Baker Road Wastewater Treatment Plant Annual Performance Report Treatment and Collection Reporting Year: 2025

Niagara Region

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BR-T-1 Wastewater Treatment Process Description

The Baker Road Wastewater Treatment Plant (WWTP) is located at 160 Lake Street in the Town of Grimsby. This facility provides wastewater treatment to the Town of Grimsby, Town of Lincoln and Township of West Lincoln. The Baker Road WWTP is a class III conventional activated sludge treatment facility and has been designed to treat an average daily flow (ADF) of 31,280 cubic meters per day (m^3/d). This facility can fully treat all flows up to 62,600 m^3/d and provides storm treatment for flows greater than 62,600 m^3/d up to a maximum flow rate of 120,000 m^3/d.

The Baker Road WWTP operates under the following MECP approvals:

Environmental Compliance Approval (Sewage): 5755-AEFJVC, issued March 30, 2017
Environmental Compliance Approval (Air): 2270-4VGJVB, Issued April 5, 2001
Environmental Compliance Approval (Air): 2186-66ZPWP, Issued December 3, 2004

The Baker Road WWTP uses the following processes to treat wastewater:

- Imported Sewage Receiving
- Raw Influent Pumping
- Screening
- Grit Removal
- Primary Treatment
- Secondary Treatment
- Phosphorus Removal
- Disinfection (Chlorination/Dechlorination)
- Solids Handling – sludge digestion, storage and transportation
- Storm Treatment

Imported Sewage Receiving Station: To provide service to Niagara Region residents outside the wastewater servicing area, the Baker Road WWTP accepts imported sewage from commercial haulers as well as Recreational Vehicle holding tank disposals. Receiving stations are situated to ensure all received sewage receives full treatment.

Raw Influent Pumping: After screening, wastewater from the collection system and imported sewage receiving station enters a wet well, 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: mechanically cleaned screens remove rags and large debris that could harm pumps and process equipment. Screenings are sent for disposal in landfill.

Grit Removal: Grit vortex tanks each equipped with a mixer separate heavy suspended materials such as sand and gravel (grit) from lighter organic particles that are kept in

suspension and pass through the tanks with the wastewater for further treatment. The grit is collected, dewatered and sent for disposal at landfill.

Primary Treatment: Primary clarifiers are large tanks that allow the incoming wastewater to slow down. The slower speed allows heavier solids to fall from the wastewater to the bottom of the tank. Sludge collected at the bottom of the primary clarifiers is removed and sent to the solids handling process.

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

Secondary Treatment:

Aeration Tank: Large tanks are equipped with air diffusers to add fine bubbles into the wastewater. This oxygen-enriched environment encourages microorganisms (or “bugs”) to remove dissolved and suspended organics and nutrients. Activated sludge is returned to the aeration process to ensure enough bugs are present to provide adequate wastewater treatment.

Secondary Clarifiers: Secondary clarifiers receive effluent from the aeration tanks which separates the microorganism population and remaining solids. Solids settle as activated sludge on the bottom of the clarifier while a clean effluent flows from the clarifiers to be disinfected and discharged to the environment. 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. Excess activated sludge is ‘wasted’ or removed from the process and sent to the primary clarifiers for thickening.

Disinfection (chlorination/dechlorination): Chlorine in the form of liquid sodium hypochlorite is added into the effluent stream for pathogen control from April 1 to October 31 each year. Adequate contact time is provided by the chlorine contact chambers. As chlorine can be toxic to aquatic species, disinfected effluent is dechlorinated with a sodium bisulphite solution before being discharged to the Lake Ontario.

Solids Handling

Anaerobic Digestion: Sludge from the primary clarifiers is pumped to a primary anaerobic digester, which overflow into a secondary digester for thickening. Anaerobic digestion allows a further breakdown of pollutants and pathogens in the collected sludge. The digested sludge is transported from site for further treatment or beneficial reuse such as land application or dewatering at the Garner Road Biosolids Facility.

