

REPORTED TO	Parksville, City of P O Box 1390, 100 Jensen Avenue East Parksville, BC V9P 2H3	TEL	(250) 951-2489
		FAX	
ATTENTION	Barbara Silenieks	WORK ORDER	7101356
PO NUMBER	002775	RECEIVED / TEMP	2017-10-17 09:00 / 7°C
PROJECT	Drinking Water Pkg	REPORTED	2017-10-26
PROJECT INFO		COC NUMBER	B53067

General Comments:

CARO Analytical Services employs methods which are conducted according to procedures accepted by appropriate regulatory agencies, and/or are conducted in accordance with recognized professional standards using accepted testing methodologies and quality control efforts, except where otherwise agreed to by the client.

The results in this report apply to the samples analyzed in accordance with the Chain of Custody or Sample Requisition 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.



Authorized By:

Helen Maleki, Dipl T
Client Service Representative

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

Locations:

#110 4011 Viking Way
Richmond, BC V6V 2K9
Tel: 604-279-1499

#102 3677 Highway 97N
Kelowna, BC V1X 5C3
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Analysis Description	Method Reference	Technique	Location
Alkalinity in Water	SM 2320 B* (2011)	Titration with H2SO4	Kelowna
Anions in Water	SM 4110 B (2011)	Ion Chromatography	Kelowna
Colour, True in Water	SM 2120 C (2011)	Spectrophotometry (456 nm)	Kelowna
Conductivity in Water	SM 2510 B (2011)	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* (2011)	Calculation: 2.497 [total Ca] + 4.118 [total Mg] (Est)	N/A
Langelier Index in Water	SM 2330 B (2010)	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 (2011)	Electrometry	Kelowna
Solids, Total Dissolved in Water	SM 1030 E (2011)	Calculation: 100 x ((Cations)-[Anions])/([Cations]+[Anions])	N/A
Temperature in Water	SM 2550 B (2010)	Thermometer	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 (2011)	Nephelometry	Kelowna

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

Method Reference Descriptions:

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/American Water Works Association/Water Environment Federation

Glossary of Terms:

MRL Method Reporting Limit
 < Less than the Reported Detection Limit (RDL) - the RDL may be higher than the MRL due to various factors such as dilutions, limited sample volume, high moisture, or interferences
 °C Degrees Celcius
 CU Colour Units (referenced against a platinum cobalt standard)
 mg/L Milligrams per litre
 NTU Nephelometric Turbidity Units
 pH units pH < 7 = acidic, pH > 7 = basic
 µS/cm Microsiemens per centimetre

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Analyte	Result / Recovery	Standard / Guideline	MRL / Limits	Units	Prepared	Analyzed	Notes
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Sample ID: Spring. well #1 (7101356-01) [Water] Sampled: 2017-10-16 13:00

Anions

Chloride	18.4	N/A	0.10	mg/L	N/A	2017-10-18	
Fluoride	< 0.10	N/A	0.10	mg/L	N/A	2017-10-18	
Nitrate (as N)	1.41	N/A	0.010	mg/L	N/A	2017-10-18	
Nitrite (as N)	< 0.010	N/A	0.010	mg/L	N/A	2017-10-18	
Sulfate	4.5	N/A	1.0	mg/L	N/A	2017-10-18	

General Parameters

Alkalinity, Total (as CaCO3)	101	N/A	1.0	mg/L	N/A	2017-10-18	
Alkalinity, Phenolphthalein (as CaCO3)	< 1.0	N/A	1.0	mg/L	N/A	2017-10-18	
Alkalinity, Bicarbonate (as CaCO3)	101	N/A	1.0	mg/L	N/A	2017-10-18	
Alkalinity, Carbonate (as CaCO3)	< 1.0	N/A	1.0	mg/L	N/A	2017-10-18	
Alkalinity, Hydroxide (as CaCO3)	< 1.0	N/A	1.0	mg/L	N/A	2017-10-18	
Colour, True	< 5.0	N/A	5.0	CU	N/A	2017-10-19	
Conductivity (EC)	260	N/A	2.0	µS/cm	N/A	2017-10-18	
Cyanide, Total	< 0.0020	N/A	0.0020	mg/L	N/A	2017-10-20	
pH	7.19	N/A	0.10	pH units	N/A	2017-10-18	HT2
Temperature, at pH	22	N/A		°C	N/A	2017-10-18	HT2
Turbidity	< 0.10	N/A	0.10	NTU	N/A	2017-10-19	

Calculated Parameters

Hardness, Total (as CaCO3)	115	N/A	0.500	mg/L	N/A	N/A	
Langelier Index	-0.8	N/A	-5.0	-	N/A	2017-10-26	
Solids, Total Dissolved (calc)	137	N/A	1.00	mg/L	N/A	N/A	

