



2025

Halton Region Drinking Water Quality Report:
Burlington, Burloak and Oakville Water Treatment
Plants and Halton Region 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 Drinking Water Quality Report summarizes system performance for the period January 1 to December 31 of the reporting year and includes:

- A description of the drinking water treatment process and chemicals used;
- A summary of any major expenses related to the installation, repair or upgrade of system equipment; and
- The results of drinking water quality testing and how they compare to provincial regulatory standards.
- Any adverse test results or other issues, along with the corrective actions taken.

All provincial regulatory monitoring requirements and operational actions applicable to Halton Region's drinking water system were met or surpassed during the current reporting year.

Burlington Water Treatment Plant

Drinking Water System Number: 220001664

The Burlington Water Treatment Plant is located at 3249 Lakeshore Road in Burlington. The facility is a conventional filtration treatment plant with a process that consists of the sand ballasted clarification process (microsand-enhanced clarification), filtration, fluoridation, optional pH adjustment, ozonation (disinfection and taste and odour control) and chlorination (secondary disinfection).

Seasonally, the water is chlorinated at the intake for zebra mussel control. The plant is controlled through a computerized SCADA system that is monitored 24 hours per day, seven days a week. The treated drinking water is pumped into the Halton Region Distribution Subsystem.

The treatment chemicals used in the current reporting year were:

- Chlorine gas (disinfection and control of mussel formation at the intakes);
- Hydrofluosilicic acid (fluoridation);
- Polyaluminum chloride with provision to switch to aluminum sulphate (coagulation);
- Polymer (coagulation aid);
- Waste polymer (waste treatment aid);
- Sodium bisulphite or calcium thiosulphate (dechlorination and ozone quenching);
- Sodium metabisulphite (waste dechlorination); and
- Liquid oxygen (ozone generation).

Burloak Water Treatment Plant

Drinking Water System Number: 260085436

The Burloak Water Treatment Plant is located at 3380 Rebecca Street, Oakville. This facility is a membrane filtration plant with a process that consists of flocculation, ultra-filtration (via membranes), optional ultra-violet irradiation, ozonation (disinfection and taste and odour control), fluoridation, and chlorination (disinfection).

Seasonally, the raw water intake is chlorinated for zebra mussel control. The plant is controlled through a computerized Supervisory Control and Data Acquisition (SCADA) system that is monitored twenty-four hours per day, seven days per week. The treated drinking water is pumped into the Halton Region Distribution Subsystem.

The treatment chemicals used in the current reporting year were:

- Chlorine gas (disinfection and mussel control);
- Hydrofluosilicic acid (fluoridation);
- Polyaluminum chloride (TOC control and coagulation);
- Citric acid (clean membranes);
- Sodium bisulphite (dechlorination and ozone quenching);
- Sodium hypochlorite (maintenance and recovery cleans on membrane system)
- Liquid oxygen (ozone generation); and
- Potassium hydroxide (pH adjustment on waste system).

Oakville Water Treatment Plant

Drinking Water System Number: 220001637

The Oakville Water Treatment Plant is located at 21 Kerr Street in Oakville. This facility is a conventional filtration treatment plant with a process that consists of the sand ballasted clarification process (microsand-enhanced clarification), filtration, fluoridation, ozonation (disinfection and taste and odour control) and chlorination (disinfection).

Seasonally, the water is chlorinated at the intake for zebra mussel control. The plant is controlled through a computerized SCADA system that is monitored twenty-four hours per day, seven days a week. The treated drinking water is pumped into the Halton Region Distribution Subsystem.

The treatment chemicals used in the current reporting year were:

- Chlorine gas (disinfection and mussel control);
- Hydrofluosilicic acid (fluoridation);
- Polyaluminum chloride with provision to switch to aluminum sulphate (coagulation);

- Polymer - solid (coagulation aid);
- Polymer - liquid (filtration and residue management aid);
- Liquid oxygen (ozone generation);
- Provision for hydrogen peroxide addition (enhanced taste and odour control); and
- Calcium thiosulphate (dechlorination and ozone quenching).

