CERTIFICATE OF ANALYSIS

REPORTED TO Mid Shuswap Lumby Water Stewards
1631 Mable Lake Rd
Lumby, BC V0E 2G6

TEL (250) 547-2554
FAX -

ATTENTION	Russ Collins	**WORK ORDER**	5051568
PO NUMBER		**RECEIVED / TEMP**	May-25-15 10:00 / 8°C
PROJECT	Analytical Testing	**REPORTED**	Nov-23-15
PROJECT INFO		**COC NUMBER**	40837.5581

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.

Work Order Comments:

Nov.23/15- This is an amended report, please note that the Hg RDL's have been lowered.- JLS

Authorized By: **Ed Hoppe, B.Sc., P.Chem.**
Division Manager, Kelowna

If you have any questions or concerns, please contact your Account Manager:
Bryan Shaw, Ph.D. (bshaw@caro.ca)

ANALYSIS INFORMATION

REPORTED TO	Mid Shuswap Lumby Water Stewards	**WORK ORDER**	5051568
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Analysis Description	Method Reference	Technique	Location
Ammonia-N in Water (total)	APHA 4500-NH3 G*	Automated Colorimetry (Phenate)	Kelowna
Anions in Water by IC	APHA 4110 B	Ion Chromatography with Chemical Suppression of Eluent Conductivity	Kelowna
Conductivity in Water	APHA 2510 B	Conductivity Meter	Kelowna
E. coli (Partition)	APHA 9222 G	Membrane Filtration / Nutrient Agar with MUG	Kelowna
Hardness (as CaCO3)	APHA 2340 B	Calculation: 2.497 [Ca] + 4.118 [Mg]	N/A
Mercury, total by CVAFS (low)	EPA 245.7*	BrCl2 Oxidation / Cold Vapor Atomic Fluorescence Spectrometry (CVAFS)	Richmond
pH in Water	APHA 4500-H+ B	Electrometry	Kelowna
Total Kjeldahl Nitrogen in Water	APHA 4500-Norg D*	Block Digestion and Flow Injection Analysis	Kelowna
Total Phosphorus in Water	APHA 4500-P B.5 / APHA 4500-P F	Persulfate Digestion / Automated Colorimetry (Ascorbic Acid)	Kelowna
Total Phosphorus, dissolved	APHA 4500-P B.5 / APHA 4500-P F	Persulfate Digestion / Automated Colorimetry (Ascorbic Acid)	Kelowna
Total Recoverable Metals	APHA 3030E* / APHA 3125 B	HNO3+HCl Hot Block Digestion / Inductively Coupled Plasma Mass Spectrometry (ICP-MS)	Richmond
Turbidity	APHA 2130 B	Nephelometry	Kelowna

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

Method Reference Descriptions:

APHA	Standard Methods for the Examination of Water and Wastewater, 22nd Edition, American Public Health Association/American Water Works Association/Water Environment Federation
EPA	United States Environmental Protection Agency Test Methods

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
AO	Aesthetic objective
MAC	Maximum acceptable concentration (health based)
OG	Operational guideline (treated water)
CFU/100 mL	Colony Forming Units per 100 millilitres
mg/L	Milligrams per litre
NTU	Nephelometric Turbidity Units
pH units	pH < 7 = acidic, ph > 7 = basic
µg/L	Micrograms per litre
µS/cm	Microsiemens per centimetre

Standards / Guidelines Referenced in this Report:

Guidelines for Canadian Drinking Water Quality (Oct 2014)

Website: http://www.hc-sc.gc.ca/ewh-semt/alt_formats/pdf/pubs/water-eau/sum_guide-res_recom/sum_guide-res_recom-eng.pdf