Total Metals

Aluminum, total	< 0.0050	N/A	0.0050	mg/L	2017-10-23	2017-10-24	
Antimony, total	< 0.00020	N/A	0.00020	mg/L	2017-10-23	2017-10-24	
Arsenic, total	< 0.00050	N/A	0.00050	mg/L	2017-10-23	2017-10-24	
Barium, total	< 0.0050	N/A	0.0050	mg/L	2017-10-23	2017-10-24	
Boron, total	0.0130	N/A	0.0050	mg/L	2017-10-23	2017-10-24	
Cadmium, total	< 0.000010	N/A	0.000010	mg/L	2017-10-23	2017-10-24	
Calcium, total	25.4	N/A	0.20	mg/L	2017-10-23	2017-10-24	
Chromium, total	< 0.00050	N/A	0.00050	mg/L	2017-10-23	2017-10-24	
Cobalt, total	< 0.00010	N/A	0.00010	mg/L	2017-10-23	2017-10-24	
Copper, total	0.00108	N/A	0.00040	mg/L	2017-10-23	2017-10-24	
Iron, total	< 0.010	N/A	0.010	mg/L	2017-10-23	2017-10-24	
Lead, total	< 0.00020	N/A	0.00020	mg/L	2017-10-23	2017-10-24	
Magnesium, total	12.6	N/A	0.010	mg/L	2017-10-23	2017-10-24	
Manganese, total	0.0154	N/A	0.00020	mg/L	2017-10-23	2017-10-24	
Mercury, total	< 0.000010	N/A	0.000010	mg/L	2017-10-23	2017-10-24	
Molybdenum, total	0.00011	N/A	0.00010	mg/L	2017-10-23	2017-10-24	
Nickel, total	< 0.00040	N/A	0.00040	mg/L	2017-10-23	2017-10-24	
Potassium, total	0.52	N/A	0.10	mg/L	2017-10-23	2017-10-24	
Selenium, total	< 0.00050	N/A	0.00050	mg/L	2017-10-23	2017-10-24	
Sodium, total	7.57	N/A	0.10	mg/L	2017-10-23	2017-10-24	
Strontium, total	0.0763	N/A	0.0010	mg/L	2017-10-23	2017-10-24	
Uranium, total	0.000074	N/A	0.000020	mg/L	2017-10-23	2017-10-24	

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Sample ID: Spring. well #1 (7101356-01) [Water] Sampled: 2017-10-16 13:00, Continued

Total Metals, Continued

Zinc, total	< 0.0040	N/A	0.0040	mg/L	2017-10-23	2017-10-24	
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Sample ID: Spring. well #8 (7101356-02) [Water] Sampled: 2017-10-16 13:10

Anions

Chloride	16.6	N/A	0.10	mg/L	N/A	2017-10-18	
Fluoride	< 0.10	N/A	0.10	mg/L	N/A	2017-10-18	
Nitrate (as N)	1.02	N/A	0.010	mg/L	N/A	2017-10-18	
Nitrite (as N)	< 0.010	N/A	0.010	mg/L	N/A	2017-10-18	
Sulfate	6.7	N/A	1.0	mg/L	N/A	2017-10-18	

General Parameters

Alkalinity, Total (as CaCO3)	143	N/A	1.0	mg/L	N/A	2017-10-18	
Alkalinity, Phenolphthalein (as CaCO3)	< 1.0	N/A	1.0	mg/L	N/A	2017-10-18	
Alkalinity, Bicarbonate (as CaCO3)	143	N/A	1.0	mg/L	N/A	2017-10-18	
Alkalinity, Carbonate (as CaCO3)	< 1.0	N/A	1.0	mg/L	N/A	2017-10-18	
Alkalinity, Hydroxide (as CaCO3)	< 1.0	N/A	1.0	mg/L	N/A	2017-10-18	
Colour, True	< 5.0	N/A	5.0	CU	N/A	2017-10-19	
Conductivity (EC)	330	N/A	2.0	µS/cm	N/A	2017-10-18	
Cyanide, Total	< 0.0020	N/A	0.0020	mg/L	N/A	2017-10-20	
pH	7.56	N/A	0.10	pH units	N/A	2017-10-18	HT2
Temperature, at pH	22	N/A		°C	N/A	2017-10-18	HT2
Turbidity	0.39	N/A	0.10	NTU	N/A	2017-10-19	

Calculated Parameters

Hardness, Total (as CaCO3)	151	N/A	0.500	mg/L	N/A	N/A	
Langelier Index	-0.2	N/A	-5.0	-	N/A	2017-10-26	
Solids, Total Dissolved (calc)	173	N/A	1.00	mg/L	N/A	N/A	

Total Metals

Aluminum, total	< 0.0050	N/A	0.0050	mg/L	2017-10-23	2017-10-24	
Antimony, total	< 0.00020	N/A	0.00020	mg/L	2017-10-23	2017-10-24	
Arsenic, total	< 0.00050	N/A	0.00050	mg/L	2017-10-23	2017-10-24	
Barium, total	0.0073	N/A	0.0050	mg/L	2017-10-23	2017-10-24	
Boron, total	0.0136	N/A	0.0050	mg/L	2017-10-23	2017-10-24	
Cadmium, total	< 0.000010	N/A	0.000010	mg/L	2017-10-23	2017-10-24	
Calcium, total	33.0	N/A	0.20	mg/L	2017-10-23	2017-10-24	
Chromium, total	0.00117	N/A	0.00050	mg/L	2017-10-23	2017-10-24	
Cobalt, total	< 0.00010	N/A	0.00010	mg/L	2017-10-23	2017-10-24	
Copper, total	0.00214	N/A	0.00040	mg/L	2017-10-23	2017-10-24	
Iron, total	0.074	N/A	0.010	mg/L	2017-10-23	2017-10-24	
Lead, total	0.00037	N/A	0.00020	mg/L	2017-10-23	2017-10-24	
Magnesium, total	16.5	N/A	0.010	mg/L	2017-10-23	2017-10-24	
Manganese, total	0.0123	N/A	0.00020	mg/L	2017-10-23	2017-10-24	
Mercury, total	< 0.000010	N/A	0.000010	mg/L	2017-10-23	2017-10-24	
Molybdenum, total	< 0.00010	N/A	0.00010	mg/L	2017-10-23	2017-10-24	
Nickel, total	< 0.00040	N/A	0.00040	mg/L	2017-10-23	2017-10-24	

