2024

Water quality report

Brampton, Mississauga and South Caledon

South Peel Drinking Water System

WTR-0175 24/01

Peel Region

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2024 South Peel water quality report

The Regional Municipality of Peel (Peel) takes pride in ensuring that its residents, businesses, and visitors are provided with clean and safe drinking water.

Peel treats its source water to remove contaminants and regularly tests the water quality to ensure its consumers are provided with high quality drinking water.

Thousands of water samples are collected throughout the year and tested for a variety of parameters. The results of the tests performed in 2024 confirm high quality of drinking water and have been consolidated in this annual report.

Our Commitment

To supply our customers with safe and clean drinking water while maintaining compliance with all applicable legislative requirements and to continually improve our Quality Management System.

If you're having trouble understanding or interpreting the data, or if you have any general feedback about the report, please contact our Water Quality and Compliance Team at 905-791-7800 extension 4685 or by email at PublicWorksCustServ@peelregion.ca.

Executive summary

The South Peel Drinking Water System, owned by Peel Region, has two drinking water treatment plants (WTP), Arthur P Kennedy WTP and Lorne Park WTP, that supply treated water to the South Peel Distribution System. Both treatment plants are class 4 water treatment subsystems under the Ontario Regulation 128/04 of the *Safe Drinking Water Act, 2002.* The South Peel Distribution System is divided into a class 4 subsystem for transmission and pumping and a class 2 distribution subsystem. The water treatment plants and transmission and pumping system are operated by the Ontario Clean Water Agency (OCWA), while the distribution system is operated by Peel Region.

The South Peel Drinking Water System supplies a population of over 1.5 million people in the Cities of Brampton and Mississauga and the southern parts of Caledon, including the community of Bolton. A portion of water produced is also supplied to York Region and Halton Region. The South Peel Drinking Water System is operated to meet daily, seasonal, and other operational demands, including fire fighting efforts. Municipal drinking water systems in Ontario are legislated by the Ministry of the Environment, Conservation and Parks (Ministry) through acts, regulations, and system-specific legal instruments (permits and licences).

2024 Highlights

- The South Peel Drinking Water System produced over 208 billion litres of water
- 99.98% of 4,027 routine laboratory analyzed samples met Ontario Drinking Water Quality Standards and confirm Peel Region's high quality drinking water
- $149,719,900 was invested into major maintenance, repairs, upgrades, and watermain installations

This annual water quality report has been completed to satisfy the requirements under section 11 of Ontario Regulation 170/03 Drinking Water Systems.

The report summarizes various drinking water system performance metrics, such as:

- Water treatment and distribution process overview
- Laboratory test results
- Operational challenges
- Repairs and maintenance on major infrastructure

2024 Summary

Peel Region

Brampton, Caledon, and Mississauga's

1.55 million residents

340,700 service accounts

175,000 businesses

provided with water and wastewater services

South Peel Drinking Water System

There were

140
watermain breaks

14
reportable events

208 billion litres
of water produced by

2
water treatment plants

99.98%
of sample results met Ontario standards

95.58%
Ministry inspection score

$4,949,400
treatment chemicals

1.09 kWh/m³
power for product

$23,062,200
electrical

4,700 km
of **watermain** in the distribution system serving over

1.55 million
people

1. Water management in Peel Region

Peel Region owns the water and wastewater systems that serve its population. This includes water treatment, storage and distribution, and wastewater collection, pumping and treatment.

Peel has two drinking water sources: Lake Ontario and groundwater wells in Caledon. Peel retains services of the Ontario Clean Water Agency (OCWA) under a contract to operate, maintain and manage the lake-based drinking water treatment facilities and its water storage and pumping system. Peel operates the groundwater-based water treatment systems and distribution watermain networks. Similarly, on the wastewater side, OCWA is contracted to operate the large wastewater treatment plants on the shore of Lake Ontario, while Peel operates the wastewater collection system, pumping stations, and the treatment facility in the community of Inglewood.

This water cycle, shown in Figure 1. Water and wastewater cycle, starts when source water is pumped into our water treatment plants and undergoes treatment to meet the Ontario Drinking Water Quality Standards. Treated drinking water is distributed through a network of pipes, storage facilities and pumping stations to homes and businesses. Used water goes down the drains into the wastewater collection system, where a series of pipes collect and convey wastewater to the treatment plants. Although a predominantly gravity-based network, pumping stations are needed to move wastewater from low lying areas. Wastewater undergoes multi-stage treatment to comply with the strict provincial and federal standards before release to the environment. Peel is committed to high standards of treated wastewater quality since it gets discharged directly or indirectly into Lake Ontario, which is a source of drinking water for Peel and many neighbouring municipalities.

Figure 1. Water and wastewater cycle

For more information, refer to the annual water quality reports for our other drinking water systems and our annual wastewater reports.

2. General drinking water system information

2.1 Where does the water come from?

Raw water from Lake Ontario is pumped into two surface water treatment plants, Arthur P. Kennedy Water Treatment Plant (WTP) and Lorne Park WTP, from intake pipes extending as far as two kilometres offshore. The Arthur P. Kennedy and Lorne Park WTPs are owned by Peel Region and operated under contract by the Ontario Clean Water Agency (OCWA). In 2024, these plants produced over 208 billion litres of water. Both plants are classified by the Ministry of the Environment, Conservation and Parks (Ministry) as class 4 water treatment subsystems.

Refer to section 3 for more details on water treatment.

2.2 Distribution system and storage facilities

The South Peel Distribution System is comprised of a class 4 transmission and pumping subsystem made up of water storage facilities, large diameter feedermains and pumping stations for bulk water movement, and a class 2 distribution subsystem made up of a large network of distribution watermains. The distribution system carries water from the treatment plants to the Cities of Brampton and Mississauga and parts of Caledon through a series of pipes that range in size up to 2,400 mm (approximately 8 feet) in diameter. The South Peel Distribution System has 12 reservoirs, 4 elevated tanks, 2 standpipes, 54,637 valves, 28,340 hydrants, 340,672 service connections, and over 4,620 kilometers of watermain. Refer to section 3.6 for more information about the distribution system.

Some of the maintenance activities performed in the South Peel Distribution System include:

- watermain break repairs
- watermain flushing
- hydrant maintenance and repairs
- valve maintenance and repairs
- water service line installations, replacements, and repairs
- customer service calls (water quality or quantity, turn off or on, pressure testing, etc.)

The South Peel Drinking Water System is controlled through a computerized supervisory control and data acquisition (SCADA) system that is monitored 24 hours per day, 7 days a week. Online analyzers continuously monitor the water quality within the treatment facilities and distribution system. Any significant process upset or potential water quality issue generates an alarm and, when applicable, the SCADA system automatically shuts down the treatment process(es) until staff investigate and appropriate action is taken to restore normal operational conditions.

The water treatment and distribution facilities are equipped with stand-by power generators to ensure continuity of water treatment and supply in the event of a power failure.

Figure 2. Arthur P. Kennedy WTP yard piping upgrade project

2.3 Expenditure information

Peel Region staff determine capital spending priorities to eliminate unnecessary expenditures while maintaining infrastructure. Major expenditures are listed in Tables 1 to 3 and presented in Figure 3. Significant expenditures for South Peel Drinking Water System

Table 1. Significant expenses for Arthur P. Kennedy Water Treatment Plant

Activity type	Activity description	Approximate expenditure
Repair	High Lift Pump Electrical Equipment	$47,100
	Generator Building Roof	$34,400
	Diesel Generator Rebuild	$41,500
	Corrosion Abatement	$24,300
	Natural Gas Generator Engine Repair	$57,300
	Chlorine Tank Liner	$72,100
Replacement	Lighting Upgrade	$18,400
	Filter and Drain Actuators	$125,400
	Ozone System Actuators	$138,400
	Ozone Analyzers	$107,000
	Membrane Valve Upgrades	$563,700
	High Lift Electrical Cable Busways	$463,800
	Clean-In-Place Tank Connections	$74,500
	Membrane Flow Meters	$203,000
	High Lift Flow Meters	$485,000
	Chlorine, Temperature, and pH Analyzers	$73,500
	Upgrade SCADA Licence and Replace Uninterrupted power Supply	$2,200
	Low Lift Butterfly Valve	$59,100
	Membrane Filters	$6,428,900
Installation	Settling Tank Slide Gates	$22,000
	High Lift Bypass Lines	$94,100

Table 2. Significant expenses for Lorne Park Water Treatment Plant

Activity type	Activity description	Approximate expenditure
Repair	Low Lift Pump	$20,500
	Floor Painting	$76,800
	Corrosion Abatement	$65,600
	Ultraviolet Discharge Line Link Seal	$121,500
	High Lift Pump	$66,400
Replacement	Chemical Tank and Dosing Skids	$278,600
	Turbidity Analyzers	$364,500
	Upgrade SCADA Licence, Replace Uninterrupted Power Supply	$2,200
	Variable Frequency Drives and Fans	$243,600
	Fluoride Dosing Skid	$204,100
	Flow Meter	$44,300
	Chlorine Analyzers	$120,300
	Emergency Lighting	$66,900
	Membrane Valves	$332,300
	Membrane Valve Solenoids	$207,300
	Isolation Gates	$416,200
	Filter Control Actuator	$64,300
	High Lift Floor Drains	$22,200
Installation	Oil Site Glass and Drains	$131,600
	Router Installation	$12,500

Table 3. Significant expenses for South Peel Distribution System

Activity type	Activity description	Approximate expenditure
Repair	Service boxes	$2,353,500
	Watermain breaks	$2,716,200
	Valves	$500,500
	Hydrants	$1,004,200
	Water services	$3,565,300
	Pumps at Beckett Sproule, Streetsville, Silverthorn and West Brampton	$291,900
	Roof repairs at Hanlan and Herridge	$247,800
	Hanlan 2400 Valves and Gears	$281,400
	High voltage cable Repairs at Hanlan and Herridge Pumping Stations	$492,800
	Pump at Beckett Sproule	$214,000
	Asbestos Abatement	$61,900
	Corrosion Abatement	$14,700
	Ladder Repairs	$118,200
	Valve Chambers	$65,300
	Diesel Fuel System Corrections	$89,200
Installation	Surge Refresher Line at Airport	$60,500
	Fence Around Overflow Pond at Mayfield ET	$36,800
	Watermain Installation	$40,863,800
	SCADA Programming for Pressure Relief Valve Logic	$8,000
Replacements	Replace Uninterrupted Power Supply, Upgrade Program Logic Controllers	$102,400
	Hydrant Replacement	$18,000
	Variable Frequency Drives at Airport and West Brampton	$220,700
	Watermain Replacement	$84,096,100
	Check Valve at West Brampton	$275,300
Removal	Windmill at West Brampton	$24,000

Figure 3. Significant expenditures for South Peel Drinking Water System

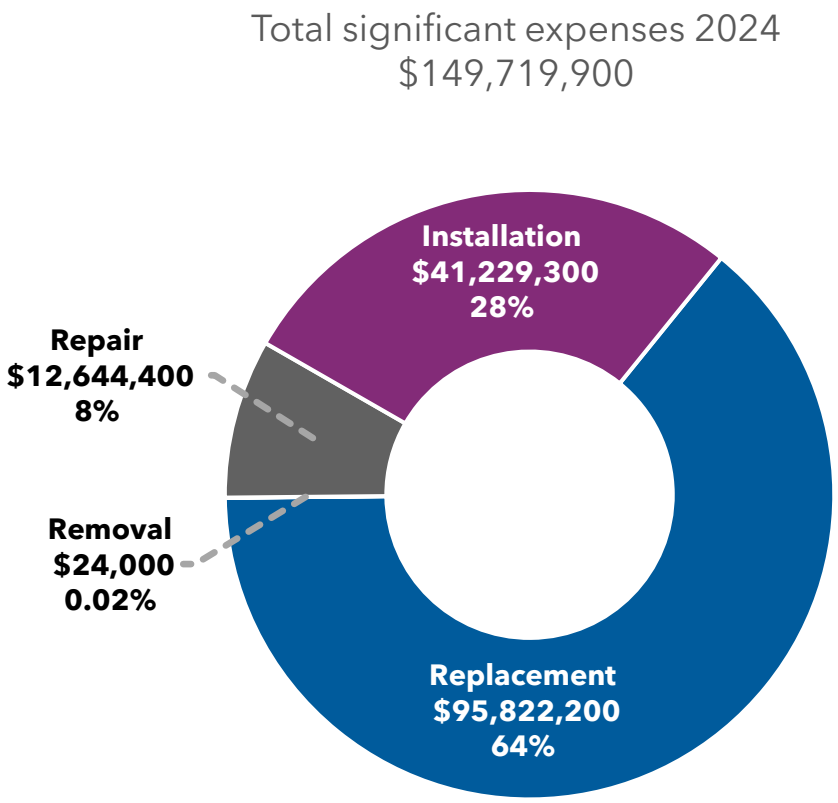


Figure 4. Silverthorn Pumping Station electrical building upgrade

3. How is water treated?

3.1 Arthur P. Kennedy Water Treatment Plant (Water Works number 210000568)

Figure 5. Arthur P. Kennedy Water Treatment Plant

Located on the north shore of Lake Ontario, the Arthur P. Kennedy Water Treatment Plant (WTP) serves primarily the east side of Mississauga and Brampton, as well as parts of Caledon, including the community of Bolton, and provides water to York Region. Arthur P. Kennedy WTP is comprised of three treatment processes: a conventional water treatment plant with ultraviolet (UV) light disinfection and two advanced treatment plants consisting of ozone, biologically active carbon contactors and membrane filtration, one additionally using ultraviolet (UV) light disinfection. The Arthur P. Kennedy WTP can produce up to 1,200 million litres of treated drinking water per day.

