Peel Region

2025

Inglewood Wastewater Treatment Plant annual report

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Inglewood Wastewater Treatment Plant annual report

The Regional Municipality of Peel (Peel) is committed to providing a high level of service in the collection, treatment, and management of wastewater. Peel diligently monitors its sewer network and operates its treatment processes effectively to meet or surpass discharge quality criteria, to protect the environment now and into the future.

Our commitment

- Protecting and preserving the environment, including the prevention of pollution, through effective operation and management of the wastewater systems that incorporates quality assurance and control practices
- Acting promptly and responsibly in addressing incidents or conditions that pose a risk to the public or environment
- Collaborating with internal and external stakeholders to ensure our services consider their environmental and quality concerns

If you have any questions about this report, please contact the Wastewater Compliance team at 905-791-7800 extension 4685 or email at publicworkscustserv@peelregion.ca.

Executive summary

The Inglewood Wastewater Treatment Plant (WWTP), located in Caledon, Ontario, is owned and operated by Peel. The plant is a class 2 wastewater treatment facility under Ontario Regulation 129/04. This WWTP was operated in 2025 under Environmental Compliance Approval (Approval) number 9122-C99KDG.

In 2025, construction of the Ministry-approved works at the Inglewood Wastewater Treatment Plant (WWTP) progressed, with rehabilitation of the two legacy treatment trains was successfully completed in the second quarter of the year.

This report summarizes the monitoring results for the Inglewood WWTP required by the Approval and describes the operational performance to ensure production of quality effluent.

In 2025, Peel complied with all capacity and final effluent limits prescribed in the Approval. The annual average daily flow to the plant was **102 m^3/day**, which was well below the rated capacity of 243 m^3/day specified in the Approval.

Throughout the year, the Inglewood WWTP consistently met the final effluent concentration limits for total suspended solids, carbonaceous biochemical oxygen demand, total ammonia nitrogen, total phosphorous, and *E. coli*, and maintained pH within the required range of 6.0 to 9.5. A summary is shown in Table 1 and Table 2. Detailed information on the requirements and results are found in section 4.1 of this report, and parameter descriptions in Appendix A: Summary of tested wastewater parameter information.

There were **no** bypass, spill, or overflow events at the Inglewood WWTP during the reporting period.

In 2025, the Inglewood WWTP generated **260 m^3** of sludge, which was hauled to the Clarkson Water Resource Recovery Facility, in Mississauga. The monthly volumes of sludge hauled are presented in Table 5.

2025 Summary

Peel Region

Brampton, Caledon and Mississauga

1.58 million residents

200,000 businesses

provided with water and wastewater services

Inglewood Wastewater Treatment Plant

$5.2 million
Capital improvement expenditure

0.01%
of Peel's total wastewater **treated at Inglewood**

33
million litres treated

Equal to volume of

14
Olympic size swimming pools

1,040
samples analyzed

99.6%
final effluent quality limits met

100%
of wastewater underwent **complete treatment**

10
Licensed operators
Maintain and operate the Inglewood plant

Glossary of terms and abbreviations

Activated sludge: Sludge containing aerobic microorganism that help to break down organic compounds

Aerobic: Living in the presence of free oxygen

Anaerobic: Living in the absence of free oxygen

Anoxic: Environment deprived of dissolved oxygen

Auger: A hollow moving screw to move large grit and debris

BOD_5: Five-day biochemical oxygen demand measured in an unfiltered sample and includes carbonaceous and nitrogenous oxygen demand (also known as total BOD or $TBOD_5$)

Bypass: An intentional diversion of wastewater around one or more wastewater treatment process(es) outside of normal operating conditions

$CBOD_5$: Five-day carbonaceous (nitrification inhibited) biochemical oxygen demand measured in an unfiltered sample

DO: Dissolved oxygen

Effluent: The treated wastewater that flows out of process units and has not been disinfected

Final effluent: The treated wastewater that has undergone all treatment steps, including disinfection, when prescribed

Geometric mean density: the nth root of the product of multiplication of the results of n number of samples over the period specified

Grinder: A pump with sharp blades that can grind large waste and debris into a fine slurry

Influent: The untreated wastewater or raw sewage coming into the sewage treatment plant from the collection system

Limit: Value prescribed in Approval for key parameters that the plant must meet in order to stay in compliance. Limits are slightly less restrictive than objectives.

m^3: cubic metres. One m^3 equals 1000 litres.

Ministry: Ministry of the Environment, Conservation and Parks

Nitrification: A biological process where aerobic bacterial convert ammonium to nitrite and then to nitrate. Nitrification is necessary for nitrogen removal in wastewater treatment

Objective: Value prescribed in Approval for key parameters that the plant is designed to meet. Consistently not meeting objectives means that the plant is not being effective and long-term remedial actions are needed. Sampling results that are over objective but under limit are considered in compliance

Overflow: a controlled discharge of wastewater to the environment from a designed location at the plant other than the approved final effluent outfall

Parameter: Chemical substances (such as phosphorus or oxygen), microbiological indicators (such as *E. coli*), or physical characteristics (such as pH and temperature) that are measured or sampled and analyzed in order to assess the performance of a plant. Some parameters have limits in the Approval

Rated capacity: Average annual daily influent flow that the plant is designed to handle

Spill: An unplanned discharge of wastewater to the environment from any location that is not specifically designed for this purpose

