# Water & Sewer Utility

## WATER ANAYLSIS REPORT 2025

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 wastewater treatment plant to ensure residents continue to receive the highest quality of water and wastewater treatment.

## Bacteria Testing Results

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

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.

During the 2025-year 163 water samples were collected from the Town of Cornwall water distribution system for regular testing. All samples taken met the requirements under the Canadian Drinking Water Guidelines. Two samples showed non-zero bacteria count in 2025, but no water was declared unfit to consume.

| 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 | 13 | 0 | 0 | 0 | 0 | 0 |
| February | 12 | 1 | 0 | 0 | 0 | 0 |
| March | 11 | 0 | 0 | 0 | 0 | 0 |
| April | 18 | 0 | 0 | 0 | 0 | 0 |
| May | 12 | 0 | 0 | 0 | 0 | 0 |
| June | 14 | 0 | 0 | 0 | 0 | 0 |
| July | 12 | 0 | 0 | 0 | 0 | 0 |
| August | 12 | 0 | 0 | 0 | 0 | 0 |
| September | 12 | 1 | 0 | 0 | 0 | 0 |
| October | 18 | 0 | 0 | 0 | 0 | 0 |
| November | 12 | 0 | 0 | 0 | 0 | 0 |
| December | 17 | 0 | 0 | 0 | 0 | 0 |
| Total | 163 | 2 | 0 | 0 | 0 | 0 |

*All retests reported negative.

## Groundwater Testing

Groundwater bacteria testing is the process of checking the wells or aquifer water for harmful microorganisms especially coliforms and E. coli to ensure it's safe for drinking and household use. Any positive test results from the wells are investigated to determine the source of contamination and water is treated through a disinfection process before entering the utilities water distribution system.

The Town of Cornwall uses primary and secondary disinfection processes in maintaining safe drinking water systems.

- ***Primary disinfection*** is a contiguous part of the treatment process and is intended to kill or inactivate (i.e.: render non-infectious) pathogenic microorganisms that may be present in the source water before secondary disinfection takes place.

- ***Secondary disinfection*** (distribution system disinfection) is intended to protect the distribution system from re-contamination. It is the maintenance of a residual of disinfectant throughout the distribution system to prevent re-growth of microorganisms in the system as well as to kill or inactivate microorganisms that may enter the distribution system. Chlorine is the most commonly used water disinfectant for secondary (residual) disinfection.

At Meadowbank, Northgate, East Wiltshire and Main Street well locations chlorine is added to the water distribution system and with sufficient contact time to inactivate any microbiological

contaminates from the ground water sources. At River Point the Town uses a UV disinfection system along with chlorine disinfection together to provide safe drinking water.

| Untreated Water (Samples from Wells) | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Month | Meadowbank | Northgate | East Wiltshire | River Point | Main | # of Samples | Positive TC Test (TC ≤ 10) | # of Non-Compliant (TC> 10) | Ecoli | Positive BG Tests (BG ≤ 200) | # of Non-Compliant (BG > 200) |
| January | 3 | 1 | 2 | 4 | 4 | 14 | 0 | 3 | 0 | 2 | 0 |
| February | 3 | 1 | 2 | 1 | 4 | 11 | 3 | 0 | 0 | 0 | 0 |
| March | 3 | 1 | 2 | 1 | 4 | 11 | 4 | 1 | 0 | 0 | 0 |
| April | 3 | 1 | 2 | 1 | 4 | 11 | 2 | 1 | 0 | 0 | 0 |
| May | 3 | 1 | 2 | 1 | 4 | 11 | 4 | 1 | 0 | 0 | 0 |
| June | 3 | 1 | 2 | 5 | 6 | 17 | 3 | 8 | 5 | 0 | 2 |
| July | 3 | 1 | 2 | 1 | 5 | 12 | 6 | 0 | 0 | 0 | 0 |
| August | 3 | 1 | 3 | 1 | 5 | 13 | 3 | 2 | 0 | 0 | 0 |
| September | 3 | 1 | 4 | 1 | 4 | 13 | 2 | 3 | 0 | 0 | 0 |
| October | 6 | 2 | 4 | 2 | 8 | 22 | 6 | 1 | 0 | 0 | 0 |
| November | 3 | 1 | 2 | 1 | 4 | 11 | 3 | 0 | 0 | 0 | 0 |
| December | 3 | 1 | 2 | 1 | 0 | 7 | 0 | 0 | 0 | 0 | 0 |
| Total | 39 | 13 | 29 | 20 | 52 | 153 | 36 | 20 | 5 | 2 | 2 |

In 2025, the Town of Cornwall pumped an average of 2,400 cubic meters of water per day. During the summer months the utility pumped an average of 2,500 cubic meters of water per day.