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

CARO ANALYTICAL SERVICES

SAMPLE ANALYTICAL DATA

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PROJECT Analytical Testing

WORK ORDER 5051568
REPORTED Nov-23-15

Analyte	Result / *Recovery*	Standard / Guideline	MRL / *Limits*	Units	Prepared	Analyzed	Notes
Sample ID: Harris Creek (Hwy 6) (5051568-01) [Water] Sampled: May-24-15 11:10							PRES
Anions							
Chloride	**0.24**	AO ≤ 250	0.10	mg/L	N/A	May-26-15	
Nitrate as N	< 0.010	MAC = 10	0.010	mg/L	N/A	May-26-15	
Nitrite as N	< 0.010	MAC = 1	0.010	mg/L	N/A	May-26-15	
Sulfate	**4.7**	AO ≤ 500	1.0	mg/L	N/A	May-26-15	
General Parameters							
Conductivity (EC)	**51**	N/A	2	µS/cm	N/A	May-25-15	
Ammonia as N, Total	**0.027**	N/A	0.020	mg/L	N/A	May-27-15	
Nitrogen, Total Kjeldahl	**0.23**	N/A	0.05	mg/L	May-25-15	May-27-15	
pH	**7.50**	6.5-8.5	0.01	pH units	N/A	May-25-15	HT2
Phosphorus, Total as P	**0.044**	N/A	0.002	mg/L	May-26-15	May-28-15	
Phosphorus, Total Dissolved	**0.013**	N/A	0.002	mg/L	May-26-15	May-28-15	
Turbidity	**3.1**	OG < 0.1	0.1	NTU	N/A	May-26-15	
Calculated Parameters							
Hardness, Total (Total as CaCO3)	**20.6**	N/A	0.1	mg/L	N/A	N/A	
Nitrate+Nitrite as N	< 0.010	N/A	0.010	mg/L	N/A	N/A	
Nitrogen, Total	**0.229**	N/A	0.050	mg/L	N/A	N/A	
Total Recoverable Metals							
Aluminum, total	**204**	OG < 100	1	µg/L	May-28-15	May-30-15	
Antimony, total	< 0.05	MAC = 6	0.05	µg/L	May-28-15	May-30-15	
Arsenic, total	**0.25**	MAC = 10	0.05	µg/L	May-28-15	May-30-15	
Barium, total	**7.4**	MAC = 1000	0.1	µg/L	May-28-15	May-30-15	
Beryllium, total	**0.01**	N/A	0.01	µg/L	May-28-15	May-30-15	
Bismuth, total	< 0.01	N/A	0.01	µg/L	May-28-15	May-30-15	
Boron, total	**2**	MAC = 5000	1	µg/L	May-28-15	May-30-15	
Cadmium, total	**0.010**	MAC = 5	0.002	µg/L	May-28-15	May-30-15	
Calcium, total	**5710**	N/A	40	µg/L	May-28-15	May-30-15	
Chromium, total	**0.4**	MAC = 50	0.1	µg/L	May-28-15	May-30-15	
Cobalt, total	**0.167**	N/A	0.005	µg/L	May-28-15	May-30-15	
Copper, total	**2.1**	AO ≤ 1000	0.1	µg/L	May-28-15	May-30-15	
Iron, total	**329**	AO ≤ 300	2	µg/L	May-28-15	May-30-15	
Lead, total	**0.08**	MAC = 10	0.05	µg/L	May-28-15	May-30-15	
Lithium, total	**1.11**	N/A	0.05	µg/L	May-28-15	May-30-15	
Magnesium, total	**1550**	N/A	5.0	µg/L	May-28-15	May-30-15	
Manganese, total	**16.6**	AO ≤ 50	0.05	µg/L	May-28-15	May-30-15	
Mercury, total	< 0.005	MAC = 1	0.005	µg/L	May-28-15	Jun-01-15	
Molybdenum, total	**0.36**	N/A	0.01	µg/L	May-28-15	May-30-15	
Nickel, total	**6.03**	N/A	0.02	µg/L	May-28-15	May-30-15	
Phosphorus, total	**22**	N/A	10	µg/L	May-28-15	May-30-15	
Potassium, total	**859**	N/A	10	µg/L	May-28-15	May-30-15	
Selenium, total	**0.2**	MAC = 50	0.1	µg/L	May-28-15	May-30-15	
Silicon, total	**4600**	N/A	50	µg/L	May-28-15	May-30-15	
Silver, total	< 0.01	N/A	0.01	µg/L	May-28-15	May-30-15	
Sodium, total	**1590**	AO ≤ 200000	10	µg/L	May-28-15	May-30-15	
Strontium, total	**32.4**	N/A	0.1	µg/L	May-28-15	May-30-15	

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WORK ORDER 5051568
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Analyte	Result / *Recovery*	Standard / Guideline	MRL / *Limits*	Units	Prepared	Analyzed	Notes
Sample ID: Harris Creek (Hwy 6) (5051568-01) [Water] Sampled: May-24-15 11:10, Continued							PRES
Total Recoverable Metals, Continued							
Sulfur, total	**1400**	N/A	500	µg/L	May-28-15	May-30-15	
Tellurium, total	< 0.05	N/A	0.05	µg/L	May-28-15	May-30-15	
Thallium, total	**0.005**	N/A	0.004	µg/L	May-28-15	May-30-15	
Thorium, total	**0.03**	N/A	0.01	µg/L	May-28-15	May-30-15	
Tin, total	< 0.05	N/A	0.05	µg/L	May-28-15	May-30-15	
Titanium, total	**9.9**	N/A	0.2	µg/L	May-28-15	May-30-15	
Uranium, total	**0.166**	MAC = 20	0.001	µg/L	May-28-15	May-30-15	
Vanadium, total	**0.9**	N/A	0.2	µg/L	May-28-15	May-30-15	
Zinc, total	**3**	AO ≤ 5000	1	µg/L	May-28-15	May-30-15	
Zirconium, total	**0.48**	N/A	0.02	µg/L	May-28-15	May-30-15	
Microbiological Parameters							
E. coli	**22**	MAC = None Detected	1	CFU/100 mL	May-25-15	May-26-15	
Sample ID: Duteau Creek (Hwy 6) (5051568-02) [Water] Sampled: May-24-15 10:45							PRES
Anions							
Chloride	**1.94**	AO ≤ 250	0.10	mg/L	N/A	May-26-15	
Nitrate as N	**0.079**	MAC = 10	0.010	mg/L	N/A	May-26-15	
Nitrite as N	< 0.010	MAC = 1	0.010	mg/L	N/A	May-26-15	
Sulfate	**7.1**	AO ≤ 500	1.0	mg/L	N/A	May-26-15	
General Parameters							
Conductivity (EC)	**96**	N/A	2	µS/cm	N/A	May-25-15	
Ammonia as N, Total	**0.046**	N/A	0.020	mg/L	N/A	May-27-15	
Nitrogen, Total Kjeldahl	**0.44**	N/A	0.05	mg/L	May-25-15	May-27-15	
pH	**7.69**	6.5-8.5	0.01	pH units	N/A	May-25-15	HT2
Phosphorus, Total as P	**0.045**	N/A	0.002	mg/L	May-26-15	May-28-15	
Phosphorus, Total Dissolved	**0.016**	N/A	0.002	mg/L	May-26-15	May-28-15	
Turbidity	**3.7**	OG < 0.1	0.1	NTU	N/A	May-26-15	
Calculated Parameters							
Hardness, Total (Total as CaCO3)	**41.2**	N/A	0.1	mg/L	N/A	N/A	
Nitrate+Nitrite as N	**0.079**	N/A	0.010	mg/L	N/A	N/A	
Nitrogen, Total	**0.522**	N/A	0.050	mg/L	N/A	N/A	
Total Recoverable Metals							
Aluminum, total	**243**	OG < 100	1	µg/L	May-28-15	May-30-15	
Antimony, total	< 0.05	MAC = 6	0.05	µg/L	May-28-15	May-30-15	
Arsenic, total	**0.30**	MAC = 10	0.05	µg/L	May-28-15	May-30-15	
Barium, total	**16.9**	MAC = 1000	0.1	µg/L	May-28-15	May-30-15	
Beryllium, total	**0.01**	N/A	0.01	µg/L	May-28-15	May-30-15	
Bismuth, total	< 0.01	N/A	0.01	µg/L	May-28-15	May-30-15	
Boron, total	**3**	MAC = 5000	1	µg/L	May-28-15	May-30-15	
Cadmium, total	**0.014**	MAC = 5	0.002	µg/L	May-28-15	May-30-15	
Calcium, total	**12000**	N/A	40	µg/L	May-28-15	May-30-15	