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Analyte	Result / Recovery	Standard / Guideline	MRL / Limits	Units	Prepared	Analyzed	Notes
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Sample ID: Spring. well #8 (7101356-02) [Water] Sampled: 2017-10-16 13:10, Continued

Total Metals, Continued

Potassium, total	0.85	N/A	0.10	mg/L	2017-10-23	2017-10-24	
Selenium, total	< 0.00050	N/A	0.00050	mg/L	2017-10-23	2017-10-24	
Sodium, total	7.65	N/A	0.10	mg/L	2017-10-23	2017-10-24	
Strontium, total	0.0897	N/A	0.0010	mg/L	2017-10-23	2017-10-24	
Uranium, total	0.000251	N/A	0.000020	mg/L	2017-10-23	2017-10-24	
Zinc, total	0.0058	N/A	0.0040	mg/L	2017-10-23	2017-10-24	

Sample ID: Rai well #1 (7101356-03) [Water] Sampled: 2017-10-16 13:25

Anions

Chloride	24.3	N/A	0.10	mg/L	N/A	2017-10-18	
Fluoride	< 0.10	N/A	0.10	mg/L	N/A	2017-10-18	
Nitrate (as N)	0.705	N/A	0.010	mg/L	N/A	2017-10-18	
Nitrite (as N)	< 0.010	N/A	0.010	mg/L	N/A	2017-10-18	
Sulfate	5.2	N/A	1.0	mg/L	N/A	2017-10-18	

General Parameters

Alkalinity, Total (as CaCO3)	118	N/A	1.0	mg/L	N/A	2017-10-18	
Alkalinity, Phenolphthalein (as CaCO3)	< 1.0	N/A	1.0	mg/L	N/A	2017-10-18	
Alkalinity, Bicarbonate (as CaCO3)	118	N/A	1.0	mg/L	N/A	2017-10-18	
Alkalinity, Carbonate (as CaCO3)	< 1.0	N/A	1.0	mg/L	N/A	2017-10-18	
Alkalinity, Hydroxide (as CaCO3)	< 1.0	N/A	1.0	mg/L	N/A	2017-10-18	
Colour, True	< 5.0	N/A	5.0	CU	N/A	2017-10-19	
Conductivity (EC)	313	N/A	2.0	µS/cm	N/A	2017-10-18	
Cyanide, Total	< 0.0020	N/A	0.0020	mg/L	N/A	2017-10-20	
pH	7.59	N/A	0.10	pH units	N/A	2017-10-18	HT2
Temperature, at pH	22	N/A		°C	N/A	2017-10-18	HT2
Turbidity	0.25	N/A	0.10	NTU	N/A	2017-10-19	

Calculated Parameters

Hardness, Total (as CaCO3)	135	N/A	0.500	mg/L	N/A	N/A	
Langelier Index	-0.3	N/A	-5.0	-	N/A	2017-10-26	
Solids, Total Dissolved (calc)	157	N/A	1.00	mg/L	N/A	N/A	

Total Metals

Aluminum, total	< 0.0050	N/A	0.0050	mg/L	2017-10-23	2017-10-24	
Antimony, total	< 0.00020	N/A	0.00020	mg/L	2017-10-23	2017-10-24	
Arsenic, total	< 0.00050	N/A	0.00050	mg/L	2017-10-23	2017-10-24	
Barium, total	0.0155	N/A	0.0050	mg/L	2017-10-23	2017-10-24	
Boron, total	0.0171	N/A	0.0050	mg/L	2017-10-23	2017-10-24	
Cadmium, total	0.000014	N/A	0.000010	mg/L	2017-10-23	2017-10-24	
Calcium, total	29.5	N/A	0.20	mg/L	2017-10-23	2017-10-24	
Chromium, total	0.00105	N/A	0.00050	mg/L	2017-10-23	2017-10-24	
Cobalt, total	< 0.00010	N/A	0.00010	mg/L	2017-10-23	2017-10-24	
Copper, total	0.00114	N/A	0.00040	mg/L	2017-10-23	2017-10-24	
Iron, total	0.029	N/A	0.010	mg/L	2017-10-23	2017-10-24	
Lead, total	< 0.00020	N/A	0.00020	mg/L	2017-10-23	2017-10-24	

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Sample ID: Rai well #1 (7101356-03) [Water] Sampled: 2017-10-16 13:25, Continued

Total Metals, Continued

Magnesium, total	15.0	N/A	0.010	mg/L	2017-10-23	2017-10-24	
Manganese, total	0.00892	N/A	0.00020	mg/L	2017-10-23	2017-10-24	
Mercury, total	< 0.000010	N/A	0.000010	mg/L	2017-10-23	2017-10-24	
Molybdenum, total	0.00040	N/A	0.00010	mg/L	2017-10-23	2017-10-24	
Nickel, total	< 0.00040	N/A	0.00040	mg/L	2017-10-23	2017-10-24	
Potassium, total	0.72	N/A	0.10	mg/L	2017-10-23	2017-10-24	
Selenium, total	< 0.00050	N/A	0.00050	mg/L	2017-10-23	2017-10-24	
Sodium, total	7.87	N/A	0.10	mg/L	2017-10-23	2017-10-24	
Strontium, total	0.0896	N/A	0.0010	mg/L	2017-10-23	2017-10-24	
Uranium, total	0.000288	N/A	0.000020	mg/L	2017-10-23	2017-10-24	
Zinc, total	0.0049	N/A	0.0040	mg/L	2017-10-23	2017-10-24	