## Pesticide Monitoring Program Results

Samples were collected from wells in November 2024 as part of the provincial annual pesticide monitoring program. Samples are collected from source wells around Cornwall and analyzed for over 50 pesticides compounds more information is available on the province's open data portal (https://data.princeedwardisland.ca/) project OD0004 Pesticide Analysis. Sample results are included in Appendix A.

## Chemistry Analysis

The *Drinking Water and Wastewater Facility Operating Regulations* require all active wells to undergo routine chemical analysis. Each year, a general chemical analysis is performed on every active well, and all testing for the Town of Cornwall is completed at the Provincial Analytical Laboratory.

The Guidelines for Canadian Drinking Water Quality establish:

- Maximum Allowable Concentrations (MACs) for chemical substances that may pose health risks

- Aesthetic Objectives (AOs) for characteristics such as taste, colour, and odour

In addition to annual testing, a detailed chemical analysis is required every three years. The next detailed analysis is scheduled for 2027 and will be completed by a private analytical laboratory, with results submitted to the Province for review.

On May 13, 2025, the Town of Cornwall collected:

- Samples from each active well for general chemical analysis
- Two distribution system samples from different areas of the water network

The results confirmed that all active wells met the Guidelines for Canadian Drinking Water Quality, demonstrating that the Town's groundwater supply continues to meet both health-based and aesthetic standards.

| Chemical Analysis Report | | | | | | |
|---|---|---|---|---|---|---|
| | East Wiltshire Well #1 (mg/L) | East Wiltshire Well #2 (mg/L) | Distribution Sample Capital Drive (mg/L) | Distribution Sample Ferry Road (mg/L) | MAC* (mg/L) | AO* (mg/L) |
| | P250513089 | P250513090 | P250513080 | P250513077 | | |
| Alkalinity Total | 146 | 160 | 117 | 104 | -- | 250 |
| Arsenic | 0.0008 | 0.0006 | 0.0012 | 0.0021 | 0.01 | -- |
| Barium | 0.9085 | 0.7774 | 0.6673 | 0.4792 | 2.0 | -- |
| Calcium | 40.76 | 47.8 | 34.42 | 27.71 | -- | -- |
| Chloride | 34.2 | 50.2 | 25.4 | 29.5 | -- | ≤250 |
| Copper | <0.002 | <0.002 | 0.135 | <0.002 | 2 | ≤1.0 |
| Iron | <0.002 | 0.004 | <0.002 | <0.002 | -- | ≤0.1 |
| Lead | <0.0001 | <0.0001 | 0.0004 | <0.0001 | 0.01 | -- |
| Magnesium | 26.44 | 24.11 | 19.31 | 14.81 | -- | -- |
| Manganese | <0.0005 | <0.0005 | <0.0005 | <0.0005 | 0.12 | ≤0.02 |
| Nitrate-N | 3 | 2.1 | 3.8 | 3.4 | 10.0 | -- |
| pH | 7.9 | 7.9 | 8 | 8.1 | -- | 7.0 - 10.5 |
| Phosphorus | 0.05 | 0.05 | 0.04 | 0.04 | -- | -- |
| Potassium | 2.03 | 1.58 | 1.66 | 1.54 | -- | -- |
| Selenium | <0.0002 | <0.0002 | 0.0002 | 0.0012 | 0.05 | -- |
| Sodium | 10.2 | 13.87 | 8.67 | 15.75 | -- | ≤200 |
| Sulfate | 11.46 | 8.25 | 8.92 | 7.99 | -- | ≤500 |
| Uranium | 0.0087 | 0.001 | 0.0037 | 0.0045 | 0.02 | -- |
| Zinc | <0.002 | <0.002 | 0.007 | <0.002 | -- | ≤5.0 |
| Total Hardness | 210.7 | 218.6 | 165.5 | 130.2 | -- | -- |

