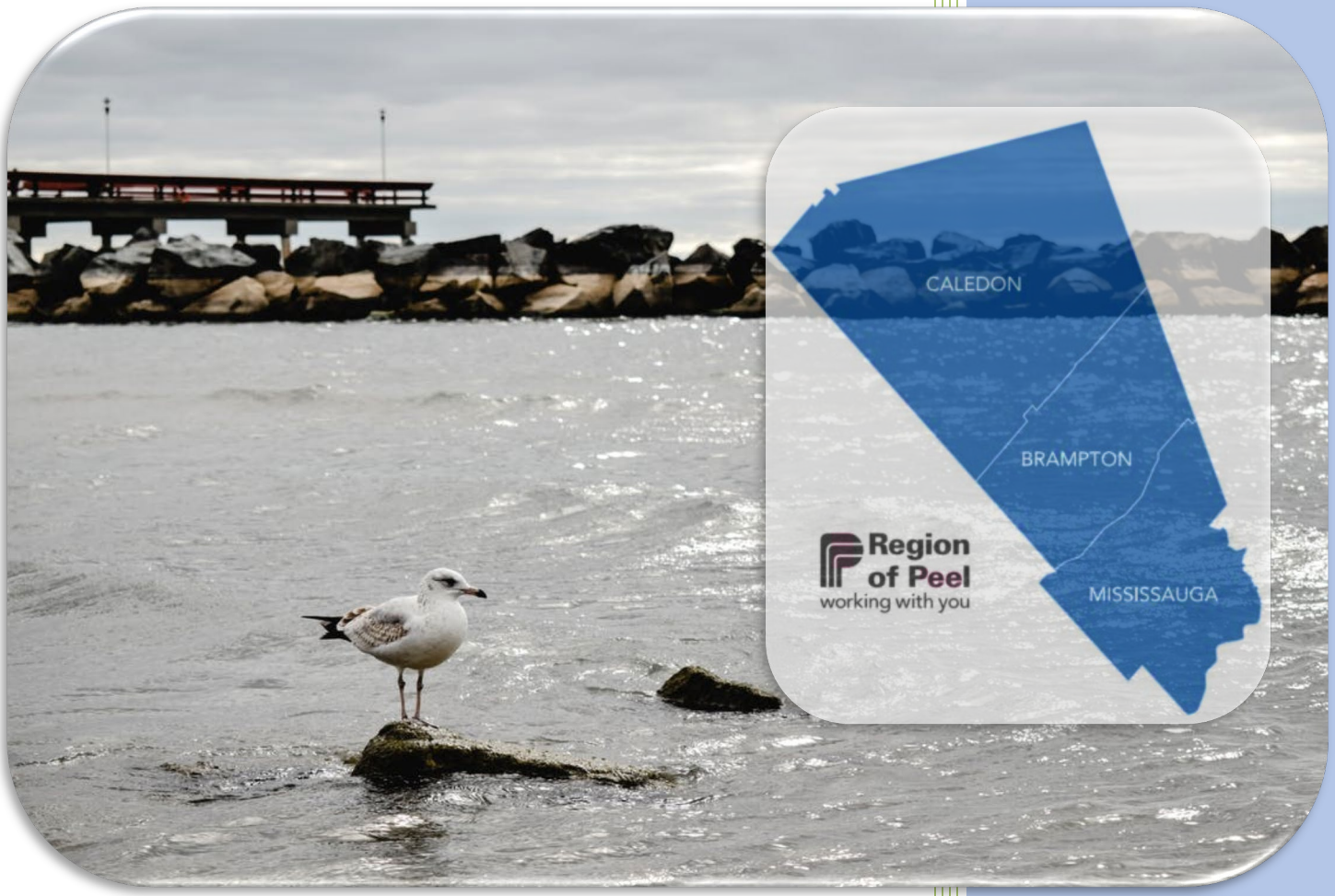
Region of Peel
working with you

2022

Inglewood Wastewater Treatment Plant
Annual Report



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The Regional Municipality of Peel (the Region) is committed to providing a high level of service in the collection, treatment, and management of wastewater. The Region diligently monitors its sewer network and operates its treatment processes effectively to meet or surpass the criteria for discharge quality, 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**
- **Complying with applicable legislation and regulatory requirements**
- **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 ext. 4685 or by email.

Executive Summary

The Inglewood Wastewater Treatment Plant (WWTP), located in Caledon, Ontario, is owned and operated by the Region of Peel (the Region). Inglewood WWTP is classified by the Ministry of the Environment, Conservation and Parks (the Ministry) as a Class II wastewater treatment facility, under Ontario Regulation 129/04. This WWTP was operated under Environmental Compliance Approvals (Approval) #5205-A34H7A (issued January 4, 2016) and #9122-C99KDG (issued March 24, 2022).

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 2022, the Region met the capacity prescribed in the Approval. The annual average daily flow to the plant was 90.93 m^3/day, which was well below the rated capacity of 243 m^3/day specified in the Approval.

Throughout 2022, the Inglewood WWTP met the effluent concentration limits for Total Suspended Solids, Carbonaceous Biochemical Oxygen Demand, Total Ammonia Nitrogen, Total Phosphorous, and *E. coli*, and maintained pH within the range of 6.0 – 9.5. A summary is shown in Tables ES.1 and ES.2. Detailed information on the requirements and results are found in Section 4.1 of this report.

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

In 2022, the Inglewood WWTP generated 450.5 m^3 of sludge, which was hauled to the Clarkson WWTP. The monthly volumes of sludge hauled are presented in Table 4.

Table ES.1 – Final Effluent Parameter Results and the Approval Monthly Average Concentration Limits

Final Effluent Parameter		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec
Total Phosphorus [1] (mg/L)	Result	0.09	0.18	0.17	0.11	0.10	0.15	0.15	0.17	0.13	0.16	0.18	0.10
	Approval Limit	**0.3**	**0.3**	**0.3**	**0.3**	**0.3**	**0.3**	**0.3**	**0.3**	**0.3**	**0.3**	**0.3**	**0.3**
Total Ammonia Nitrogen [1] (mg/L)	Result	0.1	0.2	0.8	0.1	0.2	0.2	0.2	0.1	0.2	0.3	0.1	0.1
	Approval Limit	**2.0**	**2.0**	**2.0**	**0.5**	**0.5**	**0.5**	**0.5**	**0.5**	**0.5**	**0.5**	**0.5**	**2.0**
$CBOD_5$ [1] (mg/L)	Result	2.0	4.0	2.6	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.3
	Approval Limit	**10.0**	**10.0**	**10.0**	**10.0**	**10.0**	**10.0**	**10.0**	**10.0**	**10.0**	**10.0**	**10.0**	**10.0**
Total Suspended Solids [1] (mg/L)	Result	2.2	5.3	4.7	3.1	2.6	3.1	4.4	3.3	3.1	3.2	5.8	3.1
	Approval Limit	**10.0**	**10.0**	**10.0**	**10.0**	**10.0**	**10.0**	**10.0**	**10.0**	**10.0**	**10.0**	**10.0**	**10.0**
E. coli [2] (CFU/100 mL)	Result	0.0	0.0	1.3	0.0	0.0	0.0	0.0	0.3	0.0	0.1	0.0.	0.0
	Approval Limit	**200**	**200**	**200**	**200**	**200**	**200**	**200**	**200**	**200**	**200**	**200**	**200**