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Analyte	Result / *Recovery*	Standard / Guideline	MRL / *Limits*	Units	Prepared	Analyzed	Notes
Sample ID: Duteau Creek (Hwy 6) (5051568-02) [Water] Sampled: May-24-15 10:45, Continued							PRES
Total Recoverable Metals, Continued							
Chromium, total	**0.7**	MAC = 50	0.1	µg/L	May-28-15	May-30-15	
Cobalt, total	**0.278**	N/A	0.005	µg/L	May-28-15	May-30-15	
Copper, total	**1.6**	AO ≤ 1000	0.1	µg/L	May-28-15	May-30-15	
Iron, total	**705**	AO ≤ 300	2	µg/L	May-28-15	May-30-15	
Lead, total	**0.15**	MAC = 10	0.05	µg/L	May-28-15	May-30-15	
Lithium, total	**1.12**	N/A	0.05	µg/L	May-28-15	May-30-15	
Magnesium, total	**2710**	N/A	5.0	µg/L	May-28-15	May-30-15	
Manganese, total	**60.7**	AO ≤ 50	0.05	µg/L	May-28-15	May-30-15	
Mercury, total	< 0.005	MAC = 1	0.005	µg/L	May-28-15	Jun-01-15	
Molybdenum, total	**0.71**	N/A	0.01	µg/L	May-28-15	May-30-15	
Nickel, total	**1.41**	N/A	0.02	µg/L	May-28-15	May-30-15	
Phosphorus, total	**40**	N/A	10	µg/L	May-28-15	May-30-15	
Potassium, total	**1330**	N/A	10	µg/L	May-28-15	May-30-15	
Selenium, total	**0.3**	MAC = 50	0.1	µg/L	May-28-15	May-30-15	
Silicon, total	**5200**	N/A	50	µg/L	May-28-15	May-30-15	
Silver, total	< 0.01	N/A	0.01	µg/L	May-28-15	May-30-15	
Sodium, total	**2600**	AO ≤ 200000	10	µg/L	May-28-15	May-30-15	
Strontium, total	**64.2**	N/A	0.1	µg/L	May-28-15	May-30-15	
Sulfur, total	**2200**	N/A	500	µg/L	May-28-15	May-30-15	
Tellurium, total	< 0.05	N/A	0.05	µg/L	May-28-15	May-30-15	
Thallium, total	**0.006**	N/A	0.004	µg/L	May-28-15	May-30-15	
Thorium, total	**0.04**	N/A	0.01	µg/L	May-28-15	May-30-15	
Tin, total	< 0.05	N/A	0.05	µg/L	May-28-15	May-30-15	
Titanium, total	**18.1**	N/A	0.2	µg/L	May-28-15	May-30-15	
Uranium, total	**0.323**	MAC = 20	0.001	µg/L	May-28-15	May-30-15	
Vanadium, total	**1.6**	N/A	0.2	µg/L	May-28-15	May-30-15	
Zinc, total	**2**	AO ≤ 5000	1	µg/L	May-28-15	May-30-15	
Zirconium, total	**0.48**	N/A	0.02	µg/L	May-28-15	May-30-15	
Microbiological Parameters							
E. coli	**55**	MAC = None Detected	1	CFU/100 mL	May-25-15	May-26-15	
Sample ID: Mid Bessette Creek (5051568-03) [Water] Sampled: May-24-15 10:45							PRES
Anions							
Chloride	**1.08**	AO ≤ 250	0.10	mg/L	N/A	May-26-15	
Nitrate as N	**0.038**	MAC = 10	0.010	mg/L	N/A	May-26-15	
Nitrite as N	< 0.010	MAC = 1	0.010	mg/L	N/A	May-26-15	
Sulfate	**8.4**	AO ≤ 500	1.0	mg/L	N/A	May-26-15	
General Parameters							
Conductivity (EC)	**92**	N/A	2	µS/cm	N/A	May-25-15	
Ammonia as N, Total	**0.033**	N/A	0.020	mg/L	N/A	May-27-15	
Nitrogen, Total Kjeldahl	**0.34**	N/A	0.05	mg/L	May-25-15	May-27-15	
pH	**7.73**	6.5-8.5	0.01	pH units	N/A	May-25-15	HT2

