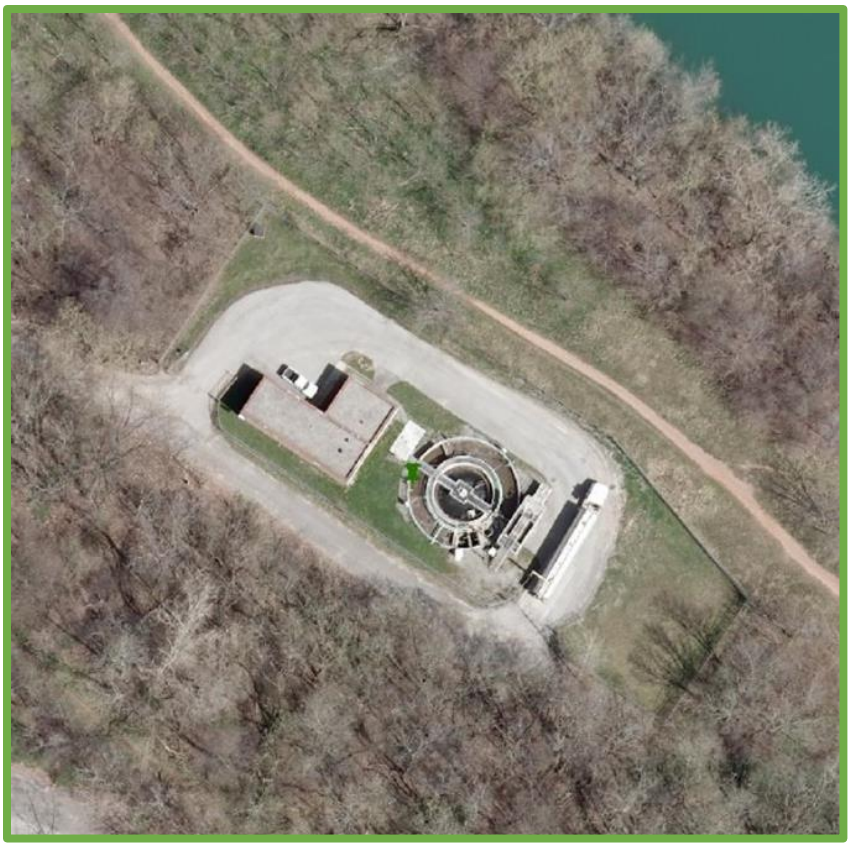

Queenston Wastewater Treatment Plant Annual Performance Report –Treatment Reporting Year: 2023

Niagara Region

Table of Contents:

Queenston Wastewater Treatment Plant Annual Performance Report (QN-T)

List of Tables:

List of Figures:

QN-T-2 Wastewater Treatment Process Description

The Queenston (Niagara-on-the-Lake) Wastewater Treatment Plant (WWTP) is located at 30 Front Street in the Town of Niagara-on-the-Lake and provides wastewater treatment to the village of Queenston. The Queenston WWTP is a class II modified Ludzack-Ettinger treatment facility and has been designed to treat an average daily flow (ADF) of 500 cubic meters per day (m^3/d). This facility has peak design flow rate of 1,700 m^3/d.

The Queenston WWTP operates under the following MECP approvals:

Environmental Compliance Approval (Sewage): 0371-93YM2L, Issued February 22, 2013
Environmental Compliance Approval (Air): 5305-7G6L32, Issued July 3, 2008

The Queenston WWTP uses the following processes to treat wastewater:

- Raw Influent Pumping
- Screening
- Grit Removal
- Phosphorus Removal
- Secondary Treatment
- Disinfection (Chlorination/Dechlorination)
- Solids Handling (Storage and Transportation)

Raw Influent Pumping: Wastewater from the collection system enters the facility at the raw sewage wet well chamber. This chamber is equipped with raw sewage pumps. The wet well provides a low point for the collection system to discharge to while the raw sewage pumps lift the wastewater to allow the remainder of the treatment process to occur by gravity.

Screening: Wastewater flows through a bar screen to remove rags and large debris that could harm pumps and process equipment downstream. Screenings are sent for disposal in landfill.

Grit Removal: Grit channels slow the speed of the wastewater allowing heavy suspended material such as sand and small stones (grit) to settle towards the bottom while lighter organic particles are kept in suspension and pass through the tank with the wastewater for further treatment. The grit is collected and sent to landfill for disposal.

Phosphorus Removal: A coagulant, ferric sulphate, is added to the treatment process to aid in phosphorus and suspended solids removal.

