

# 2024

Halton Region Drinking Water Quality Report: Milton Treatment and Distribution Subsystem

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# Introduction

Halton Region is committed to providing safe drinking water to all of our customers. As mandated by the Safe Drinking Water Act, 2002, this annual Water Quality Report includes:

- A description of the water treatment process and chemicals used;
- Any major expenses to install, repair or upgrade equipment in the system; and,
- The results of our water tests and how they compare to provincial regulatory standards.

All provincial regulatory monitoring requirements and actions applicable to Halton Region's operation of this system were met or surpassed in the current reporting year.

# **System Description**

The Town of Milton is supplied with both groundwater and surface water. Treated surface water (Lake Ontario) from the Halton Region Distribution Subsystem (lake-based) is pumped to the Steeles Avenue Water Tower. Under normal operating conditions, lake water and groundwater do not mix in Milton's distribution system.

The groundwater system consists of two well fields: Kelso and Walkers Line. There are four wells in the Kelso well field that pump raw water into the Kelso Water Treatment Plant. The treatment includes greensand filters for manganese removal and chlorination for disinfection and control of manganese. The water is pumped to the Milton Reservoir. From there, the water flows by gravity into the distribution system. The Walkers Line well field consists of one well with water being disinfected with chlorine and pumped to the Milton Surge Tank. The water flows by gravity from the surge tank to the distribution system. Fluoride is not added to the Milton groundwater system. The system is controlled through a computerized SCADA system that is monitored 24 hours per day, seven days a week.

# What Improvements Are We Making?

In the current reporting year, approximately \$900,000 was spent on capital upgrades to the Fourth Line Pumping Station. In the current reporting year, approximately \$15,000,000 was spent on upgrades to the distribution system. In addition to capital upgrades, Halton continued to support the production of quality drinking water through increased sampling for groundwater monitoring, the implementation of the Source Protection Plans (e.g. establishing Risk Management Plans, threat activity verification, and screening both planning and building permit applications in vulnerable areas), upgrades to the SCADA monitoring and infrastructure management systems, water efficiency programs and optimization of water treatment processes. Work also continued on the Drinking Water Quality Management System, a

provincial requirement to support the licensing of municipal drinking water systems which came into effect for Halton in January 2009.

# Partnership for Safe Water Program

The Partnership for Safe Water is an alliance of drinking water organizations with a mission of improving the quality of drinking water delivered to customers. Halton Region is actively involved in the Partnership for Safe Water program that awarded the Region the prestigious American Water Works Association Directors Awards in 2020. The Region is the first municipality in Canada to receive the awards recognizing outstanding commitment to high-quality drinking water and treatment. The Public Works department has built a one-team culture effectively integrating operations with maintenance and engineering. The culture aligns with the Partnership for Safe Water and optimization program capable plant concept. Operational process control combines with facility design, asset maintenance and administrative policies to create an infrastructure capable of achieving or bettering objectives and targets set by the regulatory bodies and the operating authority.

# Water Quality Testing

A large number of water quality tests are performed every day, in accordance with the *Safe Drinking Water Act, 2002 and* regulations. The following sections provide a summary of the test results.

#### Terms

| CFU/100 mL | Colony-forming units per 100 millilitres of water      |
|------------|--|
| µg/L       | micrograms per litre                                   |
| mg/L       | milligrams per litre                                   |
| Standard   | Ontario Drinking Water Quality Standard, O.Reg. 169/03 |

### **Microbiological Testing**

|              | Number of<br>Samples | E. coli<br>Results<br>(min-max) | Total Coliform<br>Results<br>(min-max) | Number of<br>HPC<br>Samples | HPC Results<br>(min-max) |
|--------------|----------------------|---------------------------------|--|-----------------------------|--------------------------|
| Raw          | 508                  | 0 - 2                           | 0 - 10                                 | N/A                         | N/A                      |
| Treated      | 208                  | 0 - Absent                      | 0 - Absent                             | 106                         | 0 - 4                    |
| Distribution | 485                  | 0 - Present                     | 0 - Present                            | 375                         | 0 - 126                  |

| E.coli          | not detected   |
|-----------------|--|
| Total Coliforms | not detected   |
| HPC             | Heterotrophic Plate Counts are conducted on some distribution system<br>samples. The HPC test is used as a tool to monitor overall quality, but the<br>results are not indicators of water safety. There is no Drinking Water Quality<br>Standard for HPC. |

