



Town of Cornwall

so much to offer...

Water & Sewer Utility

WATER ANALYSIS REPORT 2016

Drinking water quality in the Town of Cornwall is maintained according to the standards set out in the *Guidelines for Canadian Drinking Water Quality*. Throughout the year, our Utility staff sample the Town's water distribution and waste water treatment plant to ensure residents continue to receive the highest quality of water and waste water treatment.

Bacteria Testing Results

In the Town's commitment to service and keeping a sustainable environment, our sampling procedures exceed provincial standards.

Samples from Distribution System							
Month	# of Samples	Positive TC Test (TC ≤ 10)	# of Non-Compliant (TC > 10)	Ecoli	Positive BG Tests (BG ≤ 200)	# of Non-Compliant (BG > 200)	
January	11	0	0	0	0	0	
February	11	0	0	0	0	0	
March	22	0	1*	1*	0	0	
April	12	0	0	0	0	0	
May	11	0	0	0	0	0	
June	11	0	0	0	0	0	
July	12	1	0	0	0	0	
August	19	1	1*	0	0	0	
September	14	0	0	0	0	0	
October	12	0	0	0	0	0	
November	14	0	0	0	0	0	
December	12	0	0	0	0	0	
Total	161	2	2	1	0	0	

*All retests reported negative

Drinking water within the Town is chlorinated to have a minimum Free Chlorine Residual of at least 0.2 mg/L or higher at all points in the system at all times. This level of chlorination is an industry standard for drinking water disinfection and is recommended by the Guidelines for Canadian Drinking Water Quality.

In accordance with the *Drinking Water and Wastewater Facility Operating Regulations*, a water sample is collected from each source of supply (well) on a monthly basis and analyzed for the presence of coliform bacteria and E.coli.

Following collection, all water samples are sent to the Provincial Department of Environment Analytical Laboratory in Charlottetown. Each sample is tested for Total Coliforms DC and Escherichia Coli DC (E. Coli). In addition to the bacteria tests which are performed at the Provincial Lab, the Free Chlorine Residual is analyzed and recorded by Utility Staff at the time of sample collection, as required by section 11(1)(e) of the *Drinking Water and Wastewater Facility Operating Regulations*.

Untreated Water (Samples from Wells)										
Month	Meadowbank	Northgate	East Wiltshire	River Point	# of Samples	Positive TC Test (TC ≤ 10)	# of Non-Compliant (TC > 10)	Ecoli	Positive BG Tests (BG ≤ 200)	# of Non-Compliant (BG > 200)
January	2	1	2	1	6	2	0	0	0	0
February	2	1	2	1	6	2	0	0	0	0
March	4	2	4	2	12	1	0	0	0	0
April	2	1	2	1	6	1	0	0	0	0
May	2	1	2	2	7	0	1	0	0	0
June	4	1	2	2	9	4	0	0	0	0
July	6	1	2	1	10	2	2	0	1	0
August	3	1	2	1	7	0	1	0	0	0
September	3	1	2	1	7	1	0	0	0	0
October	3	2	2	1	8	1	0	0	1	0
November	3	1	2	3	9	2	3	2	0	0
December	3	1	2	2	7	3	2	0	0	0
Total	37	14	26	18	94	19	9	2	2	0

For each non-compliant sample at Meadowbank, Northgate and East Wiltshire, the well is isolated from the system and is flushed and resampled until clear samples are obtained. At River Point the Town uses a UV disinfection system along with chlorine disinfection together to provide safe drinking water.

In 2016, the Town of Cornwall pumped an average of 1,700 cubic meters of water per day. During the summer months the utility pumped an average of 1,868 cubic meters of water per day.

Chemistry Analysis

The Drinking Water and Wastewater Facility Operating Regulations require all active wells to be subject to chemical analysis. A general chemical analysis of each well must be performed annually, and all water chemistry analysis for Town of Cornwall is performed at the Provincial Analytical Laboratory. The Guidelines for Canadian Drinking Water Quality set a Maximum Allowable Concentration (MAC) for various chemical contents of drinking water.

The Town of Cornwall drew samples from each active well on May 24, 2016 for general chemical analysis.

The results showed that all active wells were within the Guidelines for Canadian Drinking Water Quality.

Chemical Analysis Report						
Chemical	Meadowbank (avg) Concentration (mg/L)	Northgate (avg) Concentration (mg/L)	East Wiltshire (avg) Concentration (mg/L)	River Point (avg) Concentration (mg/L)	MAC* (mg/L)	AO* (mg/L)
Alkalinity Total	109	129	147	157	--	--
Arsenic	< 0.004	< 0.004	< 0.004	< 0.004	0.01	--
Barium	0.498	0.526	0.805	0.238	1.0	--
Calcium	35.74	19.4	29.36	36.81	--	--
Chloride	213.4	19.4	13.8	38.3	--	≤250
Copper	0.009	0.005	< 0.005	< 0.005	--	≤1.0
Iron	< 0.009	< 0.009	< 0.009	< 0.009	--	≤0.3
Lead	< 0.02	< 0.002	< 0.002	< 0.002	0.01	--
Magnesium	24.8	16.64	16.46	18.41	--	--
Manganese	< 0.003	< 0.003	< 0.003	0.005	--	≤0.05
Nitrate-N	1.4	4.9	1.9	3.1	10.0	--
pH	8.1	7.7	7.8	7.65	--	6.5-8.5
Phosphorus	0.02	0.04	0.03	0.06	--	--
Potassium	2.82	1.57	1.72	1.37	--	--
Selenium	0.005	< 0.004	< 0.004	< 0.004	0.05	--
Sodium	95.52	6.16	8.65	7.57	--	≤200
Sulfate	23.75	5.56	4.47	5.58	--	≤500
Uranium	0.016	0.005	0.012	< 0.003	0.02	--
Zinc	0.009	< 0.006	< 0.006	< 0.006	--	≤5
Total Hardness	191	148	141	168	--	≤200

*MAC - Maximum Acceptable Concentration

* AO - Aesthetic Objective - as per *Guidelines for Canadian Drinking Water Quality*, Health Canada

WASTEWATER EFFLUENT

In accordance with regulations, the Town of Cornwall's two lagoons are sampled quarterly and the results are shown in the table below.

WASTEWATER TREATMENT REPORT						
North River Lagoon				Cornwall Lagoon		
Month	Suspended Solids (MG/L)	CBOD (mg/L)	Average Faecal Coliform (MPN/100ml)	Suspended Solids (MG/L)	CBOD (mg/L)	Average Faecal Coliform (MPN/100ml)
January	N/A	N/A	N/A	N/A	N/A	N/A
February	N/A	N/A	N/A	N/A	N/A	N/A
March	7	< 10	110	15	12	22
April	N/A	N/A	N/A	N/A	N/A	N/A
May	N/A	N/A	N/A	N/A	N/A	N/A
June	17	< 10	< 2	9	< 10	< 2
July	N/A	N/A	N/A	N/A	N/A	N/A
August	N/A	N/A	N/A	N/A	N/A	N/A
September	9	< 10	< 2	< 1	< 10	< 2
October	N/A	N/A	N/A	N/A	N/A	N/A
November	N/A	N/A	N/A	N/A	N/A	N/A
December	2	< 10	< 2	2	< 10	1

The Town of Cornwall is required not to exceed 25mg/L of Carbonaceous Biochemical Oxygen Demand (CBOD) and 25 mg/L of Total Suspended Solids (TSS) with Faecal Coliform of 200 Most Probable Number (MPN) / 100ml.