Sample ID: Rai well #8 (7101356-04) [Water] Sampled: 2017-10-16 13:15

Anions

Chloride	31.7	N/A	0.10	mg/L	N/A	2017-10-18	
Fluoride	< 0.10	N/A	0.10	mg/L	N/A	2017-10-18	
Nitrate (as N)	0.524	N/A	0.010	mg/L	N/A	2017-10-18	
Nitrite (as N)	< 0.010	N/A	0.010	mg/L	N/A	2017-10-18	
Sulfate	7.2	N/A	1.0	mg/L	N/A	2017-10-18	

General Parameters

Alkalinity, Total (as CaCO3)	118	N/A	1.0	mg/L	N/A	2017-10-18	
Alkalinity, Phenolphthalein (as CaCO3)	< 1.0	N/A	1.0	mg/L	N/A	2017-10-18	
Alkalinity, Bicarbonate (as CaCO3)	118	N/A	1.0	mg/L	N/A	2017-10-18	
Alkalinity, Carbonate (as CaCO3)	< 1.0	N/A	1.0	mg/L	N/A	2017-10-18	
Alkalinity, Hydroxide (as CaCO3)	< 1.0	N/A	1.0	mg/L	N/A	2017-10-18	
Colour, True	< 5.0	N/A	5.0	CU	N/A	2017-10-19	
Conductivity (EC)	340	N/A	2.0	µS/cm	N/A	2017-10-18	
Cyanide, Total	< 0.0020	N/A	0.0020	mg/L	N/A	2017-10-20	
pH	7.56	N/A	0.10	pH units	N/A	2017-10-18	HT2
Temperature, at pH	23	N/A		°C	N/A	2017-10-18	HT2
Turbidity	< 0.10	N/A	0.10	NTU	N/A	2017-10-19	

Calculated Parameters

Hardness, Total (as CaCO3)	151	N/A	0.500	mg/L	N/A	N/A	
Langelier Index	-0.3	N/A	-5.0	-	N/A	2017-10-26	
Solids, Total Dissolved (calc)	172	N/A	1.00	mg/L	N/A	N/A	

Total Metals

Aluminum, total	< 0.0050	N/A	0.0050	mg/L	2017-10-23	2017-10-24	
Antimony, total	< 0.00020	N/A	0.00020	mg/L	2017-10-23	2017-10-24	
Arsenic, total	< 0.00050	N/A	0.00050	mg/L	2017-10-23	2017-10-24	
Barium, total	0.0076	N/A	0.0050	mg/L	2017-10-23	2017-10-24	
Boron, total	0.0107	N/A	0.0050	mg/L	2017-10-23	2017-10-24	
Cadmium, total	0.000044	N/A	0.000010	mg/L	2017-10-23	2017-10-24	
Calcium, total	33.6	N/A	0.20	mg/L	2017-10-23	2017-10-24	

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Sample ID: Rai well #8 (7101356-04) [Water] Sampled: 2017-10-16 13:15, Continued

Total Metals, Continued

Chromium, total	0.00081	N/A	0.00050	mg/L	2017-10-23	2017-10-24	
Cobalt, total	< 0.00010	N/A	0.00010	mg/L	2017-10-23	2017-10-24	
Copper, total	0.0482	N/A	0.00040	mg/L	2017-10-23	2017-10-24	
Iron, total	< 0.010	N/A	0.010	mg/L	2017-10-23	2017-10-24	
Lead, total	0.0317	N/A	0.00020	mg/L	2017-10-23	2017-10-24	
Magnesium, total	16.2	N/A	0.010	mg/L	2017-10-23	2017-10-24	
Manganese, total	0.0202	N/A	0.00020	mg/L	2017-10-23	2017-10-24	
Mercury, total	< 0.000010	N/A	0.000010	mg/L	2017-10-23	2017-10-24	
Molybdenum, total	0.00012	N/A	0.00010	mg/L	2017-10-23	2017-10-24	
Nickel, total	0.00050	N/A	0.00040	mg/L	2017-10-23	2017-10-24	
Potassium, total	0.60	N/A	0.10	mg/L	2017-10-23	2017-10-24	
Selenium, total	< 0.00050	N/A	0.00050	mg/L	2017-10-23	2017-10-24	
Sodium, total	8.12	N/A	0.10	mg/L	2017-10-23	2017-10-24	
Strontium, total	0.0913	N/A	0.0010	mg/L	2017-10-23	2017-10-24	
Uranium, total	0.000189	N/A	0.000020	mg/L	2017-10-23	2017-10-24	
Zinc, total	0.0501	N/A	0.0040	mg/L	2017-10-23	2017-10-24	

Sample ID: River (7101356-05) [Water] Sampled: 2017-10-16 12:45

Anions

Chloride	20.0	N/A	0.10	mg/L	N/A	2017-10-18	
Fluoride	< 0.10	N/A	0.10	mg/L	N/A	2017-10-18	
Nitrate (as N)	0.013	N/A	0.010	mg/L	N/A	2017-10-18	
Nitrite (as N)	< 0.010	N/A	0.010	mg/L	N/A	2017-10-18	
Sulfate	2.1	N/A	1.0	mg/L	N/A	2017-10-18	