| Chemical Analysis Report | | | | | | |
|---|---|---|---|---|---|---|
| | Main Street Well #1 (mg/L) | Main Street Well #2 (mg/L) | Main Street Well #3 (mg/L) | Main Street Well #4 (mg/L) | MAC* (mg/L) | AO* (mg/L) |
| | P250513081 | P250513082 | P250513083 | P250513084 | | |
| Alkalinity Total | 85.5 | 92.3 | 90.5 | 92.2 | -- | 250 |
| Arsenic | 0.0013 | 0.0006 | 0.0021 | 0.0016 | 0.01 | -- |
| Barium | 0.5469 | 0.1271 | 0.6938 | 0.5796 | 2.0 | -- |
| Calcium | 24.25 | 25.68 | 28.7 | 29.84 | -- | -- |
| Chloride | 10.7 | 10.8 | 14.3 | 16.9 | -- | ≤250 |
| Copper | 0.009 | 0.007 | 0.008 | 0.008 | 2 | ≤1.0 |
| Iron | <0.002 | <0.002 | <0.002 | <0.002 | -- | ≤0.1 |
| Lead | 0.0001 | 0.0001 | 0.0001 | 0.0001 | 0.01 | -- |
| Magnesium | 12.94 | 13.54 | 15.21 | 16.65 | -- | -- |
| Manganese | <0.0005 | <0.0005 | <0.0005 | <0.0005 | 0.12 | ≤0.02 |
| Nitrate-N | 3.4 | 2.7 | 4.9 | 5.2 | 10.0 | -- |
| pH | 8 | 8.02 | 8.2 | 8.1 | -- | 7.0 - 10.5 |
| Phosphorus | 0.05 | 0.09 | 0.04 | 0.05 | -- | -- |
| Potassium | 1.56 | 1.22 | 1.36 | 1.34 | -- | -- |
| Selenium | <0.0002 | <0.0002 | <0.0002 | <0.0002 | 0.05 | -- |
| Sodium | 4.92 | 4.42 | 4.6 | 5.28 | -- | ≤200 |
| Sulfate | 6.61 | 6.49 | 10.74 | 8.57 | -- | ≤500 |
| Uranium | 0.0042 | 0.0002 | 0.0021 | 0.0011 | 0.02 | -- |
| Zinc | 0.002 | 0.002 | 0.002 | 0.002 | -- | ≤5.0 |
| Total Hardness | 113.8 | 119.9 | 134.3 | 143.1 | -- | -- |

| Chemical Analysis Report | | | | | | | |
|---|---|---|---|---|---|---|---|
| Chemical | Meadowbank Well #1 (mg/L) | Meadowbank Well #2 (mg/L) | Meadowbank Well #4 (mg/L) | Northgate Well #1 (mg/L) | River Point Well #2 (mg/L) | MAC* (mg/L) | AO* (mg/L) |
| Sample ID | P250513085 | P250513086 | P250513087 | P250513088 | P250513079 | | |
| Alkalinity Total | 104 | 111 | 120 | 135 | 121 | -- | 250 |
| Arsenic | 0.003 | 0.0038 | 0.0023 | 0.0009 | 0.0006 | 0.01 | -- |
| Barium | 0.527 | 0.387 | 0.3861 | 0.4085 | 0.2056 | 2.0 | -- |
| Calcium | 24.11 | 28.81 | 29.99 | 37.63 | 31.6 | -- | -- |
| Chloride | 47.8 | 100.9 | 42.9 | 23.4 | 17.1 | -- | ≤250 |
| Copper | 0.008 | 0.008 | 0.01 | 0.013 | 0.003 | 2 | ≤1.0 |
| Iron | <0.002 | 0.006 | 0.003 | <0.002 | 0.002 | -- | ≤0.1 |
| Lead | <0.0001 | <0.0001 | <0.0001 | 0.0001 | <0.0001 | 0.01 | -- |
| Magnesium | 14.22 | 17.67 | 16.03 | 19.73 | 15.68 | -- | -- |
| Manganese | <0.0005 | <0.0005 | <0.0005 | <0.0005 | <0.0005 | 0.12 | ≤0.02 |
| Nitrate-N | 1.7 | 1.7 | 2.8 | 4.9 | 2.9 | 10.0 | -- |
| pH | 8.3 | 8.3 | 8 | 7.8 | 7.8 | -- | 7.0 - 10.5 |
| Phosphorus | <0.02 | 0.02 | 0.04 | 0.05 | 0.08 | -- | -- |
| Potassium | 2 | 2.23 | 1.64 | 1.63 | 1.42 | -- | -- |
| Selenium | 0.0042 | 0.005 | 0.0026 | <0.0002 | <0.0002 | 0.05 | -- |
| Sodium | 29.42 | 57.25 | 26.74 | 7.78 | 8.81 | -- | ≤200 |
| Sulfate | 6.34 | 12.18 | 6.61 | 6.9 | 0.02 | -- | ≤500 |
| Uranium | 0.0132 | 0.0124 | 0.0064 | 0.002 | 0.0001 | 0.02 | -- |
| Zinc | 0.005 | 0.004 | 0.003 | 0.011 | 0.004 | -- | ≤5.0 |
| Total Hardness | 118.8 | 144.7 | 140.9 | 175.2 | 143.5 | -- | -- |

# WASTEWATER EFFLUENT

The Town of Cornwall's wastewater treatment lagoon system is monitored on a quarterly basis, with sampling requirements determined by the facility's outflow conditions. These samples are collected to ensure compliance with provincial and federal regulations and to verify that treated effluent meets environmental discharge standards.