#### Microbiological standards for treated and distributed water:

## **Operational Testing**

In the Milton Treatment Subsystem, continuous analyzers measure and record the results of free chlorine residual and turbidity in treated water. All of the readings are validated by an operator and are also reviewed by the Ministry of the Environment, Conservation and Parks (MECP) Inspector. As well, Halton operators measure the chlorine in the distributed water. 'Adverse' test results must be reported if the free chlorine residual at the end of the treatment process is not sufficient to achieve primary inactivation (disinfection) or if a free chlorine residual in the distribution system is <0.05 mg/L. In the current reporting year, all of the validated readings and test results were within the ranges required by regulation.

## **Chemical Testing**

| Parameter | Sample<br>Date | Result<br>Value | Unit of<br>Measure | Standard | Exceedance of Standard                |
|-----------|----------------|-----------------|--------------------|----------|---------------------------------------|
| Antimony  | 04/22/24       | <0.0005         | mg/L               | 0.006    | No                                    |
| Arsenic   | 04/22/24       | <0.001          | mg/L               | 0.01     | No                                    |
| Barium    | 04/22/24       | 0.143           | mg/L               | 1.0      | No                                    |
| Boron     | 04/22/24       | 0.044           | mg/L               | 5.0      | No                                    |
| Cadmium   | 04/22/24       | <0.0005         | mg/L               | 0.005    | No                                    |
| Chromium  | 04/22/24       | 0.001           | mg/L               | 0.05     | No                                    |
| Mercury   | 04/22/24       | <0.00005        | mg/L               | 0.001    | No                                    |
| Selenium  | 04/22/24       | <0.001          | mg/L               | 0.05     | No                                    |
| Sodium    | 11/18/24       | 49.2            | mg/L               | 20       | Yes –<br>Reported<br>February<br>2022 |
| Uranium   | 04/22/24       | 0.001           | mg/L               | 0.02     | No                                    |
| Fluoride  | 11/18/24       | 0.10            | mg/L               | 1.5      | No                                    |

#### Inorgranic Parameters

| Nitrite | 11/04/24 | <0.01 | mg/L | 1.0  | No |
|---------|----------|-------|------|------|----|
| Nitrate | 11/04/24 | 3.46  | mg/L | 10.0 | No |

## Organic Parameters

| Parameter                                     | Sample<br>Date | Result<br>Value | Unit of<br>Measure | Standard | Exceedance of Standard |
|---|----------------|-----------------|--------------------|----------|------------------------|
| Alachlor                                      | 04/22/24       | <0.50           | µg/L               | 5        | No                     |
| Atrazine + N-<br>dealkylated<br>metabolites   | 04/22/24       | <1.0            | µg/L               | 5        | No                     |
| Azinphos-methyl                               | 04/22/24       | <2.0            | µg/L               | 20       | No                     |
| Benzene                                       | 04/22/24       | <0.10           | µg/L               | 1        | No                     |
| Benzo(a)pyrene                                | 04/22/24       | <0.0050         | µg/L               | 0.01     | No                     |
| Bromoxynil                                    | 04/22/24       | <0.50           | µg/L               | 5        | No                     |
| Carbaryl                                      | 04/22/24       | <5.0            | µg/L               | 90       | No                     |
| Carbofuran                                    | 04/22/24       | <5.0            | µg/L               | 90       | No                     |
| Carbon<br>Tetrachloride                       | 04/22/24       | <0.10           | µg/L               | 2        | No                     |
| Chlorpyrifos                                  | 04/22/24       | <1.0            | µg/L               | 90       | No                     |
| Diazinon                                      | 04/22/24       | <1.0            | µg/L               | 20       | No                     |
| Dicamba                                       | 04/22/24       | <1.0            | µg/L               | 120      | No                     |
| 1,2-Dichlorobenzene                           | 04/22/24       | <0.20           | µg/L               | 200      | No                     |
| 1,4-Dichlorobenzene                           | 04/22/24       | <0.20           | µg/L               | 5        | No                     |
| 1,2-Dichloroethane                            | 04/22/24       | <0.20           | µg/L               | 5        | No                     |
| 1,1-Dichloroethylene<br>(vinylidene chloride) | 04/22/24       | <0.10           | µg/L               | 14       | No                     |
| Dichloromethane                               | 04/22/24       | <0.50           | µg/L               | 50       | No                     |
| 2-4 Dichlorophenol                            | 04/22/24       | <0.25           | µg/L               | 900      | No                     |
| 2,4-Dichlorophenoxy<br>acetic acid (2,4-D)    | 04/22/24       | <1.0            | µg/L               | 100      | No                     |
| Diclofop-methyl                               | 04/22/24       | <0.90           | µg/L               | 9        | No                     |
| Dimethoate                                    | 04/22/24       | <2.5            | µg/L               | 20       | No                     |
| Diquat  | 04/22/24       | <7.0            | μg/L               | 70       | No                     |
| Diuron  | 04/22/24       | <10             | µg/L               | 150      | No                     |

