

Water Quality Analytical Results - 2010

Chemical Parameters	Units	Guidelines for Canadian Drinking Water Quality	Typical Distribution System Water
Benzene - found in gasoline and used in industrial processes	ug/L	5	ND
Carbon Tetrachloride - produced while manufacturing other hydrocarbons	ug/L	5	ND
1,2 Dichlorobenzene - found in paint removers and degreasers	ug/L	200	ND
1,4 Dichlorobenzene - found in paint removers and degreasers	ug/L	5	ND
1,2 Dichloroethane - used in preparation of poly vinyl chloride (PVC)	ug/L	5	ND
Dichloromethane - volatile liquid used in paint strippers, degreasers and aerosols	ug/L	50	ND
Ethyl Benzene - highly volatile; primary source is petroleum industry	ug/L	2.4	ND
Tetrachloroethylene - solvent used in dry cleaning and metal cleaning industries	ug/L	30	ND
Total Trihalomethanes - by-products associated with chlorine disinfection	ug/L	100	14.0
Total Xylenes - highly volatile, primary source is petroleum industry	ug/L	300	ND
Toluene - highly volatile; primary source is petroleum industry	ug/L	24	ND
Trichloroethylene - highly volatile liquid	ug/L	5	ND
Vinyl Chloride - synthetic chemical with no known natural sources	ug/L	2	ND
Benzo(a)pyrene - found in creosote and cigarette smoke	ug/L	0.01	ND
Pentachlorophenol - used in pesticides and wood preservatives	ug/L	60	ND
Inorganic Parameters - a range of materials that are both naturally occurring and artificially produced			
Alkalinity - the capacity of water to neutralize acids	mg/L	~	98
Aluminium - inorganic metallic element	mg/L	0.1	<0.025
Antimony - element used in metal manufacturing	ug/L	6	<1.0
Arsenic - can occur naturally or come from industrial effluents	ug/L	10	<1.5
Barium - occurs naturally and is produced by industry	mg/L	1	0.025
Boron - naturally occurring in over 80 minerals	mg/L	5	<0.010
Bromide - natural element, often associated with salt deposits	mg/L	~	<0.05
Cadmium - present in solder and as an impurity in galvanized pipe	ug/L	5	<0.5
Calcium - this mineral helps produce "hard" water	mg/L	~	40.2
Chloride - found in road salts, processed foods and chemical industry effluents	mg/L	250	30.2
Chromium - natural metallic element	mg/L	0.05	<0.01
Conductivity - measures the waters capacity to carry an electric current	uS/cm	~	293
Copper - can stain laundry at levels above Guidelines for Canadian Drinking Water Quality	mg/L	1	0.067
Fluoride - occurs naturally in many minerals	mg/L	1.5	0.14
Iron - can cause staining in laundry and plumbing	mg/L	0.3	<0.020
Lead - can be found in older plumbing fixtures, and in solder	ug/L	10	<1.0
Magnesium - along with calcium, contributes to forming "hard" water	mg/L	~	3.5
Manganese - metal; can cause staining in laundry and plumbing fixtures	mg/L	0.05	0.007
Nitrate - often used in inorganic fertilizers	mg/L	45	<0.05
Nitrate / Nitrite - naturally occurring ions, used in inorganic fertilizers	mg/L	~	<0.05
Nitrite - naturally occurring, used in food preservatives	mg/L	3.2	<0.05
pH - measure of acidity	pH	6.5 - 8.5	7.8
Potassium - similar to sodium, found in potash	mg/L	~	0.98
Selenium - metal used to make red glass	ug/L	10	<1.0
Sodium - sixth most abundant element in the earth's crust; commonly found in table salt	mg/L	≤200	12.1
Sulfate - used extensively in the chemical industry; also occurs naturally	mg/L	500	13.0
Thallium - rare metallic element	ug/L	~	<1.0
Total Hardness - caused by dissolved minerals	mg/L	² See Note	115
Turbidity - a measure of suspended solids in the water	NTU	1	0.1
Uranium - naturally occurring element	ug/L	20	<0.5
Zinc - found in some plumbing fixtures and galvanized metal	mg/L	5	<0.005

¹ Note: mg/L are parts per million; ug/L are parts per billion

² Note Public acceptance of hardness varies considerably. Levels up to 100 mg/L are considered "acceptable" with levels greater than 200 mg/L poor but tolerable. Unacceptable levels are greater than 500 mg/L.

Hardness Scale (as per Health Canada)

Soft	0 to <60 mg/L;	0 - 3.5 grains	
Medium hard	60 to <120 mg/L	3.5 - 7.0 grains	The City of Fredericton's water is medium hard.
Hard	120 to < 180 mg/L	7.0 - 10.5 grains	
Very hard	180 mg/L & above.	10.5 grains & above	

Manganese commonly occurs in groundwater in New Brunswick. At concentrations greater than 0.15 mg/L, manganese can stain plumbing fixtures and laundry and may cause undesirable taste in beverages. The City of Fredericton's Water Treatment Plants remove manganese through a process of chlorination and filtration.