General Parameters

Alkalinity, Total (as CaCO3)	28.7	N/A	1.0	mg/L	N/A	2017-10-18	
Alkalinity, Phenolphthalein (as CaCO3)	< 1.0	N/A	1.0	mg/L	N/A	2017-10-18	
Alkalinity, Bicarbonate (as CaCO3)	28.7	N/A	1.0	mg/L	N/A	2017-10-18	
Alkalinity, Carbonate (as CaCO3)	< 1.0	N/A	1.0	mg/L	N/A	2017-10-18	
Alkalinity, Hydroxide (as CaCO3)	< 1.0	N/A	1.0	mg/L	N/A	2017-10-18	
Colour, True	5.5	N/A	5.0	CU	N/A	2017-10-19	
Conductivity (EC)	131	N/A	2.0	µS/cm	N/A	2017-10-18	
Cyanide, Total	< 0.0020	N/A	0.0020	mg/L	N/A	2017-10-20	
pH	7.04	N/A	0.10	pH units	N/A	2017-10-18	HT2
Temperature, at pH	23	N/A		°C	N/A	2017-10-18	HT2
Turbidity	0.27	N/A	0.10	NTU	N/A	2017-10-19	

Calculated Parameters

Hardness, Total (as CaCO3)	41.8	N/A	0.500	mg/L	N/A	N/A	
Langelier Index	-1.8	N/A	-5.0	-	N/A	2017-10-26	
Solids, Total Dissolved (calc)	64.1	N/A	1.00	mg/L	N/A	N/A	

Total Metals

Aluminum, total	0.0119	N/A	0.0050	mg/L	2017-10-23	2017-10-24	
Antimony, total	< 0.00020	N/A	0.00020	mg/L	2017-10-23	2017-10-24	

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Analyte	Result / Recovery	Standard / Guideline	MRL / Limits	Units	Prepared	Analyzed	Notes
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Sample ID: River (7101356-05) [Water] Sampled: 2017-10-16 12:45, Continued

Total Metals, Continued

Arsenic, total	< 0.00050	N/A	0.00050	mg/L	2017-10-23	2017-10-24	
Barium, total	0.0087	N/A	0.0050	mg/L	2017-10-23	2017-10-24	
Boron, total	0.0185	N/A	0.0050	mg/L	2017-10-23	2017-10-24	
Cadmium, total	< 0.000010	N/A	0.000010	mg/L	2017-10-23	2017-10-24	
Calcium, total	13.6	N/A	0.20	mg/L	2017-10-23	2017-10-24	
Chromium, total	< 0.00050	N/A	0.00050	mg/L	2017-10-23	2017-10-24	
Cobalt, total	< 0.00010	N/A	0.00010	mg/L	2017-10-23	2017-10-24	
Copper, total	0.00084	N/A	0.00040	mg/L	2017-10-23	2017-10-24	
Iron, total	0.074	N/A	0.010	mg/L	2017-10-23	2017-10-24	
Lead, total	< 0.00020	N/A	0.00020	mg/L	2017-10-23	2017-10-24	
Magnesium, total	1.92	N/A	0.010	mg/L	2017-10-23	2017-10-24	
Manganese, total	0.00706	N/A	0.00020	mg/L	2017-10-23	2017-10-24	
Mercury, total	< 0.000010	N/A	0.000010	mg/L	2017-10-23	2017-10-24	
Molybdenum, total	0.00011	N/A	0.00010	mg/L	2017-10-23	2017-10-24	
Nickel, total	< 0.00040	N/A	0.00040	mg/L	2017-10-23	2017-10-24	
Potassium, total	0.18	N/A	0.10	mg/L	2017-10-23	2017-10-24	
Selenium, total	< 0.00050	N/A	0.00050	mg/L	2017-10-23	2017-10-24	
Sodium, total	8.77	N/A	0.10	mg/L	2017-10-23	2017-10-24	
Strontium, total	0.0619	N/A	0.0010	mg/L	2017-10-23	2017-10-24	
Uranium, total	< 0.000020	N/A	0.000020	mg/L	2017-10-23	2017-10-24	
Zinc, total	< 0.0040	N/A	0.0040	mg/L	2017-10-23	2017-10-24	

Sample ID: 1116 Herring Gull (7101356-06) [Water] Sampled: 2017-10-16 13:35

Anions

Chloride	21.8	N/A	0.10	mg/L	N/A	2017-10-18	
Fluoride	< 0.10	N/A	0.10	mg/L	N/A	2017-10-18	
Nitrate (as N)	0.021	N/A	0.010	mg/L	N/A	2017-10-18	
Nitrite (as N)	< 0.010	N/A	0.010	mg/L	N/A	2017-10-18	
Sulfate	2.0	N/A	1.0	mg/L	N/A	2017-10-18	

General Parameters

Alkalinity, Total (as CaCO3)	28.1	N/A	1.0	mg/L	N/A	2017-10-18	
Alkalinity, Phenolphthalein (as CaCO3)	< 1.0	N/A	1.0	mg/L	N/A	2017-10-18	
Alkalinity, Bicarbonate (as CaCO3)	28.1	N/A	1.0	mg/L	N/A	2017-10-18	
Alkalinity, Carbonate (as CaCO3)	< 1.0	N/A	1.0	mg/L	N/A	2017-10-18	
Alkalinity, Hydroxide (as CaCO3)	< 1.0	N/A	1.0	mg/L	N/A	2017-10-18	
Colour, True	< 5.0	N/A	5.0	CU	N/A	2017-10-19	
Conductivity (EC)	132	N/A	2.0	µS/cm	N/A	2017-10-18	
Cyanide, Total	< 0.0020	N/A	0.0020	mg/L	N/A	2017-10-20	
pH	6.90	N/A	0.10	pH units	N/A	2017-10-18	HT2
Temperature, at pH	22	N/A		°C	N/A	2017-10-18	HT2
Turbidity	0.15	N/A	0.10	NTU	N/A	2017-10-19	

Calculated Parameters

Hardness, Total (as CaCO3)	41.0	N/A	0.500	mg/L	N/A	N/A	
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Sample ID: 1116 Herring Gull (7101356-06) [Water] Sampled: 2017-10-16 13:35, Continued

