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Fw: Water samples

To Christine LeFloch; Hayley Graham

I took a look at the water quality results for Beard's Creek and McIntyre Brook and the good news is that overall water quality is excellent, and all parameters, with the exception of one, were well below health-based and aesthetic water quality guidelines. The one exception is total coliforms, which are commonly detected in untreated, surface water sources. The detection of total coliforms does not necessarily represent a health risk by itself, but is used more as an indicator of a potential biological issue. Here's a few lines of information from the Government of Canada's Drinking Water website:

- Total coliforms are a group of bacteria that are naturally found on plants and in soils, water, and in the intestines of humans and warm-blooded animals. Because total coliforms are widespread in the environment, they can be used as one of the many operational tools to determine the efficacy of a drinking water treatment system.
- Total coliforms are naturally found in both faecal and non-faecal environments, so they are commonly present in both surface water and groundwater under the direct influence of surface water (GUDI) sources. Consequently, monitoring total coliforms in these sources does not provide information on the quality of the source water from the perspective of health risk.
- Generally, minimum treatment of supplies derived from surface water or GUDI sources should include filtration (or technologies providing an equivalent log reduction credit) and disinfection.

As stated above, it is strongly recommended that all surface water systems received some level of treatment. Below is a summary of the results. If you have any questions, please let me know.

General Parameters	Date Collected	2018-10-22	2018-10-22	GCDWQ
	Location	Beards Creek	McIntyre Brook	
	Work Order #	8102012	8102013	
	Units			
pH	-	8.2	7.53	7.0 - 10.5
Conductivity	us/cm	353	513	n/a
Turbidity (lab)	NTU	0.34	<0.1	varies
<b>General Parameters and Anions</b>				
Total Dissolved Solids	mg/L	204	292	AO ≤ 500
Hardness, Total (as CaCO3)	mg/L	217	301	n/a
Alkalinity, Total (as CaCO3)	mg/L	186	281	n/a
Fluoride	mg/L	<0.1	0.12	MAC = 1.5
Chloride	mg/L	0.16	0.27	AO ≤ 250
Nitrate, N	mg/L	0.04	<0.010	MAC = 10
Nitrite, N	mg/L	<0.010	<0.010	MAC = 1
Sulfate	mg/L	16.6	16.8	AO ≤ 500
<b>Selected Total Ions and Metals</b>				
Aluminum	mg/L	0.0082	<0.0050	OG < 0.1
Antimony	mg/L	<0.00020	<0.00020	MAC = 0.006
Arsenic	mg/L	<0.00050	0.00172	MAC = 0.01
Barium	mg/L	0.13	0.193	MAC = 1
Boron	mg/L	0.0106	0.0131	MAC = 5
Cadmium	mg/L	<0.000010	<0.000010	MAC = 0.005
Calcium	mg/L	46.8	67.3	n/a
Chromium	mg/L	<0.00050	<0.00050	MAC = 0.05
Copper	mg/L	<0.00040	0.0148	AO ≤ 1
Iron	mg/L	0.014	<0.010	AO ≤ 0.3
Lead	mg/L	<0.00020	0.00028	MAC = 0.01
Manganese	mg/L	0.0007	<0.00020	AO ≤ 0.05
Selenium	mg/L	<0.00050	<0.00050	MAC = 0.05
Sodium	mg/L	1.45	3.38	AO ≤ 200
Uranium	mg/L	0.000529	0.000634	MAC = 0.02
Zinc	mg/L	<0.0040	0.0123	AO ≤ 5
<b>Microbiological Parameters</b>				
Total Coliforms	CFU/100mL	67	21	MAC = non-detect
E. Coli	CFU/100mL	<1	<1	MAC = non-detect

GCDWQ = Government of Canada Drinking Water Quality guidelines; MAC = Maximum Acceptable Concentration (health-based); AO = Aesthetic Objective

Paul Williamson, M.Sc., GIT

Hydrogeologist



#106-5145 26 Street, Vernon, BC V1T 8G4

W: [westernwater.ca](http://westernwater.ca) | P: 250-541-1030 | C: 250-540-6899

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