[1] Monthly Average Concentration
[2] Monthly Geometric Mean Density

Table ES.2 – Final Effluent Parameter Results and the Approval Limits for Continuous Monitoring

Final Effluent Parameter	Final Effluent Result / Range	Approval Limit
pH	6.33 – 7.13	**6.0 – 9.5 inclusive**
Dissolved Oxygen (mg/L)	4.1 *	**2.0 minimum**

* lowest measured value for the year

REGION OF PEEL

Provide water and wastewater services to 1.5 million residents and over 175,000 businesses in Brampton, Caledon and Mississauga

2022 SUMMARY

Inglewood Wastewater Treatment Plant

4.4 km
of sewage pipes throughout the village of Inglewood delivering wastewater to the treatment facilities

1159
samples analyzed

100%
of approval effluent limits met

4.7 kWh*
energy used per m^3 wastewater treated

$0.16
chemicals used per m^3 wastewater treated

0.01%
of the Region's total wastewater treated at Inglewood;

33,189 m^3
treated in 2022; equivalent to volume of

13
Olympic pools

100%
of wastewater underwent complete treatment

*kWh: Kilowatts per hour

Glossary of Terms and Abbreviations

Activated Sludge: Sludge containing aerobic microorganism that help to breakdown 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

CFU: Colony Forming Units – that is, healthy, viable organisms

CMMS: Computerized Maintenance Management System

COD: Chemical Oxygen Demand

DO: Dissolved Oxygen

ECA: Environmental Compliance Approval

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 and disinfection and is discharged to the environment

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 to maintain compliance. Limits are generally higher than objectives.

m^3: cubic metres. 1 m^3 = 1000 litres

Mixed Liquor: mixture of activated sludge mixed with primary effluent or raw wastewater and return sludge

Ministry: Ministry of the Environment, Conservation and Parks

Nitrification: A biological process where aerobic bacteria 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.

Overflows: 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) or physical characteristics (such as pH or temperature) that are measured or sampled and analyzed in order to assess the performance of a plant. Some parameters have limits in the Approval.

PLC: Programmable Logic Controller

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

SBR: Sequencing Batch Reactor

Spills: 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

WAS: Waste Activated Sludge; excess mircoorganisms that must be removed from the wastewater treatment process to keep the system in balance

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.

WWTP: Wastewater Treatment Plant

1. Water Management in the Region of Peel

The Region owns and operates the water and wastewater systems that serve its population. This includes water treatment, storage and distribution, and wastewater collection, pumping and treatment. Figure 1, on the next page, shows how these systems interact.

The Region has two drinking water sources: Lake Ontario and groundwater wells in Caledon. The Region 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. The Region 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 the Region operates the wastewater collection system, pumping stations, and the treatment facility in the community of Inglewood.

This water cycle starts when source water is pumped into our water treatment plants and undergoes treatment to meet the Ontario Drinking Water 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. The Region is committed to high standards of treated wastewater quality since it gets discharged directly or indirectly into Lake Ontario, which is the source of drinking water for the Region and many neighbouring municipalities.

More information about the water treatment process can be found within the Annual Water Quality Reports, which are available online.