Calculated Parameters, Continued

Langelier Index	-2.0	N/A	-5.0	-	N/A	2017-10-26	
Solids, Total Dissolved (calc)	64.9	N/A	1.00	mg/L	N/A	N/A	

Total Metals

Aluminum, total	0.0064	N/A	0.0050	mg/L	2017-10-23	2017-10-24	
Antimony, total	< 0.00020	N/A	0.00020	mg/L	2017-10-23	2017-10-24	
Arsenic, total	< 0.00050	N/A	0.00050	mg/L	2017-10-23	2017-10-24	
Barium, total	0.0084	N/A	0.0050	mg/L	2017-10-23	2017-10-24	
Boron, total	0.0186	N/A	0.0050	mg/L	2017-10-23	2017-10-24	
Cadmium, total	< 0.000010	N/A	0.000010	mg/L	2017-10-23	2017-10-24	
Calcium, total	13.3	N/A	0.20	mg/L	2017-10-23	2017-10-24	
Chromium, total	< 0.00050	N/A	0.00050	mg/L	2017-10-23	2017-10-24	
Cobalt, total	< 0.00010	N/A	0.00010	mg/L	2017-10-23	2017-10-24	
Copper, total	0.0183	N/A	0.00040	mg/L	2017-10-23	2017-10-24	
Iron, total	0.049	N/A	0.010	mg/L	2017-10-23	2017-10-24	
Lead, total	0.00063	N/A	0.00020	mg/L	2017-10-23	2017-10-24	
Magnesium, total	1.87	N/A	0.010	mg/L	2017-10-23	2017-10-24	
Manganese, total	0.00097	N/A	0.00020	mg/L	2017-10-23	2017-10-24	
Mercury, total	< 0.000010	N/A	0.000010	mg/L	2017-10-23	2017-10-24	
Molybdenum, total	< 0.00010	N/A	0.00010	mg/L	2017-10-23	2017-10-24	
Nickel, total	< 0.00040	N/A	0.00040	mg/L	2017-10-23	2017-10-24	
Potassium, total	0.17	N/A	0.10	mg/L	2017-10-23	2017-10-24	
Selenium, total	< 0.00050	N/A	0.00050	mg/L	2017-10-23	2017-10-24	
Sodium, total	8.48	N/A	0.10	mg/L	2017-10-23	2017-10-24	
Strontium, total	0.0597	N/A	0.0010	mg/L	2017-10-23	2017-10-24	
Uranium, total	< 0.000020	N/A	0.000020	mg/L	2017-10-23	2017-10-24	
Zinc, total	0.0088	N/A	0.0040	mg/L	2017-10-23	2017-10-24	

Sample / Analysis Qualifiers:

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

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The following section displays the quality control (QC) data that is associated with your sample data. Groups of samples are prepared in "batches" and analyzed in conjunction with QC samples that ensure your data is of the highest quality. Common QC types include:

- **Method Blank (Blk):** Laboratory reagent water is carried through sample preparation and analysis steps. Method Blanks indicate that results are free from contamination, i.e. not biased high from sources such as the sample container or the laboratory environment
- **Duplicate (Dup):** Preparation and analysis of a replicate aliquot of a sample. Duplicates provide a measure of the analytical method's precision, i.e. how reproducible a result is. Duplicates are only reported if they are associated with your sample data.
- **Blank Spike (BS):** A known amount of standard is carried through sample preparation and analysis steps. Blank Spikes, also known as laboratory control samples (LCS), are prepared from a different source of standard than used for the calibration. They ensure that the calibration is acceptable (i.e. not biased high or low) and also provide a measure of the analytical method's accuracy (i.e. closeness of the result to a target value).
- **Standard Reference Material (SRM):** A material of similar matrix to the samples, externally certified for the parameter(s) listed. Standard Reference Materials ensure that the preparation steps in the method are adequate to achieve acceptable recoveries of the parameter(s) tested.

Each QC type is analyzed at a 5-10% frequency, i.e. one blank/duplicate/spike for every 10 samples. For all types of QC, the specified recovery (% Rec) and relative percent difference (RPD) limits are derived from long-term method performance averages and/or prescribed by the reference method.

Analyte	Result	MRL Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Notes
Anions, Batch B7J1331									
Blank (B7J1331-BLK1) Prepared: 2017-10-18, Analyzed: 2017-10-18									
Chloride	< 0.10	0.10 mg/L							
Fluoride	< 0.10	0.10 mg/L							
Nitrate (as N)	< 0.010	0.010 mg/L							
Nitrite (as N)	< 0.010	0.010 mg/L							
Sulfate	< 1.0	1.0 mg/L							
LCS (B7J1331-BS1) Prepared: 2017-10-18, Analyzed: 2017-10-18									
Chloride	15.7	0.10 mg/L	16.0		98	90-110			
Fluoride	3.92	0.10 mg/L	4.00		98	88-108			
Nitrate (as N)	3.99	0.010 mg/L	4.00		100	93-108			
Nitrite (as N)	1.89	0.010 mg/L	2.00		95	85-114			
Sulfate	15.7	1.0 mg/L	16.0		98	91-109			
Duplicate (B7J1331-DUP1) Source: 7101356-01 Prepared: 2017-10-18, Analyzed: 2017-10-18									
Chloride	18.5	0.10 mg/L		18.4			< 1	10	
Fluoride	< 0.10	0.10 mg/L		< 0.10				10	
Nitrate (as N)	1.40	0.010 mg/L		1.41			< 1	10	
Nitrite (as N)	< 0.010	0.010 mg/L		< 0.010				6	
Sulfate	4.6	1.0 mg/L		4.5				6	
Matrix Spike (B7J1331-MS1) Source: 7101356-01 Prepared: 2017-10-18, Analyzed: 2017-10-18									
Chloride	33.9	0.10 mg/L	16.0	18.4	97	75-125			
Fluoride	3.74	0.10 mg/L	4.00	< 0.10	93	75-125			
Nitrate (as N)	5.42	0.010 mg/L	4.00	1.41	100	75-125			
Nitrite (as N)	1.83	0.010 mg/L	2.00	< 0.010	91	80-120			
Sulfate	20.0	1.0 mg/L	16.0	4.5	96	75-125			
General Parameters, Batch B7J1251									
Blank (B7J1251-BLK1) Prepared: 2017-10-19, Analyzed: 2017-10-19									
Turbidity	< 0.10	0.10 NTU							