Halton Region Distribution Subsystem

Drinking Water System Number: 260085462

The Halton Region Distribution Subsystem is supplied by the Burlington, Oakville and Burloak Water Treatment Plants. The Halton Region Distribution Subsystem serves Burlington, Oakville and parts of Milton and Halton Hills, and includes 16 reservoirs/storage tanks:

- Appleby Reservoir and Booster Station
- Ashgrove (Trafalgar Road) Reservoir and Booster Station
- Bailie Reservoir and Booster Station
- Beaufort Reservoir and Booster Station
- Tyandaga Reservoir and Booster Station
- Brant Reservoir and Booster Station
- Headon Reservoir
- Washburn Reservoir and Booster Station
- Waterdown Reservoir
- Kitchen Reservoir and Booster Station
- McCraney Reservoir
- Eighth Line Glenashton Reservoir and Booster Station
- Moore Reservoir
- Burnhamthorpe Tower
- Third Line Reservoir, and
- Milton Tower.

As the Halton Region Subsystem is distribution only, it does not require a Permit to Take Water. Flows into the distribution subsystem are reported under the three water treatment plants, which provided the treated water in 2025.

What Improvements Are We Making?

During the current reporting year, approximately \$20,772,016 was invested in capital upgrades to the Burlington, Burloak and Oakville Water Treatment Plants, as well as Halton Region outlying stations. These investments were directed towards maintaining system reliability, enhancing treatment processes, and supporting long-term infrastructure sustainability.

Key capital projects completed or underway during the reporting period include:

- David Road Booster Station Improvements
- Neyagawa Pumping Station Improvements
- Eighth Line Booster Station Improvemens
- Burloak Booster Station Improvements
- Bailie Booster Station Improvements
- Headon Reservoir and Rechlorination Facility Capital Project

Approximately \$42,349,019 was spent on watermain projects in Oakville, Burlington, Milton and Halton Hills (lake-based) which are all connected to the Halton Region Distribution Subsystem.

In addition to capital upgrades, Halton Region continues to support the production of high-quality, safe drinking water through water sampling and monitoring above the provincial requirements, ongoing upgrades to the SCADA monitoring and infrastructure management systems, oversight of cross-connection control, an update of the Water Master Plan, 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. In 2025, Halton Region received the Director's Award for the fifth year in a row. This milestone demonstrates our ongoing commitment to the program and providing quality excellent water services to our customers. 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 comprehensive program of water quality testing is performed daily in accordance with the *Safe Drinking Water Act, 2002* and its associated regulations. The following sections summarize the results of this testing and demonstrate compliance with applicable provincial drinking water quality standards.

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 Water Burlington	52	0 – 10	0 – 100	N/A	N/A
Treated Water Burlington	52	0 – Absent	0 – Absent	52	0 - 4
Raw Water Oakville	52	0 – 56	0 - 680	N/A	N/A
Treated Water Oakville	52	0 – Absent	0 – Absent	52	0 - 3
Raw Water Burloak	52	0 - 3	0 – 104	N/A	N/A
Treated Water Burloak	52	0 – Absent	0 – Absent	52	0 - 6
Distribution	3516	0 – Absent	0 - Present	2608	0 - 58

Microbiological standards for treated and distributed water:

E. coli	not detected
Total Coliforms	not detected
HPC	Heterotrophic Plate Counts are conducted on some 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

At all three Water Treatment Plants, continuous analyzers measure and record the results of chlorine residual, turbidity and fluoride residual throughout the treatment process and in the 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 there is an indication that primary inactivation (disinfection) may not have been achieved, if the turbidity of filtered water is >1.0 NTU, if the fluoride residual is >1.5 mg/L or if a free chlorine residual in the distribution system is <0.05 mg/L. In the current reporting year, all validated readings and test results for these parameters were within the ranges required by regulation.