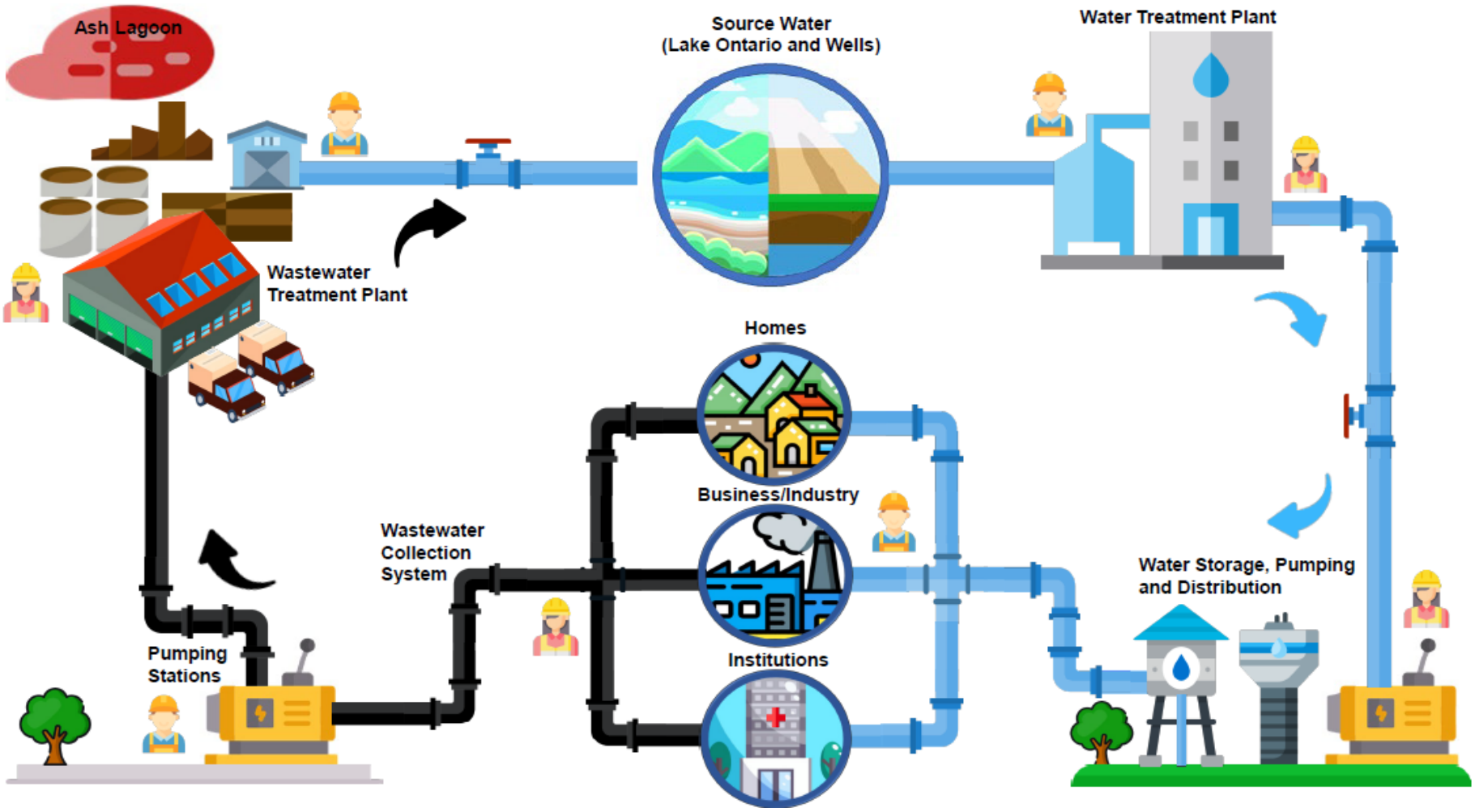


Figure 1 – Water and Wastewater Cycle

2. Introduction

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

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

This report provides a performance summary for the period from January 1 to December 31, 2022, for the Inglewood Wastewater Treatment Plant (WWTP), to fulfill the annual performance reporting requirements set out in the Approvals # 5205-A34H7A (issued January 4, 2016) and # 9122-C99KDG (issued March 24, 2022).

The Inglewood Wastewater Treatment Plant (WWTP), located in the Village of Inglewood, in the Town of Caledon, is owned and operated by the Region of Peel (the Region). It is a Class II 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 legal instrument that sets the 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.

The Region ensures that the final effluent produced, and activities associated with wastewater treatment comply with the Approval and other related legislation. The Region 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. The Region 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 District (local) office.

2.2 Monitoring

The Region monitors the effluent quality to ensure it meets limits prescribed in the Approval. Through an extensive sampling and monitoring program, the Region can assess the communal wastewater, ensure effective treatment processes, and evaluate the quality of treated wastewater being discharged to protect receiving waters. Sampling for various microbiological, chemical, and physical parameters is performed by Ministry-licensed wastewater operators at various sampling points throughout the process and effluent receiving water 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 flow and quality 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 a stand-by power generator to ensure critical equipment can continue to operate in the event of a power failure.

2.3 Water and Wastewater Operations during COVID-19

In 2022, the Region remained flexible in planning for return to normal operation for water and wastewater programs that had been altered in response to COVID-19. While service delivery and emergency response continued throughout the COVID-19 pandemic, with safeguards to protect staff, their families, our business partners, and the public, most of the suspended or altered programs and projects resumed by the end of the year.

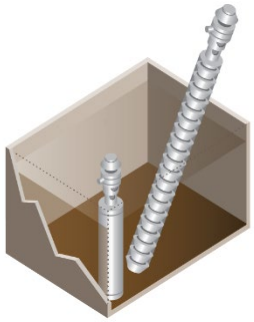
3. Plant Process Overview

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

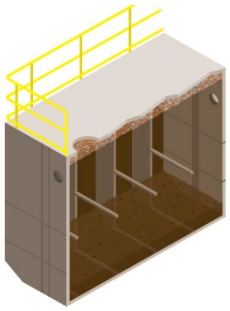
3.1 Preliminary Treatment – Headworks

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).



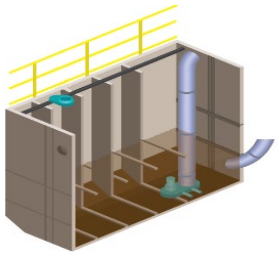
At the plant, the treatment process begins with headworks. A wet well, grinder and auger help to break up or remove any large objects (branches, rocks, and personal hygiene products) to prevent damage and clogging of the equipment and pipes within the plant. Debris that is removed is collected in a bin outside of the plant building and sent off-site for disposal. Wastewater splits into two parallel process trains (Train #1 and Train #2) for treatment.

3.2 Primary Treatment – Anaerobic Chamber

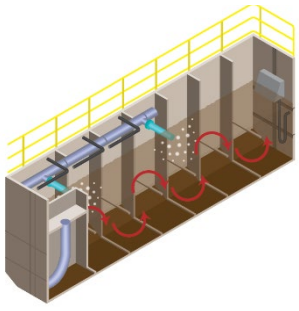


The wastewater moves from headworks to primary treatment, where treatment occurs in two anaerobic (in the absence of oxygen) tanks. These tanks are known as Integrated Surge Anoxic Mix (ISAM). In this stage, wastewater treatment begins by combining the wastewater with an activated sludge, a thick mixture containing waste and microorganisms. With time, the heavier solids settle at the bottom of the tank, in what are called 'trash traps', 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 – Surge Anoxic Mix (SAM) Chamber and Sequencing Batch Reactor (SBR)



Secondary treatment occurs in two tanks. The SAM 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 SAM tank to assist with phosphorous removal. Excess microorganisms, in the form of waste activated sludge (WAS) are removed from this process and sent to the anaerobic chamber to aid with settling. Excess sludge is hauled off-site to the Clarkson WWTP, a large OCWA-operated treatment facility in Mississauga.



The second tank in the process is the Sequencing Batch Reactor (SBR). In this tank, the activated sludge process takes place in a single tank by cycling through 4 stages – fill, react (aerate), settle, and decant. In the **fill** stage, wastewater enters the SBR tank and blends with the activated sludge. In the **react** stage, air is 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. During the **settle** cycle, solids settle to the bottom of the SBR tank. The effluent is decanted off the top into the effluent chamber during the **decant** phase.

3.4 Tertiary Treatment – Filtration and Ultraviolet (UV) Disinfection

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.