TAN: Total ammonia nitrogen

TKN: Total Kjeldahl nitrogen

TP: Total phosphorus

TSS: Total suspended solids

UV: Ultraviolet

Wastewater: Water that has been used and discharged by homes, businesses and industries. Everything we flush down a toilet or pour down a drain, collectively

Wet well: A holding pit for sewage in a pumping station. As the sewage level rises, pumps turn on to pump the sewage into the forcemain or to a higher elevation to continue gravity flow

WRRF: Water resource recovery facility

WWTP: Wastewater treatment plant

1. Water management in Peel Region

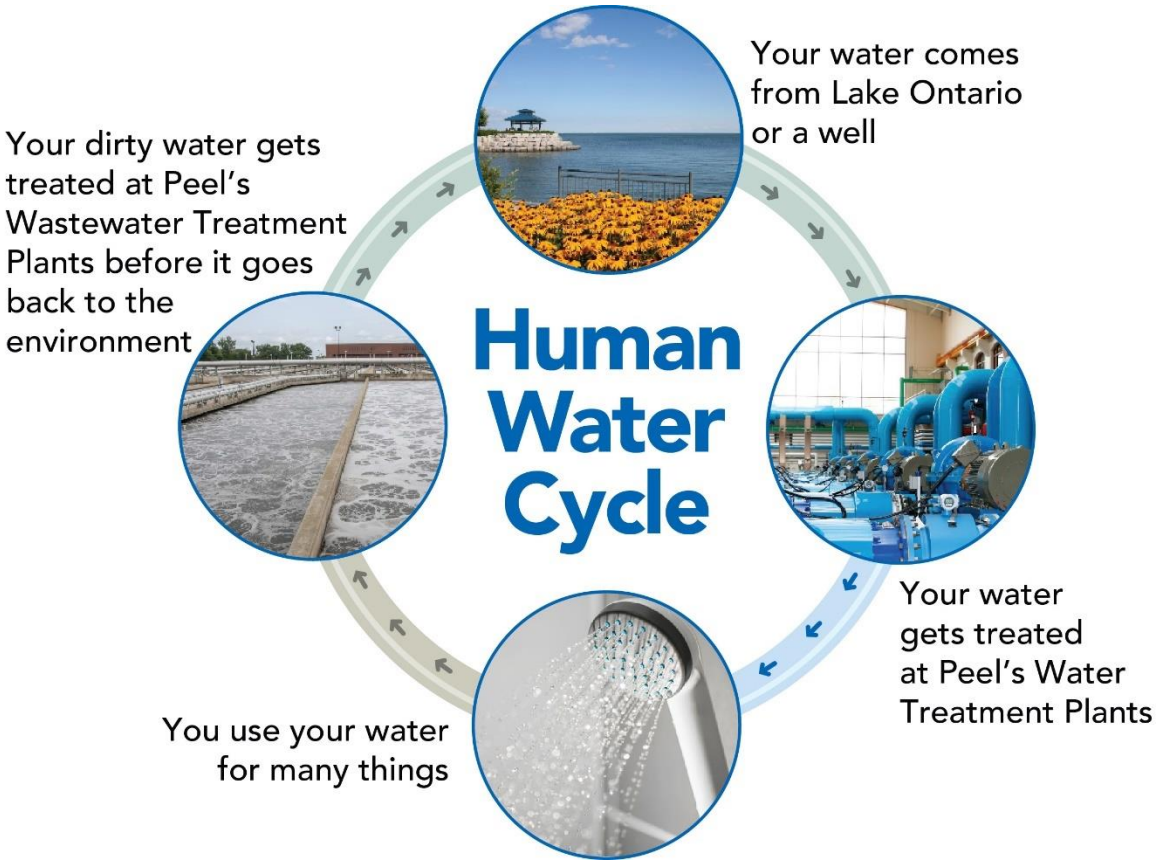
Peel owns the water and wastewater systems that serve its population. This includes water treatment, storage and distribution, and wastewater collection, pumping and treatment.

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, in the Town of Caledon.

This water cycle, shown in Figure 1, 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 into Lake Ontario, which is the source of drinking water for Peel and many neighbouring municipalities.

Figure 1. Water and wastewater cycle



For more information, refer to the annual wastewater reports for our other wastewater systems and our annual water quality reports to learn about water treatment and distribution.

2. Introduction

Wastewater systems in Ontario are governed by the Ministry of the Environment, Conservation and Parks (the Ministry) and are also subject to federal legislation.

The purpose of a wastewater treatment system is to remove solids and nutrients to minimize impact from the effluent on the receiving waterbody. The Environmental Compliance Approval (Approval), issued under the *Environmental Protection Act*, is a facility-specific document through which the Ministry sets discharge quality limits for that facility based on the sensitivity of the receiving waters. To comply with the Approval, Peel prepares an annual report covering the operation and overall performance of the wastewater system.

This report provides a performance summary for 2025, for the Inglewood Wastewater Treatment Plant (WWTP), to fulfill the annual performance reporting requirements set out in the Approval number 9122-C99KDG.

The Inglewood Wastewater Treatment Plant (WWTP), located in the Village of Inglewood, in the Town of Caledon, is owned and operated by Peel. It is a class 2 wastewater treatment facility under Ontario Regulation 129/04. The Inglewood WWTP uses sequencing batch reactor (SBR) technology with physical, chemical, and biological treatment processes. Ultraviolet (UV) radiation is used for disinfection of the final effluent prior to release into the Credit River. The Credit River flows into Lake Ontario at Port Credit in Mississauga.