Conventional treatment with UV disinfection

This treatment process consists of coagulation, flocculation, sedimentation, filtration, and disinfection by both UV light and chlorine. Refer to section 3.3 for a detailed description.

Ozone, biologically active carbon contactor and membrane filtration (OBM) treatment

The OBM treatment process consists of ozone, biologically active carbon contactor (BACC) treatment and membrane filtration. One of the two OBM processes at Arthur P. Kennedy WTP also has UV reactors. Both are followed by chlorine disinfection. Refer to section 3.4 or a detailed description.

Process diagrams

The treatment processes used at the Arthur P. Kennedy WTP are described in sections 3.3 and 3.4 and a printable visual schematic diagram is available on our additional water and wastewater educational resources webpage.

Table 4. The chemicals used at the Arthur P. Kennedy WTP during the reporting period

Type of chemical	Description of use
Aluminum sulphate (alum)	a coagulant to aid tiny particles in the water to join into larger particles that are easier to settle and/or filter out
Chlorine gas	used to disinfect the water
Citric acid and sulphuric acid [1]	used to clean the membrane filters
Sodium hydroxide	used to neutralize the spent membrane cleaning solution
Hydrofluorosilicic acid	used for optimal fluoridation of water to prevent tooth decay
Liquid oxygen	used to generate ozone gas on-site. Ozone is a strong disinfectant.
Sodium bisulphite	used to quench excess chlorine and ozone
Anionic polymer and cationic polymer	used in the wastewater stream to settle out solids
Sodium hypochlorite	used to control mussel growth in the raw water intake structures and also to clean the membrane filters
Water softener salt	used in the regeneration process of the deionization water system for the membrane cleaning process

The west side of Mississauga and Brampton is serviced primarily by the Lorne Park Water Treatment Plant. Several watermains allow water to transfer from either east to west or west to east. Refer to section 3.6 for information about the South Peel water distribution system.

[1] Sulphuric acid system is in place, but sulphuric acid was not used in 2024

3.2 Lorne Park Water Treatment Plant (Water Works number 210001317)

Figure 6. Lorne Park Water Treatment Plant

The Lorne Park Water Treatment Plant (WTP) supplies water to primarily the west side of Mississauga and Brampton and is located on the north shore of Lake Ontario, largely underground beneath public park land. Lorne Park WTP has two treatment processes: a conventional treatment plant with ultraviolet (UV) light disinfection, and an advanced treatment plant consisting of membrane filtration, UV light, and granular activated carbon contactors. The Lorne Park WTP can produce up to 500 million litres of treated drinking water per day.

Conventional treatment with UV disinfection

This treatment process consists of the following steps: coagulation, flocculation, sedimentation, filtration, and disinfection by both UV light and chlorine. Refer to section 3.3 for a detailed description.

Membrane filtration, ultraviolet light, and granular activated carbon contactor (MUG) treatment

The MUG treatment process consists of membrane filtration, UV light, and granular activated carbon contactor (GACC) treatment, followed by chlorine disinfection. Refer to section 3.5 for a detailed description.

Process diagrams

The treatment processes used at the Lorne Park WTP are described in sections 3.3 and 3.5 and a printable visual schematic diagram is available on our additional water and wastewater educational resources webpage.

Figure 7. The chemicals used at the Lorne Park Water Treatment Plant during the reporting period

Type of chemical	Description of use
Aluminum chlorohydrate (ACH)	a coagulant to aid tiny particles in the water to join into larger particles that are easier to settle and/or filter out
Citric acid and sulphuric acid	used to clean the membrane filters
Sodium hydroxide	used to neutralize the spent membrane cleaning solution
Hydrofluorosilicic acid	used for optimal fluoridation of water to prevent tooth decay
Hydrogen peroxide	used in the UV advanced oxidation process to destroy taste and odour compounds
Polymer	used in the wastewater stream to settle out solids
Sodium bisulphite	used to quench excess chlorine and ozone
Sodium hypochlorite	used to control mussel growth in the raw water intake structures and also to clean the membrane filters

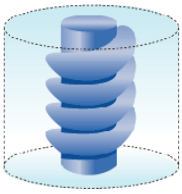
3.3 Conventional water treatment process description

Both Arthur P. Kennedy and Lorne Park WTPs employ conventional treatment processes.

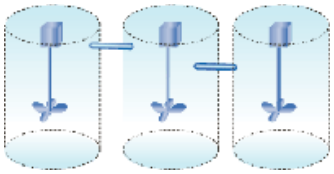
Lake Ontario is the source for the South Peel Drinking Water System. As the lake water enters the intake pipe, it can be chlorinated. The chlorine kills bacteria and discourages mussels from growing inside the intake pipe and obstructing the flow.

As the water enters the treatment facility, it passes through **travelling screens**. The screens prevent items such as fish, sticks, shells, and aquatic plants from entering the treatment facility and damaging equipment.

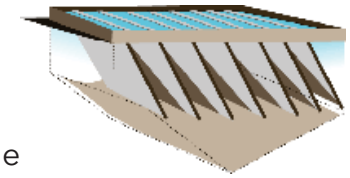
Low lift pumps draw the lake water into the treatment plant.



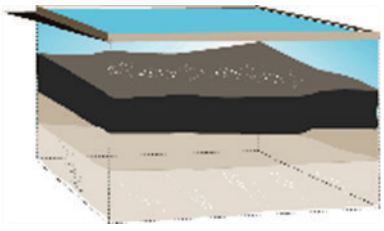
Coagulation assists with the removal of turbidity and suspended matter (particles) from the water. A coagulant (alum or ACH) is added to the water. The **rapid mixer** thoroughly mixes the coagulant with the water to help form sticky particles.



Flocculation is the process of slow mixing that helps the sticky particles collide with each other, forming larger and heavier particles called floc.



In the **sedimentation** process, floc particles are removed from the water by inclined plate settlers (as used at Lorne Park WTP) or by slowing the water down in large tanks (used at Arthur P. Kennedy WTP) to allow particles to settle to the bottom. The settled solids are removed and transferred to the wastewater treatment facility.

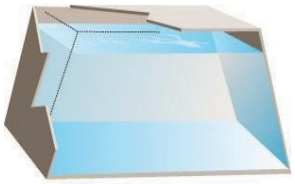


Conventional filtration uses granular media to remove particles and bacteria that were not settled out in the previous step. Water starts at the top of the filter and moves down between the granules by gravity. The water filters through layers of granular activated carbon (used at Lorne Park WTP) or anthracite (used at Arthur P. Kennedy WTP), sand and gravel. This step can reduce the quantity of compounds that can cause unpleasant tastes and odours.

When needed, the filters are **backwashed** (cleaned). Clean water is pumped up and through the filter media, in a reverse flow, lifting and flushing out the floc particles that have accumulated in the filter. The backwash water is treated in the process wastewater treatment facility prior to being discharged to the lake.

Filtered water then passes through **ultraviolet (UV) light** units, which inactivate microorganisms, for disinfection of the water.

The process of **disinfection** destroys or inactivates harmful disease-causing organisms such as *E. coli* and *Giardia*. **Chlorine**, used in the South Peel Drinking Water System, is the most common disinfectant used in water treatment.



Fluoride is added to the finished water to prevent cavities in our teeth. The finished water is then stored in a **reservoir** and distributed to the customers through a series of large pipes, pumping stations and reservoirs.

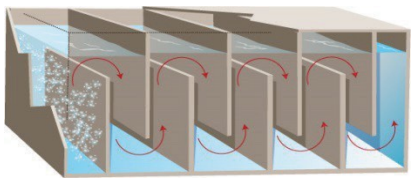
Generators provide auxiliary or standby power for the facility. Standby power ensures we can provide water in case of an emergency such as a massive power failure.

The water flows through watermains to homes and industrial, commercial, and institutional premises (like schools and hospitals). Refer to section 3.6 for information about the South Peel water distribution system.

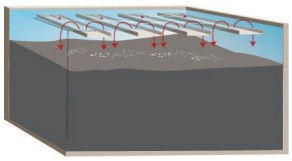
To view or download a water treatment poster, visit Schematics on Peel's water website.

3.4 Ozone, biologically active carbon, and membrane (OBM) water treatment process description (used at Arthur P. Kennedy WTP)

Low lift pumps draw water from Lake Ontario into the treatment plant.

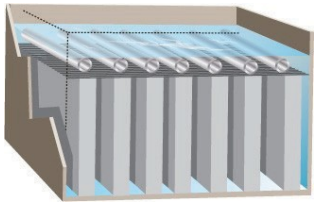


Ozone gas is generated on site from liquid oxygen and electricity. The ozone is bubbled through the water in the **ozone contactors**. Ozone kills bacteria and also helps to break down substances that cause tastes and odours so that they are more easily removed in the next treatment step.

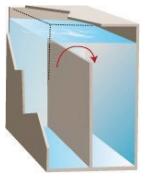


The water then passes into the **biologically active carbon contactors (BACC).** These contactors remove the biodegradable organic matter produced by the activity of the ozone process. The BACCs are very good at adsorbing organic matter from the water and this removal process keeps the water stable after treatment by minimizing re-growth of bacteria in the distribution system.

The Arthur P. Kennedy Water Treatment Plant has two OBM treatment plants. OBM2 has one additional treatment step that OBM1 does not have: **ultraviolet (UV) light**. The specific wavelength of light emitted by these UV units inactivates microorganisms so that they cannot reproduce and cause infections.



In the next treatment process, water passes through the **ultra filtration membrane** system. These are specially designed water filters with very small pores that the water is pulled through. The membrane filters are so effective that they can remove microorganisms and produce water with very little turbidity.

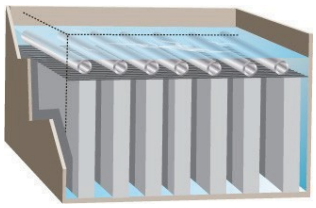


Filtered water is directed to the weir box, which stores water and is also the location where chlorine and fluoride are added.

Chlorine and fluoride are added to the treated water from both the conventional treatment and the OBM treatment processes as it flows by gravity into the water **storage reservoir.** The water must remain in the storage reservoir until adequate disinfection has occurred. Water leaves the reservoir by way of **high lift pumps** and enters the distribution system.