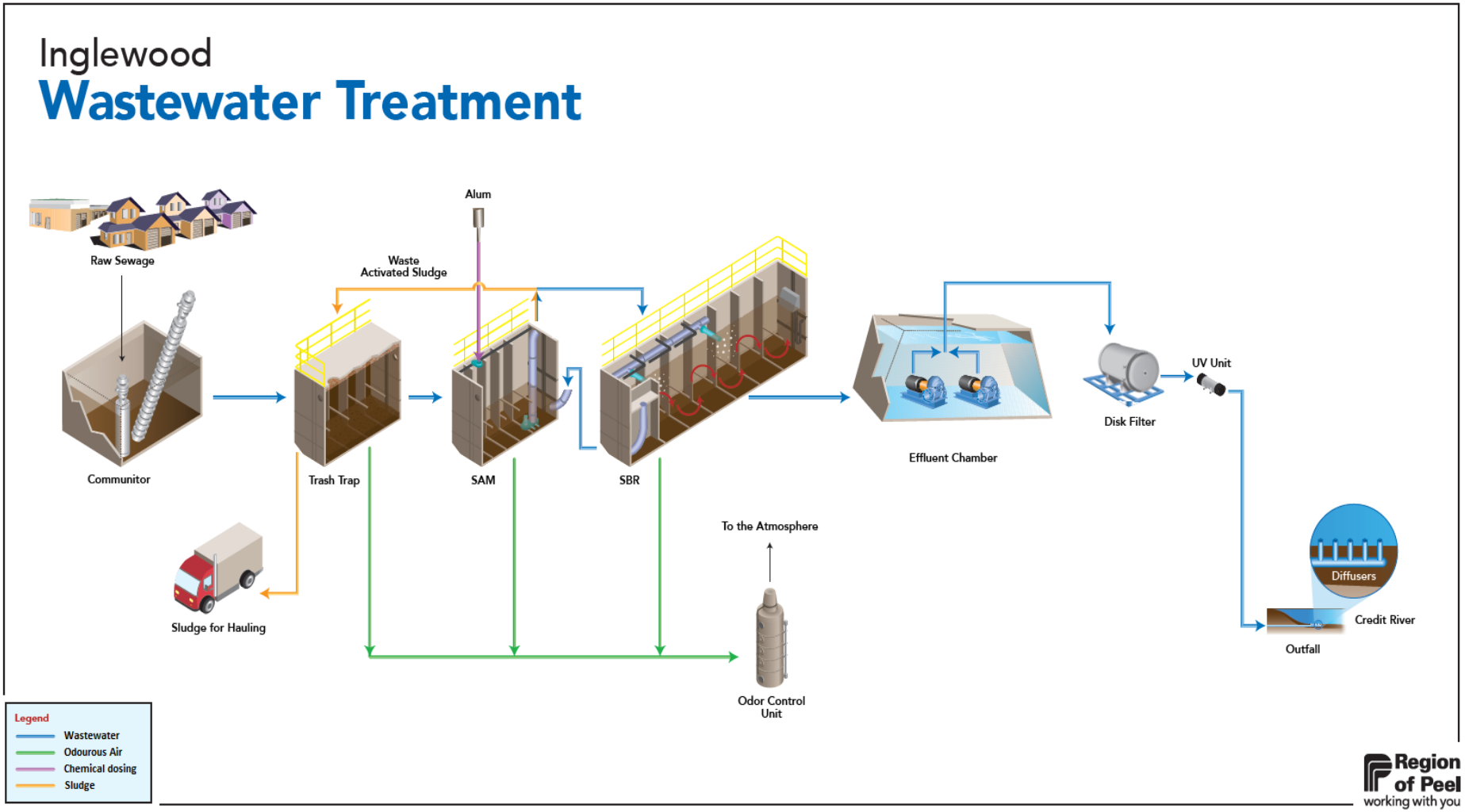


Figure 2 – Process Flow Diagram

4. Operational Performance

4.1 Summary and Interpretation of Monitoring Data

In 2022, the Region sampled the Inglewood WWTP influent and effluent in accordance with the monitoring and recording conditions of the Approvals. Samples were submitted to an accredited laboratory for analysis. Based on the sample results, the quality of effluent from the Inglewood WWTP was consistently within the Approval limits for monthly average concentrations and monthly average loadings. Tables 1 and 2 provide the influent and effluent monitoring summaries, respectively.

Table 1 – Influent Monitoring Monthly Averages

Month	TSS (mg/L)	Total BOD_5 (mg/L)	TKN (mg/L)	TP (mg/L)
Jan	156.0	196.0	49.0	6.2
Feb	255.5	262.5	42.8	6.4
Mar	252.5	240.0	43.0	5.6
Apr	147.5	187.5	46.0	5.8
May	308.2	261.8	44.4	8.4
Jun	158.5	235.0	51.8	8.4
Jul	320.0	250.0	51.8	6.8
Aug	234.0	248.0	49.4	6.4
Sep	211.0	260.0	46.0	5.7
Oct	207.7	243.3	50.0	7.1
Nov	242.6	221.4	47.4	7.0
Dec	295.0	255.0	42.3	6.8

Table 2 – Effluent Monitoring Monthly Averages and the Approval Criteria

Month	*E. coli* * CFU/100mL	$CBOD_5$ (mg/L)	TSS (mg/L)	TP (mg/L)	TAN (mg/L)	DO (mg/L)	Field pH (pH units)
Approval Objective	**100**	**5.0**	**5.0**	**0.15**	**Summer** 0.3 Winter** 1.2**	**None**	**6.5 – 9.0**
Approval Limit	**200**	**10.0**	**10.0**	**0.3**	**Summer** 0.5 Winter** 2.0**	**>2.0**	**6.0 – 9.5**
Jan	0.0	2.0	2.2	0.09	0.1	5.9	6.7 – 6.9
Feb	0.0	4.0	5.3	0.18	0.2	6.9	6.6 – 6.9
Mar	1.3	2.6	4.7	0.17	0.8	6.8	6.8 – 7.0
Apr	0.0	2.0	3.1	0.11	0.1	6.6	6.8 – 6.9
May	0.0	2.0	2.6	0.10	0.2	6.0	6.7 – 7.0
Jun	0.0	2.0	3.1	0.15	0.2	5.8	6.5 – 6.8
Jul	0.0	2.0	4.4	0.15	0.2	11.4	6.3 – 6.7
Aug	0.3	2.0	3.3	0.17	0.1	5.3	6.6 – 7.0
Sep	0.0	2.0	3.1	0.13	0.2	5.5	6.6 – 7.1
Oct	0.1	2.0	3.2	0.16	0.3	4.9	6.7 – 6.9
Nov	0.0	2.0	5.8	0.18	0.1	5.5	6.4 – 6.9
Dec	0.0	2.3	3.1	0.10	0.1	6.2	6.7 – 6.9

** Monthly Geometric Mean Density*
*** Summer: April 1 – November 30; Winter: December 1 – March 31*

In addition to operating the plant in compliance with the Approval effluent limits, the Region strives to achieve more stringent effluent objectives (target concentrations/ranges). In 2022, there were ten (10) occurrences where the effluent objectives were not met (based on monthly averages for TSS and TP, and daily value for pH):

- pH measured outside of the effluent objective range on three (3) days of the year,
- TSS was above the ECA effluent objective limit of 5 mg/L in the months of February and November, and
- TP tested above the ECA objective limit of 0.15 mg/L in the months of February, March, August, October, and November.

See Table 3 for information on corrective actions taken to resolve these events.

The Inglewood WWTP has a rated capacity of 243 m^3/day, which is based on an annual average of daily flows. In 2022, the annual average flow was 90.93 m^3/day, representing 37% of the rated capacity. Over the past five years, flows have remained steady year over year.

4.2 Operating Problems Encountered and Corrective Actions Taken

The Inglewood WWTP operates all year round, 24 hours a day. Occasional operating issues are encountered and are recorded in the facility logbook and on Station Failure Reports. The issues are also logged into the Computerized Maintenance Management System (CMMS).