Secondary Treatment:

Aeration Tank: Aeration tanks equipped with air bubble diffusers oxygenate the wastewater to encourage microorganisms (or “bugs”) to remove dissolved and suspended organics and nutrients from the wastewater. Return Activated Sludge (RAS); a mixture of bugs and

wastewater, is recycled back through the aeration process to ensure enough bugs are present to provide adequate wastewater treatment.

Secondary Clarifier: The secondary clarifier receives effluent from the aeration tanks. The flow of wastewater slows down and the solids settle quickly as Activated Sludge. The clear effluent on top discharges over a weir for further treatment. A portion of the activated sludge collected on the bottom of the clarifier is pumped back to the front of the aeration tanks to ensure a healthy microbial population (RAS). Any excess or Waste Activated Sludge (WAS) is removed from the process by pumping to the solids handling treatment process.

Disinfection (chlorination/dechlorination):

Chlorine in the form of liquid sodium hypochlorite is added into the effluent stream for pathogen control during the chlorination season from April 1st to October 31st. Adequate contact time is provided as the effluent flows through the chlorine contact chambers. As chlorine can be toxic to aquatic species, disinfected effluent is dechlorinated with a dechlorinating agent before being discharged to the Niagara River.

Solids Handling:

Waste Activated Sludge Storage: Waste activated sludge from the secondary treatment process is transferred to a storage tank for holding until it can be hauled to another WWTP facility for further treatment and processing.

QN-T-3 Review of Plant Flows and Influent Sampling and Monitoring

Review of 2023 Plant Flows

Table QN-T-1 below outlines the volume of sewage treated at the Queenston WWTP during the reporting year.

Table QN-T-1: Table of Queenston WWTP 2023 Treated Flows

Flow Statistic	Value
Design Average Daily Flow (ML/d)	0.500
Design Peak Flow Rate - Dry Weather (ML/d)	1.700
Total Volume Processed (ML)	82.225
Annual Average Daily Flow (MLD)	0.225
% Annual Average Daily Flow Utilization	45%
% Increase/Decrease over prior year	34%

Reviewing the treated flows in 2023, it was observed that, on average, the plant utilizes 45% of its design Average Daily Flow. This indicates that the facility has the hydraulic capacity to meet the needs of the collection system with room for additional flows that may be added from development. Where the average becomes greater than 80%, plant expansion should be considered.

Daily flows to the plant were reviewed. In 2023, there were nine (9) instances where the flow to the plant was greater than the design Average Daily Flow, amounting to approximately 2% of the year.

A review of the monthly average daily flow rate for the prior 10-year period was completed. This can be observed below in Figure QN-T-1 below. This can be observed below in Figure QN-T-1 below. It was observed that average daily flow rates have been in decline over the past 10 years. The closure of businesses and tourist attractions because of the COVID-19 Pandemic resulted in lower flows in 2020 and 2021. The trend is now returning to typical flow observed prior to the pandemic. Spikes during typical wet weather seasons further support increased flows are occurring due to Inflow and Infiltration.