2.1 Compliance

The Approval is a facility-specific document and is the legal instrument that sets requirements for municipal system owners and operating agencies with regards to operation and management, level of treatment, monitoring and recording,

routine and event reporting, and effluent quality notification. In accordance with the Approval, major changes to treatment process or equipment are communicated to the Ministry.

Peel ensures that the final effluent produced, and activities associated with wastewater treatment comply with the Approval and related legislation. Peel follows best practices in resource planning, process documentation and emergency preparedness.

The Ministry performs periodic inspections on all wastewater systems, comprised of facility visits and review of information and data for the inspection period. Inspection scope generally covers procedural documentation review, staff competency, process operation and monitoring, and corrective actions to operational events. Peel is committed to ensuring environmental protection and compliance with legislative requirements. We maintain transparency by reporting all findings of potential non-compliance incidents and outcomes of internal assessment to the Ministry local district office. For more information refer to section 5.1.

2.2 Monitoring

Peel monitors the effluent quality to ensure it meets limits prescribed in the Approval. Peel has an extensive sampling and monitoring program to assess the influent wastewater, ensure effective treatment processes, and assess the quality of treated wastewater being discharged to protect the Credit River and Lake Ontario. Sampling for various microbiological, chemical, and physical parameters is performed by Ministry-licensed wastewater operators at various sampling points throughout the process and submitted to an accredited laboratory for analysis.

Inglewood WWTP is controlled through a computerized supervisory control and data acquisition (SCADA) system that is monitored 24 hours per day, 7 days a week. Online meters and analyzers continuously monitor the wastewater quality and flow prior to release. Any significant process upset generates an alarm so staff can investigate and take appropriate actions to restore normal operational conditions. The plant is equipped with stand-by power generators to ensure critical equipment can continue to operate in the event of a power failure.

3. Plant process overview

Originally commissioned in 2003, this communal treatment facility features three stages of treatment that include the following major processes (refer to Figure 2 for an illustration of the full process):

- Preliminary treatment: headworks
- Primary treatment: anaerobic chamber
- Secondary treatment: surge anoxic mix chamber and sequencing batch reactor
- Tertiary treatment: filtration and UV disinfection

3.1 Preliminary treatment

Wastewater is collected from homes and businesses through a system of underground sewer pipes known as the collection system. Wastewater flows by gravity through the Wastewater Collection System into the Inglewood Sewage Pumping Station that pumps it into the treatment plant (some areas are lower elevation than the WWTP, preventing gravity flow directly to the WWTP).

At the plant, the treatment process begins with headworks. A wet well, grinder and auger help to break up or remove any large objects (branches, rocks, and personal hygiene products) to prevent damage and clogging of the equipment and pipes within the plant. Debris that is removed is collected in a bin outside of the plant building and sent off-site for disposal. Wastewater splits into two parallel process trains for treatment.

3.2 Primary treatment

The wastewater moves from headworks to primary treatment, where treatment occurs in two anaerobic (in the absence of oxygen) tanks. In this stage, wastewater treatment begins by combining the wastewater with an activated sludge, a thick mixture containing waste and microorganisms. With time, the heavier solids settle at the bottom of the tank, where anaerobic bacteria (bacteria that live in the absence of oxygen) consume and remove nutrients, such as nitrogen. The remaining water moves to secondary treatment.