Table 3 summarizes these operational challenges and corrective actions taken to minimize environmental impact. All operational challenges were addressed and resolved through equipment maintenance, operational adjustment, or other mitigative action(s). Challenges with meeting ECA limits and objectives are reported to the Ministry Inspector monthly.

Table 3 – Summary of Operating Issues and Corrective Actions Taken

Operational Challenges	Date(s)	Corrective Actions
High Effluent TSS	Individual elevated values were observed through 2022, with monthly objective exceedance in the months of February and November	Process troubleshooting and adjustment performed as appropriate. Actions included: • Wasting cycle adjusted • Tanks and filters cleaned • Grease skimmed and pumped out from SBR • Removed sludge from trash traps • Removed sludge from SBR • Alum feed adjusted • Cleaned filter and the UV system • SBR reseeded with activated sludge from Clarkson WWTP

Continued on next page

Table 3 continued

High Effluent TP	Individual elevated values were observed through 2022, with monthly objective exceedance in the months of February, March, August, October, and November	Process troubleshooting and adjustment performed as appropriate. Actions included: • Wasting cycle adjusted • Tanks and filters cleaned • Removed sludge from trash traps • Removed sludge from SBR • Alum feed adjusted • Cleaned filter and the UV system • SBR reseeded with activated sludge from Clarkson WWTP
Effluent pH value lower than the objective range	11 July 7 November 9 November	Process troubleshooting and wasting cycle adjustment performed
Effluent TAN elevated	Individually elevated values were observed in the months of March, April, June, July, September, and October	Process troubleshooting and adjustment performed as appropriate. Actions included: • Tanks and filters cleaned • Process cycle adjusted
Minor issues with equipment or SCADA	4, 26 January 17, 28 May	Troubleshooting was performed and equipment was repaired or replaced as needed; SCADA group addressed all SCADA related issues
High flows due to rain and snow melt	February	Trash traps and inlet maintenance hole contents hauled to prevent any washout
Broken decant piping flange	19 March	Process troubleshooting and adjustment performed as appropriate. Actions included: • Hauled from influent manhole, trash traps, and/or effluent chamber • Fixed decant flange • SBR reseeded with activated sludge from Clarkson WWTP In-house testing was performed from March 17-23 and the effluent was only released into the Credit River when the results were within the Approval limits.

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 Operation and Maintenance Activities

Figure 3 shows the various maintenance activities conducted at the Inglewood WWTP, with a total 2,984.5 hours spent in 2022. In-house laboratory testing accounted for 41.67% of total hours, followed by sampling activities and general maintenance activities.

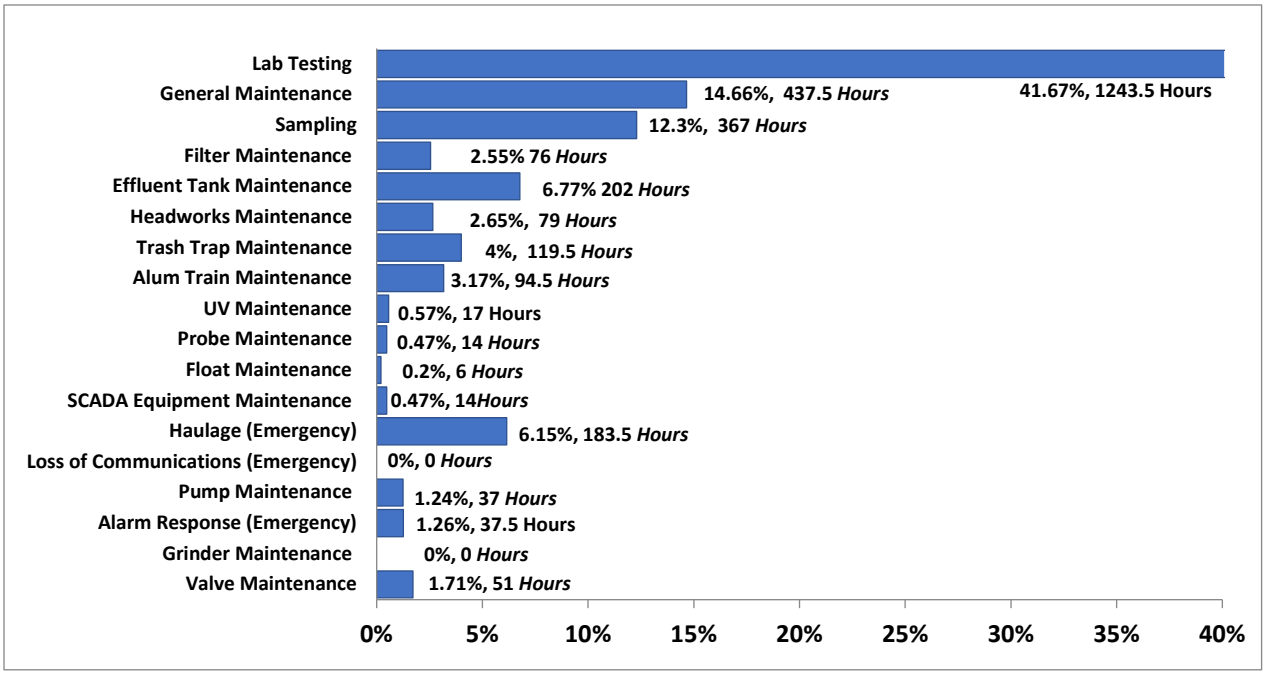


Figure 3 – Maintenance Activities

4.3.2 Preventive Maintenance

Figure 4 shows the preventive maintenance activities at the Inglewood WWTP, conducted to avoid unplanned downtime and prevent equipment failure. A total of 206.9 hours were invested in preventive maintenance activities in 2022. Routine facility inspections accounted for 81.9% of the total hours, followed by generator testing to maintain plant operational readiness during emergencies.