| Glyphosate                                 | 04/22/24 | <10   | µg/L | 280                             | No |
|--|----------|-------|------|---------------------------------|----|
| HAA (latest running annual average)        | 11/04/24 | 8.1   | µg/L | 80 (running<br>annual average)  | No |
| 2-Methyl-4-<br>chlorophenoxyacetic<br>acid | 04/22/24 | <10   | µg/L | 100                             | No |
| Malathion                                  | 04/22/24 | <5.0  | µg/L | 190                             | No |
| Metolachlor                                | 04/22/24 | <0.50 | µg/L | 50                              | No |
| Metribuzin                                 | 04/22/24 | <5.0  | µg/L | 80                              | No |
| Monochlorobenzene                          | 04/22/24 | <0.10 | µg/L | 80                              | No |
| Paraquat                                   | 04/22/24 | <1.0  | µg/L | 10                              | No |
| Pentachlorophenol                          | 04/22/24 | <0.50 | µg/L | 60                              | No |
| Phorate                                    | 04/22/24 | <0.50 | µg/L | 2                               | No |
| Picloram                                   | 04/22/24 | <5.0  | µg/L | 190                             | No |
| Polychlorinated<br>Biphenyls(PCB)          | 04/22/24 | <0.05 | µg/L | 3                               | No |
| Prometryne                                 | 04/22/24 | <0.25 | µg/L | 1                               | No |
| Simazine                                   | 04/22/24 | <1.0  | µg/L | 10                              | No |
| THM (latest running annual average)        | 11/04/24 | 27.1  | µg/L | 100 (running<br>annual average) | No |
| Terbufos                                   | 04/22/24 | <0.50 | µg/L | 1                               | No |
| Tetrachloroethylene                        | 04/22/24 | <0.10 | µg/L | 10                              | No |
| 2,3,4,6-<br>Tetrachlorophenol              | 04/22/24 | <0.50 | µg/L | 100                             | No |
| Triallate                                  | 04/22/24 | <1.0  | µg/L | 230                             | No |
| Trichloroethylene                          | 04/22/24 | <0.10 | µg/L | 5                               | No |
| 2,4,6-<br>Trichlorophenol                  | 04/22/24 | <0.50 | µg/L | 5                               | No |

No additional testing was required by a Municipal Drinking Water License, order or other legal instrument.

## 'Adverse' Results Notifications

Notices of 'adverse' water quality results are submitted in accordance with the Safe Drinking Water Act, 2002 to the MECP and the Medical Officer of Health.

| Sample Date   | Location     | Adverse Condition   | Corrective Action  | Notice of<br>Issue<br>Resolution |
|---------------|--------------|---|--|----------------------------------|
| July 16, 2024 | Distribution | Presence/Absence<br>confirmed E. coli<br>and Total Coliform | Two sets of<br>resamples taken,<br>and all resample<br>results within<br>acceptable limits | July 19, 2024                    |

## **Community-Wide Lead Sampling Program Results**

Under the Community-Wide Lead Sampling Program, samples were collected from eight sampling points located throughout the Milton Distribution Subsystem in the current reporting year. None of the samples contained lead concentrations above the standard of 10  $\mu$ g/L.

# **More Information or Questions**

The related annual Drinking Water Systems Flow Report is presented to Municipal Council members on or before March 31 of each year and is posted on <u>halton.ca</u>

For alternative formats or questions relating to these documents, email <u>accesshalton@halton.ca</u> or call 311.

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