Quarterly sampling typically includes analysis of parameters such as:

- Biochemical Oxygen Demand (cBOD)
- Total Suspended Solids (TSS)
- Nutrients (e.g., ammonia, total phosphorus)
- Fecal coliforms
- pH

The results are submitted to the Province for review and are used to confirm that the lagoon system is operating effectively and protecting receiving waters.

| WASTEWATER TREATMENT REPORT<br>Cornwall Lagoon | | | | | | | |
|---|---|---|---|---|---|---|---|
| Month | Suspended Solids (MG/L) | CBOD (mg/L) | Average Faecal Coliform (MPN/100ml) | pH | Total Nitrogen (ppm) | Total Phosphorus (ppb) | Ammonia (ppm) |
| January | n/a | 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 | n/a |
| March | 17 | 18 | 170 | 7.8 | 43.6 | 5900 | 43.46 |
| April | n/a | 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 | n/a |
| June | 8 | <10 | <2 | 8.3 | 27.6 | 4530 | 27.38 |
| July | n/a | 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 | n/a |
| September | 15 | <10 | <2 | 7.9 | 14 | 5790 | 12.26 |
| October | n/a | 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 | n/a |
| December | 21 | <10 | 4 | 7.7 | 33.8 | 5450 | 33.72 |
| | | | | | | | |

| WASTEWATER TREATMENT REPORT<br>North River Lagoon | | | | | | | |
|---|---|---|---|---|---|---|---|
| Month | Suspended Solids (MG/L) | CBOD (mg/L) | Average Faecal Coliform (MPN/100ml) | pH | Total Nitrogen (ppm) | Total Phosphorus (ppb) | Ammonia (ppm) |
| January | n/a | 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 | n/a |
| March | 6 | <10 | 4 | 8 | 37.5 | 5160 | 35.67 |
| April | n/a | 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 | n/a |
| June | 17 | <10 | <2 | 8.2 | 44.6 | 6280 | 46.168 |
| July | n/a | 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 | n/a |
| September | 1 | <10 | <2 | 7.8 | 12 | 3270 | 6.998 |
| October | n/a | 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 | n/a |
| December | 5 | <10 | <2 | 7.8 | 27.5 | 4130 | 21.693 |
| | | | | | | | |

The Town of Cornwall is required not to exceed 25 mg/L of Total Suspended Solids (TSS), 25mg/L of Carbonaceous Biochemical Oxygen Demand (cBOD), and Faecal Coliform a mean of 200 MPN/100ml and a maximum of 400 MPN/100ml.

# UTILITY PROJECTS

The Town of Cornwall Water and Sewer Utility in 2025, has carried out a variety of projects to expand and maintain the water and sewer system owned and operated by the Town.

## Hydrant Maintenance

The Utility performed biannual (spring and fall) maintenance on the fire hydrants located around the Town. This process requires each hydrant to be inspected and operated to ensure that it is in good working order. The Utility also completed flow testing on multiple hydrants around the Town. The hydrants were repainted to National Fire Protection Association (NFPA) standards and colour codes for fire flows.

## Lift Stations

The Utility conducted regular inspections of all lift stations. This process includes cleaning the chambers and lifting the individual sewer pumps for cleaning and inspections.

## New Water Tower

The Utility has begun construction of a new water tower for the Town of Cornwall that is expected to be operational in early 2026. The new water tower will provide additional water storage for the town as well as improve water pressure in higher elevations.

## Cornwall Lagoon Berm Stabilization

During a regular survey of the Cornwall Wastewater Treatment Facility, it was observed that the interior berms of the lagoon needed to be reinforced to prevent erosion. The Utility contracted the work to Island Coastal Services Ltd., and the repair work was completed in the fall of 2025.

## Cornwall Road Utilities Extension

The Utility completed phase 1 of the Cornwall Road Utilities extension that extended water and sewer services on Cornwall Road to expand the Utilities service area. This expanded service area allows for additional land to be developed and connected to the Town of Cornwall's Utility infrastructure. Phase 2 of the project is expected to start in 2026.

# Appendix A

## Pesticide Monitoring Program Results