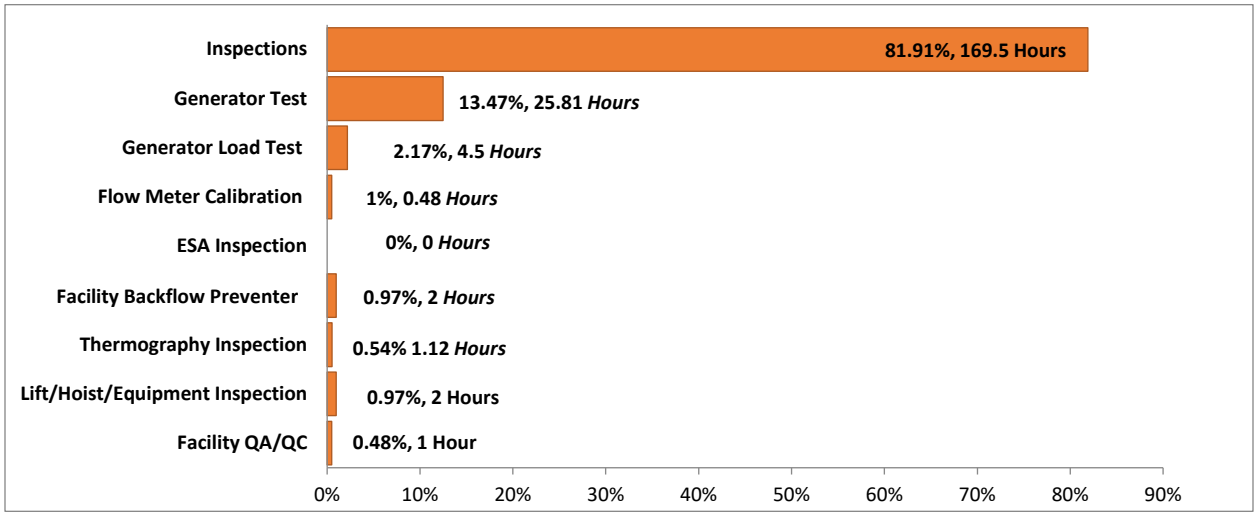


Figure 4 – Preventive Maintenance

4.3.3 Operating Costs

The Approval requires that the plant and all equipment used to achieve compliance are properly operated and maintained. This includes providing adequate funding. The Region funds operational activities and process chemicals to maintain daily operation, as well as capital activities to ensure future system performance.

In 2022, $5,290 was spent on process chemicals (aluminum sulphate) with an average cost of $0.16 per m^3 of wastewater treated.

Water and wastewater treatment plants are among the highest energy users in the Region. Utilizing the Region's Energy Dashboard electricity numbers (kWh) and volumes of wastewater treated it is possible to calculate how much energy is required to treat wastewater. In 2022, 4.73 kWh of energy was used per m^3 of wastewater treated at the Inglewood WWTP. Energy usage and performance of energy intensive equipment is monitored, and the Region continues to research ways to optimize and reduce energy use, such as identifying energy-saving opportunities during design of capital improvement and construction projects.

4.3.4 Expenditure Information

Region staff determine capital spending priorities to eliminate unnecessary expenditures while maintaining infrastructure. The multi-year expansion of the Inglewood WWTP was initiated in 2022 and total capital spending associated with the construction works was approximately $1,700,000.

4.4 Summary of Effluent Quality and Control Measures

Quality Assurance & Control Measures

Sampling Data

Licensed operators perform **in-house testing** of multiple parameters for process control

Primary treatment efficiency **sampling program**

Samples are analyzed by an **accredited laboratory**

All **process data** is captured electronically

SCADA real-time data capture & monitoring, data historian, and reporting tools for the collection and analysis of data

Operational Control

Operational facility sheets capture data that can be used to determine trend and diagnose problems

Dissolved oxygen profiling to ensure completion of CBOD removal and complete nitrification

Calibration of critical equipment is performed with required frequency

Equipment redundancy to increase equipment availability and effective response to failures and unplanned emergencies

Multiple **SCADA** stations throughout the facility ensures operators have ready access to real-time conditions and control of plant equipment

Internal **Standard Operating Procedures** complement Operations and Maintenance Manuals

Document control system for proper and effective record-keeping

Wastewater Contingency Plan to address emergency situations in the interest of meeting final effluent limits and prevent impacts to the environment

Preventive Maintenance

Reliability Centered Maintenance program reduces emergency repairs, shifting toward proactive control

Inventory of equipment is captured in a **Computerized Maintenance Management System**, improving the ability to manage assets

A major **maintenance program** focuses on replacing or refurbishing aging assets

Competent Staff

Operator licences (issued under O. Reg. 129/04) are verified monthly

Comprehensive operator training includes classroom, online and hands on training

Overall Responsible Operator readily available to provide direction during operational challenges and emergency situations

Compliance and Process staff for system oversight

Management Oversight

Regular process and compliance meetings between the various internal groups

Monthly operations staff meetings provide training and discussion on topics including health and safety, compliance, and operational and maintenance activities

4.5 Summary of Calibration 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 2022, all flow meters were found to be within acceptable limits.

4.6 Summary of Efforts Made in Meeting the Effluent Objectives

Effluent objectives prescribed by the Approval for individual parameters were met throughout 2022, except for ten (10) instances, which were communicated to the Ministry Inspector through monthly compliance reports. See Table 3 for details on the instances and corrective actions taken.

The Region ensures high effluent quality through a multi-stage treatment process and well-developed monitoring program. Each year, Region 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 effluent parameters to ensure that trends are identified and intervention where needed to ensure potential issues do not escalate.

Samples are collected from the Credit River downstream of the effluent discharge location and their results compared against effluent testing data to monitor for environmental impacts. In 2022, trending demonstrates that the Credit River water quality was not adversely impacted by the effluent from the Inglewood WWTP. As further diligence, the Region and the Credit Valley Conservation Authority share monitoring data to ensure both parties are kept informed, which improves collaborative protection of the natural environment.

4.7 Volume of Sludge Generated and Hauled

Sludge is a by-product generated from the treatment of wastewater and must be removed from the WWTP's trash traps. Sludge generated on-site is hauled to the Region's Clarkson WWTP. Haulage from other process tanks is directed to either the Clarkson WWTP or the Mayfield Road Sewage Pumping Station (part of the Wastewater Collection System that flows to the Clarkson and GE Booth WWTPs). Table 4 provides a summary of sludge volume hauled in 2022, as well as volume of haulage from other process tanks.

There is no anticipated significant increase in the generated sludge volume for 2023. However, occasional events like cleaning of tanks may cause changes in haulage volume.

Table 4 – Volume of Sludge Generated and Haulage from the WWTP

Month	Sludge Hauled from Trash Traps (m^3)	Haulage from other process tanks (m^3) *
January	26	26
February	88.5	49
March	129.5	276
April	26	25
May	47	50.5
June	26	24
July	6.5	6.5
August	0	26
September	45	11
October	34	11
November	11	33
December	11	0
TOTAL	**450.5**	**538**

* Refer to Table 3 for information on haulage from other process locations

4.8 Summary of Complaints

The Approval requires that the Region log all resident complaints, investigate, and resolve them. The Region attempts to contact all customers and satisfactorily address their concerns and enquiries. A database is used to record details including information collected from the customer on the nature of the enquiry and action taken by the Region. There were no complaints in 2022 related to the operation of the Inglewood WWTP.

4.9 Summary of All Bypass, Spill or Abnormal Discharge Events

Occasional weather events such as heavy rainfall and spring snow melt can result in flow rates that are higher than those for which the plant was designed and 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.