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PROJECT Analytical Testing

WORK ORDER 5051568
REPORTED Nov-23-15

Analyte	Result / *Recovery*	Standard / Guideline	MRL / *Limits*	Units	Prepared	Analyzed	Notes
Sample ID: Mid Bessette Creek (5051568-03) [Water] Sampled: May-24-15 10:45, Continued							PRES
General Parameters, Continued							
Phosphorus, Total as P	**0.066**	N/A	0.002	mg/L	May-26-15	May-28-15	
Phosphorus, Total Dissolved	**0.015**	N/A	0.002	mg/L	May-26-15	May-28-15	
Turbidity	**4.8**	OG < 0.1	0.1	NTU	N/A	May-26-15	
Calculated Parameters							
Hardness, Total (Total as CaCO3)	**39.9**	N/A	0.1	mg/L	N/A	N/A	
Nitrate+Nitrite as N	**0.038**	N/A	0.010	mg/L	N/A	N/A	
Nitrogen, Total	**0.374**	N/A	0.050	mg/L	N/A	N/A	
Total Recoverable Metals							
Aluminum, total	**374**	OG < 100	1	µg/L	May-28-15	May-30-15	
Antimony, total	< 0.05	MAC = 6	0.05	µg/L	May-28-15	May-30-15	
Arsenic, total	**0.34**	MAC = 10	0.05	µg/L	May-28-15	May-30-15	
Barium, total	**13.9**	MAC = 1000	0.1	µg/L	May-28-15	May-30-15	
Beryllium, total	**0.02**	N/A	0.01	µg/L	May-28-15	May-30-15	
Bismuth, total	< 0.01	N/A	0.01	µg/L	May-28-15	May-30-15	
Boron, total	**2**	MAC = 5000	1	µg/L	May-28-15	May-30-15	
Cadmium, total	**0.019**	MAC = 5	0.002	µg/L	May-28-15	May-30-15	
Calcium, total	**12100**	N/A	40	µg/L	May-28-15	May-30-15	
Chromium, total	**0.8**	MAC = 50	0.1	µg/L	May-28-15	May-30-15	
Cobalt, total	**0.338**	N/A	0.005	µg/L	May-28-15	May-30-15	
Copper, total	**2.3**	AO ≤ 1000	0.1	µg/L	May-28-15	May-30-15	
Iron, total	**750**	AO ≤ 300	2	µg/L	May-28-15	May-30-15	
Lead, total	**0.18**	MAC = 10	0.05	µg/L	May-28-15	May-30-15	
Lithium, total	**1.41**	N/A	0.05	µg/L	May-28-15	May-30-15	
Magnesium, total	**2370**	N/A	5.0	µg/L	May-28-15	May-30-15	
Manganese, total	**33.7**	AO ≤ 50	0.05	µg/L	May-28-15	May-30-15	
Mercury, total	< 0.005	MAC = 1	0.005	µg/L	May-28-15	Jun-01-15	
Molybdenum, total	**0.69**	N/A	0.01	µg/L	May-28-15	May-30-15	
Nickel, total	**4.89**	N/A	0.02	µg/L	May-28-15	May-30-15	
Phosphorus, total	**45**	N/A	10	µg/L	May-28-15	May-30-15	
Potassium, total	**1090**	N/A	10	µg/L	May-28-15	May-30-15	
Selenium, total	**0.4**	MAC = 50	0.1	µg/L	May-28-15	May-30-15	
Silicon, total	**5200**	N/A	50	µg/L	May-28-15	May-30-15	
Silver, total	< 0.01	N/A	0.01	µg/L	May-28-15	May-30-15	
Sodium, total	**2150**	AO ≤ 200000	10	µg/L	May-28-15	May-30-15	
Strontium, total	**69.8**	N/A	0.1	µg/L	May-28-15	May-30-15	
Sulfur, total	**2500**	N/A	500	µg/L	May-28-15	May-30-15	
Tellurium, total	< 0.05	N/A	0.05	µg/L	May-28-15	May-30-15	
Thallium, total	**0.008**	N/A	0.004	µg/L	May-28-15	May-30-15	
Thorium, total	**0.05**	N/A	0.01	µg/L	May-28-15	May-30-15	
Tin, total	< 0.05	N/A	0.05	µg/L	May-28-15	May-30-15	
Titanium, total	**26.2**	N/A	0.2	µg/L	May-28-15	May-30-15	
Uranium, total	**0.337**	MAC = 20	0.001	µg/L	May-28-15	May-30-15	
Vanadium, total	**1.7**	N/A	0.2	µg/L	May-28-15	May-30-15	
Zinc, total	**3**	AO ≤ 5000	1	µg/L	May-28-15	May-30-15	

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PROJECT	Analytical Testing	**REPORTED**	Nov-23-15