3.3 Secondary treatment

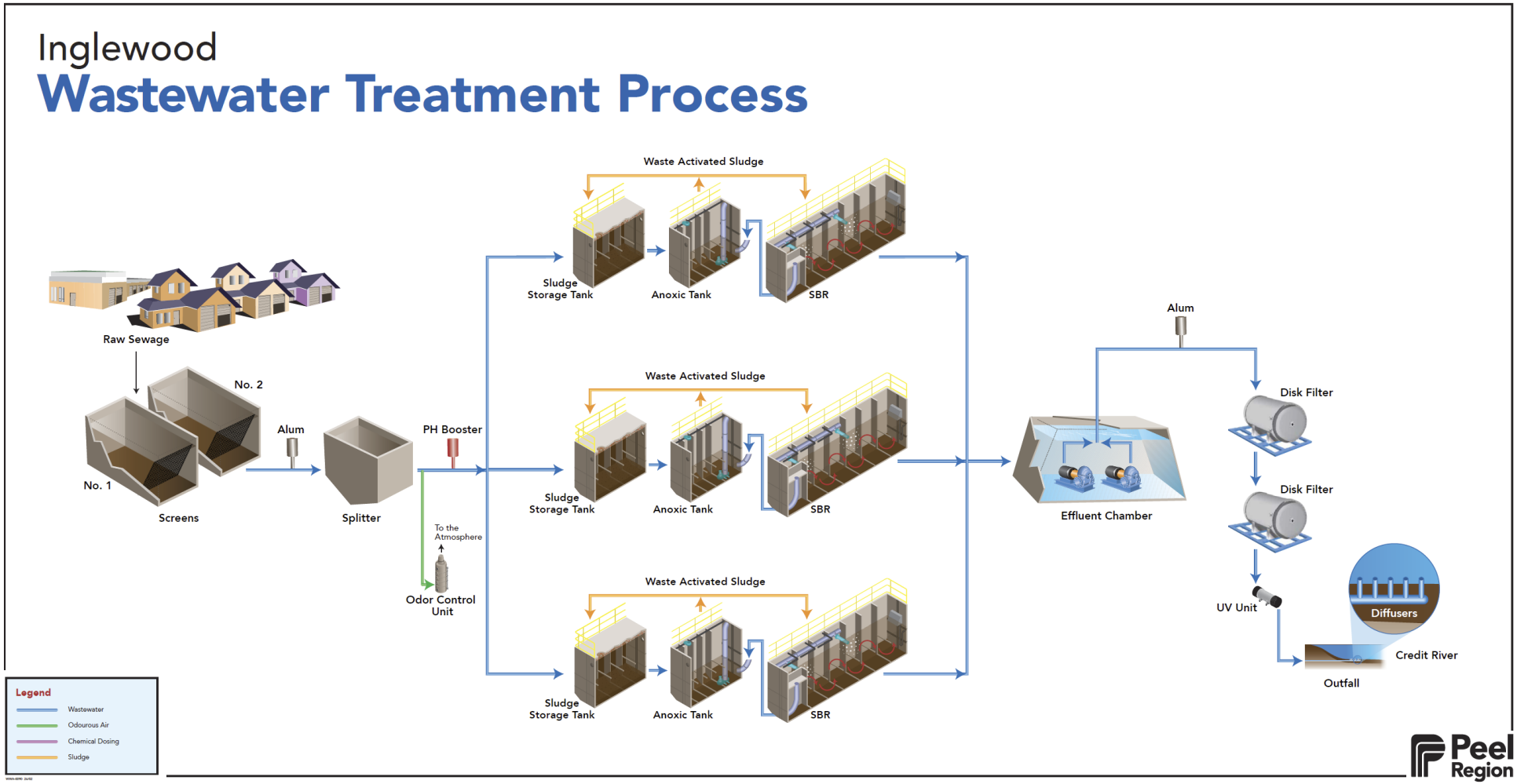
Secondary treatment occurs in two tanks. The first tank allows for flow to stabilize while providing an anoxic (without free oxygen) environment to enable nitrate to convert into nitrogen (denitrification). Aluminum sulphate (alum) is injected into the tank to assist with phosphorous removal. Excess microorganisms, in the form of waste activated sludge are removed from this process and sent to the anaerobic chamber to aid with settling. Excess sludge is hauled off-site to the Clarkson Water Resource Recovery Facility, a large OCWA-operated treatment facility in Mississauga.

In the second tank, the activated sludge process takes place in a single tank by cycling through four stages: fill, react (aerate), settle, and decant. Wastewater fills the tank and blends with the activated sludge. Air is then bubbled through the wastewater to provide oxygen to achieve nitrification. Nitrification is the conversion of ammonia-nitrogen to nitrite and then to nitrate. Removal of nitrogen and phosphorous is important as high levels of these nutrients in the final effluent can cause vegetation and algae overgrowth in receiving waters. Next, solids settle to the bottom of the tank. Finally, the effluent is decanted off the top into the effluent chamber.

3.4 Tertiary treatment

The effluent is pumped through a disk filter for final polishing and then directed through a UV light for disinfection to inactivate microorganisms such as bacteria. The final effluent, which is ultimately discharged into the Credit River, is sampled, and tested on a regular basis.

Figure 2. Inglewood wastewater treatment process



4. Operational performance

4.1 Summary of influent monitoring data

Influent and final effluent are sampled in accordance with the monitoring and recording conditions of the Approval. Samples are submitted to an accredited laboratory for analysis. Based on the sample results, the quality of final effluent from the Inglewood WWTP was consistently within the Approval limits for monthly average concentrations and monthly average loadings. Table 1 and Table 2 provide the influent and final effluent monitoring summaries, respectively. Table 3 provides a summary of monthly average flow, maximum flow day for each month and monthly total flows, as well as nutrient loadings in the final effluent.

For a description of what each test parameter means, see Appendix A: Summary of tested wastewater parameter information.

Table 1. Influent monitoring monthly averages [1]

Month	TSS (mg/L)	Total BOD_5 (mg/L)	TKN (mg/L)	TP (mg/L)
January	125	195	50	5.5
February	96	138	46	4.4
March	89	114	40	4.3
April	116	150	49	4.9
May	252	215	55	6.4
June	276	254	44	6.3
July	199	174	47	5.6
August	192	185	46	5.3
September	245	215	55	6.5
October	455	363	56	7.8
November	190	192	44	5.3
December	292	260	57	8.0
Annual	206	203	50	5.8

Month	*E. coli* (CFU/100mL)	$CBOD_5$ (mg/L)	TSS (mg/L)	TP (mg/L)	TAN (mg/L)	Field pH range (pH units)
Approval Objective	100	5.0	5.0	0.15	Summer[2] 0.3 Winter Error! Bookmark not defined. 1.2	6.5 to 9.0
Approval Limit	200	10.0	10.0	0.3	Summer Error! Bookmark not defined. 0.5 Winter Error! Bookmark not defined. 1.2	6.0 to 9.5
Jan	1.1	2.1	6.1	0.06	0.38	6.7 to 7.0
Feb	1.0	2.3	3.8	0.03	0.45	6.9 to 7.2
Mar	1.0	2.8	1.8	0.03	0.43	6.9 to 7.1
Apr	1.0	2.1	2.4	0.03	0.2	6.8 to 7.7
May	1.0	2.0	1.8	0.07	0.1	6.9 to 8.1
Jun	1.0	2.0	2.1	0.11	0.06	6.9 to 7.1
Jul	1.0	2.4	2.9	0.10	0.07	6.8 to 7.2
Aug	1.0	3.1	3.5	0.12	0.26	6.9 to 7.2