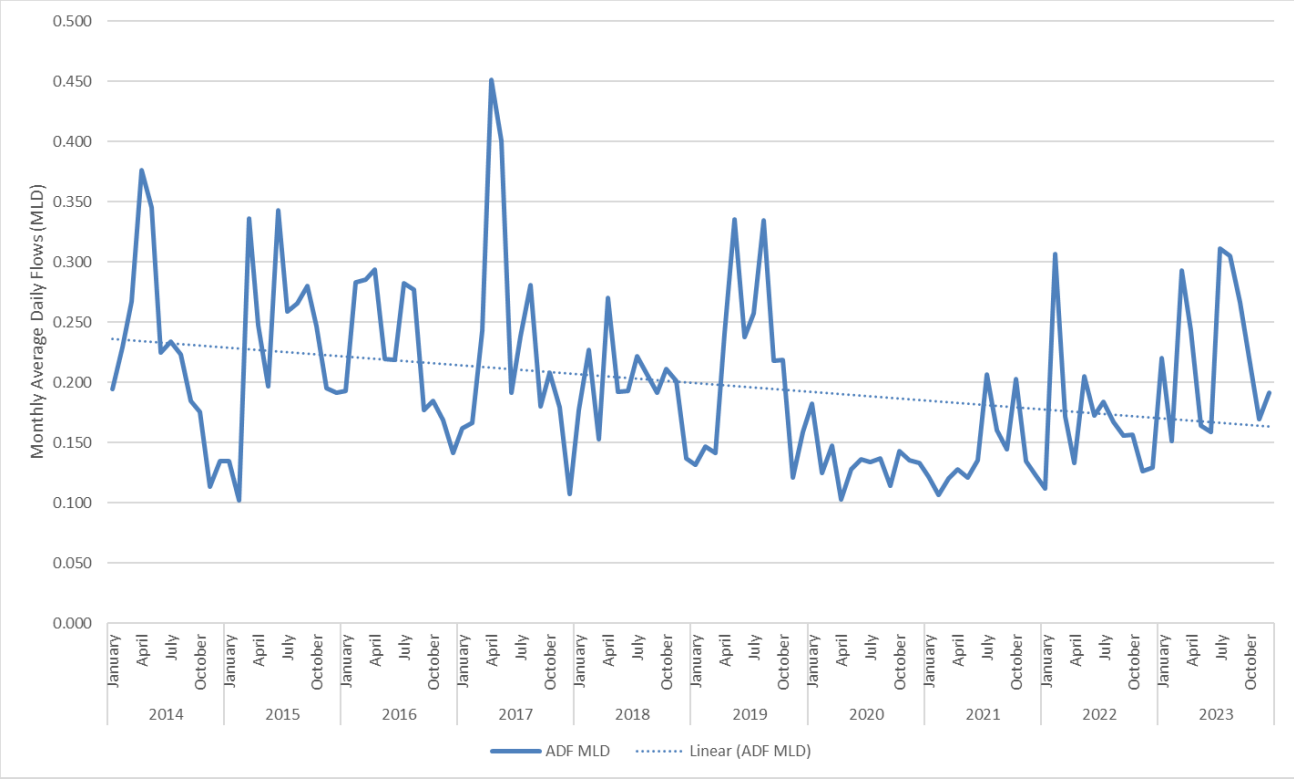

Figure QN-T-1: Graph displaying the Monthly Average Daily Flow Rate in MLD

Review of Influent Sampling and Monitoring Activities

In 2023, there were 104 samples of influent collected and tested. An annual summary of influent sampling can be observed in Table QN-T-4.

Although the volume of sewage is an important consideration for the effective operation of a wastewater treatment plant, another important factor to monitor is plant loading. Plant loading displays if the strength of the sewage received at the plant is getting stronger or weaker. Stronger sewage may impact the amount of sewage the plant can treat effectively.

Plant loading is calculated by measuring the average strength of a pollutant per liter of influent sewage and multiplying it by the average volume of sewage received. This is generally displayed as kilograms of pollutant per day or kg/d. Below in Figure QN-T-2, is a graph depicting four (4) commonly monitored pollutant loadings to the plant for the period of 2021-2023.