APPENDIX 1: QUALITY CONTROL DATA

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Analyte	Result	MRL Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Notes
General Parameters, Batch B7J1251, Continued									
LCS (B7J1251-BS1)			Prepared: 2017-10-19, Analyzed: 2017-10-19						
Turbidity	40.1	0.10 NTU	40.0		100	90-110			
General Parameters, Batch B7J1353									
Blank (B7J1353-BLK1)			Prepared: 2017-10-18, Analyzed: 2017-10-18						
Alkalinity, Total (as CaCO3)	< 1.0	1.0 mg/L							
Alkalinity, Phenolphthalein (as CaCO3)	< 1.0	1.0 mg/L							
Alkalinity, Bicarbonate (as CaCO3)	< 1.0	1.0 mg/L							
Alkalinity, Carbonate (as CaCO3)	< 1.0	1.0 mg/L							
Alkalinity, Hydroxide (as CaCO3)	< 1.0	1.0 mg/L							
Conductivity (EC)	< 2.0	2.0 µS/cm							
Blank (B7J1353-BLK2)			Prepared: 2017-10-18, Analyzed: 2017-10-18						
Alkalinity, Total (as CaCO3)	< 1.0	1.0 mg/L							
Alkalinity, Phenolphthalein (as CaCO3)	< 1.0	1.0 mg/L							
Alkalinity, Bicarbonate (as CaCO3)	< 1.0	1.0 mg/L							
Alkalinity, Carbonate (as CaCO3)	< 1.0	1.0 mg/L							
Alkalinity, Hydroxide (as CaCO3)	< 1.0	1.0 mg/L							
Conductivity (EC)	< 2.0	2.0 µS/cm							
LCS (B7J1353-BS1)			Prepared: 2017-10-18, Analyzed: 2017-10-18						
Alkalinity, Total (as CaCO3)	100	1.0 mg/L	100		100	92-106			
LCS (B7J1353-BS2)			Prepared: 2017-10-18, Analyzed: 2017-10-18						
Alkalinity, Total (as CaCO3)	100	1.0 mg/L	100		100	92-106			
LCS (B7J1353-BS3)			Prepared: 2017-10-18, Analyzed: 2017-10-18						
Conductivity (EC)	1400	2.0 µS/cm	1410		99	95-104			
LCS (B7J1353-BS4)			Prepared: 2017-10-18, Analyzed: 2017-10-18						
Conductivity (EC)	1400	2.0 µS/cm	1410		100	95-104			
Reference (B7J1353-SRM1)			Prepared: 2017-10-18, Analyzed: 2017-10-18						
pH	6.99	0.10 pH units	7.00		100	98-102			HT2
Reference (B7J1353-SRM2)			Prepared: 2017-10-18, Analyzed: 2017-10-18						
pH	6.99	0.10 pH units	7.00		100	98-102			HT2
General Parameters, Batch B7J1463									
Blank (B7J1463-BLK1)			Prepared: 2017-10-19, Analyzed: 2017-10-19						
Colour, True	< 5.0	5.0 CU							
LCS (B7J1463-BS1)			Prepared: 2017-10-19, Analyzed: 2017-10-19						
Colour, True	10	5.0 CU	10.0		100	85-115			
General Parameters, Batch B7J1590									
Blank (B7J1590-BLK1)			Prepared: 2017-10-20, Analyzed: 2017-10-20						
Cyanide, Total	< 0.0020	0.0020 mg/L							
LCS (B7J1590-BS1)			Prepared: 2017-10-20, Analyzed: 2017-10-20						
Cyanide, Total	0.0192	0.0020 mg/L	0.0200		96	82-120			
LCS Dup (B7J1590-BSD1)			Prepared: 2017-10-20, Analyzed: 2017-10-20						
Cyanide, Total	0.0187	0.0020 mg/L	0.0200		93	82-120	3	10	