[1] To read about these parameters and units of measure, refer to Appendix A: Summary of tested wastewater parameter information

[2] Summer: April 1 to November 30; Winter: December 1 to March 31

Sept	1.0	2.0	6.4	0.09	0.12	6.5 to 7.5
Oct	1.6	2.3	6.8	0.12	0.17	6.5 to 7.1
Nov	1.0	2.0	8.5	0.08	0.09	6.7 to 7.0
Dec	0.0	2.3	7.4	0.03	0.05	6.7 to 7.2

Table 2. Final effluent monitoring monthly averages and the Approval criteria [1]

Table 3. Flow monitoring and loading

	Flow			Final Effluent Loading			
Month	**Average (m^3/Day)**	**Max (m^3)**	**Total (m^3)**	**Total Suspended Solids (TSS) (kg/Day)**	**Total Ammonia (kg/Day)**	**Total Phosphorus (kg/Day)**	**$CBOD_5$ (kg/Day)**
Approval Limit	243	N/A	N/A	2.43	Summer **Error! Bookmark not defined.** 0.12 Winter **Error! Bookmark not defined.** 0.49	0.07	2.43
Jan	105	192	3,264	0.64	0.04	0.01	0.22
Feb	96	119	2,687	0.36	0.04	0.00	0.22
Mar	110	150	3,419	0.19	0.05	0.00	0.30
Apr	126	347	3,793	0.31	0.02	0.00	0.27
May	94	117	2,902	0.17	0.01	0.01	0.19
Jun	97	124	2,907	0.20	0.01	0.01	0.19
Jul	114	161	3,544	0.33	0.01	0.01	0.28
Aug	101	142	3,126	0.35	0.02	0.01	0.32
Sept	96	167	2,870	0.62	0.01	0.09	0.19
Oct	86	126	2,675	0.58	0.01	0.01	0.20
Nov	97	134	2,913	0.83	0.01	0.01	0.19
Dec	102	161	3,172	0.76	0.01	0.03	0.24
Annual	102	N/A	37,274	0.46	0.02	0.01	0.24

In addition to operating the plant in compliance with the Approval effluent limits, Peel strives to achieve more stringent final effluent objectives (target concentrations or ranges). In 2025, daily pH objectives were achieved in accordance with the Approval; however, there were five occurrences where the monthly final effluent objectives were not met for Total Suspended Solids (TSS). The occurrences, with the corrective actions taken to resolve these events are listed in Table 4 in section 4.2.

The Inglewood WWTP has a rated capacity of 243 m^3/day, which is based on an annual average of daily flows. In the reporting year, the annual average flow was 102 m^3/day, representing 42% of the rated capacity. Over the past five years, the annual average flows have been consistent.

4.2 Operating problems encountered and corrective actions taken

The Inglewood WWTP operates all year round, 24 hours a day. When occasional operating issues arise, staff investigate and resolve the problem, record the event and actions taken in the facility logbook, station failure reports, and the computerized maintenance management system.

Table 4 summarizes these operational challenges and the corrective actions taken to minimize potential environmental impacts. All operational challenges were addressed and resolved through equipment maintenance, operational adjustment, or other mitigative actions. Challenges with meeting Approval final effluent limits and objectives are reported to the Ministry inspector monthly.

Table 4. Summary of operating issues and corrective actions taken

Operational challenges	Date(s)	Corrective Actions
High TSS in final effluent	Monthly average concentration exceeded objective in the months of January, September, October, November and December	Process troubleshooting and adjustments made as appropriate. Actions included: • Wasting cycle adjusted • Tanks and filters cleaned • Removed sludge from tank • Foam removed from tank • UV bulbs cleaned • Alum feed adjusted

4.3 Summary of maintenance activities and significant expenses

To ensure availability of equipment for the proper and continuous operation of the Inglewood WWTP, major plant components must be inspected and maintained on a regular basis. A variety of maintenance activities are performed by Ministry-licensed wastewater operators, following the manufacturers' instructions where applicable.

4.3.1 Maintenance Activities

Peel has the following maintenance programs for wastewater facilities:

1. Preventive maintenance is conducted on a routine basis to maintain the equipment in good working order and lessen the likelihood of failure,
2. Corrective maintenance is conducted to correct deficiencies discovered during routine inspections or preventive maintenance activities and return equipment to working order,
3. Unplanned (emergency) maintenance is conducted in response to equipment failure.

Maintenance is performed on major equipment, such as effluent tank, headworks, filter, valve, UV system, as well as attending to chemical delivery. Preventive maintenance also includes flow meter verification, generator testing and inspections of various components. In early 2025, the two existing treatment trains were temporarily taken out of service to undergo rehabilitation, with all work successfully completed in May 2025.

4.3.2 Expenditure information

Peel staff continue to prioritize capital investments that maintain infrastructure while avoiding unnecessary expenditures. The multi-year expansion of the Inglewood WWTP, which included construction of a new treatment train, new headworks, replacement of existing SBR equipment (anoxic mixers, blowers, and fine-bubble diffusers), and additional aerobic capacity, began in summer 2022 and progressed to substantial completion in May 2025.

Completion and commissioning of the new treatment plant components in 2024, followed by rehabilitation of the two remaining trains in 2025, marked a significant advancement in the long-term plan to improve overall treatment plant performance. Total capital spending associated with these construction works was approximately $5,240,000.