Storm Treatment: During times of wet weather, inflow and infiltration (I&I) can occur in the collection system resulting in high flows of sewage and storm water to the treatment plant. To protect the plant processes from high flows, flows greater than the design peak flow of 62,600 m^3/d are diverted to a storm treatment system. Flows diverted to the storm treatment system

receive screening, grit removal and settling (solids removal) before recombining with the final effluent to receive chlorination and dechlorination (from April 1 to October 31) prior to discharge to Lake Ontario. The two storm tanks can hold approximately 2,000 m^3. If the storm volume exceeds the tank capacity, the flows continue for disinfection and discharge to the environment. After a storm, the storm tanks are drained and flushed back to the head of the plant to receive full treatment.

BR-T-2 Review of Plant Flows, Influent and Imported Sewage Sampling and Monitoring

Review of 2025 Plant Flows

Table BR-T-1 below outlines the volume of sewage treated at the Baker Road WWTP during the reporting year. It also outlines how much imported sewage was received at site for treatment.

Table BR-T-1: Table of Baker Road WWTP 2025 Treated and Imported Sewage Flows

Flow Statistic	Value
Design Average Daily Flow (ML/d)	31.280
Design Peak Flow Rate - Dry Weather (ML/d)	62.600
Design Peak Flow Rate - Wet Weather (ML/d)	120.000
Total Volume Processed (ML)	7,536.241
Annual Average Daily Flow (ML/d)	20.647
% Annual Average Daily Flow Utilization	66%
% Increase/Decrease over prior year	-6%
Volume Imported Sewage Received (ML)	9.292
% Increase/Decrease Imported Sewage over prior year	+6%
Imported Sewage as % of Flow	0.12%

Reviewing the treated flows in 2025, it was observed that, on average, the plant is utilizing 66% of its design Average Daily Flow capacity. 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. If the average becomes greater than 80%, plant expansion should be considered. A capital project has been initiated to investigate increasing the capacity of the Baker Road WWTP.

Daily flows to the plant were reviewed. In 2025, there were 24 instances where the flow to the plant was greater than the design Average Daily Flow, amounting to approximately 7% of the

year. These instances occurred during times of wet weather or heavy snow melt suggesting increased flows are occurring due to Inflow and Infiltration.

A review of the monthly average daily flow rate for the prior 10-year period was completed. This can be observed below in Figure BR-T-1 below. An increasing trend is noted starting in 2021. Spikes during typical wet weather seasons further support increased flows are occurring due to Inflow and Infiltration. Trends will be continued to be monitored.