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Analyte	Result	MRL Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Notes
Total Metals, Batch B7J1738									
Blank (B7J1738-BLK1)			Prepared: 2017-10-23, Analyzed: 2017-10-24						
Mercury, total	< 0.000010	0.000010 mg/L							
Duplicate (B7J1738-DUP1)			Source: 7101356-01 Prepared: 2017-10-23, Analyzed: 2017-10-24						
Mercury, total	< 0.000010	0.000010 mg/L		< 0.000010				20	
Matrix Spike (B7J1738-MS1)			Source: 7101356-02 Prepared: 2017-10-23, Analyzed: 2017-10-24						
Mercury, total	0.000242	0.000010 mg/L	0.000250	< 0.000010	97	70-130			
Reference (B7J1738-SRM1)			Prepared: 2017-10-23, Analyzed: 2017-10-24						
Mercury, total	0.00477	0.000010 mg/L	0.00489		97	80-120			
Total Metals, Batch B7J1773									
Blank (B7J1773-BLK1)			Prepared: 2017-10-23, Analyzed: 2017-10-24						
Aluminum, total	< 0.0050	0.0050 mg/L							
Antimony, total	< 0.00020	0.00020 mg/L							
Arsenic, total	< 0.00050	0.00050 mg/L							
Barium, total	< 0.0050	0.0050 mg/L							
Boron, total	< 0.0050	0.0050 mg/L							
Cadmium, total	< 0.000010	0.000010 mg/L							
Calcium, total	< 0.20	0.20 mg/L							
Chromium, total	< 0.00050	0.00050 mg/L							
Cobalt, total	< 0.00010	0.00010 mg/L							
Copper, total	< 0.00040	0.00040 mg/L							
Iron, total	< 0.010	0.010 mg/L							
Lead, total	< 0.00020	0.00020 mg/L							
Magnesium, total	< 0.010	0.010 mg/L							
Manganese, total	< 0.00020	0.00020 mg/L							
Molybdenum, total	< 0.00010	0.00010 mg/L							
Nickel, total	< 0.00040	0.00040 mg/L							
Potassium, total	< 0.10	0.10 mg/L							
Selenium, total	< 0.00050	0.00050 mg/L							
Sodium, total	< 0.10	0.10 mg/L							
Strontium, total	< 0.0010	0.0010 mg/L							
Uranium, total	< 0.000020	0.000020 mg/L							
Zinc, total	< 0.0040	0.0040 mg/L							
LCS (B7J1773-BS1)			Prepared: 2017-10-23, Analyzed: 2017-10-24						
Aluminum, total	0.0208	0.0050 mg/L	0.0200		104	80-120			
Antimony, total	0.0183	0.00020 mg/L	0.0200		91	80-120			
Arsenic, total	0.0182	0.00050 mg/L	0.0200		91	80-120			
Barium, total	0.0193	0.0050 mg/L	0.0200		97	80-120			
Boron, total	0.0165	0.0050 mg/L	0.0200		82	80-120			
Cadmium, total	0.0188	0.000010 mg/L	0.0200		94	80-120			
Calcium, total	1.88	0.20 mg/L	2.00		94	80-120			
Chromium, total	0.0183	0.00050 mg/L	0.0200		92	80-120			
Cobalt, total	0.0186	0.00010 mg/L	0.0200		93	80-120			
Copper, total	0.0206	0.00040 mg/L	0.0200		103	80-120			
Iron, total	1.82	0.010 mg/L	2.00		91	80-120			
Lead, total	0.0185	0.00020 mg/L	0.0200		93	80-120			
Magnesium, total	1.89	0.010 mg/L	2.00		95	80-120			
Manganese, total	0.0192	0.00020 mg/L	0.0200		96	80-120			
Molybdenum, total	0.0190	0.00010 mg/L	0.0200		95	80-120			
Nickel, total	0.0185	0.00040 mg/L	0.0200		93	80-120			

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Analyte	Result	MRL Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Notes
Total Metals, Batch B7J1773, Continued									
LCS (B7J1773-BS1), Continued					Prepared: 2017-10-23, Analyzed: 2017-10-24				
Potassium, total	1.92	0.10 mg/L	2.00		96	80-120			
Selenium, total	0.0197	0.00050 mg/L	0.0200		99	80-120			
Sodium, total	2.00	0.10 mg/L	2.40		84	80-120			
Strontium, total	0.0191	0.0010 mg/L	0.0200		95	80-120			
Uranium, total	0.0198	0.000020 mg/L	0.0200		99	80-120			
Zinc, total	0.0212	0.0040 mg/L	0.0200		106	80-120			
Reference (B7J1773-SRM1)					Prepared: 2017-10-23, Analyzed: 2017-10-24				
Aluminum, total	0.293	0.0050 mg/L	0.303		97	82-114			
Antimony, total	0.0497	0.00020 mg/L	0.0511		97	88-115			
Arsenic, total	0.116	0.00050 mg/L	0.118		98	88-111			
Barium, total	0.822	0.0050 mg/L	0.823		100	83-110			
Boron, total	3.09	0.0050 mg/L	3.45		90	80-118			
Cadmium, total	0.0488	0.000010 mg/L	0.0495		99	90-110			
Calcium, total	11.4	0.20 mg/L	11.6		99	85-113			
Chromium, total	0.246	0.00050 mg/L	0.250		98	88-111			
Cobalt, total	0.0384	0.00010 mg/L	0.0377		102	90-114			
Copper, total	0.503	0.00040 mg/L	0.486		104	90-117			
Iron, total	0.489	0.010 mg/L	0.488		100	90-116			
Lead, total	0.199	0.00020 mg/L	0.204		97	90-110			
Magnesium, total	3.75	0.010 mg/L	3.79		99	88-116			
Manganese, total	0.109	0.00020 mg/L	0.109		100	88-108			
Molybdenum, total	0.204	0.00010 mg/L	0.198		103	88-110			
Nickel, total	0.247	0.00040 mg/L	0.249		99	90-112			
Potassium, total	7.28	0.10 mg/L	7.21		101	87-116			
Selenium, total	0.128	0.00050 mg/L	0.121		106	90-122			
Sodium, total	8.22	0.10 mg/L	7.54		109	86-118			
Strontium, total	0.381	0.0010 mg/L	0.375		102	86-110			
Uranium, total	0.0310	0.000020 mg/L	0.0306		101	88-112			
Zinc, total	2.49	0.0040 mg/L	2.49		100	90-113			

QC Qualifiers:

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