4.4 Summary of verification and maintenance of effluent monitoring equipment

Equipment used to monitor wastewater influent and effluent flows must be checked and maintained to ensure it is reading accurately. This is achieved through annual verification and maintenance of the flow meters, completed by a third-party vendor. For 2025, flow meters were found to be within acceptable range.

4.5 Summary of efforts made in meeting the effluent objectives

In 2025, the daily pH objective was met, and there were five occurrences where the monthly final effluent objectives were not met for TSS. These were communicated to the Ministry Inspector through monthly compliance reports. See Table 4 for details on the instances and corrective actions taken.

Peel ensures high effluent quality through a multi-stage treatment process and well-developed monitoring program. Each year, Peel staff prepare a sampling schedule and monitoring plan for the coming calendar year that covers the required sampling plus additional sampling to assist in operational process monitoring. Operations staff collect samples and perform testing in accordance with the established schedule, including field measurements, on-site benchtop testing, and collection of samples that get submitted to a laboratory for analysis.

Monthly and quarterly monitoring reports are prepared that include a review of influent and final effluent parameters to ensure that trends are identified and internal controls to mitigate operational challenges are implemented.

The completion and commissioning of the upgrades to the Inglewood facility in 2024, with the rehabilitation of the existing trains completed in 2025, was a major step in the long-term plan to improve the efficiency of the treatment plant performance. Refer to section 4.9 for more information.

4.6 Volume of sludge generated and hauled

Sludge is a by-product generated from the treatment of wastewater and must be removed from the bottom of the tank. Sludge generated on site is hauled to Peel's Clarkson WRRF. Haulage from other process tanks is directed to either the Clarkson WRRF or the Mayfield Road Sewage Pumping Station. Table 5 provides a summary of sludge volume hauled in 2025.

There is no anticipated significant increase in the generated sludge volume for 2026. Occasional events like cleaning of tanks may cause changes in haulage volume.

Table 5. Volume of sludge hauled for final disposal

Month	Sludge volume (m^3)
January	52
March	26
May	52

July	52
August	26
November	39
December	13
Annual	260

4.7 Summary of complaints

The Approval requires that Peel log all resident complaints, investigate, and resolve them. Peel staff responds to customers enquiries and attempts to satisfactorily address all concerns. A database is used to record details including information collected from the customer on the nature of the enquiry and action taken by Peel. **There were no complaints in 2025** related to the operation of the Inglewood WWTP.

4.8 Summary of all bypass, spill or abnormal discharge events

Occasional weather events such as heavy rainfall and snow melt can result in flow rates that are higher than those for which the plant was designed and can burden the treatment process. These challenges, as well as the need for planned maintenance and construction activities, may result in a discharge to the environment of a portion of wastewater that has not undergone all treatment processes, outside of normal operating conditions, in what is referred to as a bypass event.

A bypass is an intentional diversion of excess wastewater around one or more wastewater treatment process(es). The bypassed portion of wastewater undergoes part of the treatment process followed by disinfection and gets re-combined with the fully treated flow prior to release into the receiving waterbody at the approved discharge location and sampling point. Final effluent is sampled and tested during bypass events to assess its quality.

While not desirable, emergency bypasses may be necessary during high flow events to prevent spills and flooding at the WWTP and backups within the sewer system that can cause basement flooding and spills to the environment.

There were **no bypasses in 2025** at the Inglewood WWTP.

An overflow is a controlled discharge of wastewater to the environment from a designed location at the plant other than the approved final effluent outfall.

There were **no overflows in 2025** at the Inglewood WWTP.

A spill is an unplanned discharge of wastewater to the environment from any location that is not specifically designed for this purpose.

There were **no spills in 2025** at the Inglewood WWTP.

4.9 Modifications to the sewage works

The Approval allows for certain pre-authorized modifications to be made to the facility. The Ministry is notified of these modifications via Notice of Modification to Sewage Works. Peel undertakes construction projects to upgrade or enhance the WWTP to meet demands related to industrial and commercial growth in Peel Region that may alter incoming wastewater volume or loading, and to integrate new technologies.

One Notice of Modification to Sewage Works was submitted in 2025 to facilitate the re-purposing of existing alum pumps to include injection points for pH control and installation of associated valving and supply lines.

No new chemicals were added to the treatment process. This modification provides the ability to perform pH adjustments in the future, if required. The notice also included the replacement of the eyewash station in the existing control building to ensure consistency with the eyewash station in the tertiary building.

Repair and maintenance activities are exempt from the documentation requirements and may be performed as needed to maintain the WWTP in good working condition.

Following the commissioning of Ministry approved works at the Inglewood WWTP, which included the installation of a third treatment train, the two remaining treatment trains were subsequently rehabilitated, with all work completed in May 2025. See section 4.3 for details on cost associated with this work.

4.10 Other information required by the Ministry Water Supervisor

There was no other information requested by the Ministry Water Supervisor in 2025.

5. Performance management programs

5.1 Ministry Inspections

Wastewater system inspections are performed by the Ministry to ensure systems are operating as required and making efforts to achieve plant design objectives. Performance data and records are reviewed against the Approval and legislative requirements to confirm that Peel performed the required reporting for incidents when compliance limits were not met, per section 2.1 of this report. The inspections also verify that Peel meets sampling, testing and treatment standards and staff competency requirements. Inspections can be periodic or can be triggered through a variety of factors such as frequency of events or inconsistent system performance (e.g., increased number of spill events or incidents reported), in response to a complaint or concern, or as part of a follow-up from prior non-compliances.

