# The 2021 Annual Drinking Water Quality Report:

## South Halton Drinking Water System – Milton Treatment and Distribution Subsystem

February 2022

Halton REGION

# Introduction

Halton 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's operation of this system were met or surpassed in the current reporting year.

# Milton Well Supply

**Drinking Water System Number: 220001646**

The Milton Well Supply consists of two well fields: Kelso and Walker's Line. Four wells in the Kelso well field pump raw water into the Kelso Water Treatment Plant (WTP). The treatment includes greensand filters for manganese removal and disinfection using chlorine. The treated water is pumped from the WTP to the Milton Reservoir and then flows by gravity into the Milton distribution system. The Walkers Line well field consists of one production well. Water from the well is disinfected with chlorine and pumped into the Milton Surge Tank which is located just off 12$^{th}$ Side Road. From the surge tank the water is fed by gravity into the distribution system. The Milton Well Supply is controlled through a Supervisory Control and Data Acquisition (SCADA) system that is monitored twenty-four hours per day, seven days per week.

The following chemicals are used in the drinking water treatment process:

- chlorine (disinfection and control of manganese)

# What Improvements Are We Making?

In the current reporting year, approximately $3,699,000 was spent on upgrading the connected distribution system, including watermains and services. 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

Halton Region is actively involved in the American Water Works Association's Partnership for Safe Water, an alliance of prestigious drinking water organizations with a mission of improving the quality of drinking water delivered to customers. The Partnership's comprehensive programs have provided the Region with the tools needed to continuously improve performance beyond regulatory requirements.

# Water Quality Testing

A large number of water quality tests are performed each and 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 Samples | *E. coli* Results (min -max ) | Total Coliform Results (min - max) | Number of HPC Samples | HPC Results (min -max) |
|---|---|---|---|---|---|
| Raw | 514 | 0 - 0 | 0 - 1 | N/A | N/A |
| Treated | 206 | 0 – Absent | 0 - Absent | 104 | 0 - 10 |
| Distribution | 465 | Absent – Absent | Absent – Absent | 362 | 0 - 11 |

### Microbiological standards for treated and distributed water:

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

## Operational Testing

In the Milton Treatment Subsystem, continuous analyzers measure and record the results of free chlorine residual and turbidity in treated water several times per minute, twenty-four hours per day, seven days per week. 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

### Inorganic Parameters

| Parameter | Sample Date | Result Value | Unit of Measure | Standard | Exceedance of Standard |
|---|---|---|---|---|---|
| Antimony | 04/19/21 | <0.0005 | mg/L | 0.006 | No |
| Arsenic | 04/19/21 | <0.001 | mg/L | 0.01 | No |
| Barium | 04/19/21 | 0.152 | mg/L | 1.0 | No |
| Boron | 04/19/21 | 0.038 | mg/L | 5.0 | No |
| Cadmium | 04/19/21 | <0.0005 | mg/L | 0.005 | No |
| Chromium | 04/19/21 | <0.001 | mg/L | 0.05 | No |
| Mercury | 04/19/21 | <0.00005 | mg/L | 0.001 | No |
| Selenium | 04/19/21 | <0.001 | mg/L | 0.05 | No |

| Parameter | Sample Date | Result Value | Unit of Measure | Standard | Exceedance of Standard |
|---|---|---|---|---|---|
| Sodium | 11/08/21 | 49.9 | mg/L | 20 | Yes – Reported May 2017 |
| Uranium | 04/19/21 | 0.001 | mg/L | 0.02 | No |
| Fluoride | 11/08/21 | 0.10 | mg/L | 1.5 | No |
| Nitrite | 11/15/21 | <0.01 | mg/L | 1.0 | No |
| Nitrate | 11/15/21 | 4.09 | mg/L | 10.0 | No |