3.5 Membrane, ultraviolet light, and granular activated carbon (MUG) water treatment process description (used at Lorne Park WTP)

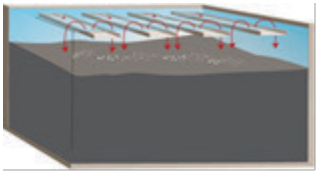
Low lift pumps draw raw water from Lake Ontario into the treatment plant.



Raw water is pulled through **ultra filtration membranes** with pores small enough to filter out particles and many microorganisms.

Filtered water then passes through **ultraviolet (UV) light** units, which inactivate microorganisms, for disinfection of the water. These special UV units can also be used for a process called **advanced oxidation**, which uses hydrogen peroxide, added upstream of the UV units, and a higher intensity of UV light to oxidize (break apart) substances that cause unpleasant tastes and odours. The advanced oxidation process is used seasonally, when taste and odour problems are at their peak due to lake conditions.

The water then flows into **granular activated carbon contactors (GACC)**, where it moves by gravity down through a matrix of carbon granules. The GACCs eliminate any residual hydrogen peroxide remaining from the advanced oxidation process.



Chlorine and fluoride are added to the water on its way into the on-site **storage reservoir**, from which it is pumped into the distribution system.

3.6 South Peel Water Distribution System (Water Works number 260094120)

The drinking water in the South Peel Distribution System is re-chlorinated using **sodium hypochlorite (liquid chlorine)** at the North Brampton Pumping Station, Airport Road Pumping Station, and Bolton Rechlorination Facility and **chlorine gas** at the Beckett Sproule Pumping Station and Meadowvale North Pumping Station. Drinking water being directed to York Region is chloraminated at the Airport Road Pumping Station by adding **sodium hypochlorite** and **aqua ammonia** at a specific ratio.

Figure 8. Herridge Reservoir and Pumping Station

Water from the South Peel Distribution System is also supplied to Halton Region's Steeles Avenue Small Drinking Water System, a non-residential system classified under Ontario Regulation 319/08 of the *Health Protection and Promotion Act*. The service connection point is located at Winston Churchill Boulevard and Steeles Avenue intersection in the Town of Halton Hills.

Peel staff monitor quality of water through regular sampling and testing at locations representative of the water directed to Halton's Steeles Avenue system to ensure water safety across the municipal boundary.

4. Peel Region and drinking water compliance in Ontario

Drinking water quality in Peel is regulated by the Ontario government through the Ministry of the Environment, Conservation and Parks (Ministry). Ontario drinking water legislation sets requirements for municipal water system owners and operating authorities with regards to operation and management, level of treatment, sampling and testing, training and certification of staff, and water quality notification.

4.1 Annual water reports

To comply with the Drinking Water Systems Regulation (Ontario Regulation 170/03) under the *Safe Drinking Water Act, 2002*, every year, Peel Region prepares water quality reports that provide information on quality of water supplied and a summary report covering the operation and overall performance of the drinking water systems.

The summary report under Schedule 22 of Ontario Regulation 170/03 includes a statement of compliance with the *Safe Drinking Water Act, 2002*, the regulations, and the terms and conditions of all the approvals for Peel Region's drinking water systems. It also includes a summary of the quantities and flow rates of water supplied to assess the capability to meet the existing and planned uses of the water systems. This report is made available to Regional Council by March 31 of each year.

The water quality reports, and the summary report are made available to the public to ensure that our consumers are kept informed. Each year, the reports are posted on Peel Region's website and their electronic or paper copies may be obtained upon request by emailing Peel Region or calling at 905-791-7800 extension 4685.

Additionally, a notice is placed in the local newspapers to inform the public about the availability of Peel's water quality reports.

4.2 Sampling and testing

In compliance with legislation, quality of drinking water must be monitored to ensure it meets provincial standards.

Peel regularly samples and tests raw, treated and distribution system water for a number of microbiological, chemical, physical, and radiological parameters. Peel

has an extensive water sampling and monitoring program extending beyond the minimum regulatory requirements. This helps staff better understand the quality of source water, to ensure effectiveness of treatment processes, and to diligently monitor and protect the drinking water supply. Sampling and testing are done by trained and qualified operators, who collect water samples from representative sampling sites throughout Peel that accurately reflect the overall quality of the water throughout the entire system, and immediately test them for first indicators of water safety. As part of Peel's water quality monitoring programs, samples are collected for laboratory analysis for a vast number of health-related, operational, and aesthetic parameters.

The Ministry requires that all drinking water testing laboratories be accredited by the Standards Council of Canada (SCC) based on proficiency evaluation conducted by the Canadian Association for Laboratory Accreditation as well as licensed by the Ministry for all drinking water tests performed. All laboratories used by Peel are accredited by the SCC, licensed by the Ministry, and adhere to strict drinking water sample collection, handling, and transport protocols as well as analytical methods and reporting procedures.

4.3 Certified water operators

Persons who operate Peel Region's water systems hold appropriate water treatment, water distribution and/or water distribution and supply certification, as required by the Ontario drinking water legislation. The Ministry mandated training and certification program ensures that all operators are certified to industry recognized standards.

Peel Region has established a continuing education program for all staff responsible for operating drinking water systems and whose role has an impact on drinking water quality. The program features in-house training that addresses Peel's specific needs with focus on the operation and management of Peel-owned drinking water systems and that offers the benefits of increased staff engagement through a custom designed training toolkit tailored to our business directives. This helps the operators to gain knowledge of the latest industry practices, technologies, and advanced processes and to effectively maintain system water quality and quantity.

4.4 Water quality notification

In compliance with the regulatory requirements, Peel reports every event of adverse water quality to the Medical Officer of Health and the Ministry and initiates timely corrective action to address and resolve the issue and implement control measures to prevent its reoccurrence. Peel has established a notification protocol for reporting of adverse water quality events and makes these reports and data publicly available in the water quality reports.

During the period of January 1 through December 31, 2024, the events that were reported to the Medical Officer of Health and the Ministry for the South Peel Drinking Water System are summarized in Table 5.

Table 5. Summary of 2024 reportable [2] events in the South Peel Distribution System (Waterworks number 260094120)

AWQI [3] number	Event date(s)	Event location	Parameter	Result	Unit of measure	Corrective action
164627	Mar 13	Hydrant at 2301 Burnhamthorpe Rd West, Mississauga	Total coliform	6	CFU/100 mL[4]	Flushed system and re-sampled. Re-samples met microbiological standards.
164654	Mar 18	Hydrant at Pedaline Dr. South of Nahani Way, Mississauga	Total coliform	5	CFU/100 mL[4]	Flushed system and re-sampled. Re-samples met microbiological standards.
164746	Apr 4	Snelgrove Elevated Tank, Brampton	Vent cover found missing	N/A	N/A	Full inspection to confirm potable conditions. Samples collected met microbiological standards.
165032/ 165038	May 23/25	Sampling station at 25 Adamsville Rd, Brampton	Total coliform and *E. coli*	120 / 8 and 120 / 8	CFU/100 mL[4]	Flushed system and re-sampled. Re-samples met microbiological standards.

[2] Reportable = Reportable to the Medical Officer of Health and Ministry under O. Reg. 170/03
[3] AWQI = Adverse water quality incident
[4] CFU/100mL = Colony forming units per 100 millilitres

AWQI [3] number	Event date(s)	Event location	Parameter	Result	Unit of measure	Corrective action
165526	Jun 24	Hyacinthe Blvd and Mississauga Valley Blvd, Mississauga	Watermain break, category 2, sewage contamination no water directed to users	N/A	N/A	Full disinfection to restore potable conditions. Samples collected met microbiological standards.
165317	Jun 25	Hydrant at Arnold Circle, Brampton	Free chlorine	0.00	mg/L [5]	Flushed system to restore to potable conditions. Samples collected met microbiological standards.
165526	Jul 9	Sampling station 320 at 2510 Jarvis St, Mississauga	Total coliform	8	CFU/100 mL[4]	Flushed system and re-sampled. Re-samples met microbiological standards.
165563	Jul 17	Sampling station at 3259 Golden Orchard Dr., Mississauga	Total coliform	35	CFU/100 mL[4]	Flushed system and re-sampled. Re-samples met microbiological standards.
165855	Jul 29	Hydrant 2018127 at Woodeden Dr., Mississauga	Total coliform	50	CFU/100 mL[4]	Flushed system and re-sampled. Re-samples met microbiological standards.
165559	Oct 1	Sampling Station at 13 Pannahill Dr., Brampton	Total coliform	30	CFU/100 mL[4]	Flushed system and re-sampled. Re-samples met microbiological standards.
166634	Oct 9	Sampling Station at 1958 Burhamthorpe Rd. E., Mississauga	Total coliform	1	CFU/100 mL[4]	Flushed system and re-sampled. Re- samples met microbiological standards

[5] mg/L = milligrams per litre. This is a measure of concentration of a substance in water, also called parts per million (ppm)

AWQI [3] number	Event date(s)	Event location	Parameter	Result	Unit of measure	Corrective action
167060	Dec 11	Hydrant at South Sheridan Way and Kiran Crt., Mississauga	Free chlorine	0.00	mg/L [5]	Flushed system to restore to potable conditions. Samples collected met microbiological standards.

No events of adverse water quality were reported at the Arthur P. Kennedy WTP and Lorne Park WTP in 2024.

4.5 Water system inspections

Every year, Peel Region's drinking water systems undergo the Ministry inspection program to confirm compliance with provincial drinking water legislation. The Ministry's annual inspection program is an important aspect of drinking water systems oversight. Through these inspections, the Ministry ensures that Peel meets the sampling, testing and disinfection requirements, treatment standards, terms and conditions of all Ministry approvals and staff certification and training requirements as stated in the Ontario Regulations 170/03, 169/03, and 128/04 under the *Safe Drinking Water Act, 2002*. Ministry inspections also include checks of control measures in place to maintain protection of sources of drinking water under the *Ontario Water Resources Act* and *Clean Water Act, 2006*.

Ministry inspections provide Peel with an overview of how well our drinking water systems are doing and how well we meet the province's stringent regulations. They also provide an opportunity to review our best management practices and, if necessary, implement new practices to continually improve the operation and management of Peel's drinking water systems.

For an overview of all the work the Ministry is doing to protect drinking water in Ontario, please visit the Ministry website for the Minister's annual report on drinking water 2024 and the 2023-2024 Chief Drinking Water Inspector annual report.

4.6 Peel Region Water By-law

Water By-law 6-2017 in effect since April 1, 2017, manages and enforces the use of Peel's municipal drinking water systems. It aligns with drinking water legislation such as the Safe Drinking *Water Act, 2002* and Peel's operational management practices by ensuring that the uses of the water system do not adversely impact the operation, repair, maintenance, supply, or quality of the water system. The Water By-law also sets fixed water billing rates and charges. *Water Act, 2002* and Peel's operational management practices by ensuring that the uses of the water system do not adversely impact the operation, repair, maintenance, supply, or quality of the water system. The Water By-law also sets fixed water billing rates and charges.

Here is a high-level overview of activities governed by the Water By-law:

- Installation and maintenance of water services
- Use of fire hydrants and control valves
- Installation and maintenance of water meters
- Prohibits unauthorized use of and tampering with the drinking water system
- Access to property for inspection and maintenance of Peel's assets
- Prohibits obstruction of fire hydrants and water meters
- Protection of the distribution system integrity

Who is affected by this By-law?

This By-law applies to all water customers, including builders, developers, landscapers, and contractors who are involved with Peel in the construction and maintenance and whose work directly impacts the integrity of our drinking water systems and quality of our drinking water.

How does this By-law affect me?

Since the passing of this By-law, it is "business as usual" for most customers. Those who are in violation of the provisions of the By-law (e.g. obstruction or unauthorized use of a fire hydrant) are expected to take corrective action as soon as reasonably possible or be subjected to monetary penalty.