There was no Ministry inspection of the Inglewood WWTP in 2025.

Peel conducts regular internal compliance checks to confirm that operational performance meets all regulatory requirements. Any self-declared findings that indicate potential non-compliance are reported to the Ministry through courtesy notification.

During the reporting year, there was one instance of non-compliance noted related to incomplete record keeping for plant operations and equipment malfunction. In October 2025, a logbook entry was missed when the effluent flow meter recorded zero flow. An internal evaluation determined that during equipment calibrations performed by an external contractor, the effluent flow meter had been reset and this change not communicated to operations staff. Corrective actions included reviewing and updating standard operating procedures for working with contractors.

5.2 Wastewater Integrated Management System

Peel has developed and implemented the Wastewater Integrated Management System (WWIMS) to create a systematic approach towards pollution prevention, adopt quality work and enhance performance, to assist with fulfilling compliance obligations. Based on the principles of ISO 9001 (Quality Management Systems) and ISO 14001 (Environmental Management Systems), the WWIMS aims to apply best management practices to the operation of the Peel-operated wastewater

collection and treatment systems. The scope of Peel's WWIMS includes the Wastewater Collection System and the Inglewood Wastewater Treatment Plant.

In July 2024, Peel announced self-declaration of conformance to ISO 14001 and ISO 9001 standards for it's Wastewater Integrated Management System (WWIMS). This significant milestone reflects the hard work and ongoing commitment to environmental protection and quality assurance. The WWIMS meets all the requirements set out within ISO 14001 and 9001, without depending on third party (external) certification.

The WWIMS enhances service reliability and accountability. This approach leads to improved operational efficiency and performance, risk management, and stakeholder confidence, ultimately contributing to the sustainable and effective operation of our wastewater systems. The WWIMS provides an effective framework for operational excellence, guidance to building and managing policies, procedures, and processes, and fostering a culture of continual improvement.

The 2025 internal audit was conducted in September and all sections of the WWIMS manual were confirmed to be in full conformance with ISO 14001 and ISO 9001 standards. Three Opportunities for Improvement (OFI) were identified, focused primarily on administrative enhancements related to communication and climate change preparedness.

Also in 2025, the annual WWIMS risk assessment review was completed, encompassing 146 activity assessments. Of these activities, 12 were designated as Significant Environmental Aspects (SEAs), activities that have or could have one or more significant environmental impact(s). The SEAs are ranked to support the development of Objectives and Targets, which guide efforts to reduce or eliminate associated risks. Objectives and Targets are assessed with stakeholders for each SEA, and are monitored and tracked on a quarterly basis.

Appendix A: Summary of tested wastewater parameter information

Carbonaceous biochemical oxygen demand ($CBOD_5$): Amount of dissolved oxygen needed by microorganisms to break down carbonaceous (carbon rich) organic material present in a wastewater sample over a 5-day period.

CFU: Colony forming units; that is, healthy, viable organisms.

Dissolved oxygen (DO): Amount of oxygen dissolved in water. It is essential for the survival of aquatic plants and animals. In the wastewater treatment process, DO is required by the microorganisms to break down the organic material present. A lower DO value suggests a greater amount of organic matter present in the sample.

Dissolved phosphorous: Phosphorous that remains in water after it is filtered to remove particulate matter. It is highly bioavailable to algae and can promote algae blooms.

E. coli: An indicator of fecal contamination in effluent. Most species of this bacteria are harmless to humans; however, some strains can be pathogenic (cause disease).

Nitrate, nitrite: Intermediate nitrogen species in the cycle of nitrogen removal from wastewater.

pH: A measure of the alkalinity or acidity in wastewater, which can indicate chemical or industrial pollution.

Temperature: Temperature of the wastewater sample measured at the time of collection. Higher wastewater temperatures allow for more efficient treatment at biological treatment plants.

Total ammonia nitrogen (TAN): The amount of ammonia in wastewater. Sources of ammonia include domestic, industrial, or agricultural pollution, primarily from fertilizers, animal and plant decomposition, and animal waste.

Total biochemical oxygen demand (BOD_5): Amount of DO used by microorganisms to break down organic material present in a wastewater sample, measured as DO decrease over a 5-day period. A higher BOD_5 value means greater amount of organic matter presenting the sample, which can cause deplete DO in receiving waters.

Total Kjeldahl nitrogen (TKN): Sum of ammonia nitrogen and the amount of nitrogen present in organic form. High TKN can be toxic to aquatic life.

Total phosphorous (TP): An essential nutrient used by microorganisms for growth. TP comes from a variety of sources including fertilizers, detergents, domestic wastewater, and wastewater from industrial processes. Excess phosphorus in waterbodies can promote algae blooms.

Total suspended solids (TSS): Suspended particles (organic and inorganic material) present in the water sample. TSS can include sediment, sand, silt, plankton, and algae. High concentration of TSS can interfere with the disinfection process and can also lower the quality of the receiving waterbody.

Appendix B: Frequently asked questions

Where does water go after it is used?

After you use water to wash dishes and clothes, brush your teeth, shower or flush the toilet, the used water (wastewater) that goes down your drains flows through a series of underground sewer pipes to the wastewater treatment plants.

The wastewater is treated to remove contaminants and kill disease-causing microorganisms before being discharged into the environment. Peel owns two water resource recovery facilities (WRRF): G.E. Booth WRRF and Clarkson WRRF, both discharging into Lake Ontario, and the Inglewood wastewater treatment plant, discharging into the Credit River. These three plants serve the cities of Mississauga and Brampton and parts of the Town of Caledon.