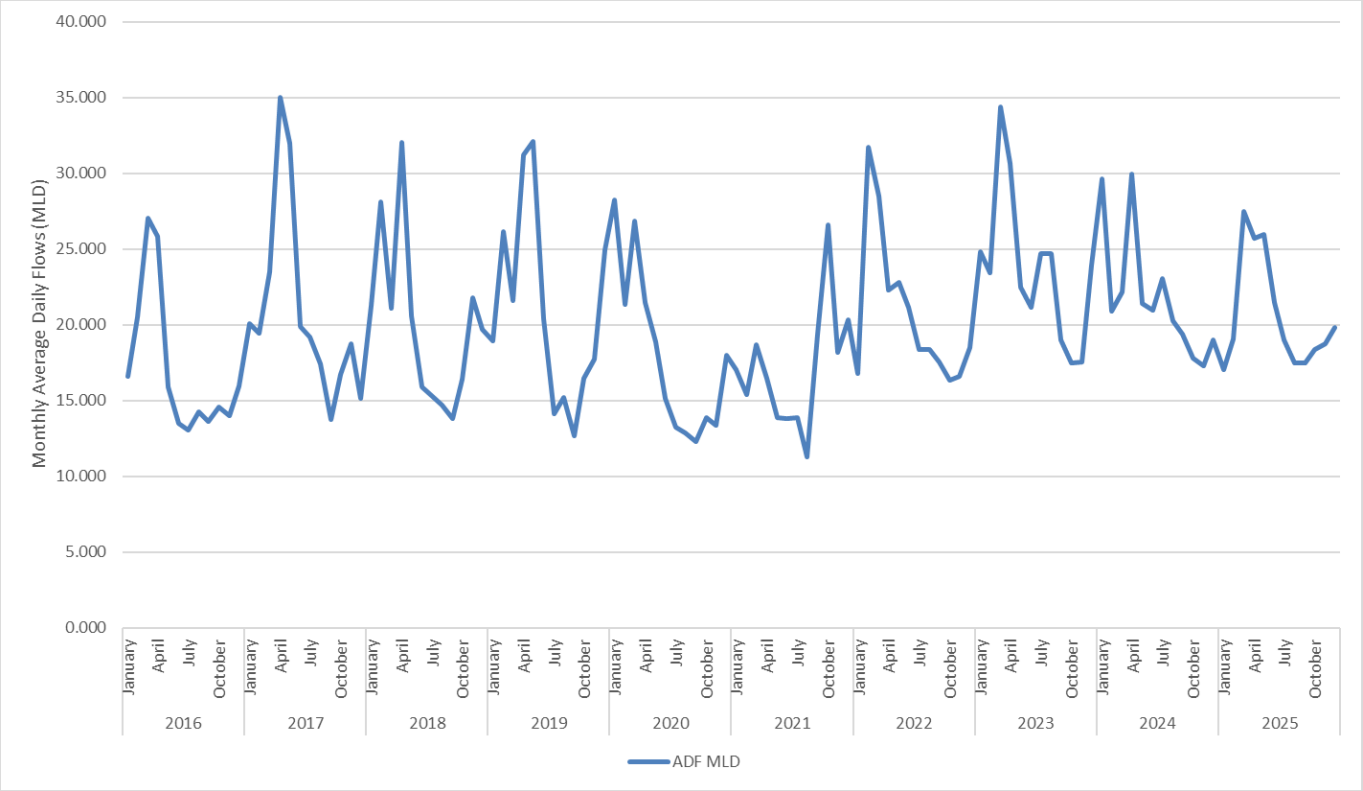

Figure BR-T-1: Graph displaying the Monthly Average Daily Flow Rate in MLD

The volume of imported sewage received at this facility increased by 6% compared to the previous reporting period. There were no operational issues encountered from the receipt of imported sewage in 2025.

Review of Influent Sampling and Monitoring Activities

In 2025, 105 samples of influent were collected and tested. An annual summary of influent sampling can be observed in Table BR-T-5.

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 BR-T-2, is a graph depicting four commonly monitored pollutant loading to the plant for the period of 2023-2025.