5. How well did we do?

5.1 Operation

Ensuring water system safety

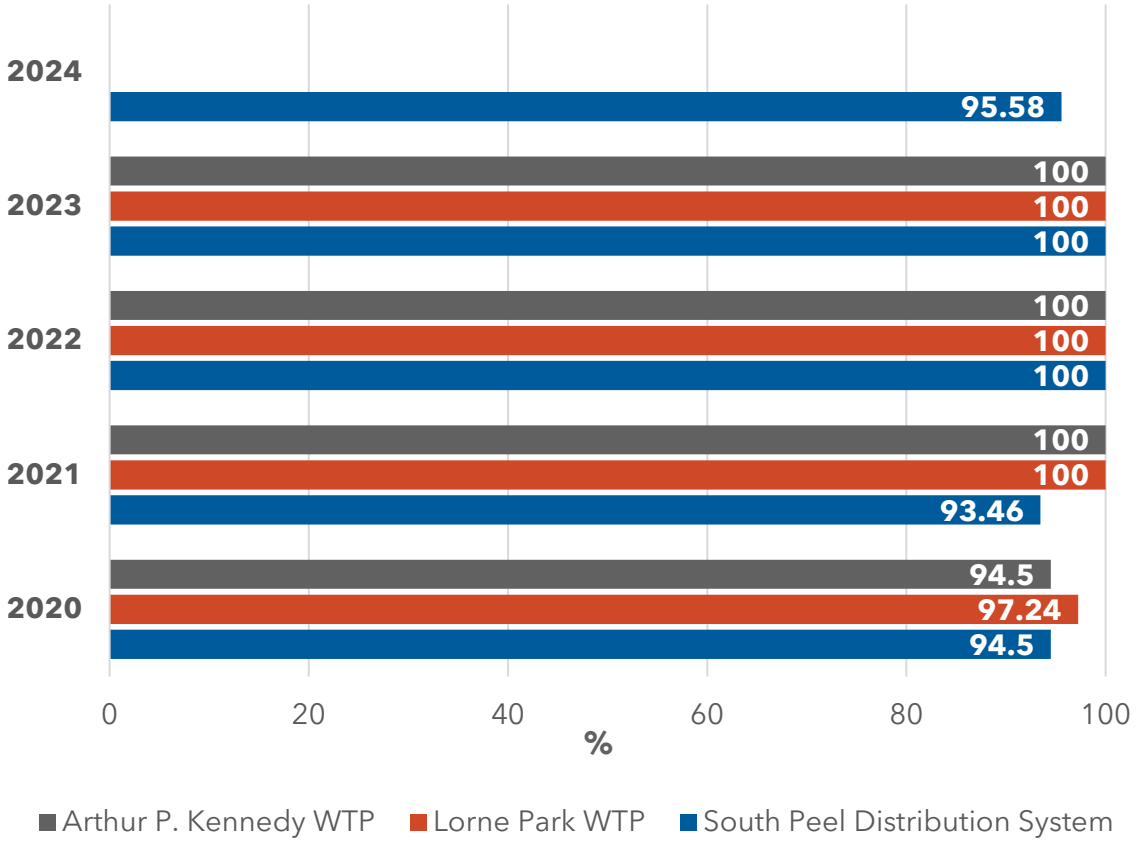
To protect the health of the public and to ensure clean and safe drinking water, the Ministry of the Environment, Conservation and Parks (Ministry) enforces the Ontario Drinking Water Quality Standards. These standards are set to ensure the water is free of disease-causing organisms and harmful chemicals. The province reviews the standards from time to time based on new science and to keep provincial criteria aligned, where reasonable, with the Canadian Drinking Water Quality Guidelines.

In 2024, Peel monitored water quality by undertaking tens of thousands of samples and tests to ensure a safe and clean water supply. Appendix A of this report provides a summary of the water quality test results.

Ministry inspections

The Ministry performs annual inspections on all municipal drinking water systems, comprised of physical inspection of facilities and review of information and data for the inspection period. Scope of inspection includes review of documentation, staff competency, process operation and monitoring, water quality monitoring and corrective actions in response to events. Inspection findings are assessed for compliance with legislation, upon which, the Ministry issues the system an inspection score card. The South Peel Drinking Water System demonstrates overall high performance, as presented in Figure 9.

Figure 9. South Peel Drinking Water System Ministry inspection score graph



Notes:

- 2024 Inspections of the Arthur P. Kennedy and Lorne Park Water Treatment Plants were still underway at the time of this report being issued.
- The South Peel Distribution System inspection in 2024 scored a 95.58% and the systems overall performance has been excellent the past five inspection years, as presented in Figure 9.
- Inspection scores below 100% do not reflect unsafe drinking water. They typically reflect inspection findings that were largely administrative in nature and did not compromise the quality of the water supply.

For more information on the Ministry inspection methodology, please visit the Ministry's website.

5.2 Customer service quality and efficiency

In 2024, Peel staff attempted to respond to and satisfactorily address all customer enquiries in a timely manner. Records of calls received about water quality and supply, and actions taken, are logged in Peel's database. In 2024, Peel received 1,298 water quality enquiries, which represents approximately 0.01% of Peel's population or 0.4% of the total number of water service accounts, including residential, industrial, commercial and institutional (ICI) customers. Figure 10 and Figure 11 illustrate the comparison of Peel population and total water service connections to the number of customer enquiries over the past five years.

Figure 10. Population served and number of customer enquiries

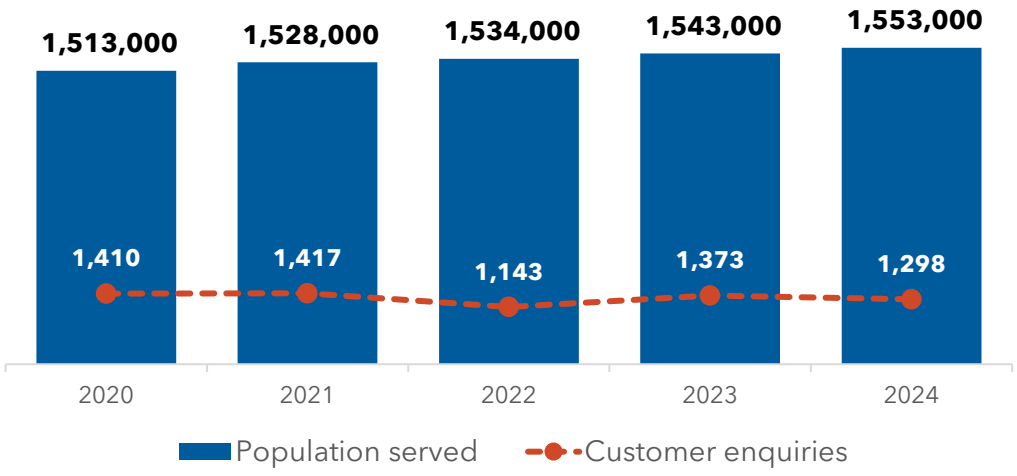
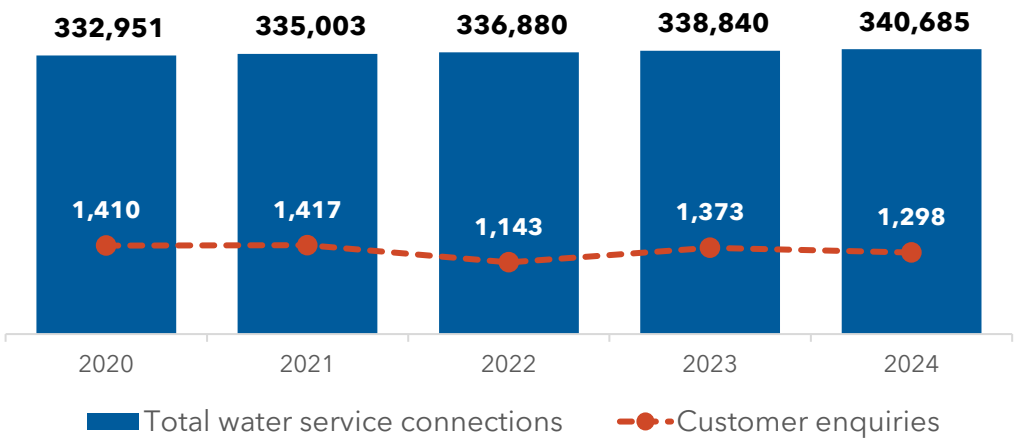


Figure 11. Total water service connections (residential and ICI) and number of customer enquiries

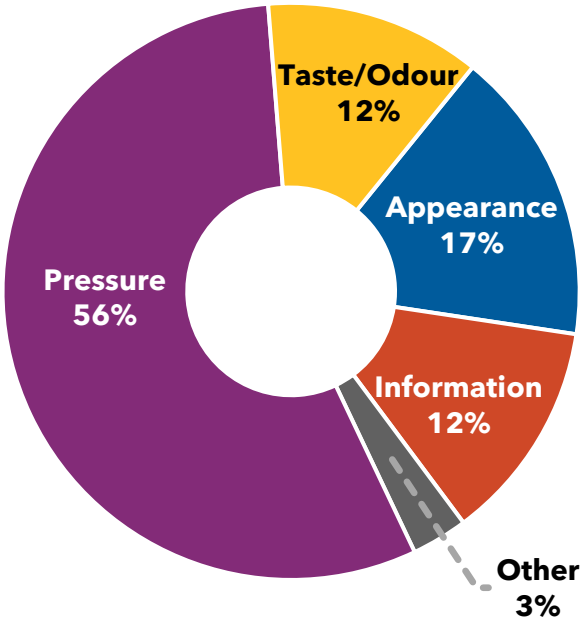


The numerical breakdown of the numerical data presented in Figure 10 and Figure 11 is presented in Table 6 below.

Table 6. Number of customer enquiries compared to population served and residential and ICI water service connections

Year	Population served	Number of customer enquiries	Number of residential service connections	Number of ICI service connections
2020	1,513,000	1,410	317,797	15,154
2021	1,528,000	1,417	319,605	15,402
2022	1,534,000	1,143	321,435	15,445
2023	1,543,000	1,373	323,239	15,601
2024	1,553,000	1,298	324,921	15,764

Figure 12. Water quality and supply customer enquiries by category



In addition to customer support related to water quality, staff also actively respond to questions or concerns about construction of watermains and water facilities. In 2024, close to 900 enquiries were received related to water system capital projects in Peel Region. Staff promote sign-up for electronic notices regarding ongoing and upcoming work.

6. Drinking water programs

6.1 Municipal Drinking Water Licensing Program

Under the Safe Drinking Water Act, 2002, all municipal residential drinking water system owners in Ontario are required to operate their systems under a valid Municipal Drinking Water Licence (Licence). To be issued a Licence, system owners must have the following components in place:

1. **Drinking Water Works Permit (DWWP)**: grants authority to establish or modify a drinking water system.
2. **Permit to Take Water (PTTW)**: issued under the Ontario Water Resources Act, specifies the approved rate of water pumped from surface water or groundwater source for municipal supply.
3. **Accepted Operational Plan**: documents the Quality Management System (QMS) for Peel's drinking water systems, in accordance with the Ontario Drinking Water Quality Management Standard (DWQMS). The plan includes Peel's commitment to service delivery, and outlines procedures, responsibilities, and evaluation criteria to ensure quality water supply.
4. **Accredited Operating Authority (Third-Party Audit of the QMS)**: drinking water system must be operated by an accredited operating authority. Peel's drinking water systems go through third-party annual surveillance audits and re-accreditation audit every third year to verify conformance to the requirements of the DWQMS.
5. **Financial Plan**: prepare a long-term financial strategy to ensure sustainability. Peel's Financial Plan forecasts a period of six years, and it is updated and approved every five years.

Peel's drinking water systems have maintained their accreditation to the Ontario Drinking Water Quality Management Standard and have been operating according to Ministry approvals. An updated Council-approved Financial Plan Number 009-301A was submitted to the Ministry of Municipal Affairs and Housing by May 7, 2024, as required and Peel's Licences were successfully renewed in November 2024 for another 5-year term.

To ensure the Licence and DWWP remain current and accurately reflect the drinking water systems between renewals, amendments and reissues are made periodically to capture system alterations and/or changes to system-specific conditions. For more information on the Region's Municipal Drinking Water Licensing Program, please visit the following link: Drinking water - Managing Peel's drinking water quality.

