

**Table 1. Required Water Quality Parameters**

Core Parameters	Guideline	General Comments
<input type="checkbox"/> E. Coli	[none detected]	1. The sampler must make arrangements for receiving and shipping of chemical/physical sample bottles and coolers with an accredited private lab. <i>Northern Health</i> may accept bacteriological samples only. 2. Analysis of additional parameters may be required based on the results of the initial analysis and on potential impact by nearby sources of contamination. The required parameters should be confirmed with <i>Northern Health</i> <u>before</u> sampling. 3. The analytical detection limit must be <i>less than 10% of the Guideline for Canadian Drinking Water Quality</i> where applicable. Other analyses must provide sufficient information to reasonably assess the water suitability for domestic use and to determine what, if any, treatment might be needed. Analyses must be conducted in accordance with the methods prescribed in <i>Standard Methods</i> (latest edition). 4. Analyses should be for total or closely equivalent concentrations, to represent potential quality problems. 5. A copy of all analytical results must be sent to the <i>Northern Health</i> Officer responsible for the water system.
<input type="checkbox"/> Total Coliforms	[none detected]	
<input type="checkbox"/> HPC ⁽¹⁾	[~ 100-500 CFU/mL]	
<input type="checkbox"/> Alkalinity	[~ 30-500 mg/L]	
<input type="checkbox"/> Chloride	[250 mg/L]	
<input type="checkbox"/> Colour	[15 TCU]	Notes (1) May be omitted if bacterial growth is not found during Total Coliform test – lab to note " <i>Other bacterial growth not present</i> ". (2) <i>Total metals</i> required. <i>Dissolved metals</i> optional, but recommended if turbidity is elevated. Scan to include both high and low level metals: Aluminum (if coagulant used), Antimony (0.006) , Arsenic (0.010) , Barium (1) , Boron (5) , Cadmium (0.005) , Calcium (~100) , Chromium (0.050) , Copper (1) , Iron (0.300) , Lead (0.010) , Magnesium (~30) , Manganese (0.050; 0.500) , Phosphorus (~0.100) , Potassium (~400) , Selenium (0.010) , Sodium (20-200; 1000) , Zinc (5) , Uranium (0.020) [expand scan if zone is mineralised to include Mercury (0.001)]. (3) Required for source water characterisation. If all are < 1 mg/L as N, later samples may be analysed for Total N only. (4) Required if <u>UV disinfection</u> is being considered as part of the water treatment process. The test must be conducted on a RAW, UNFILTERED water sample. [Modified version of <i>Standard Method</i> 5910B where the sample is not filtered or pH adjusted.] (5) Required if <u>chlorination</u> is used or proposed <u>and</u> TOC>2.5 mg/L. For new sources, specify " DBP formation potential ". Different DBPs are required for chlorine dioxide or ozone disinfection. (6) Required for TOC>2.5 mg/L and/or Colour>15 TCU. (7) Required if <u>bacterial regrowth</u> is suspected in well or distribution piping. Contact laboratory for sampling procedure. (8) Required if unsatisfactory <u>odour</u> is suspected. Analyse on site or preserve sample. Contact laboratory for sampling procedure. (9) Required if <u>hydrocarbon/gasoline</u> type contamination is suspected. Contact laboratory for sampling procedure. Colours: red → health parameter , violet → aesthetic , black → treatment options
<input type="checkbox"/> Electrical Conductivity	[~ 800 µS/cm]	
<input type="checkbox"/> Fluoride	[1.5 mg/L]	
<input type="checkbox"/> Hardness	[~ 250 mg/L]	
<input type="checkbox"/> Langelier Saturation Index	[~ -2 to +2]	
<input type="checkbox"/> Metals Scan	[varies]⁽²⁾	
<input type="checkbox"/> Nitrogen species: ⁽³⁾		
Ammonia - N	[~ 1.5 mg/L]	
Organic N	[~ 0.15 mg/L]	
Nitrate - N	[10 mg/L]	
Nitrite - N	[1 mg/L]	
<input type="checkbox"/> pH	[6.5 – 8.5]	
<input type="checkbox"/> Sulphate	[500 mg/L]	
<input type="checkbox"/> Total Dissolved Solids (TDS)	[~ 500 mg/L]	
<input type="checkbox"/> Total Organic Carbon (TOC)	[2.5 mg/L]	
<input type="checkbox"/> Turbidity	[~ 1 NTU]	
<input type="checkbox"/> Odour	[describe]	
<input type="checkbox"/> _____		
<input type="checkbox"/> _____		
<input type="checkbox"/> _____		
May require ...	Guideline	
<input type="checkbox"/> UV Transmittance (UVT) ⁽⁴⁾	[~ 80%]	
<input type="checkbox"/> Disinfection By-Products (DBPs)⁽⁵⁾		
THMs	[0.100 mg/L]	
HAAs	[0.080 mg/L]	
Bromide	[0.050 mg/L]	
<input type="checkbox"/> Tannins & Lignin ⁽⁶⁾	[~ 0.400 mg/L]	
<input type="checkbox"/> Iron & Sulphate Bacteria ⁽⁷⁾	[presence]	
<input type="checkbox"/> Sulphide ⁽⁸⁾	[0.050 mg/L]	
<input type="checkbox"/> Hydrocarbons⁽⁹⁾		
Benzene	[0.005 mg/L]	
Toluene	[0.024 mg/L]	
Ethylbenzene	[0.002 mg/L]	
Xylenes	[0.300 mg/L]	