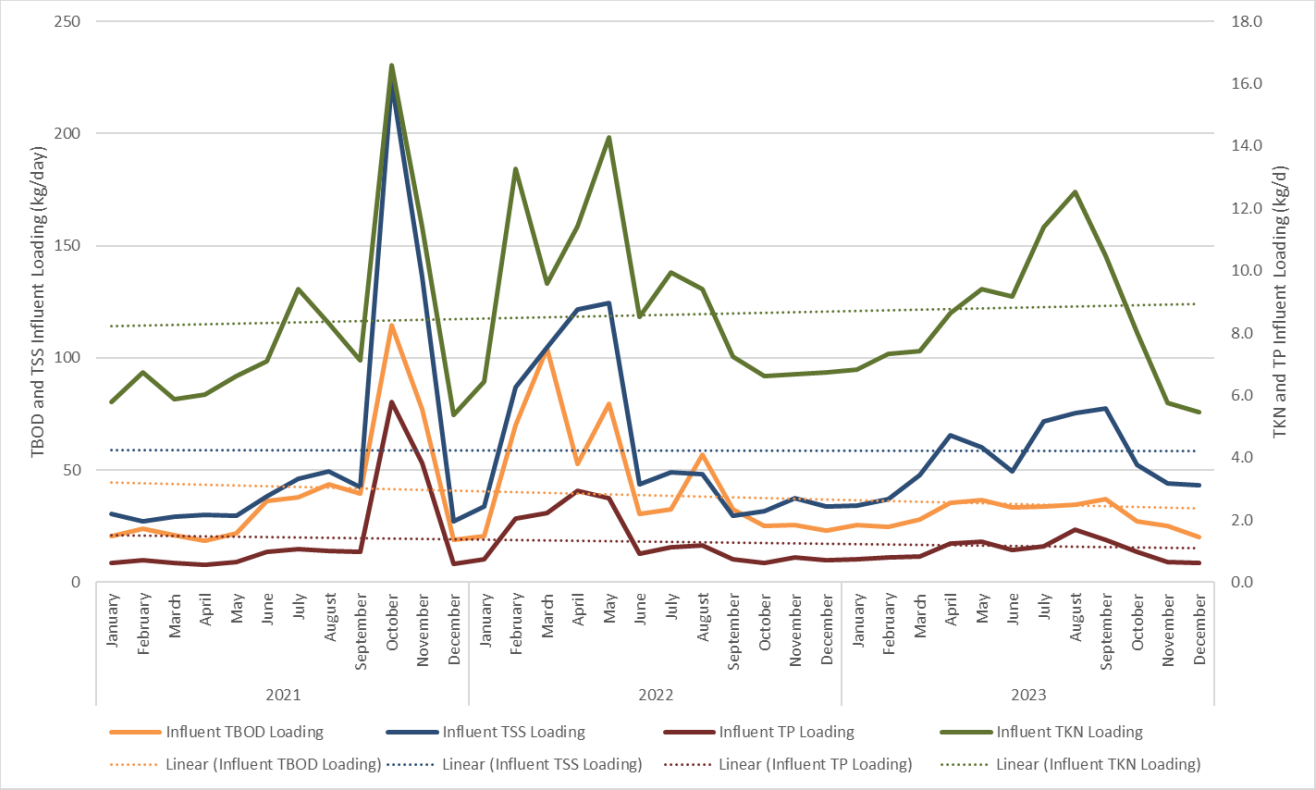

Figure QN-T-2: Figure of monthly plant loadings to the Queenston WWTP for CBOD, TSS, TKN and TP (in kg/d) for the period 2021 to 2023.

Reviewing the calculated loadings for TBOD, TSS, TKN and TP for the past three (3) years there is an observable increasing trend for all four parameters. The increased loadings are likely related to the observed decrease in average daily flows over the same period resulting in an increased concentration of sewage. These parameters will continue to be monitored to see if the trend persists.

Review of Final Effluent Sampling and Monitoring Activities

In 2023, there were 104 samples of final effluent were collected and tested. Individual as well as monthly average results are reviewed and compared to the objective and compliance limits stated in the facility ECA. Table QN-T-2 below summarizes the number of monthly objective and compliance limit exceedances at the Queenston WWTP in the reporting year.

Table QN-T-2: Evaluation of Final Effluent sample results to ECA objectives and compliance limits

Pollutant	ECA Monthly Concentration Objective	ECA Monthly Concentration Limit	Number of Monthly Objective Concentration Exceedances	Number of Monthly Limit Concentration Exceedances	ECA Annual Average Loading Limit	Number of Annual Loading Limit Exceeded
pH[1]	6.0-9.5	6.0-9.5	0	0	-	-
Carbonaceous Biological Oxygen Demand (CBOD)	15 mg/L	25 mg/L	0	0	12.5 kg/d	0
Total Suspended Solids (TSS)	15 mg/L	25 mg/L	1	0	12.5 kg/d	0
Total Phosphorus (TP)	1.0 mg/L	-	0	0	-	-
Total Residual Chlorine (TRC)[2]	0.50 mg/L	-	0	-	-	-
E-Coli (*geomean*)[3]	200 CFU/100 mL	200 CFU/100 mL	1	1	-	-

The Queenston WWTP met all ECA compliance limits for the 2023 reporting year.

Queenston WWTP had one (1) monthly objective exceedance for Total Suspended Solids (TSS) in August. This objective exceedance was caused by the secondary clarifier being out of service to conduct a condition assessment on this equipment. During this time, one of two aeration tanks was utilized as a secondary clarifier. Although the plant is designed to use an aeration tank as a back up to the secondary clarifier, the efficiency of treatment using the back up equipment is not as good, and some solids were carrying over into the final effluent.

[1]pH must meet objectives/limits at all times (inclusive)
[2] Total Residual Chlorine monitoring only required April 01 to October 31 inclusive
[3] E.Coli monitoring only required April 01 to October 31 inclusive

A review of individual results against ECA objectives was also complete. Below summarizes the percentage of individual samples that were over the ECA objective:

- CBOD – 0%
- TSS – 12%
- TP – 0%
- E.Coli – 16%

Final Effluent sample results did not exceed the ECA objective greater than 50% of the time.

The plant continues to effectively treat all wastewater received for treatment. An annual summary of monthly average final effluent sample results can be observed in Table QN-T-4 below.