6.2 Source water protection

Following the water tragedy that occurred in Walkerton, Ontario in May 2000, a public inquiry, led by Justice Dennis O'Connor, made 121 recommendations to ensure clean and safe municipal drinking water in Ontario, including bringing new laws and regulations, such as the Safe Drinking Water Act, 2002 and the Clean Water Act, 2006.

The *Clean Water Act, 2006* and associated regulations aim to protect existing and future sources of drinking water from contamination or depletion. Source water protection is intended to be a shared responsibility of all stakeholders and is a key element of the province's safety net and multi-barrier approach to protect municipal drinking water from source to tap.

Peel Region protects its drinking water sources by implementing the source protection plans. Visit Peel's website to view Peel's source protection plans and learn more about our source water protection program.

In 2024, Peel Region advanced its source water protection initiatives. These include follow-up inspections to verify the effectiveness of site-specific Risk Management Plans, a comprehensive review of significant drinking water threats to align with evolving regulatory changes, targeting completion by mid 2025. These efforts reinforce our commitment to safeguarding drinking water sources in Peel.

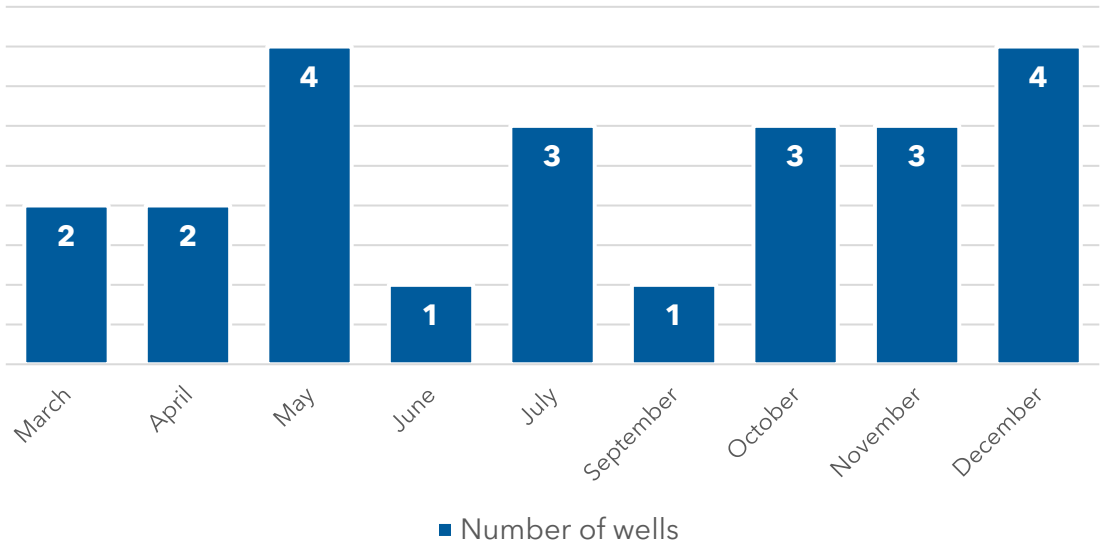
Peel Region continued working with businesses and farmers to verify threat activities at their sites, fostering compliance and environmental stewardship. Early in the year, Peel launched an internal database management system to streamline tracking of threat verifications, inspections, and development application reviews. Peel plans to host refresher learning sessions in 2025 with partner groups for continued success in meeting the source water protection mandate.

6.3 Private Well Abandonment Program

Peel administers a Private Well Abandonment Program for decommissioning of old, unused private wells within Peel Region. The Program intends to gradually eliminate potential pathways of groundwater contamination in areas where groundwater is a source for drinking water.

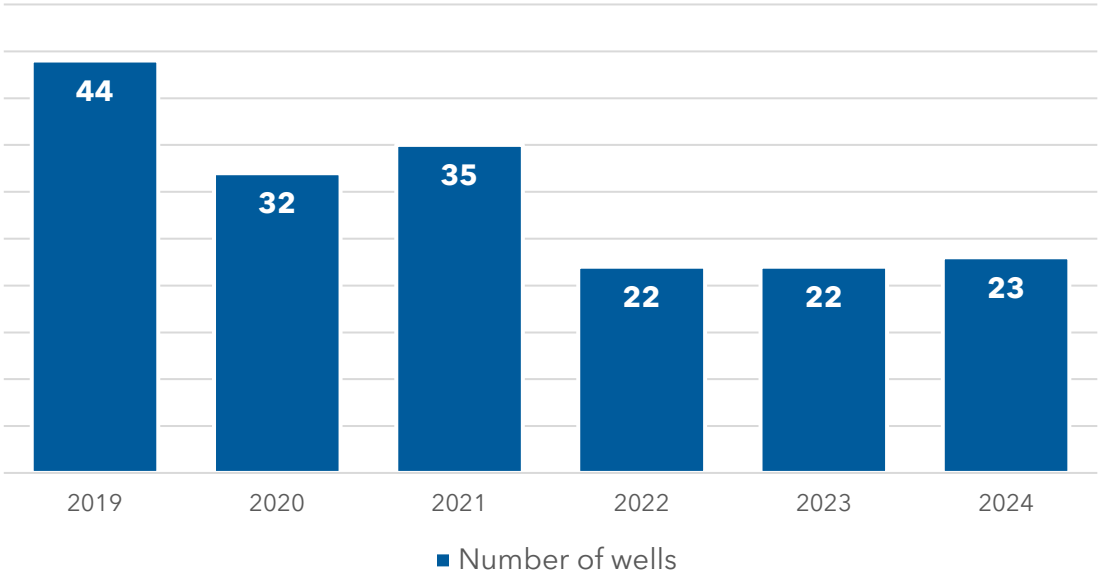
A total of 23 private wells were decommissioned under this program throughout 2024 (see Figure 13). Program criteria, seasonal conditions and funding determine scheduling and completion of work. Two requests for well decommissioning were not carried through in 2024 due to resident withdrawal from the program or construction implications preventing approval. Five requests were waitlisted and pending decommissioning in 2025.

Figure 13. Number of wells decommissioned in 2024



Successes of the program over the last 6 years, with total number of wells decommissioned, are presented in Figure 14.

Figure 14. Historical number of wells decommissioned



The program is advertised using various methods to promote program participation. This includes mobile signs in Town of Caledon, and announcements in local newspapers and through social media platforms.

Visit Peel's Private Well Abandonment Program website for more information or e-mail us directly at wellenquiries@peelregion.ca.

6.4 Watermain renewal program

Peel's overall infrastructure is aging, requiring more investment in preventive and planned maintenance. In response, Peel has established a comprehensive asset management program, which includes watermain assessment, rehabilitation, and renewal. The program is an ongoing plan of upgrading watermains to ensure long term integrity and sustainability. The program involves repair or replacement of existing water pipes and water services to improve water flow and quality, and upsize, if required, to meet future planning needs; all to provide a higher level of service to our consumers.

Peel determines priority of watermains replacement based on the following factors:

- Watermain age
- Water quality trend and customer feedback
- Watermain size and material type

- Watermain breaks and leak history
- Hydraulic performance of watermain
- Planned municipal and city projects related to water, wastewater and road assets
- Cost of replacement
- Operational demands

The majority of the watermain replacement projects are undertaken in partnership and coordination with road re-construction and sanitary sewer renewal projects for improved cost effectiveness and minimized public inconvenience. Using these criteria, Peel Region plans the watermain renewal program in a financially responsible manner.

Every year, the watermain renewal program is allocated funding to replace a significant length of watermain with nearly $41.5 million being allocated to this in 2024.

In 2024, 26 km of watermain was replaced throughout the South Peel Distribution System.

6.5 Community Lead Testing Program

Established in 2007, Peel's Community Lead Testing Program fulfills the legislative requirements under Schedule 15.1 of Ontario Regulation 170/03. The scope of the program includes sampling and testing of drinking water for lead from private residential and non-residential buildings s as well as municipal water hydrants or sampling stations.

The Community Lead Testing Program is to be conducted semi-annually, with a winter and a summer sampling round each year. Peel staff recruit volunteers of homes and businesses serviced by the South Peel Drinking Water System to participate in the program. Sampling appointments are booked with volunteers over the phone. Upon completion of sample analysis at an accredited and licensed laboratory, the test results are sent to their respective participants, and assistance is provided in interpretation of the data.

Lead testing results for 2024, summarized in Appendix A, show that Peel's water supply is consistently below Ontario's lead standard of 0.01 mg/L (10 micrograms per litre). On the rare occasion that a higher lead concentration is found, Peel investigates to determine the type of pipe material and to find the source of elevated lead result. If the pipe is found to be lead, the municipal portion is

immediately replaced. Property owners are advised of the appropriate steps they can take to reduce exposure, such as implementing a daily flushing at the tap regimen, use of water filter or, most effectively, replacing the privately-owned service pipe.

Risk of exposure to lead ranking from highest to lowest includes:

- Dwellings built prior to 1960
- Dwellings built between 1960 to 1986 (lead piping banned 1975 and solder banned in 1986)
- Dwellings built after 1986 that may have lead-bearing fixtures

For more information, refer to Peel's Community Lead Testing Program website, or contact us at 905--791--7800, extension 4685.

6.6 Watermain flushing program

Peel Region's watermain flushing program is another element of the multi-barrier approach to ensuring safe drinking water. The primary objective of the watermain flushing program is to maintain adequate chlorine residuals in the water distribution system. Flushing is also conducted to improve water aesthetics by removing any mineral deposits that may have settled on the bottom of the watermains over time. Ontario Regulation 170/03 and Procedure for Disinfection of Drinking Water in Ontario stipulate the acceptable range of chlorine residual in the distribution system.

Certified water operators measure and record the chlorine residual at each flush.

Flushing is conducted at locations where a low water demand may occur, such as dead- ends and new (partly occupied) subdivisions and at greater frequency in areas where the water demand is lower. Flushing is also conducted following water system repairs and other situations where a check of chlorine residual is warranted.

6.7 Hydrant inspection program

Peel Region's hydrant inspection program fulfills several purposes. An annual inspection is necessary to confirm the functionality of each fire hydrant and hydrant branch valve to ensure they are operable for fire suppression needs. Fire hydrant components that need repair are identified during the inspection. Deficiencies that affect the hydrant's operability are handled as a priority due to its primary function of fire protection.

Peel Region's hydrants are installed with hydrant flow identifiers on the side ports. These markers are colour-coded based on the recommended colour coding scheme by the National Fire Prevention Association and designed to let the fire department know what the available flow is at the hydrant closest to the fire. The markers are reflective, making them highly visible at night.

If you notice a damaged fire hydrant, please report it to Peel Region at 905-791-7800.

6.8 Drinking water sampling station program

Peel Region has drinking water sampling stations throughout Caledon, Mississauga and Brampton for drinking water quality monitoring. Sampling stations are located at strategically selected points within the distribution system to provide water sampling locations that represent the water supplied to the consumers. The use of sampling stations has reduced the impact on customers by decreasing the need to enter homes or business facilities where hours of operation can limit access. In addition to unlimited access, Water Operations also benefit by having added control over important sampling conditions such as sample site cleanliness and security.

6.9 Maintenance program and activities

Planned maintenance can be either predictive or preventive. Under predictive maintenance, early warning signs of potential equipment failure are used to identify

and correct problems to reduce that risk. Preventive maintenance consists of scheduled maintenance activities performed on a regular basis to maintain assets in good working order.

Unplanned maintenance is either corrective or emergency driven and can draw heavily on the available resources and potentially affect drinking water quality. Corrective maintenance consists of scheduled repairs to problems identified under planned maintenance. Emergency maintenance includes repairs performed in response to critical equipment failure where immediate action is required.

At Peel Region, a Planned Maintenance program has been implemented to reduce breakdowns and the need for corrective or emergency maintenance thereby minimizing system costs. The program improves reliability by minimizing the time equipment is out of service, increases the useful life of equipment thereby avoiding costly premature replacement, improves personnel utilization, and can prevent potential non-compliance and adverse drinking water quality.