## Organic Parameters

| Parameter | Sample Date | Result Value | Unit of Measure | Standard | Exceedance of Standard |
|---|---|---|---|---|---|
| Alachlor | 04/19/21 | <0.50 | µg/L | 5 | No |
| Atrazine + N-dealkylated metobolites | 04/19/21 | <1.0 | µg/L | 5 | No |
| Azinphos-methyl | 04/19/21 | <2.0 | µg/L | 20 | No |
| Benzene | 04/19/21 | <0.10 | µg/L | 1 | No |
| Benzo(a)pyrene | 04/19/21 | <0.0050 | µg/L | 0.01 | No |
| Bromoxynil | 04/19/21 | <0.50 | µg/L | 5 | No |
| Carbaryl | 04/19/21 | <5.0 | µg/L | 90 | No |
| Carbofuran | 04/19/21 | <5.0 | µg/L | 90 | No |
| Carbon Tetrachloride | 04/19/21 | <0.10 | µg/L | 2 | No |
| Chlorpyrifos | 04/19/21 | <1.0 | µg/L | 90 | No |
| Diazinon | 04/19/21 | <1.0 | µg/L | 20 | No |
| Dicamba | 04/19/21 | <1.0 | µg/L | 120 | No |
| 1,2-Dichlorobenzene | 04/19/21 | <0.20 | µg/L | 200 | No |
| 1,4-Dichlorobenzene | 04/19/21 | <0.20 | µg/L | 5 | No |
| 1,2-Dichloroethane | 04/19/21 | <0.20 | µg/L | 5 | No |
| 1,1-Dichloroethylene (vinylidene chloride) | 04/19/21 | <0.10 | µg/L | 14 | No |
| Dichloromethane | 04/19/21 | <0.50 | µg/L | 50 | No |
| 2-4 Dichlorophenol | 04/19/21 | <0.25 | µg/L | 900 | No |
| 2,4-Dichlorophenoxy acetic acid (2,4-D) | 04/19/21 | <1.0 | µg/L | 100 | No |
| Diclofop-methyl | 04/19/21 | <0.90 | µg/L | 9 | No |
| Dimethoate | 04/19/21 | <2.5 | µg/L | 20 | No |
| Diquat | 04/19/21 | <7.0 | µg/L | 70 | No |
| Diuron | 04/19/21 | <10 | µg/L | 150 | No |
| Glyphosate | 04/19/21 | <10 | µg/L | 280 | No |
| HAA (latest running annual average) | 11/15/21 | <5.0 | µg/L | 80 (running annual average) | No |
| 2-Methyl-4-chlorophenoxyacetic acid | 04/19/21 | <10 | µg/L | 100 | No |
| Malathion | 04/19/21 | <5.0 | µg/L | 190 | No |
| Metolachlor | 04/19/21 | <0.50 | µg/L | 50 | No |
| Metribuzin | 04/19/21 | <5.0 | µg/L | 80 | No |
| Monochlorobenzene | 04/19/21 | <0.10 | µg/L | 80 | No |
| Paraquat | 04/19/21 | <1.0 | µg/L | 10 | No |
| Pentachlorophenol | 04/19/21 | <0.50 | µg/L | 60 | No |

| Parameter | Sample Date | Result Value | Unit of Measure | Standard | Exceedance of Standard |
|---|---|---|---|---|---|
| Phorate | 04/19/21 | <0.50 | µg/L | 2 | No |
| Picloram | 04/19/21 | <5.0 | µg/L | 190 | No |
| Polychlorinated Biphenyls(PCB) | 04/19/21 | <0.05 | µg/L | 3 | No |
| Prometryne | 04/19/21 | <0.25 | µg/L | 1 | No |
| Simazine | 04/19/21 | <1.0 | µg/L | 10 | No |
| THM (latest running annual average) | 11/15/21 | 29.5 | µg/L | 100 (running annual average) | No |
| Terbufos | 04/19/21 | <0.50 | µg/L | 1 | No |
| Tetrachloroethylene | 04/19/21 | <0.10 | µg/L | 10 | No |
| 2,3,4,6-Tetrachlorophenol | 04/19/21 | <0.50 | µg/L | 100 | No |
| Triallate | 04/19/21 | <1.0 | µg/L | 230 | No |
| Trichloroethylene | 04/19/21 | <0.10 | µg/L | 5 | No |
| 2,4,6-Trichlorophenol | 04/19/21 | <0.50 | µg/L | 5 | No |
| Trifluralin | 04/19/21 | <1.0 | µg/L | 45 | No |
| Vinyl Chloride | 04/19/21 | <0.20 | µg/L | 1 | 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. In the current reporting year, there were no adverse water reports for the Milton Treatment and Distribution Subsystem.

## 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 µg/L.

## Microcystin Sampling Results

Although not required by regulation or the municipal drinking water licence, Halton Region has proactively implemented a harmful algal bloom (HAB) monitoring plan at Kelso Lake. The plan includes regular visual inspections for harmful algal blooms and microcystin samples were collected on a weekly basis from June to October from the Kelso water treatment plant. None of the samples contained Microcystin concentrations at or above the standard of 1.5 µg/L and the results for all raw and treated samples were less than the detection limit (i.e. <0.1 µg/L) for Total Microcystin.

# More Information or Questions

The related annual drinking water Flow Summary Report is published on or before March 31 each year on halton.ca.

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