Effluent Quality Assurance Measurements and Control Measures

To ensure Queenston WWTP continues to produce a high-quality effluent the following measures have been implemented:

- Development and implementation of a Wastewater Quality Management System (WWQMS) program
    - This program promotes an environment of continuous improvement for all staff impacting the quality of wastewater
- Compliance samples are analyzed by an ISO 17025:2017 accredited laboratory unless sample results are required to be collected in the field at the time of sampling
- Standard Operating Procedures (SOPs) are in place to support proper sampling and field measurements
- A compliance sampling schedule is created each year to ensure regulatory requirements are being met, as a minimum
- Equipment used in the monitoring and measurement of Final Effluent quality are calibrated annually

Deviations from Scheduled Monitoring Program

Compliance sampling activities at the Queenston WWTP follow a scheduled monitoring program to ensure all provincial and federal requirements are met. A schedule is prepared for the upcoming year and is submitted to the MECP as part of the annual reporting requirement.

In 2023, two deviations from the scheduled sampling days occurred. Table QN-T-3 below provides the instances where a deviation occurred and a reason for the deviation.

The 2024 sampling schedule is available upon request.

Table QN-T-3: Table of 2023 sampling schedule deviations

Sampling Date Deviation	Sample Type(s)	Reason
2023-07-06	Influent, Final Effluent	Operator error - operator thought it wasn't sampling day. Samples submitted the following day.
2023-12-05	Influent, Final Effluent	Sampler malfunction. Samples submitted the following day.

Table QN-T-4: Annual Summary of Plant Flows, Influent and Effluent Sampling and Monitoring Results

Measured Parameter	January	February	March	April	May	June	July	August	September	October	November	December	Total / Average	Total Samples Collected
Influent - Monthly Average TSS (mg/L)	156	244	163	269	366	312	231	247	291	238	259	225	250	
Number of Influent TSS Samples	9	8	9	9	9	8	9	9	8	10	8	8		104
Influent - Monthly Average TBOD5 (mg/L)	115	162	95	145	223	211	108	114	140	124	148	106	141	
Number of Influent TBOD5 Samples	9	8	9	9	9	8	9	9	8	10	8	8		104
Influent - Monthly Average TP (mg/L)	3.3	5.3	2.8	5.1	8.0	6.6	3.7	5.5	5.1	4.4	3.9	3.2	4.7	
Number of Influent TP Samples	9	8	9	9	9	8	9	9	8	10	8	8		104
Influent - Monthly Average TKN (mg/L)	31.00	48.33	25.31	35.56	57.49	57.79	36.63	41.08	39.40	36.42	33.84	28.51	39.28	
Number of Influent TKN Samples	9	8	9	9	9	8	9	9	8	10	8	8		104
Total Plant Flows (ML)	6.829	4.240	9.083	7.298	5.080	4.766	9.637	9.450	7.986	6.819	5.096	5.941	82.225	
Daily Average (MLD)	0.220	0.151	0.293	0.243	0.164	0.159	0.311	0.305	0.266	0.220	0.170	0.192	0.225	
Maximum Flow (ML)	0.431	0.319	0.763	0.614	0.228	0.245	0.550	0.446	0.403	0.325	0.265	0.489	**MAX**	0.763
Minimum Flow (ML)	0.152	0.066	0.173	0.121	0.126	0.114	0.238	0.179	0.192	0.175	0.135	0.137	**MIN**	0.066
Final Effluent - Monthly Average TSS (mg/L)	5.9	9.0	12.3	8.8	11.7	7.8	5.3	15.7	10.8	10.7	13.4	6.4	9.8	
Final Effluent - Average Daily TSS Loading (kg/d)	1	1	4	2	2	1	2	5	3	2	2	1	2	
Number of Final Effluent TSS Samples	9	8	9	9	9	8	9	9	8	10	8	8		104
Final Effluent - Monthly Average CBOD5 (mg/L)	4.9	4.0	4.8	4.0	4.0	4.0	4.0	4.3	4.0	4.7	4.0	4.0	4.2	
Final Effluent - Average Daily CBOD5 Loading (kg/d)	1	1	1	1	1	1	1	1	1	1	1	1	1	
Number of Final Effluent CBOD5 Samples	9	8	9	9	9	8	9	9	8	10	8	8		104
Final Effluent - Monthly Average TP (mg/L)	0.24	0.33	0.31	0.28	0.50	0.39	0.26	0.49	0.34	0.39	0.46	0.21	0.35	
Final Effluent - Average Daily TP Loading (kg/d)	0.05	0.05	0.09	0.07	0.08	0.06	0.08	0.15	0.09	0.09	0.08	0.04	0.08	
Number of Final Effluent TP Samples	9	8	9	9	9	8	9	9	8	10	8	8		104
Final Effluent - Monthly Average TKN (mg/L)	0.90	1.48	1.16	1.52	2.78	2.04	1.33	7.83	1.15	1.21	1.41	0.95	1.98	
Number of Final Effluent TKN Samples	9	8	9	9	9	8	9	9	8	10	8	8		104
Final Effluent - Monthly Average NH3 (mg/L)	0.06	0.26	0.06	0.17	0.74	0.31	0.16	5.99	0.07	0.05	0.06	0.07	0.67	
Number of Final Effluent NH3 Samples	9	8	9	9	9	8	9	9	8	10	8	8		104
Final Effluent - Monthly Average NO3 (mg/L)	6.81	6.56	6.16	6.08	9.70	13.11	14.60	8.28	12.55	15.27	14.76	10.29	10.35	
Number of Final Effluent NO3 Samples	9	8	9	9	9	8	9	9	8	10	8	8		104
Final Effluent - Monthly Average NO2 (mg/L)	0.37	0.40	0.17	0.21	0.80	0.44	0.62	0.68	0.36	0.40	0.40	0.40	0.44	
Number of Final Effluent NO2 Samples	9	8	9	9	9	8	9	9	8	10	8	8		104
Final Effluent - Monthly Geomean E.Coli (cfu/100mL)				46	25	72	111	6	3	4			18	
Number of Final Effluent E.Coli Samples				8	10	8	8	10	8	9				61
Final Effluent - Monthly Average TRC (mg/L)				0.00	0.00	0.00	0.00	0.00	0.00	0.00			0.00	