View Peel Region's wastewater video for more information on how wastewater is treated.

Why am I experiencing a sewage odour outside my house?

The sewage odor outside your house could be from a variety of sources. It could be that the sewer is backed up close to your property. If your property is located close to a lake, algal blooms also cause odours. Other sources of odour might include: scheduled treatment plant maintenance coupled with prevailing winds, nearby farming activities, or odours from waste management facilities or industries.

If you are noticing odours near your property, please call Peel Region at 905-791-7800.

Why am I experiencing a sewage odour inside my house?

If you notice an odour of sewage coming from a drain in your house, it is recommended to pour a cupful of bleach into the drain, let it sit for 10-15 minutes and then rinse it down with plenty of water. If this does not resolve the odour problem, please call Peel Region at 905-791-7800 for further investigation.

What is the difference between a storm sewer and sanitary sewer?

Wastewater that goes down drains inside homes and buildings enters the sanitary sewer system, which sends it to a wastewater treatment facility for treatment before it is released to the environment. Sanitary sewer collection systems in Mississauga, Brampton and Caledon are maintained by Peel.

Rainwater and melting snow are called storm water. Stormwater enters storm grates on the road and enters the storm sewer pipes that run beneath the roadways. These pipes discharge the storm water to local waterways, like streams, creeks, and lakes. The majority of storm sewer is maintained by the local municipality – the cities of Brampton and Mississauga and the Town of Caledon. Peel maintains storm sewers on regional roads.

Refer to the Peel webpage for more information about wastewater and storm water.

What happens to industrial wastewater?

Some companies treat their own wastewater and release it directly into the environment or into Peel's sanitary sewer (wastewater collection system). Wastewater released into the sanitary sewer joins all other wastewater collected (from households and building drains) and flows to one of the wastewater treatment plants. Industrial wastewater can be hazardous or contain substances that may damage sewer infrastructure or upset the treatment process. Therefore, all wastewater released and all businesses that release it into Peel sewers must comply with Peel's Wastewater Bylaw. To ensure compliance, industrial facilities are examined by inspectors from Peel's Environmental Control department. Thousands of inspections are completed each year.

What must not be disposed down the toilet or poured down the drain?

It is important to understand that what goes down the drain or the toilet may have negative impacts on the wastewater system and the environment. Fats, oils, and grease (FOG) should never be poured down the drain because these materials are known to cling to pipe walls. Over time, their accumulation can build up to such high levels that the sewer can become blocked. Another reason to avoid disposing fats, oils, and grease into drains or toilets is that they are not effectively broken down during the wastewater treatment process. Instead, Peel

recommends that edible household fats, oils and grease should be collected and properly disposed as per the FOG disposal at home instructions. To learn more about Peel's community recycling centres' web page.

It is also important not to dispose items down the toilet that could get stuck in or damage the sewer systems. Sticks, rags, paper towels, personal hygiene products, diapers, disposable wipes, household hazardous waste and pharmaceuticals should not be disposed by simply flushing down the toilet. Any unused or expired pharmaceuticals can be returned to your local pharmacy. For more information on how to properly dispose of items that damage the wastewater refer to idontflush.ca.

What causes a sanitary sewer backup?

Most sewer backups occur when sewer pipes get blocked. Sewer pipes can become clogged with excess fats, oils, greases, food wastes, coffee grounds, hair, toilet paper, soap residue, or inappropriate materials being flushed down the toilet or drain. Even sanitary wipes that are labelled "flushable" will in fact clog pipes, sewers, and screens at the treatment plants. To help reduce sanitary sewer blockages and prevent backups, it is recommended to properly dispose of these items and other materials that can harden or settle within the sewer pipes.

Sanitary sewer backups can also occur when tree roots grow into or through sewer lines. These roots may be from trees that are outside your property boundaries. The only solution to this problem is to cut away the roots and then replace the pipeline.

If you notice a sewer backup in your home, call Peel at 905-791-7800 extension 4409, or 1-888-919-7800 for residents in Caledon. If the problem area is determined to be on private property, there is a flat fee for the service call.

More information about wastewater and storm water is available on the Peel webpage.

How safe is the treated wastewater that is released into Lake Ontario?

To meet environmental compliance criteria in Ontario, all wastewater must be treated before being returned to the environment. Peel's wastewater treatment facilities, G.E. Booth, Clarkson, and Inglewood, are operated and maintained

under strict regulations and the effluent discharged into the environment must meet location-specific, provincial, and federal standards.

Which pipes are mine and which are Peel Region's responsibility?

See the information at homeowner and regional responsibilities of wastewater infrastructure.

What is optional water and sewer line insurance program?

The pipes on the private side of the property line belong to the property owner. Sometimes these pipes may get damaged or blocked, which can result in costly plumbing bills. Peel endorses a voluntary pipe insurance program. For more information can be found on the insurance program web page.

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.

Other sources for more information about wastewater and related issues

Peel Region
working with you

Peel Region

10 Peel Centre Dr., Brampton ON L6T 4B9

Wastewater-related questions:

Phone: 905-791-7800 extension 4685

Website: peelregion.ca/wastewater

E-mail: Publicworkscustserv@peelregion.ca

Water and Sanitary Sewer and Septic Protection Plans:

Peel Wastewater Bylaw or Service line warranties

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