Occasionally, a planned bypass is necessary to repair an essential part of the treatment process or during construction. In those cases, Peel submits a request to the federal and provincial government to perform the bypass, including a plan to minimize its impact.

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. Bypasses are also essential to protect the plant core

biological treatment process (microorganisms that treat the sewage) from being washed out, which would prevent the plant from functioning properly and potentially causing long-term treatment impacts until the biological community is re-established.

Most bypasses in Peel are *secondary bypasses*, whereby the diverted wastewater receives primary treatment, bypasses secondary treatment, and receives a high degree of disinfection.

There were no bypasses in 2022 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 2022 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 2022 at the Inglewood WWTP.

4.10 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*.

There was no work requiring *Notice of Modification to Sewage Works* performed in 2022. Similarly, there was no modification to the equipment or facility as described in the Approval.

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

The Region undertakes construction projects to upgrade or enhance the WWTP to meet demands related to industrial and commercial growth in the Region that may alter incoming wastewater volume or loading, and to integrate new technologies. In 2022, construction of the Ministry approved works for the Inglewood WWTP commenced, which involves plant expansion and includes a new treatment train, new headworks, replacement of existing SBR equipment, anoxic mixers, blowers, and fine bubble diffusers to provide additional aerobic capacity.

4.11 Other Information Required by the Ministry Water Supervisor

There was no other information requested by the Ministry Water Supervisor in 2022.

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 the Region performed the required reporting for incidents when compliance limits were not met, per Section 2.1 of this report. The inspections also verify that the Region 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.

On December 19, 2022, the Ministry began a detailed inspection of the facility for a period of December 2020 to December 2022. A physical inspection of the facility was performed, followed by a document and record review. The inspection yielded one finding of non-compliance, associated with TAN over the Approval limit in March 2021, and three best management practice recommendations associated with the effluent objectives for TP, TSS, and pH.

5.2 Wastewater Integrated Management System

The Region has developed and implemented Wastewater Integrated Management System (WWIMS) to create a systematic approach towards pollution prevention, adopt quality work and enhance performance thereby 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 the Region's WWIMS includes the Wastewater Collection System, and the Inglewood Wastewater Treatment Plant.

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 within the Wastewater Division.

In early 2022, the Region determined through internal review of its management system self-declaration of conformance to ISO 14001 and ISO 9001 requirements. With organizational changes in the Region's water and wastewater programs in summer 2022, the WWIMS is being updated to align with the new operational framework of the wastewater collection and treatment systems.

A review of risks to the operation of Region's wastewater systems and the natural environment was completed in 2022. Through the assessment of 170 activities and their potential impact, 27 activities were deemed to be significant. Once identified, environmental priorities and control mechanisms were confirmed and/or set to ensure prevention of pollution and to reduce the risk of adverse impacts on the natural environment.

Appendix A – Summary of Tested Wastewater Parameter Information

Parameter	Parameter Information
Dissolved Oxygen (DO)	Amount of oxygen dissolved in water. It is essential for the survival of aquatic plants and animals. For wastewater treatment, DO is required by microorganisms to break down the organic material present. A lower dissolved oxygen value suggests a greater amount of organic matter present in the sample.
Total Biochemical Oxygen Demand (BOD_5)	Amount of DO used by microorganisms to break down organic material present in water sample, measured as DO decrease over a 5-day period. A higher BOD value means a greater amount of organic matter present in the sample, which can cause depletion of DO in receiving waters.
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.
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.
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 hinder the disinfection process and can also lower the quality of the receiving waterbody.
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.
Alkalinity	Water's resistance to the effect of acids added to water.
Carbonaceous Biochemical Oxygen Demand ($CBOD_5$)	Amount of DO needed by biological organisms to break down carbonaceous (carbon rich) organic material present in a water sample over a 5-day period.
Chemical Oxygen Demand (COD)	Amount of oxygen needed to oxidize (combine with oxygen) all the organics in a wastewater sample. COD is used as a measure of organic pollution.
Field pH	Measure of the alkalinity or acidity in wastewater, which can indicate chemical or industrial pollution. The pH test must be performed immediately, in the field, rather than sent to a lab.
Field Temperature	Temperature of the wastewater sample measured in the field. Higher wastewater temperatures allow for more efficient treatment at biological treatment plants.
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).
Total Ammonia Nitrogen (TAN)	The amount of ammonia in wastewater. Sources of ammonia include domestic, industrial, or agricultural pollution, primarily from fertilizers and animal and plant decomposition and waste.
Total Un-ionized Ammonia (UAN)	In water, total ammonia nitrogen occurs in ionized (NH_4^+) and un-ionized (NH_3) form. Un-ionized ammonia is toxic to fish.
Total Aluminum (Al)	A metallic element that occurs naturally in small amounts in the environment and can also be introduced into wastewater through industrial processes.

Total Cadmium (Cd)	A rare metal that is introduced into wastewater through industrial processes (plating, batteries, pigments, etc.) as well domestic products such as hand soap and bodywash in small concentrations.
Total Chromium (Cr)	Chromium is a metallic element that is the primary additive in stainless steel and chrome plating and introduced into wastewater through these industrial processes.
Total Copper (Cu)	Copper is a conductive metallic element that is introduced into wastewater primarily through electronics manufacturing and manufacturing of wires and cables.
Total Iron (Fe)	Iron is the most widely used metal and enters the wastewater system through industrial processes such as the construction of machinery and tools as well as framework for buildings and, in small amounts, from domestic sources such as cleaning products.
Total Lead (Pb)	Lead is a heavy metal that is introduced into wastewater through various industrial processes such as battery production and construction material manufacturing.
Total Nickel (Ni)	Nickel is a metal that is introduced into wastewater through various industrial processes such as manufacturing of stainless steel, electroplating and batteries.
Total Zinc (Zn)	Zinc is a heavy metal that is introduced into wastewater through various industrial processes such as mining, coal and waste combustion and steel processing.
Nitrite (NO_2)	Nitrite is an intermediate product created during nitrification and denitrification processes in wastewater treatment. Nitrite in large concentrations may cause hypoxia (reduced oxygen to body tissues) in fish and other aquatic organisms.
Nitrate (NO_3)	An essential nutrient used by microorganisms for growth. Nitrate comes from a variety of sources including overuse of chemical fertilizers and improper disposal of human and animal waste. Excess nitrates in waterbodies can promote algae blooms and cause eutrophication.
Total Coliforms	Found widely in nature e.g. animal manure, soil and wood. Coliform bacteria grow under the same conditions as disease-causing bacteria, which makes them useful indicator organisms.
Fecal Coliforms	Group of bacteria found in fecal excrement of humans, wildlife and livestock. They are an indication of presence of organisms that can survive in the digestive system, some of which could cause disease.
Background Colony Count	Indicates general bacterial population in a sample. Most of these are not disease-causing, but their counts are used to assess disinfection effectiveness.
Fecal Streptococcus	Group of bacteria commonly found in animal and human feces that are known to cause many illnesses. They are a more accurate indication of presence of pathogens than Coliforms.
Heterotrophic Plate Count (HPC)	Provides an estimation of the number of healthy, live heterotrophic bacteria in water following treatment. Heterotrophic organisms eat other plants or animals for energy and nutrients. Many pathogenic (disease-causing) bacteria are heterotrophs.