2023 Annual Performance and Summary Report - Treatment

Measured Parameter	January	February	March	April	May	June	July	August	September	October	November	December	Total / Average	Total Samples Collected
Number of Final Effluent TRC Samples				30	31	30	31	31	30	31				214
Final Effluent - Monthly Average Temperature (°C)	9.51	9.11	8.70	11.83	14.79	17.55	19.10	20.68	20.23	18.44	14.64	11.63	14.68	
Number of Final Effluent Temperature Samples	9	8	9	9	9	8	9	9	8	10	8	8		104
Final Effluent - Monthly Average pH	6.81	6.83	6.89	6.93	6.79	6.73	6.88	7.07	6.91	6.71	6.65	6.84	6.84	
Number of Final Effluent pH Samples	9	8	9	9	9	8	9	9	8	10	8	8		104

QN-T-4 Description of Operating Problems Encountered and Corrective Actions Taken

No operational issues were encountered in 2023.

QN-T-5 Summary of Major Maintenance Activities and Capital Works

Summary of Maintenance Carried out on Major Equipment

Niagara Region works to keep wastewater infrastructure in a state of good repair. Maintenance activities completed include regular preventative maintenance (PM) activities and normal and emergency equipment repair or replacement. Where a substantial amount of upgrade is required, this work is carried out under the capital works program.

Below is a summary of normal and emergency repairs carried out on major equipment at the Queenston WWTP:

- Aeration line replacement
- Fabrication of equipment to support sustainability upgrade project and condition assessments
- Replacement of Blower #1

This list does not include PM activities. PMs are completed and tracked in a computerized maintenance management system. PMs completed during the reporting year are available upon request.

Planned Capital Upgrades

An Environmental Assessment (EA) was conducted to review servicing options for the Queenston and St. David's areas of Niagara-on-the-Lake. Two options were considered:

- Keep the existing Queenston WWTP and complete needed sustainability upgrades
- Decommission the plant and build infrastructure to transport the wastewater to the Niagara Falls WWTP

During the EA study, it was identified based on a multi factor assessment, the preferred alternative was to keep the existing facility and complete sustainability upgrades. More information regarding the Environmental Assessment process is available on the Niagara Region website. (https://www.niagararegion.ca/projects/queenston-st-davids/default.aspx)

Condition assessments have bee completed to determine the necessary improvements required to existing equipment.

Summary and Update of Notice of Modifications Completed

Through the facility ECA, the MECP has given System Owners the ability to complete low risk changes to a treatment plant without requiring approval from the MECP. These modifications are documented on a Notice of Modification form and are signed off by the Owner or delegate of the system. Any pre-authorized modifications must be reported on annually to the MECP.