Chemical Testing

Inorganic Parameters

Parameter	Sample Date	Unit of Measure	Burlington Result	Oakville Result	Burloak Result	Standard	Exceedance of Standard
Antimony	04/14/25	mg/L	0.0010	<0.0005	0.0010	0.006	No
Arsenic	04/14/25	mg/L	0.0010	<0.0005	0.0010	0.01	No
Barium	04/14/25	mg/L	0.022	0.022	0.021	1.0	No
Boron	04/14/25	mg/L	0.025	0.024	0.024	5.0	No
Bromate (latest running annual average)	12/08/25	mg/L	0.007	0.005	0.005	0.01 (running annual average)	No
Cadmium	04/14/25	mg/L	<0.0005	<0.0005	<0.0005	0.005	No
Chromium	04/14/25	mg/L	<0.0005	<0.0005	<0.0005	0.05	No
Mercury	04/14/25	mg/L	<0.00006	<0.00006	<0.00006	0.001	No
Selenium	04/14/25	mg/L	<0.0005	<0.0005	<0.0005	0.05	No
Sodium	12/15/25	mg/L	13.6	14.2 38.9* (03/31/25)	14.1 22.7** (04/08/25)	20	Yes – Reported Jan 2023* & August 2024**
Uranium	04/14/25	mg/L	<0.0005	<0.0005	<0.0005	0.02	No
Fluoride	12/15/25	mg/L	0.69	0.63	0.70	1.5	No
Nitrite	11/10/25	mg/L	<0.01	<0.01	<0.01	1.0	No
Nitrate	11/12/2025	mg/L	0.25	0.35	0.23	10.0	No

Organic Parameters

Parameter	Sample Date	Unit of Measure	Burlington Result	Oakville result	Burloak Result	Standard	Exceedance of Standard
Alachlor	04/14/25	µg/L	<0.50	<0.50	<0.50	5	No
Atrazine + N-dealkylated metabolites	04/14/25	µg/L	<1.0	<1.0	<1.0	5	No
Azinphos-methyl	04/14/25	µg/L	<2.0	<2.0	<2.0	20	No
Benzene	04/14/25	µg/L	<0.10	<0.10	<0.10	1	No
Benzo(a)pyrene	04/14/25	µg/L	<0.0050	<0.0050	<0.0050	0.01	No
Bromoxynil	04/14/25	µg/L	<0.50	<0.50	<0.50	5	No
Carbaryl	04/14/25	µg/L	<5.0	<5.0	<5.0	90	No
Carbofuran	04/14/25	µg/L	<5.0	<5.0	<5.0	90	No
Carbon Tetrachloride	04/14/25	µg/L	<0.10	<0.10	<0.10	2	No
Chlorpyrifos	04/14/25	µg/L	<1.0	<1.0	<1.0	90	No
Diazinon	04/14/25	µg/L	<1.0	<1.0	<1.0	20	No
Dicamba	04/14/25	µg/L	<1.0	<1.0	<1.0	120	No
1,2-Dichlorobenzene	04/14/25	µg/L	<0.20	<0.20	<0.20	200	No
1,4-Dichlorobenzene	04/14/25	µg/L	<0.20	<0.20	<0.20	5	No
1,2-Dichloroethane	04/14/25	µg/L	<0.20	<0.20	<0.20	5	No
1,1-Dichloroethylene (vinylidene chloride)	04/14/25	µg/L	<0.10	<0.10	<0.10	14	No
Dichloromethane	04/14/25	µg/L	<0.50	<0.50	<0.50	50	No
2,4-Dichlorophenol	04/14/25	µg/L	<0.25	<0.25	<0.25	900	No
2,4-Dichlorophenoxy acetic acid (2,4-D)	04/14/25	µg/L	<1.0	<1.0	<1.0	100	No
Diclofop-methyl	04/14/25	µg/L	<0.90	<0.90	<0.90	9	No
Dimethoate	04/14/25	µg/L	<2.5	<2.5	<2.5	20	No
Diquat	04/14/25	µg/L	<7.0	<7.0	<7.0	70	No
Diuron	04/14/25	µg/L	<10	<10	<10	150	No
Glyphosate	04/14/25	µg/L	<10	<10	<10	280	No
HAA (latest running annual average)	11/11/25	µg/L	<5.0	<5.0	5.6	80 (running annual average)	No