Many major maintenance activities were carried out in the South Peel Drinking Water System in 2024, as listed in section 2.3.

6.10 Continual improvement process

Through implementation of a continual improvement process (CIP), Peel strives to enhance the operation of its drinking water systems by identifying best practices and opportunities. Tools such as root cause analysis, after action reviews and risk assessments are strategically utilized after notable events occur to identify both successes and gaps, share the outcomes with the stakeholders, and implement changes to reduce risk. CIP helps ensure Peel maintains compliance with applicable drinking water regulations as well as conformance to the Ontario Drinking Water Quality Management Standard through the application of inventive solutions and employment of new technologies. CIP also encourages integration of ideas, helps facilitate adaptation to change, promotes transparency, increases staff engagement and communication as well as improves reliability of services.

Some of Peel's CIP highlights for 2024 include:

- Digital transformation with use of electronic forms for data entry on specific activities. The benefits include improved legibility, eliminated risk of lost papers, reduced environmental impact, and real-time results sharing.

- Implementation of software that will help Peel manage compliance, improve performance, sustainability and quality, and enhance processes to achieve quality objectives with minimal manual effort.
- Update on the water quality model with field work and associated water quality testing completed for both the groundwater and lake-based system. Data analysis, reports and water quality model are to be finalized in 2025.
- Peel is working towards an AI-powered conversational interface for navigating our water and wastewater standard operational procedures and relevant documentation. This tool is currently in the development phase and testing will continue into 2025.
- Continued collaboration with Durham, Halton and Toronto to create a web-based decision support system (DSS) for effective response and management of drinking water intakes during spill events. The DSS can gather real-time weather data and lake conditions to support hydrodynamic and water quality forecasting. It also allows for the input of specific situational details to enable rapid prediction of spill impacts.

6.11 Monitoring equipment calibration and maintenance

Calibration, verification, and maintenance of field instruments and monitoring equipment is done by certified operators, or third-party specialists, at a frequency specified by the regulatory requirements and equipment manufacturer manuals. Each piece of equipment or instrument has a unique asset identification number by which calibrations and verifications are tracked. To further improve data quality and verification frequency, Peel has implemented a digital verification application for hand-held chlorine analyzers that includes automated reminders to staff and escalates notification of overdue verifications. Monitoring equipment that are considered "critical", as they relate to regulated parameters and pose risk of non-compliance when not managed properly, include:

- Chlorine analyzers (primary and secondary disinfection monitoring)
- pH and temperature meters (primary disinfection effectiveness)
- Turbidity analyzers (primary disinfection effectiveness)
- Flow meters (raw water pumping and treated water limits)
- UV monitoring parameters (primary disinfection monitoring)
    - UV transmittance analyzers
    - UV intensity sensors
    - Dose calculations

- Ozone analyzers (primary disinfection effectiveness)

Figure 15. Staff calibrating level transmitter and verifying handheld chlorine analyzer and online turbidity analyzer

Appendix A

Water safety indicators information

Escherichia coli (E. coli)

Escherichia coli (E. coli) is a species of fecal coliform bacteria that can be detected using approved lab methods. *E. coli* is present in fecal matter and prevalent in sewage but is easily inactivated by chlorine. It is a strong indicator of recent fecal pollution. If *E. coli* is detected in a sample of drinking water, immediate corrective action needs to be taken including confirmatory sampling.

Total coliform

Total coliforms are part of a family of bacteria called enteric, bacteria that typically exist in the intestines of animals and humans. Coliform bacteria grow under the same conditions as disease-causing bacteria, which makes them useful *indicator organisms*. Presence of coliform bacteria in a sample of drinking water signifies potential contamination. If coliforms are detected in a sample of drinking water, corrective action needs to be taken including confirmatory sampling.

Heterotrophic plate count

Heterotrophic plate count (HPC) results give an indication of the overall quality of the water immediately following treatment and in the distribution system. HPC is not an indicator of water safety but is used as an indicator of water integrity within the distribution system.

Disinfection by-products

Disinfection of drinking water is essential to protect the public from waterborne infectious and parasitic diseases. Disinfection inactivates bacteria and other microorganisms in the water and protects the water from any subsequent contamination during storage and distribution. The most commonly used drinking water disinfectant is chlorine. Chemical disinfectants can combine with naturally

occurring organic compounds in the water, potentially leading to the formation of disinfection by-products, including trihalomethanes, haloacetic acids, and bromate.

Terms you need to know when reviewing the water testing results in this report

MAC: Maximum Acceptable Concentration

IMAC: Interim Maximum Acceptable Concentration

Aesthetic Objectives (AO): AO are established for substances that affect the taste, odour and appearance of water or may interfere with water quality control practices. These substances do not affect health.

Operational Guidelines (OG): OG are established for substances that need to be controlled to ensure the efficient treatment and distribution of water

NTU: Nephelometric Turbidity Unit

CFU/mL: Colony forming units per millilitre

CFU/100mL: Colony forming units per 100 millilitres

umho/cm: micro mhos per centimetre (equivalent to microSiemens per centimetre)

L: litre

ug/L: micrograms per litre. This is a measure of concentration of a substance in water, also called parts per billion (ppb). 1000 ug/L = 1 mg/L

mg/L: milligrams per litre. This is a measure of concentration of a substance in water, also called parts per million (ppm).

<: less than laboratory analytical detection limit

≤: less than or equal to

>: greater than

Bq/L: Becquerels per litre

Running Annual Average (RAA): The 12-month running average of quarterly results

Summary of 2024 Water testing results

Table 7. Raw (source) water characteristics, Lake Ontario

Water parameters	Units	AP Kennedy results range	Lorne Park results range	Parameter information
Conductivity at 25°C	umho/cm	300 to 370	300 to 480	Related to inorganics such as minerals dissolved in water
Fluoride	mg/L	0.10 to 0.14	0.10 to 0.16	Naturally occurring; related to mineral content
Hardness	mg/L ($CaCO_3$)	120 to 130	120 to 130	Naturally occurring; related to mineral content
Hardness in US units	grains/ US Gallon	7.0 to 7.6	7.0 to 7.6	Naturally occurring; related to mineral content
pH [6]	pH units	6.95 to 9.20	7.57 to 8.75	Indicates water acidity
Sulphate	mg/L	20 to 23	20 to 25	Naturally occurring
Temperature[6]	Degrees Celsius	2.7 to 27.1	1.7 to 22.2	Varies seasonally
Turbidity [6,7]	NTU	0.0 to 99.9	0.01 to 100	Tiny, suspended particles of organic or inorganic matter

Table 8. Summary of routine microbiological testing for South Peel Drinking Water System (Arthur P Kennedy, Lorne Park, and distribution)

Sample type	Number of samples	Range of *E. coli* results (CFU/100mL) (min to max)	Range of total coliform results (CFU/100mL) (min to max)	Number of HPC samples	Range of HPC results (CFU/mL) (min to max)
Raw	309	0 to 82	0 to 280	309	0 to 2100
Treated [8]	471	0	0	471	0 to 48
Distribution [8]	4027	0-120[9]	0 to 120[9]	3974	0 to 58

[6] Data from continuous monitoring analyzers
[7] Raw water turbidity analyzers at Arthur P. Kennedy and Lorne Park record to a maximum of 100 NTU
[8]Ontario Drinking Water Quality Standards: *E. coli* = **0** CFU/100mL; Total Coliform = **0** CFU/100mL in treated water
[9] Aside from one result of 120 CFU/100mL, one result of 8 CFU/100mL, one result of 30 CFU/100mL, one result of 1 CFU/100mL and one result of 35 CFU/100mL, for total coliform, the distribution system total coliform results were all 0 CFU/100mL. Aside from one result of 120 CFU/100mL for E. coli the distribution system E. coli results were all 0 CFU/100mL Refer to section 4.4 for details.

Table 9. Summary of results for inorganic parameters per Schedule 23 of O. Reg. 170/03 tested on annual grab samples of treated water

Test parameter	Units	MAC	AP Kennedy result(s) [10]	Lorne Park result(s)	Parameter Information
Antimony	ug/L	6	<0.50	<0.50	Naturally occurring metalloid rarely detected in Ontario drinking water
Arsenic	ug/L	10	<1.0	<1.0	Sometimes found in high concentrations in ground water in hard rock areas through the natural dissolution of arsenic-containing minerals
Barium	ug/L	1000	21	21	Common in sedimentary rocks
Boron	ug/L	5000	22	23	Normally found in very small levels in drinking water
Cadmium	ug/L	5	<0.09	<0.09	Rare element unlikely to be present as natural contaminant in drinking water
Chromium	ug/L	50	<5.0	<5.0	Trivalent chromium naturally occurs and is not considered toxic
Mercury	ug/L	1	<0.10	<0.10	Sources in drinking water can be air pollution, waste incineration and metal refining operations
Selenium	ug/L	50	<2.0	<2.0	Naturally occurs in water at trace levels
Uranium	ug/L	20	0.29, 0.36	0.28	Normally occurring in granite and other mineral deposits, leaches into water

[10] There are two sampling locations at Arthur P Kennedy (AP Kennedy), one from each of the two reservoir cells (south and north). If the analytical test results are the same for each reservoir cell, then only one value is reported in the table.

Table 10. Summary of Community Lead Testing Program results per Schedule 15.1 of O. Reg. 170/03 tested on plumbing and distribution water samples

Test and location	Units	MAC	Range of results min to max	Number of samples	Number of exceedances	Parameter information
Lead in residential plumbing [11]	ug/L	10	<0.50 to 7.40	40	0	Present as a result of corrosion of lead solder, lead containing brass fittings, or lead pipes
Lead in non-residential plumbing [11]	ug/L	10	<0.50 to 1.50	19	0	
Lead in distribution system	ug/L	10	<0.50 to 2.60	60	0	
pH in residential plumbing [12]	pH units	N/A	6.99 to 8.65	40	N/A	Indicates water acidity
pH in non-residential plumbing [12]	pH units	N/A	7.03 to 8.37	19	N/A	
pH in distribution system [12]	pH units	N/A	6.98 to 8.29	60	N/A	
Alkalinity in distribution system [12]	mg/L	N/A	87 to 280	60	N/A	Water resistance to effects of acids added to water

[11] Plumbing represents samples collected from a tap within a residential home or non-residential building

[12] Alkalinity and pH are operational parameters. Alkalinity aesthetic objective is set at 500 mg/L. Optimal range for drinking water pH is 6.5 to 8.5.