Analyte	Result / *Recovery*	Standard / Guideline	MRL / *Limits*	Units	Prepared	Analyzed	Notes
Sample ID: Mid Bessette Creek (5051568-03) [Water] Sampled: May-24-15 10:45, Continued							PRES
Total Recoverable Metals, Continued							
Zirconium, total	**0.56**	N/A	0.02	µg/L	May-28-15	May-30-15	
Microbiological Parameters							
E. coli	**41**	MAC = None Detected	1	CFU/100 mL	May-25-15	May-26-15	
Sample ID: Lower Bessette Creek (5051568-04) [Water] Sampled: May-24-15 10:20							PRES
Anions							
Chloride	**1.09**	AO ≤ 250	0.10	mg/L	N/A	May-26-15	
Nitrate as N	**0.034**	MAC = 10	0.010	mg/L	N/A	May-26-15	
Nitrite as N	< 0.010	MAC = 1	0.010	mg/L	N/A	May-26-15	
Sulfate	**9.2**	AO ≤ 500	1.0	mg/L	N/A	May-26-15	
General Parameters							
Conductivity (EC)	**98**	N/A	2	µS/cm	N/A	May-25-15	
Ammonia as N, Total	**0.029**	N/A	0.020	mg/L	N/A	May-27-15	
Nitrogen, Total Kjeldahl	**0.40**	N/A	0.05	mg/L	May-25-15	May-27-15	
pH	**7.77**	6.5-8.5	0.01	pH units	N/A	May-25-15	HT2
Phosphorus, Total as P	**0.073**	N/A	0.002	mg/L	May-26-15	May-28-15	
Phosphorus, Total Dissolved	**0.016**	N/A	0.002	mg/L	May-26-15	May-28-15	
Turbidity	**8.1**	OG < 0.1	0.1	NTU	N/A	May-26-15	
Calculated Parameters							
Hardness, Total (Total as CaCO3)	**44.0**	N/A	0.1	mg/L	N/A	N/A	
Nitrate+Nitrite as N	**0.034**	N/A	0.010	mg/L	N/A	N/A	
Nitrogen, Total	**0.430**	N/A	0.050	mg/L	N/A	N/A	
Total Recoverable Metals							
Aluminum, total	**597**	OG < 100	1	µg/L	May-28-15	May-30-15	
Antimony, total	< 0.05	MAC = 6	0.05	µg/L	May-28-15	May-30-15	
Arsenic, total	**0.45**	MAC = 10	0.05	µg/L	May-28-15	May-30-15	
Barium, total	**16.7**	MAC = 1000	0.1	µg/L	May-28-15	May-30-15	
Beryllium, total	**0.03**	N/A	0.01	µg/L	May-28-15	May-30-15	
Bismuth, total	< 0.01	N/A	0.01	µg/L	May-28-15	May-30-15	
Boron, total	**3**	MAC = 5000	1	µg/L	May-28-15	May-30-15	
Cadmium, total	**0.031**	MAC = 5	0.002	µg/L	May-28-15	May-30-15	
Calcium, total	**13200**	N/A	40	µg/L	May-28-15	May-30-15	
Chromium, total	**1.5**	MAC = 50	0.1	µg/L	May-28-15	May-30-15	
Cobalt, total	**0.553**	N/A	0.005	µg/L	May-28-15	May-30-15	
Copper, total	**3.1**	AO ≤ 1000	0.1	µg/L	May-28-15	May-30-15	
Iron, total	**1100**	AO ≤ 300	2	µg/L	May-28-15	May-30-15	
Lead, total	**0.33**	MAC = 10	0.05	µg/L	May-28-15	May-30-15	
Lithium, total	**1.78**	N/A	0.05	µg/L	May-28-15	May-30-15	
Magnesium, total	**2700**	N/A	5.0	µg/L	May-28-15	May-30-15	
Manganese, total	**43.1**	AO ≤ 50	0.05	µg/L	May-28-15	May-30-15	
Mercury, total	< 0.005	MAC = 1	0.005	µg/L	May-28-15	Jun-01-15	

REPORTED TO Mid Shuswap Lumby Water Stewards
PROJECT Analytical Testing

WORK ORDER 5051568
REPORTED Nov-23-15

Analyte	Result / *Recovery*	Standard / Guideline	MRL / *Limits*	Units	Prepared	Analyzed	Notes
Sample ID: Lower Bessette Creek (5051568-04) [Water] Sampled: May-24-15 10:20, Continued							PRES
Total Recoverable Metals, Continued							
Molybdenum, total	**0.73**	N/A	0.01	µg/L	May-28-15	May-30-15	
Nickel, total	**5.48**	N/A	0.02	µg/L	May-28-15	May-30-15	
Phosphorus, total	**54**	N/A	10	µg/L	May-28-15	May-30-15	
Potassium, total	**1200**	N/A	10	µg/L	May-28-15	May-30-15	
Selenium, total	**0.5**	MAC = 50	0.1	µg/L	May-28-15	May-30-15	
Silicon, total	**5700**	N/A	50	µg/L	May-28-15	May-30-15	
Silver, total	< 0.01	N/A	0.01	µg/L	May-28-15	May-30-15	
Sodium, total	**2310**	AO ≤ 200000	10	µg/L	May-28-15	May-30-15	
Strontium, total	**75.5**	N/A	0.1	µg/L	May-28-15	May-30-15	
Sulfur, total	**3100**	N/A	500	µg/L	May-28-15	May-30-15	
Tellurium, total	< 0.05	N/A	0.05	µg/L	May-28-15	May-30-15	
Thallium, total	**0.013**	N/A	0.004	µg/L	May-28-15	May-30-15	
Thorium, total	**0.06**	N/A	0.01	µg/L	May-28-15	May-30-15	
Tin, total	< 0.05	N/A	0.05	µg/L	May-28-15	May-30-15	
Titanium, total	**42.5**	N/A	0.2	µg/L	May-28-15	May-30-15	
Uranium, total	**0.394**	MAC = 20	0.001	µg/L	May-28-15	May-30-15	
Vanadium, total	**2.5**	N/A	0.2	µg/L	May-28-15	May-30-15	
Zinc, total	**5**	AO ≤ 5000	1	µg/L	May-28-15	May-30-15	
Zirconium, total	**0.55**	N/A	0.02	µg/L	May-28-15	May-30-15	
Microbiological Parameters							
E. coli	**43**	MAC = None Detected	1	CFU/100 mL	May-25-15	May-26-15	
Sample ID: Shuswap River (Wilsey Dam) (5051568-05) [Water] Sampled: May-24-15 10:00							PRES
Anions							
Chloride	**0.18**	AO ≤ 250	0.10	mg/L	N/A	May-26-15	
Nitrate as N	**0.070**	MAC = 10	0.010	mg/L	N/A	May-26-15	
Nitrite as N	< 0.010	MAC = 1	0.010	mg/L	N/A	May-26-15	
Sulfate	**4.2**	AO ≤ 500	1.0	mg/L	N/A	May-26-15	
General Parameters							
Conductivity (EC)	**79**	N/A	2	µS/cm	N/A	May-25-15	
Ammonia as N, Total	**0.023**	N/A	0.020	mg/L	N/A	May-27-15	
Nitrogen, Total Kjeldahl	**0.10**	N/A	0.05	mg/L	May-25-15	May-27-15	
pH	**7.79**	6.5-8.5	0.01	pH units	N/A	May-25-15	HT2
Phosphorus, Total as P	**0.019**	N/A	0.002	mg/L	May-26-15	May-28-15	
Phosphorus, Total Dissolved	**0.014**	N/A	0.002	mg/L	May-26-15	May-28-15	
Turbidity	**5.9**	OG < 0.1	0.1	NTU	N/A	May-26-15	
Calculated Parameters							
Hardness, Total (Total as CaCO3)	**36.1**	N/A	0.1	mg/L	N/A	N/A	
Nitrate+Nitrite as N	**0.070**	N/A	0.010	mg/L	N/A	N/A	
Nitrogen, Total	**0.174**	N/A	0.050	mg/L	N/A	N/A	
Total Recoverable Metals							