During the reporting year 2023, no Notices of Modification were completed.

No Notice of Modification forms were completed in previous reporting years. No status update is required.

Proposed Works – Status Update

There were no Proposed Works to be reported on for the 2023 reporting period.

QN-T-6 Summary Calibration Activities

Flow Meter Calibration – Influent and Effluent

Flow meters measuring flows discharging to the environment are calibrated at minimum, once per calendar year. Below in Table QN-T-5 provides a summary of flow meter calibration.

Table QN-T-5: Summary of Flow Meter Calibration

Meter Name	Date Calibrated	Comments
Queenston Final Effluent Meter	2023-04-12	Pass
Queenston Final Effluent Meter	2023-11-28	Pass

Calibration certificates are available upon request.

Effluent Monitoring Equipment Calibration/Verification

It is a requirement to calibrate, or, where unable to calibrate, verify equipment that is used to measure effluent quality.

Some effluent monitoring equipment calibration or verification is completed daily or as used by operations staff such as pH meter calibration or verification of the Total Residual Chlorine colorimeter.

Once annually, a third-party contractor performs calibration or verification on all effluent monitoring equipment. A summary of third-party calibration/verification activities are available in Table QN-T-6 below.

Table QN-T-6: Summary of Calibration/Verification of Effluent Monitoring Equipment

Equipment Description	Date Calibrated	Comments
pH Meter	2023-08-10	Pass
Chlorine Portable Pocket Colorimeter	2023-08-10	Pass

Calibration certificates are available upon request.

QN-T-7 Solids Handling

Processed Organics Received

No processed organics were received at the Queenston WWTP during the reporting period. Queenston does not typically receive processed organics.

Volumes of Sludge Generated and Removed From Site

Solids removed from the treatment process are stored and transported from site for further processing and beneficial re-use. All sludge removed from the Queenston WWTP is taken to another WWTP for further processing and anaerobic digestion. Table QN-T-7 provides a summary of 2022 and 2023 sludge volumes removed from site.

Table QN-T-7: Summary of Sludge Removed from Site 2023

Month	2023 Volume Sludge Hauled (ML)	Prior Year Volume Sludge Hauled (ML)
January	0.173	0.173
February	0.217	0.173
March	0.217	0.130
April	0.347	0.217
May	0.390	0.130
June	0.390	0.217
July	0.347	0.347
August	0.173	0.347
September	0.260	0.390
October	0.390	0.260
November	0.260	0.173
December	0.260	0.217
TOTAL	**3.425**	**2.775**

The volume of sludge hauled increased by 23% in 2023. This number is increased due to draining of tankage on site to facilitate condition assessment of tankage. Flows to the plant were also higher in 2023.

No changes are anticipated for sludge handling in 2024 at the Queenston WWTP.

Sludge Quality Monitoring

Sludges are sampled and analyzed bi-weekly to meet regulatory requirements of the Garner Road Biosolids Facility ECA and maintain our ability to beneficially re-use biosolids. Results are trended and compared to Nutrient Management Act (NMA) limits. Where a trend is detected, investigations are initiated to identify potential sources of the pollutant and correct any issue identified.

The Queenston WWTP does not directly haul sludge to Garner Road Biosolids Facility. Queenston WWTP does not have an on-site digester for storage and treatment of solids. Instead, sludge acquired from this WWTP is directed to neighbouring wastewater treatment plants so that it may receive further treatment and processing.

As a result, no sludge samples are collected from Queenston WWTP.

QN-T-8 Complaints

No complaints were received for the Queenston WWTP in 2023.

QN-T-9 Bypasses, Overflows, Other Situations Outside Normal Operating, Spills and Abnormal Discharge Events

Bypasses and Overflows

There were no overflow events at the Queenston WWTP in 2023. This facility normally does not overflow. The plant overflow cannot occur without manual of the overflow valve. Table QN-T-8 provides a monthly breakdown of overflow events occurring at the Queenston WWTP during the reporting period.

Table QN-T-8: Annual Summary of Overflow Events by Month

Month	Number of Overflow Events	Total Volume (ML)
January	0	0.000
February	0	0.000
March	0	0.000
April	0	0.000
May	0	0.000
June	0	0.000
July	0	0.000
August	0	0.000
September	0	0.000
October	0	0.000
November	0	0.000
December	0	0.000
Total	**0**	**0.000**

Overflows are sampled and submitted for analysis. Results are shown in Table QN-T-9 below.