Appendix B – Summary of Additional Wastewater Testing Results for 2022

Table 5 – Raw Wastewater (Influent) Characteristics

Parameter	Unit	Monthly Average * (Result Range) (Min – Max)
Total BOD_5	mg/L	187.5 – 262.5
Total Phosphorous	mg/L	5.6 – 8.4
Dissolved Phosphorus	mg/L	2.8 – 4.6
Total Suspended Solids (TSS)	mg/L	147.5 – 320.0
Total Kjeldahl Nitrogen (TKN)	mg/L	42.3 – 51.8
Alkalinity	mg/L	330 – 385
Total $CBOD_5$	mg/L	190 – 265
Chemical Oxygen Demand (COD)	mg/L	390 – 688
Field pH	pH	7.9 – 8.6
Field Temperature	°C	11.8 – 21.8
Total Ammonia-N	mg/L	28.8 – 44.2
Total Aluminum (Al)	ug/L	330 – 1150
Total Cadmium (Cd)	ug/L	0.1 – 0.2
Total Chromium (Cr)	ug/L	5.0 – 5.7
Total Copper (Cu)	ug/L	52.3 – 82.0
Total Iron (Fe)	ug/L	130 – 348
Total Lead (Pb)	ug/L	0.86 – 1.25
Total Nickel (Ni)	ug/L	1.7 – 3.4

** Results that were below the analytical method detection limit are reported with a "less than" (<) sign. The "<" sign is eliminated when calculating average values.*

Table 6 – Final Effluent Characteristics

Parameter	Unit	Monthly Average * (Min – Max)
Total Coliforms	CFU/100mL	1 – 5
Fecal Coliform	CFU/100mL	0 – 2
Background Colony Count	CFU/100mL	4 – 22
Fecal Streptococcus	CFU/100mL	0 – 2
Heterotrophic Plate Count (HPC)	CFU/mL	2 – 62
Dissolved Phosphorus	mg/L	0.037 – 0.093
Alkalinity	mg/L	42 – 78
Chemical Oxygen Demand (COD)	mg/L	14 – 20
Total Unionized Ammonia	mg/L	0.0006 – 0.0018
Total Kjeldahl Nitrogen (TKN)	mg/L	1.0 – 1.4
Field Temperature	(°C)	13.3 – 22.6
Total Aluminum (Al)	ug/L	103.8 – 322.5
Total Cadmium (Cd)	ug/L	<0.090
Total Chromium (Cr)	ug/L	<5.0
Total Copper (Cu)	ug/L	7.3 – 12.3
Total Iron (Fe)	ug/L	100 – 108
Lead (Pb)	ug/L	<0.5
Total Nickel (Ni)	ug/L	1.0 – 1.8
Total Zinc (Zn)	ug/L	42.5 – 67.0
Nitrite (NO_2)	mg/L	0.02 – 0.16
Nitrate (NO_3)	mg/L	25.1 – 38.4
NO_2 + NO_3	mg/L	25.2 – 38.6

** Results that were below the analytical method detection limit were reported with a "less than" (<) sign. The "<" sign is eliminated when calculating average values except for Cd, Fe and Pb.*

In addition to influent and effluent, the Region of Peel also tests the effluent receiving body (Credit River), downstream of the WWTP discharge point. Monthly samples were collected from January to December 2022 and tested for a variety of parameters.

Appendix C – Frequently Asked Questions

1. 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. The Region of Peel operates three wastewater treatment plants (WWTP): G.E. Booth WWTP and Clarkson WWTP, both discharging into Lake Ontario, and the Inglewood WWTP, discharging into the Credit River. These three plants serve the cities of Mississauga and Brampton and the Town of Caledon.

Click here for more information on how wastewater is treated.

2. 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 the Region of Peel at 905-791-7800.

3. 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 capful 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 the Region of Peel at 905-791-7800 for further investigation.

4. 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 systems in Mississauga, Brampton and Caledon are maintained by the Region of 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. The Region of Peel maintains storm sewers on regional roads.

Click here for more information about wastewater and storm water.

5. What happens to industrial wastewater?

Some companies treat their own wastewater and release it directly into the environment or into the Region of Peel 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 Region of Peel sewers must comply with the Region of Peel's Sewer Use Bylaw (Wastewater Bylaw). To ensure compliance, industrial facilities are examined by inspectors from the Region's Environmental Control department. Approximately 6,000 inspections are completed each year.

6. 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 it is not effectively broken down during the wastewater treatment process. Instead, the Region of Peel recommends that edible household fats, oils and grease should be collected and properly disposed as per the **FOG disposal at home** instructions on this page. Click here to learn more about Peel's Community Recycling Centres.

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 should be returned to your local pharmacy. For more information on how to properly dispose of items that damage the wastewater refer www.idontflush.ca.

7. 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 the Region of Peel at 905-791-7800 ext. 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. Click here for more information.

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. The Region of Peel operates and maintains three wastewater treatment facilities, G.E. Booth, Clarkson, and Inglewood, under strict regulations and the effluent discharged into the environment must meet location-specific, provincial, and federal standards.

8. Which pipes are mine and which are the Region's responsibility?

Click here for more information about homeowner and regional responsibilities of wastewater infrastructure.

9. What is optional water/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. The Region of Peel endorses a voluntary pipe insurance program. Read more here:

Click here for more information on the water/sewer line insurance program.

Other sources from which you can get more information about wastewater and related issues:

Region of Peel working with you **Wastewater-related questions:** **Region of Peel** 10 Peel Centre Drive Brampton ON L6T 4B9 Phone: 905-791-7800 Ext. 4685 Website: https://peelregion.ca/wastewater/ E-mail: Publicworkscustserv@peelregion.ca	Region of Peel working with you **Water and Sanitary Sewer/Septic Protection Plans:** https://www.peelregion.ca/water/your-home/service-line-warranties.asp **Peel Wastewater Bylaw:** https://www.peelregion.ca/council/bylaws/2010s/2010/by-53-2010.htm
Ontario **Ministry of the Environment, Conservation & Parks** Public Information Centre Phone: 416-325-4000 Toll-Free: 1-800-565-4923 Web site: www.ontario.ca/environment	Canada **Environment and Climate Change Canada** Inquiry Centre Phone: 819-997-2800 Toll-Free:1-800-668-6767 Web Site: http://www.ec.gc.ca