REPORTED TO Mid Shuswap Lumby Water Stewards
PROJECT Analytical Testing

WORK ORDER 5051568
REPORTED Nov-23-15

Analyte	Result / *Recovery*	Standard / Guideline	MRL / *Limits*	Units	Prepared	Analyzed	Notes
Sample ID: Shuswap River (Wilsey Dam) (5051568-05) [Water] Sampled: May-24-15 10:00, Continued							PRES
Total Recoverable Metals, Continued							
Aluminum, total	**204**	OG < 100	1	µg/L	May-28-15	May-30-15	
Antimony, total	**0.08**	MAC = 6	0.05	µg/L	May-28-15	May-30-15	
Arsenic, total	**0.23**	MAC = 10	0.05	µg/L	May-28-15	May-30-15	
Barium, total	**9.2**	MAC = 1000	0.1	µg/L	May-28-15	May-30-15	
Beryllium, total	< 0.01	N/A	0.01	µg/L	May-28-15	May-30-15	
Bismuth, total	< 0.01	N/A	0.01	µg/L	May-28-15	May-30-15	
Boron, total	**2**	MAC = 5000	1	µg/L	May-28-15	May-30-15	
Cadmium, total	**0.028**	MAC = 5	0.002	µg/L	May-28-15	May-30-15	
Calcium, total	**12200**	N/A	40	µg/L	May-28-15	May-30-15	
Chromium, total	**0.7**	MAC = 50	0.1	µg/L	May-28-15	May-30-15	
Cobalt, total	**0.200**	N/A	0.005	µg/L	May-28-15	May-30-15	
Copper, total	**1.0**	AO ≤ 1000	0.1	µg/L	May-28-15	May-30-15	
Iron, total	**337**	AO ≤ 300	2	µg/L	May-28-15	May-30-15	
Lead, total	**0.14**	MAC = 10	0.05	µg/L	May-28-15	May-30-15	
Lithium, total	**0.67**	N/A	0.05	µg/L	May-28-15	May-30-15	
Magnesium, total	**1380**	N/A	5.0	µg/L	May-28-15	May-30-15	
Manganese, total	**12.6**	AO ≤ 50	0.05	µg/L	May-28-15	May-30-15	
Mercury, total	< 0.005	MAC = 1	0.005	µg/L	May-28-15	Jun-01-15	
Molybdenum, total	**0.57**	N/A	0.01	µg/L	May-28-15	May-30-15	
Nickel, total	**0.67**	N/A	0.02	µg/L	May-28-15	May-30-15	
Phosphorus, total	**18**	N/A	10	µg/L	May-28-15	May-30-15	
Potassium, total	**661**	N/A	10	µg/L	May-28-15	May-30-15	
Selenium, total	**0.2**	MAC = 50	0.1	µg/L	May-28-15	May-30-15	
Silicon, total	**3100**	N/A	50	µg/L	May-28-15	May-30-15	
Silver, total	< 0.01	N/A	0.01	µg/L	May-28-15	May-30-15	
Sodium, total	**824**	AO ≤ 200000	10	µg/L	May-28-15	May-30-15	
Strontium, total	**50.0**	N/A	0.1	µg/L	May-28-15	May-30-15	
Sulfur, total	**1400**	N/A	500	µg/L	May-28-15	May-30-15	
Tellurium, total	< 0.05	N/A	0.05	µg/L	May-28-15	May-30-15	
Thallium, total	**0.006**	N/A	0.004	µg/L	May-28-15	May-30-15	
Thorium, total	**0.02**	N/A	0.01	µg/L	May-28-15	May-30-15	
Tin, total	< 0.05	N/A	0.05	µg/L	May-28-15	May-30-15	
Titanium, total	**10.9**	N/A	0.2	µg/L	May-28-15	May-30-15	
Uranium, total	**0.292**	MAC = 20	0.001	µg/L	May-28-15	May-30-15	
Vanadium, total	**0.9**	N/A	0.2	µg/L	May-28-15	May-30-15	
Zinc, total	**2**	AO ≤ 5000	1	µg/L	May-28-15	May-30-15	
Zirconium, total	**0.08**	N/A	0.02	µg/L	May-28-15	May-30-15	
Microbiological Parameters							
E. coli	**10**	MAC = None Detected	1	CFU/100 mL	May-25-15	May-26-15	
Sample ID: Shuswap River (Odd Fellows) (5051568-06) [Water] Sampled: May-24-15 09:15							PRES
Anions							
Chloride	**0.28**	AO ≤ 250	0.10	mg/L	N/A	May-26-15	