Table 11. Summary of results for organic parameters tested per Schedule 24 of O. Reg. 170/03 on annual grab samples of treated water

Test parameter	Units	MAC	AP Kennedy result(s) [10]	Lorne Park result(s)	Parameter information
Alachlor	ug/L	5	<0.50	<0.50	Herbicide for weeds control banned in 1985
Atrazine + N-dealkylated metabolites	ug/L	5	<1.0	<1.0	Herbicide on corn for annual grass control. It is highly persistent and moderately mobile in soil
Azinphos-methyl (guthion)	ug/L	20	<2.0	<2.0	Insecticide against foliage-feeding insects
Benzene	ug/L	1	<0.10	<0.10	Present in gasoline and other refined petroleum products
Benzo(a)pyrene	ug/L	0.01	<0.005	<0.005	Formed during the incomplete burning of organic matter and poorly adjusted diesel exhaust
Bromoxynil	ug/L	5	<0.50	<0.50	Herbicide for control of specific weeds
Carbaryl	ug/L	90	<5.0	<5.0	Insecticide used in agriculture and forestry
Carbofuran	ug/L	90	<5.0	<5.0	Insecticide used in agriculture
Carbon tetrachloride	ug/L	2	<0.10	<0.10	Only found in ground water from old chlorinated solvent industry sites
Chlorpyrifos	ug/L	90	<1.0	<1.0	Common insecticide for insect control
Diazinon	ug/L	20	<1.0	<1.0	Insecticide for dwelling pests, flies, ants and cockroaches
Dicamba	ug/L	120	<1.0	<1.0	Herbicide for weed in grains
1,2-Dichlorobenzene	ug/L	200	<0.20	<0.20	Used in chemical blends
1,4-Dichlorobenzene	ug/L	5	<0.20	<0.20	Was widely used in toilet pucks and mothballs, banned in 1988
1,2-Dichloroethane	ug/L	5	<0.20	<0.20	Used as a solvent and fumigant
1,1-Dichloroethylene (vinylidene chloride)	ug/L	14	<0.10	<0.10	Used in the food packaging industry and the textile industry for furniture and automotive upholstery
Dichloromethane (methylene chloride)	ug/L	50	<0.50	<0.50	Industrial solvent for paint and degreasing agent
2-4 Dichlorophenol	ug/L	900	<0.25	<0.25	Present in drinking water only as a result of industrial contamination

Test parameter	Units	MAC	AP Kennedy result(s) [10]	Lorne Park result(s)	Parameter information
2,4-Dichlorophenoxy acetic acid (2,4-D)	ug/L	100	<1.0	<1.0	Herbicide for cereal crop and lawn weed control
Diclofop-methyl	ug/L	9	<0.90	<0.90	Herbicide grass control in grains and vegetables
Dimethoate	ug/L	20	<2.5	<2.5	Miticide and insecticide
Diquat	ug/L	70	<7.0	<7.0	Herbicide used as a crop desiccant in seed crops
Diuron	ug/L	150	<10	<10	Herbicide for control of vegetation in crop and non-crop areas
Glyphosate	ug/L	280	<10	<10	Herbicide for weed control
Malathion	ug/L	190	<5.0	<5.0	Insecticide used in fruits and vegetables
2-Methyl-4-chlorophenoxyacetic acid (MCPA)	ug/L	100	<10	<10	Herbicide used on agriculture sites, fine turf, forestry applications and at industrial sites
Metolachlor	ug/L	50	<0.50	<0.50	Selective herbicide for pre-emergence and pre-plant broad leaf weed control
Metribuzin	ug/L	80	<5.0	<5.0	Herbicide for control of weed and grasses
Monochlorobenzene	ug/L	80	<0.10	<0.10	Industrial solvent
Paraquat	ug/L	10	<1.0	<1.0	Highly toxic herbicide used for desiccation of seed crops
Pentachlorophenol	ug/L	60	<0.50	<0.50	It is rarely found today but was extensively used as a pesticide and wood preservative
Phorate	ug/L	2	<0.50	<0.50	Insecticide for sucking insects and larvae
Picloram	ug/L	190	<5.0	<5.0	Herbicide for broad leaf weed and brush control on roads
Polychlorinated Biphenyls (PCBs) (total)	ug/L	3	<0.05	<0.05	Primarily produced by the reaction of chlorine and natural organics
Prometryne	ug/L	1	<0.25	<0.25	Herbicide used on select grass and weeds
Simazine	ug/L	10	<1.0	<1.0	Herbicide for pre-emergence weed control
Terbufos	ug/L	1	<0.50	<0.50	Insecticide
Tetrachloroethylene	ug/L	10	<0.10	<0.10	Industrial solvent

Test parameter	Units	MAC	AP Kennedy result(s) [10]	Lorne Park result(s)	Parameter information
2,3,4,6-Tetrachlorophenol	ug/L	100	<0.50	<0.50	Was normally used to preserve wood
Triallate	ug/L	230	<1.0	<1.0	Herbicide for wilds oat control in crops
Trichloroethylene	ug/L	5	<0.10	<0.10	Industrial solvent
2,4,6-Trichlorophenol	ug/L	5	<0.50	<0.50	Pesticide
Trifluralin	ug/L	45	<1.0	<1.0	Herbicide for summer weed control
Vinyl chloride	ug/L	1	<0.20	<0.20	Synthetic chemical used in making PVC plastic

Note: Organic parameters are present to some degree in all water supplies. Peel tests these parameters to ensure the water meets the Ontario Drinking Water Quality Standards.

Table 12. Summary of results for organic parameters tested per Schedule 24 of O. Reg. 170/03 on grab samples of distribution water

Test parameter	Units	MAC	Distribution system result[13]	Parameter information
Haloacetic acids (HAA)	ug/L	80	9.2	Primarily produced by the reaction of chlorine and natural organics
Total Trihalomethanes (THM)	ug/L	100	27.7	Primarily produced by the reaction of chlorine and natural organics.

Note: Organic parameters are present to some degree in all water supplies. Peel tests these parameters to ensure the water meets the Ontario Drinking Water Quality Standards.

During the reporting period, no test parameters included in Schedules 23 and 24 of O. Reg. 170/03 were subject to increased sampling frequency. None of the test results exceeded half of the maximum acceptable concentration.

[13] Running annual average of samples collected quarterly.

Table 13. Summary of results for radiological parameters tested on annual grab samples of treated water

Test parameter	Units	MAC	AP Kennedy result(s)[10]	Lorne Park result(s)
Gross alpha	Bq/L	N/A	<0.10	<0.10
Gross beta	Bq/L	N/A	<0.10	<0.10
Tritium	Bq/L	70000	<15	<15

Note: Radiological parameters are most common in groundwater where natural radionuclides are present at low concentrations in all rocks and soils. Also monitored in areas near nuclear facilities.

Table 14. Operational parameters - annual minimum, maximum, and mean (average) treated water results from Arthur P Kennedy WTP

Parameter	Units	Number of samples	Acceptable range or upper limit	Minimum	Maximum	Mean (average)
Treated water turbidity	NTU	8760[14]	1.0	0.01	1.62[15]	0.03
Free chlorine residual primary disinfection	mg/L	8760[14]	0.05 to 4.00	0.58	3.17	1.43
Treated water fluoride	mg/L	8760[14]	1.5	0.20	0.84	0.68
Conventional filter effluent turbidity	NTU	8760[14]	0.3 and 1.0[16]	0.01	2.81[17]	0.03
Membrane filter effluent turbidity	NTU	8760[14]	0.1 and 1.0[18]	0.0001	1.000	0.043

[14] 8760 represents continuous monitoring, recorded at a frequency that meets the legislated requirements. Occasional outlying results occur due to equipment maintenance, programming updates, or signal anomalies.
[15] September 10th – maintenance activity on APK North Cell sample pump. Turbidity spike >1.0NTU occurred when re-installing the new sample pump feeding analyzers. Operations were present during installation and manually tested 0.09NTU.
[16] Conventional filter effluent turbidity must not exceed 1.0 NTU for greater than 15 minutes and must be below 0.3 NTU in 95% of the readings each month. These requirements were met throughout the 2024 year.
[17] Conventional filters will also automatically shutdown if effluent turbidity reaches 0.30NTU but turbidity analyzers continue to register readings when filter is offline. Values of 2.81NTU (APK) and 1.50 NTU (LP) occurred when filters were out of service.
[18] Membrane filter effluent turbidity must not exceed 1.0 NTU for greater than 15 minutes and must be below 0.1 NTU in 99% of the readings each month. These requirements were met throughout the 2024 year.

Table 15. Operational parameters - annual minimum, maximum, and mean (average) treated water results from Lorne Park WTP

Parameter	Units	Number of samples	Acceptable range or upper limit	Minimum	Maximum	Mean (average)
Treated water turbidity	NTU	8760[14]	1.0	0.02	1.00	0.03
Free chlorine residual primary disinfection	mg/L	8760[14]	0.05 to 4.00	0.69	2.16	1.40
Treated water fluoride	mg/L	8760[14]	1.5	0.20	0.92	0.64
Conventional filter effluent turbidity	NTU	8760[14]	0.3 and 1.0[16]	0.02	1.50[17]	0.04
Membrane filter effluent turbidity	NTU	8760[14]	0.1 and 1.0[18]	0.0002	1.000	0.022

Table 16. Distribution system

Parameter	Units	Number of samples	Acceptable range	Range of results, minimum to maximum	Average result
Free chlorine residual secondary disinfection	mg/L	4027[19]	0.05 to 4.00	0.51 to 1.84	1.14

Table 17. Summary of results for bromate [20] testing on treated water

Sampling location	Units	Licence requirement	Range of results minimum to maximum	Annual mean (average)
Arthur P. Kennedy WTP treated water	mg/L	≤0.01 as a running annual average of monthly results	<0.005	<0.005

[19] Represents the number of samples collected per O. Reg. 170/03 Schedule 7 section 7-2 (3) to (4)
[20] As required by the Municipal Drinking Water Licence. Bromate is a disinfection by-product of ozone disinfectant in the presence of bromide in the source water. Refer to description of by-products at the beginning of Appendix A.

Table 18. Summary of results for total suspended solids (TSS)

Sampling location [21]	Units	Licence requirement	Range of results minimum to maximum	Annual mean (average)
Arthur P. Kennedy WTP off-shore primary discharge	mg/L	≤25 as an annual average	2 to 140	11
Lorne Park WTP wastewater supernatant	mg/L	≤15 as an annual average	6 to 36	12

Table 19. Summary of results for total chlorine residual on process wastewater (filter backwash residue management)

Sampling location[21]	Units	Licence requirement	Range of results minimum to maximum	Annual mean (average)
Arthur P. Kennedy WTP off-shore primary discharge	mg/L	≤0.03	0.01 to 5.00 [22]	0.01
Lorne Park WTP wastewater supernatant	mg/L	≤0.03	0.00 to 0.08	0.00

Table 20. Summary of results for other parameters tested on grab samples of treated water

Test parameter	Units	Type of objective	Acceptable range or upper limit	Arthur P. Kennedy result(s) or range	Lorne Park result(s) or range	Parameter information
Alkalinity	mg/L	OG	30 to 500	86 to 98	95 to 100	Water resistance to effects of acids added to water
Chloride	mg/L	AO	250	26 to 31	26 to 36	Non-toxic material naturally present in drinking water
Conductivity at 25°C	umho/cm	N/A	N/A	320 to 370	320 to 370	Related to inorganics such as minerals dissolved in water

[21] The Municipal Drinking Water Licence provides approval for discharge to additional locations to which no discharge was directed during this reporting period.
[22] These analyzers record to a maximum of 5.00 mg/L. Range limit exceedances are verified by manual grab sample when occasional chlorine spikes occur. No manual confirmatory test result exceeded the limit of 0.03 mg/L.

Test parameter	Units	Type of objective	Acceptable range or upper limit	Arthur P. Kennedy result(s) or range	Lorne Park result(s) or range	Parameter information
Copper	ug/L	AO	1000	<0.90	3.2 to 4.8	Naturally occurring and also used extensively in domestic plumbing
Fluoride [6]	mg/L	MAC	1.5	0.22 to 0.61 and 0.53 to 0.63	0.11 to 0.61	Added to water in optimum level for control of tooth decay
Hardness [23]	mg/L ($CaCO_3$)	OG	80 to 100	120 to 130	120 to 130	Naturally occurring; related to mineral content
Hardness in US units	grains/ US Gallon	OG	4.7 to 5.8	7.0 to 7.6	7.0 to 7.6	Naturally occurring; related to mineral content
Iron	ug/L	AO	100	<100	<100	Naturally occurring in mineral deposits and from sediment decay
Lead	ug/L	MAC	10	<0.50	<0.50	Present as a result of corrosion of lead solder, lead-containing brass fittings or lead pipes
Manganese	ug/L	AO	50	<2.0	<2.0	Naturally occurring in mineral deposits and from sediment decay
Nitrate [24]	mg/L as N	MAC	10.0	0.47, 0.48 0.41, 0.41, 0.42, 0.43, 0.36, 0.27	0.46, 0.52, 0.34, 0.29	Present in ground water as a result of plant or animal material decay, fertilizers, sewage or treated wastewater

[23] Hardness is typically dissolved calcium and magnesium in the water measured as calcium carbonate ($CaCO_3$). Hardness levels between 80 mg/L and 100 mg/L are considered to provide an acceptable balance between corrosion and incrustation. Water supplies with hardness greater than 200 mg/L are considered tolerable while those in excess of 500 mg/L are unacceptable for most domestic uses. Refer to Appendix B for answers to some frequently asked questions related to water hardness.