2-Methyl-4-chlorophenoxyacetic acid	04/14/25	µg/L	<10	<10	<10	100	No
Malathion	04/14/25	µg/L	<5.0	<5.0	<5.0	190	No
Metolachlor	04/14/25	µg/L	<0.50	<0.50	<0.50	50	No
Metribuzin	04/14/25	µg/L	<5.0	<5.0	<5.0	80	No
Monochlorobenzene	04/14/25	µg/L	<0.10	<0.10	<0.10	80	No
Paraquat	04/14/25	µg/L	<1.0	<1.0	<1.0	10	No
Pentachlorophenol	04/14/25	µg/L	<0.50	<0.50	<0.50	60	No
Phorate	04/14/25	µg/L	<0.50	<0.50	<0.50	2	No
Picloram	04/14/25	µg/L	<5.0	<5.0	<5.0	190	No
Polychlorinated Biphenyls(PCB)	04/14/25	µg/L	<0.05	<0.05	<0.05	3	No
Prometryne	04/14/25	µg/L	<0.25	<0.25	<0.25	1	No
Simazine	04/14/25	µg/L	<1.0	<1.0	<1.0	10	No
THM - Distribution (latest running annual average)	11/11/25	µg/L	29.9	29.9	29.9	100 (running annual average)	No
Terbufos	04/14/25	µg/L	<0.50	<0.50	<0.50	1	No
Tetrachloroethylene	04/14/25	µg/L	<0.10	<0.10	<0.10	10	No
2,3,4,6-Tetrachlorophenol	04/14/25	µg/L	<0.50	<0.50	<0.50	100	No
Triallate	04/14/25	µg/L	<1.0	<1.0	<1.0	230	No
Trichloroethylene	04/14/25	µg/L	<0.10	<0.10	<0.10	5	No
2,4,6-Trichlorophenol	04/14/25	µg/L	<0.50	<0.50	<0.50	5	No
Trifluralin	04/14/25	µg/L	<1.0	<1.0	<1.0	45	No
Vinyl Chloride	04/14/25	µg/L	<0.20	<0.20	<0.20	1	No

Additional Testing Required by the Municipal Drinking Water Licence

Parameter	Date Sampled	Burlington Result	Oakville Result	Burloak Result	Exceedance of Specified Concentration
Suspended solids in the treated wastewater at point of discharge (composite or automatic sampler)	Monthly (January to December)	8.8 mg/L (average) Max. per MDWL = 15 mg/L	12.0 mg/L (average) Max. per MDWL = 25 mg/L	15.0 mg/L (average) Max. per MDWL = 15 mg/L	No

'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
May 29, 2025	Distribution (Zone B4)	PA confirmed Total Coliform	Flushed and resampled. Resample results within acceptable limits	May 31, 2025
May 29, 2025	Distribution (Zone B2)	PA confirmed Total Coliform	Flushed and resampled. Resample results within acceptable limits	May 31, 2025
July 8, 2025	Distribution	PA confirmed Total Coliform	Flushed and resampled. Resample results within acceptable limits	July 10, 2025
August 20, 2025	Distribution	PA confirmed Total Coliform	Flushed and sampled. Resample results within acceptable limits	August 22, 2025

September 15, 2025	Distribution	Low chlorine residual in new unoccupied development in Milton	Isolated system at point of entry of subdivision. Will need to be recommissioned	September 15, 2025
September 25, 2025	Distribution	PA confirmed Total Coliform	Flushed and resampled. Resample results within acceptable limits	September 27, 2025
December 3, 2025	Distribution	TC = 1 CFU/100mL from hydrant	Flushed watermains, disinfection restored and sampled	December 6, 2025

Community-Wide Lead Sampling Program Results

Under the Community-Wide Lead Sampling Program, samples were collected from twenty-three sampling points and seven sets of consumer samples located throughout the Halton Region Distribution Subsystem in the current reporting year. None of the sets of samples contained concentrations of lead above the standard of 10 µg/L.

Microcystin Sampling Results

Under the direction of the MECP, Microcystin samples were collected on a weekly basis from June to October, from Oakville, Burlington and Burloak Water Treatment Plants. None of the samples contained Microcystin concentrations at or above the standard of 1.5 µg/L. The results for all raw and treated samples were <0.1 µg/L for Total Microcystin.

Per - and Polyfluoroalkyl Substances (PFAS)

In August 2024, Health Canada introduced a new drinking water objective of 30 ng/L for the sum concentration of 25 PFAS compounds. In 2025, Halton Region proactively tested raw and treated water at all of its water treatment facilities to assess PFAS levels Region-wide. All results were below the federal objective. Halton Region has also established an annual monitoring program to ensure PFAS levels remain low and to continue protecting the safety of the drinking water supply. The Region keeps current on the changing regulatory environment for this emerging contaminant and will be prepared should adjustments to the monitoring strategy or treatment operations be required.

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 available on halton.ca

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

Halton Region

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