REPORTED TO Mid Shuswap Lumby Water Stewards
PROJECT Analytical Testing

WORK ORDER 5051568
REPORTED Nov-23-15

Analyte	Result / *Recovery*	Standard / Guideline	MRL / *Limits*	Units	Prepared	Analyzed	Notes
Sample ID: Shuswap River (Odd Fellows) (5051568-06) [Water] Sampled: May-24-15 09:15, Continued							PRES
Anions, Continued							
Nitrate as N	**0.063**	MAC = 10	0.010	mg/L	N/A	May-26-15	
Nitrite as N	< 0.010	MAC = 1	0.010	mg/L	N/A	May-26-15	
Sulfate	**5.1**	AO ≤ 500	1.0	mg/L	N/A	May-26-15	
General Parameters							
Conductivity (EC)	**86**	N/A	2	µS/cm	N/A	May-25-15	
Ammonia as N, Total	< 0.020	N/A	0.020	mg/L	N/A	May-27-15	
Nitrogen, Total Kjeldahl	**0.14**	N/A	0.05	mg/L	May-25-15	May-27-15	
pH	**7.79**	6.5-8.5	0.01	pH units	N/A	May-25-15	HT2
Phosphorus, Total as P	**0.036**	N/A	0.002	mg/L	May-26-15	May-28-15	
Phosphorus, Total Dissolved	**0.005**	N/A	0.002	mg/L	May-26-15	May-28-15	
Turbidity	**7.8**	OG < 0.1	0.1	NTU	N/A	May-26-15	
Calculated Parameters							
Hardness, Total (Total as CaCO3)	**39.5**	N/A	0.1	mg/L	N/A	N/A	
Nitrate+Nitrite as N	**0.063**	N/A	0.010	mg/L	N/A	N/A	
Nitrogen, Total	**0.199**	N/A	0.050	mg/L	N/A	N/A	
Total Recoverable Metals							
Aluminum, total	**312**	OG < 100	1	µg/L	May-28-15	May-30-15	
Antimony, total	**0.07**	MAC = 6	0.05	µg/L	May-28-15	May-30-15	
Arsenic, total	**0.32**	MAC = 10	0.05	µg/L	May-28-15	May-30-15	
Barium, total	**11.2**	MAC = 1000	0.1	µg/L	May-28-15	May-30-15	
Beryllium, total	**0.01**	N/A	0.01	µg/L	May-28-15	May-30-15	
Bismuth, total	< 0.01	N/A	0.01	µg/L	May-28-15	May-30-15	
Boron, total	**2**	MAC = 5000	1	µg/L	May-28-15	May-30-15	
Cadmium, total	**0.025**	MAC = 5	0.002	µg/L	May-28-15	May-30-15	
Calcium, total	**13100**	N/A	40	µg/L	May-28-15	May-30-15	
Chromium, total	**1.0**	MAC = 50	0.1	µg/L	May-28-15	May-30-15	
Cobalt, total	**0.289**	N/A	0.005	µg/L	May-28-15	May-30-15	
Copper, total	**1.4**	AO ≤ 1000	0.1	µg/L	May-28-15	May-30-15	
Iron, total	**538**	AO ≤ 300	2	µg/L	May-28-15	May-30-15	
Lead, total	**0.20**	MAC = 10	0.05	µg/L	May-28-15	May-30-15	
Lithium, total	**0.87**	N/A	0.05	µg/L	May-28-15	May-30-15	
Magnesium, total	**1640**	N/A	5.0	µg/L	May-28-15	May-30-15	
Manganese, total	**20.4**	AO ≤ 50	0.05	µg/L	May-28-15	May-30-15	
Mercury, total	< 0.005	MAC = 1	0.005	µg/L	May-28-15	Jun-01-15	
Molybdenum, total	**0.68**	N/A	0.01	µg/L	May-28-15	May-30-15	
Nickel, total	**1.19**	N/A	0.02	µg/L	May-28-15	May-30-15	
Phosphorus, total	**26**	N/A	10	µg/L	May-28-15	May-30-15	
Potassium, total	**754**	N/A	10	µg/L	May-28-15	May-30-15	
Selenium, total	**0.4**	MAC = 50	0.1	µg/L	May-28-15	May-30-15	
Silicon, total	**3600**	N/A	50	µg/L	May-28-15	May-30-15	
Silver, total	< 0.01	N/A	0.01	µg/L	May-28-15	May-30-15	
Sodium, total	**1020**	AO ≤ 200000	10	µg/L	May-28-15	May-30-15	
Strontium, total	**56.8**	N/A	0.1	µg/L	May-28-15	May-30-15	
Sulfur, total	**1500**	N/A	500	µg/L	May-28-15	May-30-15	

