
The 2022 Annual Drinking Water Quality Report: Acton Drinking Water System

February 2023



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.

Acton Drinking Water System

Drinking Water System Number: 220001673

The Acton Drinking Water System, located in the Town of Acton, consists of three well fields: Davidson, Fourth Line and Prospect Park (Fairy Lake). All of the wells use ultraviolet (UV) light for primary disinfection and chlorine for secondary disinfection. Fluoride is added to the water from all three sources. The Prospect Park Water Treatment Plant (WTP) is equipped with greensand filters for the removal of manganese and iron and the Davidson and Fourth Line wells utilize cartridge filters within the treatment process. Water from the three sources is pumped to the Churchill Reservoir and the Acton distribution system. The Acton Drinking Water System 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 were used in the drinking water treatment process:

- chlorine (disinfection and control of iron and manganese)
- hydrofluosilicic acid (fluoridation)

What Improvements Are We Making?

Approximately \$100,000 was spent on an ultraviolet disinfection system upgrade project at the Prospect Park Water Treatment Plant. Halton continued to support the production of quality drinking water through increased sampling for groundwater monitoring, the implementation of the aquifer management plan (including capture zone and groundwater vulnerability assessments), upgrades to the SCADA monitoring and infrastructure management systems and water efficiency programs. 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	<i>E. coli</i> Results (min - max)	Total Coliform Results (min - max)	Number of HPC Samples	HPC Results (min - max)
Raw	612	0 - 0	0 - 38	N/A	N/A
Treated	309	0 - Absent	0 - Absent	156	0 - 6
Distribution	363	Absent - Absent	Absent – Absent	290	0 - 8

Microbiological standards for treated and distributed water:

<i>E. coli</i>	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 Acton Drinking Water System, continuous analyzers measure and record the results of chlorine residual, turbidity and fluoride residual 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), if a free chlorine residual in the distribution system is <0.05 mg/L or if the fluoride residual is >1.5 mg/L. In the current reporting year, all of the validated readings and test results for these parameters were within the ranges required by regulation.

Chemical Testing

Inorganic Parameters

Parameter	Sample Date	Result Value	Unit of Measure	Standard	Exceedance of Standard
Antimony	04/11/22	0.0007	mg/L	0.006	No
Arsenic	04/11/22	<0.001	mg/L	0.01	No
Barium	04/11/22	0.211	mg/L	1.0	No
Boron	04/11/22	0.022	mg/L	5.0	No
Cadmium	04/11/22	<0.0005	mg/L	0.005	No
Chromium	04/11/22	<0.001	mg/L	0.05	No
Mercury	04/11/22	<0.00005	mg/L	0.001	No
Selenium	04/11/22	<0.001	mg/L	0.05	No
Sodium	11/07/22	47.2	mg/L	20	Yes – Reported January 2022

Uranium	04/11/22	<0.001	mg/L	0.02	No
Fluoride	12/12/22	0.79	mg/L	1.5	No
Nitrite	11/14/22	<0.01	mg/L	1.0	No
Nitrate	11/14/22	2.51	mg/L	10.0	No

Organic Parameters

Parameter	Sample Date	Result Value	Unit of Measure	Standard	Exceedance of Standard
Alachlor	04/11/22	<0.50	µg/L	5	No
Atrazine + N-dealkylated metabolites	04/11/22	<1.0	µg/L	5	No
Azinphos-methyl	04/11/22	<2.0	µg/L	20	No
Benzene	04/11/22	<0.10	µg/L	1	No
Benzo(a)pyrene	04/11/22	<0.0050	µg/L	0.01	No
Bromoxynil	04/11/22	<0.50	µg/L	5	No
Carbaryl	04/11/22	<5.0	µg/L	90	No
Carbofuran	04/11/22	<5.0	µg/L	90	No
Carbon Tetrachloride	04/11/22	<0.10	µg/L	2	No
Chlorpyrifos	04/11/22	<1.0	µg/L	90	No
Diazinon	04/11/22	<1.0	µg/L	20	No
Dicamba	04/11/22	<1.0	µg/L	120	No
1,2-Dichlorobenzene	04/11/22	<0.20	µg/L	200	No
1,4-Dichlorobenzene	04/11/22	<0.20	µg/L	5	No
1,2-Dichloroethane	04/11/22	<0.20	µg/L	5	No
1,1-Dichloroethylene (vinylidene chloride)	04/11/22	<0.10	µg/L	14	No
Dichloromethane	04/11/22	<0.50	µg/L	50	No
2-4 Dichlorophenol	04/11/22	<0.25	µg/L	900	No
2,4-Dichlorophenoxy acetic acid (2,4-D)	04/11/22	<1.0	µg/L	100	No
Diclofop-methyl	04/11/22	<0.90	µg/L	9	No
Dimethoate	04/11/22	<2.5	µg/L	20	No
Diquat	04/11/22	<7.0	µg/L	70	No
Diuron	04/11/22	<10	µg/L	150	No
Glyphosate	04/11/22	<10	µg/L	280	No
HAA (latest running annual average)	11/14/22	13.0	µg/L	80 (running annual average)	No
2-Methyl-4-chlorophenoxyacetic acid	04/11/22	<10	µg/L	100	No
Malathion	04/11/22	<5.0	µg/L	190	No
Metolachlor	04/11/22	<0.50	µg/L	50	No
Metribuzin	04/11/22	<5.0	µg/L	80	No
Monochlorobenzene	04/11/22	<0.10	µg/L	80	No

Parameter	Sample Date	Result Value	Unit of Measure	Standard	Exceedance of Standard
Paraquat	04/11/22	<1.0	µg/L	10	No
Pentachlorophenol	04/11/22	<0.50	µg/L	60	No
Phorate	04/11/22	<0.50	µg/L	2	No
Picloram	04/11/22	<5.0	µg/L	190	No
Polychlorinated Biphenyls(PCB)	04/11/22	<0.05	µg/L	3	No
Prometryne	04/11/22	<0.25	µg/L	1	No
Simazine	04/11/22	<1.0	µg/L	10	No
THM (latest running annual average)	11/14/22	40.7	µg/L	100 (running annual average)	No
Terbufos	04/11/22	<0.50	µg/L	1	No
Tetrachloroethylene	04/11/22	<0.10	µg/L	10	No
2,3,4,6-Tetrachlorophenol	04/11/22	<0.50	µg/L	100	No
Triallate	04/11/22	<1.0	µg/L	230	No
Trichloroethylene	04/11/22	<0.10	µg/L	5	No
2,4,6-Trichlorophenol	04/11/22	<0.50	µg/L	5	No
Trifluralin	04/11/22	<1.0	µg/L	45	No
Vinyl Chloride	04/11/22	<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

The following tables show the notices of 'adverse' water quality results 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 Issue Resolution
January 31, 2022	Treated	Sodium = 47.8 mg/L	Resamples taken and results were comparable in value to the original sample(s) Reportable every 57 months.	February 4, 2022
January 31, 2022	Distribution	Sodium = 47.4 mg/L	Resamples taken and results were comparable in value to the original sample(s) Reportable every 57 months.	February 4, 2022

Community-Wide Lead Sampling Program Results

Under the Community-Wide Lead Sampling Program, samples were collected from eight points located throughout the Acton Drinking Water System in the current reporting year. None of the samples contained concentrations of lead 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 Fairy 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 Prospect Park 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.

Halton Region

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