Table QN-T-9: 2023 Queenston WWTP Overflow Sampling Results

Date	CBOD (mg/L)	Total Suspended Solids (mg/L)	Phosphorus (total) (mg/L)	Total Kjeldahl Nitrogen (mg/L)	Ammonia as N (mg/L)	Nitrate (mg/L)	Nitrite (mg/L)
No bypass or overflow events occurred.							

Situations Outside of Normal Operating Conditions

The MECP defines “Normal Operating Conditions” as when all unit process(es), excluding Preliminary Treatment System, in a treatment train is operating within its design capacity.

There were three (3) instances where tankage was taken out of service to support completion of condition assessments on plant equipment:

- January 2023 – Anoxic/Aeration Cell #1
- February 2023 – Anoxic/Aeration Cell #2

- August 2023 – Secondary Clarifier

Equipment out of service notifications were submitted to the MECP District Office for all the above work.

Spills

Niagara Region strives to maintain and operate wastewater infrastructure so spills to the environment do not occur. However, circumstances may arise and a spill occurs due to equipment malfunction, failure or other reasons. Occasionally, a planned spill may be required in order to safely complete required maintenance to critical equipment. In the event that this is necessary, approval from the MECP is obtained in advance.

All spills are reported to the MECP Spills Action Centre upon discovery. Spills are investigated and written reports are submitted to the MECP and Environment and Climate Change Canada as required by legislation. Below in Table QN-T-10 summarizes spills that occurred at the Queenston WWTP in 2023.

Table QN-T-10: Summary of spills occurring at the Queenston WWTP during the reporting year

Spill Date	MECP Incident Number	Description of Spill
No spills occurred in 2023		

Abnormal Discharges

An abnormal discharge is a discharge to the environment that is abnormal in quality or quantity. There were no abnormal discharges from the Queenston WWTP during this reporting year.

QN-T-10 Summary of Efforts to Achieve Conformance with F-5-1 and/or F-5-5

Summary of Efforts – Procedure F-5-1 – Secondary Treatment Equivalent

Procedure F-5-1 states wastewater treatment facilities are to provide treatment of wastewater to a minimum of secondary treatment equivalence. This means the WWTP should be designed to meet objectives of 15 mg/L for CBOD and TSS and 1 mg/L for TP.

As demonstrated above in section QN-T-2 and Table QN-T-4, Queenston consistently achieved effluent quality that met or exceeded design objectives.

Summary of Efforts – Procedure F-5-1 – Sewage Bypass/Overflow from Nominally Separated System

Procedure F-5-1 states that bypasses and overflows from nominally separated systems are not allowed except in emergency situations. Emergency situations include protection from basement flooding, preventing damage to WWTP equipment or pumping stations or to prevent treatment process washout.

The Queenston WWTP has adequate capacity to fully treat all flows received to the WWTP and is not required to bypass or overflow during wet weather. However, it is noted that high flow conditions occur during wet weather indicating inflow and infiltration in the system. Being a two-tier system, Niagara Region works closely with the Town of Niagara-on-the-Lake to reduce inflow and infiltration. Niagara Region participates in a cost sharing strategy with lower tier municipalities to fund overflow reduction projects. In 2023, Niagara Region had an approved budget totaling $4.0M for the overflow reduction cost sharing program. Two (2) projects were approved for cost sharing with the Town of Niagara-on-the-Lake however no projects were identified for the Queenston WWTP catchment.

Industrial Waste

Industrial waste can contain material that can have negative impacts on collection system infrastructure as well as the wastewater treatment process itself. Upsets to the treatment process can cause a plant to become non-compliant with ECA objectives and limits. To protect our infrastructure, the Niagara Region has a Sewer Use By-law in place. Environmental Enforcement Officers conduct industry inspections, sampling and monitoring of industrial discharges on a routine basis to ensure that they meet the Sewer Use By-law limits.

Summary of Efforts – Procedure F-5-5

The MECP Procedure F-5-5 applies to combined sewage systems. The Queenston wastewater collection system is considered nominally separated. This procedure does not apply.

Public Reporting of Bypasses and Overflows

Niagara Region reports all bypass and overflow events publicly on the Niagara Region website (https://www.niagararegion.ca/living/sewage/CSO/Reporting/CSOLocations.aspx)

Niagara Region updates the data on recent overflows four times a year and displays any overflows that may have occurred in the past 12 months.

A listing of overflow data back to 2008 is available through the Niagara Open Data website (https://niagaraopendata.ca/dataset/combined-sewage-overflow)

An active project is underway to improve public reporting of bypasses and overflows including making the data available in near real time.