REPORTED TO Mid Shuswap Lumby Water Stewards
PROJECT Analytical Testing

WORK ORDER 5051568
REPORTED Nov-23-15

Analyte	Result / *Recovery*	Standard / Guideline	MRL / *Limits*	Units	Prepared	Analyzed	Notes
Sample ID: Shuswap River (Odd Fellows) (5051568-06) [Water] Sampled: May-24-15 09:15, Continued							PRES
Total Recoverable Metals, Continued							
Tellurium, total	< 0.05	N/A	0.05	µg/L	May-28-15	May-30-15	
Thallium, total	**0.008**	N/A	0.004	µg/L	May-28-15	May-30-15	
Thorium, total	**0.03**	N/A	0.01	µg/L	May-28-15	May-30-15	
Tin, total	< 0.05	N/A	0.05	µg/L	May-28-15	May-30-15	
Titanium, total	**17.9**	N/A	0.2	µg/L	May-28-15	May-30-15	
Uranium, total	**0.305**	MAC = 20	0.001	µg/L	May-28-15	May-30-15	
Vanadium, total	**1.3**	N/A	0.2	µg/L	May-28-15	May-30-15	
Zinc, total	**3**	AO ≤ 5000	1	µg/L	May-28-15	May-30-15	
Zirconium, total	**0.11**	N/A	0.02	µg/L	May-28-15	May-30-15	
Microbiological Parameters							
E. coli	**73**	MAC = None Detected	1	CFU/100 mL	May-25-15	May-26-15	
Sample ID: Vance Creek (Mabel Lake Road) (5051568-07) [Water] Sampled: May-24-15 11:00							PRES
Anions							
Chloride	**1.63**	AO ≤ 250	0.10	mg/L	N/A	May-26-15	
Nitrate as N	< 0.010	MAC = 10	0.010	mg/L	N/A	May-26-15	
Nitrite as N	< 0.010	MAC = 1	0.010	mg/L	N/A	May-26-15	
Sulfate	**27.0**	AO ≤ 500	1.0	mg/L	N/A	May-26-15	
General Parameters							
Conductivity (EC)	**316**	N/A	2	µS/cm	N/A	May-25-15	
Ammonia as N, Total	< 0.020	N/A	0.020	mg/L	N/A	May-27-15	
Nitrogen, Total Kjeldahl	**0.08**	N/A	0.05	mg/L	May-25-15	May-27-15	
pH	**8.25**	6.5-8.5	0.01	pH units	N/A	May-25-15	HT2
Phosphorus, Total as P	**0.014**	N/A	0.002	mg/L	May-26-15	May-28-15	
Phosphorus, Total Dissolved	**0.009**	N/A	0.002	mg/L	May-26-15	May-28-15	
Turbidity	**2.0**	OG < 0.1	0.1	NTU	N/A	May-26-15	
Calculated Parameters							
Hardness, Total (Total as CaCO3)	**157**	N/A	0.1	mg/L	N/A	N/A	
Nitrate+Nitrite as N	< 0.010	N/A	0.010	mg/L	N/A	N/A	
Nitrogen, Total	**0.083**	N/A	0.050	mg/L	N/A	N/A	
Total Recoverable Metals							
Aluminum, total	**61**	OG < 100	1	µg/L	May-28-15	May-30-15	
Antimony, total	**0.08**	MAC = 6	0.05	µg/L	May-28-15	May-30-15	
Arsenic, total	**0.32**	MAC = 10	0.05	µg/L	May-28-15	May-30-15	
Barium, total	**29.4**	MAC = 1000	0.1	µg/L	May-28-15	May-30-15	
Beryllium, total	< 0.01	N/A	0.01	µg/L	May-28-15	May-30-15	
Bismuth, total	< 0.01	N/A	0.01	µg/L	May-28-15	May-30-15	
Boron, total	**2**	MAC = 5000	1	µg/L	May-28-15	May-30-15	
Cadmium, total	**0.048**	MAC = 5	0.002	µg/L	May-28-15	May-30-15	
Calcium, total	**54100**	N/A	40	µg/L	May-28-15	May-30-15	
Chromium, total	**0.2**	MAC = 50	0.1	µg/L	May-28-15	May-30-15	

REPORTED TO Mid Shuswap Lumby Water Stewards
PROJECT Analytical Testing

WORK ORDER 5051568
REPORTED Nov-23-15

Analyte	Result / *Recovery*	Standard / Guideline	MRL / *Limits*	Units	Prepared	Analyzed	Notes
Sample ID: Vance Creek (Mabel Lake Road) (5051568-07) [Water] Sampled: May-24-15 11:00, Continued							PRES
Total Recoverable Metals, Continued							
Cobalt, total	**0.096**	N/A	0.005	µg/L	May-28-15	May-30-15	
Copper, total	**0.7**	AO ≤ 1000	0.1	µg/L	May-28-15	May-30-15	
Iron, total	**140**	AO ≤ 300	2	µg/L	May-28-15	May-30-15	
Lead, total	**0.07**	MAC = 10	0.05	µg/L	May-28-15	May-30-15	
Lithium, total	**1.59**	N/A	0.05	µg/L	May-28-15	May-30-15	
Magnesium, total	**5290**	N/A	5.0	µg/L	May-28-15	May-30-15	
Manganese, total	**5.47**	AO ≤ 50	0.05	µg/L	May-28-15	May-30-15	
Mercury, total	< 0.005	MAC = 1	0.005	µg/L	May-28-15	Jun-01-15	
Molybdenum, total	**1.68**	N/A	0.01	µg/L	May-28-15	May-30-15	
Nickel, total	**0.38**	N/A	0.02	µg/L	May-28-15	May-30-15	
Phosphorus, total	< 10	N/A	10	µg/L	May-28-15	May-30-15	
Potassium, total	**1150**	N/A	10	µg/L	May-28-15	May-30-15	
Selenium, total	**2.8**	MAC = 50	0.1	µg/L	May-28-15	May-30-15	
Silicon, total	**5400**	N/A	50	µg/L	May-28-15	May-30-15	
Silver, total	< 0.01	N/A	0.01	µg/L	May-28-15	May-30-15	
Sodium, total	**2370**	AO ≤ 200000	10	µg/L	May-28-15	May-30-15	
Strontium, total	**322**	N/A	0.1	µg/L	May-28-15	May-30-15	
Sulfur, total	**8100**	N/A	500	µg/L	May-28-15	May-30-15	
Tellurium, total	< 0.05	N/A	0.05	µg/L	May-28-15	May-30-15	
Thallium, total	< 0.004	N/A	0.004	µg/L	May-28-15	May-30-15	
Thorium, total	**0.01**	N/A	0.01	µg/L	May-28-15	May-30-15	
Tin, total	< 0.05	N/A	0.05	µg/L	May-28-15	May-30-15	
Titanium, total	**1.5**	N/A	0.2	µg/L	May-28-15	May-30-15	
Uranium, total	**0.807**	MAC = 20	0.001	µg/L	May-28-15	May-30-15	
Vanadium, total	**0.4**	N/A	0.2	µg/L	May-28-15	May-30-15	
Zinc, total	**2**	AO ≤ 5000	1	µg/L	May-28-15	May-30-15	
Zirconium, total	**0.04**	N/A	0.02	µg/L	May-28-15	May-30-15	
Microbiological Parameters							
E. coli	1	MAC = None Detected	1	CFU/100 mL	May-25-15	May-26-15	

Sample / Analysis Qualifiers:

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

PRES Sample has been preserved for NH3 in the laboratory and the holding time has been extended.