Test parameter	Units	Type of objective	Acceptable range or upper limit	Arthur P. Kennedy result(s) or range	Lorne Park result(s) or range	Parameter information
Nitrite [24]	mg/L as N	MAC	1.0	<0.010 [24]	<0.010 [24]	Present in ground water, and is oxidized to nitrate when chlorinated
pH [6]	pH units	OG	6.5 to 8.5	7.03 to 7.81	7.72 to 8.53	Indicates water acidity
Sodium [25]	mg/L	AO	200	17 to 19 and 16 to 19	16 to 24	Naturally occurring or due to water softening
Temperature [6]	Degrees Celsius	AO	15	2.8 to 24.0	8.6 to 20.9	Varies seasonally
Total dissolved solids	mg/L	AO	500	170 to 180	170 to 190	Refers mainly to inorganic substances dissolved in water

[24] Nitrate and nitrite are sampled quarterly. Where the analytical test result is the same for more than one quarter, then only one value is reported in the table.
[25] The Medical Officer of Health is notified when sodium concentration exceeds 20 mg/L (MAC), per O. Reg. 170/03

Appendix B

Frequently asked questions and answers on water quality

Is my water safe to drink?

To protect public health, the Ministry has established the Ontario Drinking Water Quality Standards. These standards help ensure that water used by the public is free from disease- causing organisms, harmful amounts of toxic chemicals and radioactive materials.

Why do we use chlorine?

Chlorine is used to destroy viruses and kill bacteria and other organisms that can cause illness. Ontario Regulation 170/03 regulates the amount of chlorine that must be added. The regulation states that we must maintain free chlorine residual at a minimum level of 0.05 mg/L and should not exceed 4.0 mg/L.

Why does my water sometimes smell earthy or musty in the summer or fall months?

The odour that some Peel residents experience is due to seasonal changes in Lake Ontario during warmer months. It can cause unpleasant odours but it does not negatively affect your health in any way.

Is the water hard?

The water in the South Peel system is considered moderately hard. Hardness is typically dissolved calcium and magnesium in the water measured as calcium carbonate. Upon heating, hard water tends to form scale deposits or a white film and can form excessive scum with regular soaps. Conversely, soft water may result in accelerated corrosion of water pipes.

Should I buy a water softener?

The purchase of a water softener is based mostly on personal preference. Soap suds are formed more readily with soft water; therefore, less detergent is used. The use of a water softener also reduces the formation of hardness scale in pipes and hot water tanks. Some consumers do not like the feel of soft water. For example, after rinsing with soft water you may still feel a soap film on your skin.

Why does my kettle get a white film inside?

When water is boiled, calcium and magnesium precipitate out of the water and deposits on the heating element and inner surfaces of the kettle. This harmless deposit can be removed by regular rinsing with vinegar or lemon juice.

Why does the water sometimes look "cloudy" or "milky"?

Tiny bubbles of air in the water cause the cloudiness. Those bubbles may also cause the water to appear white or foamy, like the appearance of water in a rushing stream. This does not indicate any problem and clears when the water is left to sit for a few minutes. This is an aesthetic issue, not a health concern. If cloudy water persists, please notify Peel Region so that the matter can be investigated.

Is fluoride added to my water?

Fluoride is added to the South Peel drinking water supply, which serves the cities of Brampton and Mississauga and southern parts of Caledon, including communities of Bolton and Mayfield West. The amount of fluoride in the drinking water supply is regulated and is maintained at an optimal level to prevent tooth decay.

Why does the water sometimes look "rusty", yellow, or tea-like?

Yellow water is a common occurrence. Excessive levels of iron in drinking water may impart a yellow to brownish colour, often seen on laundered clothes, plumbing fixtures, or in the water itself. Running your tap for a few minutes can clear the colour. No health risks are associated with this discolouration. If you are

experiencing problems and your neighbours are not, the hot water tank or the pipes in your home are likely causing the problem.

Does Peel Region knock on the door to test water or leave a bottle to fill?

Some of our water programs require testing on private premises, such as residential homes or businesses. This would only be done by Peel with prior arrangements with the owner or tenant of the premise. Based on the stringent provincial guidelines, drinking water samples must be collected and handled by qualified persons and analysed at an accredited laboratory, therefore, Peel staff would not leave a bottle at the door requesting a sample of water for testing and will always carry a Peel Region identification card.

There are many responsible home water treatment businesses that offer products that live up to their claims. Unfortunately, some companies and salespersons resort to grabbing the public's attention and misinforming them about the safety of the municipal drinking water supplies in an effort to sell their products.

Door to door sale of water heaters and treatment devices is prohibited by the government of Ontario. To ensure that you are informed about the water quality in Peel and less likely to become a target for a company trying to sell you costly and inappropriate water treatment equipment, or, if you have any questions or concerns, please contact our water quality team at 905-791-7800 extension 4685 or via e-mail. You can find more information on our website at peelregion.ca/drinking water services

Will Peel Region come to my house and take a water sample?

If your water is supplied by Peel, then you have no reason for concern about the safety of your drinking water. Peel operates, maintains, and monitors its municipal drinking water systems in accordance with strict provincial regulations and Peel's drinking water continually meets the established water quality standards.

When testing on private premises is required or requested, it would only be done by a certified Peel operator with prior arrangements made with the owner or tenant.

Peel collects many samples from its drinking water systems to confirm high quality water supply. Peel's operations staff will respond to a customer enquiry or request

and undertake sampling at private taps if there is reason to believe that water quality in the building has been impacted by the municipal supply.

Peel staff occasionally sample at residential or commercial taps in conjunction with nearby work in the private or municipal water system or as part of water quality monitoring programs and studies. Peel staff will carry a Peel Region identification card.

Does Peel Region have a water meter replacement program?

Peel has a water meter replacement program to replace outdated meters that have been in service for 20 years or more. The replacement involves removing the old meter from inside your home and replacing it with a new meter and reading device. Refer to our website for more information.

Why is lead sometimes present in water?

Lead is a metal that was used in the past for pipes, fittings, and joint solder material in household plumbing and water distribution systems. If water stays in a piping system that contains lead for long periods of time, lead may dissolve into the water. If you have a lead service pipe, contact us at 905-791-7800 extension 4685. More information can be found in section 6.5 of this report.

How can I tell if my water issue is internal or from Peel Region's system?

If you are experiencing water issues within your home or business:

Check if the problem is present in the cold water. If it's limited to warm and hot tap water, the issue might be within your water heater. Check a location that does not have a hot water supply pipe (like a hose spout or toilet tank) or go to a faucet that has separate hot and cold handles and test the cold water.

Note: Hot tap water is meant for washing. Water quality can deteriorate within hot water tanks; it is best to use cold water from the tap for preparing your food and drinks. Check if the problem is present at all taps and fixtures. There is usually only one pipe from Peel's watermain into your home or building, so the cold-water supply to all taps and fixtures is from the same "source". If the problem is with one or

two taps or fixtures only it is most likely an issue within your private plumbing, and you should consult a plumber.

To help you troubleshoot the problem, see the table below titled Water quality at home tips. If the problem affects cold water at all taps and fixtures, you can contact our water quality team at 905- 791-7800 extension 4685.

How can I find out what work is taking place in my neighbourhood?

Peel maintains an interactive mapping tool on our website where the public can see the status of current and upcoming water projects that could result in water interruption. At this site, you can sign up to receive email notices with project updates. .

Similarly, we publish a summary of water outages. If you are unexpectedly without water, you can check this site to learn what is happening and view the answers to frequently asked questions.

Water quality at home tips

Table 21. Water quality tips

Water quality concern	Possible cause	Suggested solutions
Chlorine odour and taste	• Chlorine combining with organics • Chlorination of new water mains • Effects of new plumbing • Change of residency, as chlorine concentration varies from location to location	Chlorine is necessary to control disease-causing organisms. To minimize chlorine taste and odour in drinking water: • Fill a pitcher and let it stand in the refrigerator overnight • Blend the water for 5 minutes or pour between containers about 10 times • Boil the water, let it cool, then refrigerate • Home plumbing may be flushed for a minute before water use (especially in the mornings, after water has remained in pipes overnight)
Musty or earthy odour	• Algae that bloom in the lake in the summer produce a metabolite called geosmin, which causes musty or earthy odour	• Most algae are harmless and although the water may not be aesthetically pleasing, it is safe

Water quality concern	Possible cause	Suggested solutions
Rotten egg or septic odour	• Sink and floor drains • Faucet aerators (screens) • Poorly maintained hot water tanks • Dead-end water mains or areas with low water demand	• Refrain from flushing solids or organics down the drain; stagnant wastewater in the drain may generate foul odours and potentially plug the drain • Clean faucet aerators and screens on frequent basis • Hot water tanks should be flushed periodically (every 2 to 3 years) to remove rust and scale
Milky or cloudy water	• Air trapped in water due to water main breaks, water temperature or pressure change, plumbing work, construction work in the area, water shut-offs • Hot water tank temperature may be set too high	• Water is safe to drink • Run all cold water taps at once for a couple of minutes to flush the lines and release the trapped air • Lower the hot water tank temperature if above 140°F (60°C)
Blue or green stains on fixtures	• Copper in water due to copper plumbing	• Run water for 30 seconds prior to consumption to reduce the effects of local plumbing (metal concentration) • Keep fixtures dry and drip-free

Brown or dirty water	• Change in water flow due to:
	  • water main break
	  • hydrant use
	  • local fire
	  • dead ends
	• Poorly maintained hot water tank
	• No water use for a longer period of time; return from vacation
		• Open cold water faucets and flush water for 5 to 10 minutes, until clear
		• Refrain from doing laundry to prevent clothes staining
		• Hot water tank should be flushed periodically (every 2 to 3 years)
		• Run cold and hot water separately to verify the cause; if hot water is the cause the tank needs a flush
		• Open several faucets and flush the water standing in pipes that may have dissolved pipe scale material

White flakes or particles	• Flakes are scale caused by hardness • Faulty or disintegrating hot water tank tubing or lining	• Can be reduced by frequent cleaning of faucet aerators (screens) and/or regular flushing of hot water tanks • Contact the hot water tank company
Pink staining on fixtures	• Pink pigmented bacteria called *Serratia marcescens* • Airborne bacteria; not originating from the water	• Scrub surfaces with a brush, disinfect with a strong bleach solution, allow disinfectant to penetrate for 10 to 20 minutes, rinse

Report accessibility

The 2024 annual reports can be viewed by the public online, or arrangement made to pick up a paper copy at the Peel Region office at 10 Peel Centre Drive, Brampton by calling 905-791-7800 extension 4685.

Refer to Peel's Water and Wastewater website for more information regarding services we provide.

Other sources of information about drinking water

Peel Region

Peel Region

Water quality
Peel Region
10 Peel Centre Dr, Brampton ON L6T 4B9
Phone: 905-791-7800 extension 4685
E-mail: Publicworkscustserv@peelregion.ca
Water quality information:
Website: peelregion.ca/water/drinking-water/water-quality
Lead testing of drinking water information:
Website: peelregion.ca/pw/water/quality/lead-in-water

Water By-Law:
Phone: 905-791-7800 extension 3101
Website: peelregion.ca/council/bylaws/bl-6-2017

Peel Public Health:
7120 Hurontario St, 8th Floor Mississauga, ON L5W 1N4
Phone: 905-799-7700
Website: peelregion.ca/health

watersmartpeel
Smarter Today – Water Tomorrow

Water Smart Peel

230 Advance Blvd, Brampton, ON L6T 4T6
Phone: 905-791-7800 extension 4409
Website: peelregion.ca/watersmartpeel

Ontario

Government of Ontario

Ministry of the Environment, Conservation and Parks
Public Information Centre
Phone: 416-325-4000
Toll-Free: 1-800-565-4923
Website: ontario.ca/environment

Canada

Government of Canada

Environment and Climate Change Canada Inquiry Centre
Phone: 819-997-2800
Toll-Free:1-800-668-6767
Website: ec.gc.ca

Health Canada
General Inquiries Telephone: 613-957-2991
Toll free: 1-866-225-0709
Website: canada.ca/en/health-canada