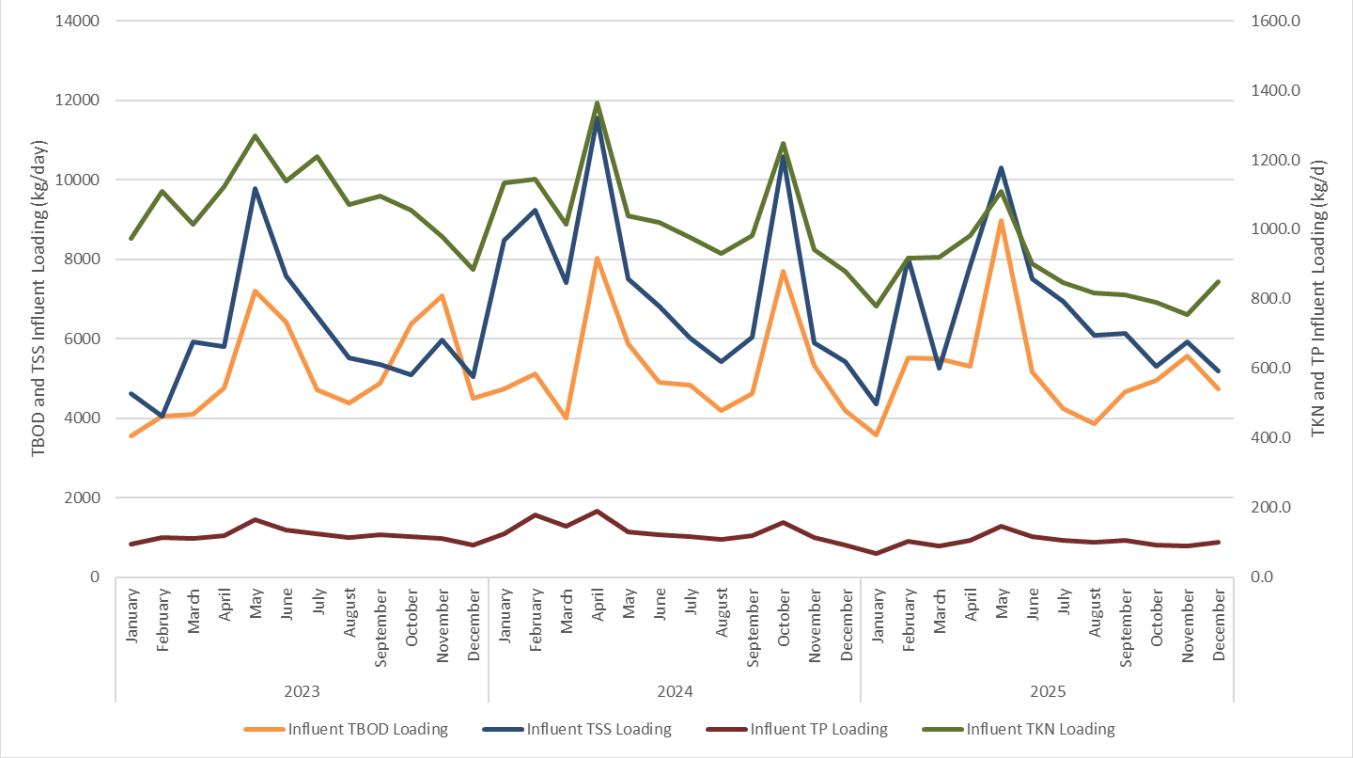

Figure BR-T-2: Figure of monthly plant loadings to the Baker Road WWTP for Total Biochemical Oxygen Demand (TBOD), Total Suspended Solids (TSS), Total Kjeldahl Nitrogen (TKN) and Total Phosphorus (TP), in kg/d, for the period 2023 to 2025.

Reviewing the calculated loadings for TBOD, TSS, TKN and TP for the past three years shows no observable trends in sewage strength received at the plant. Loading will continue to be monitored to ensure proper plant operation.

Review of Imported Sewage Sampling and Monitoring

Imported sewage is sampled bi-weekly to ensure sewage being received will not have an adverse impact to the treatment process or the beneficial re-use of biosolids resulting from the wastewater treatment process. Sampling and testing of imported sewage are not regulated by the ECA but is completed as a best practice. In 2025, 26 samples of imported sewage were collected and submitted for testing by an ISO 17025:2017 accredited laboratory. Results were reviewed and compared to the Niagara Region Sewer Use By-law. Where exceedances of the by-law were noted, the source of the imported sewage is investigated. Exceedances of treatable parameters (BOD, COD, TP, TSS, TKN, and pH) are allowable under the SUBL.

Table BR-T-2: Table of Imported Sewage monthly average analysis results

Analyte	Units	SUBL Limit	January	February	March	April	May	June	July	August	September	October	November	December
Total Solids	mg/L	-	76,665	3,170	7,823	3,483	42,100	55,150	8,600	12,710	31,020	35,325	50,335	10,525
Phosphorus	mg/L	10	311	39	82	26	240	643	172	73	159	197	303	101
Arsenic	mg/L	1	0.50	0.50	0.03	0.05	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50
Cadmium	mg/L	0.7	0.20	0.20	0.00	0.00	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20
Chromium	mg/L	3	0.50	0.50	0.04	0.04	0.50	0.65	0.50	0.50	0.50	0.50	0.50	0.50
Cobalt	mg/L	5	0.20	0.20	0.01	0.01	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20
Copper	mg/L	3	13.55	1.70	4.47	1.98	13.15	13.55	0.20	6.05	2.17	1.70	4.20	5.10
Lead	mg/L	1	0.50	0.50	0.21	0.07	0.50	0.60	0.50	0.50	0.50	0.50	0.50	0.50
Mercury	ug/L	10	0.06	1.00	0.05	0.56	2.24	10.98	0.05	1.97	0.27	0.35	0.25	92.03
Molybdenum	mg/L	5	0.20	0.20	0.02	0.07	0.20	0.25	0.20	0.20	0.20	0.20	0.20	0.20
Nickel	mg/L	2	0.20	0.20	0.17	0.05	0.30	0.35	0.20	0.30	0.20	0.20	0.20	0.25
Selenium	mg/L	1	0.50	0.50	0.04	0.03	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50
Zinc	mg/L	3	6.50	4.50	12.29	1.50	20.50	36.50	2.00	17.50	5.33	2.00	2.50	14.00
Aluminum	mg/L	-	81.00	10.00	3.76	9.70	57.50	76.50	2.00	83.50	11.67	5.00	55.50	15.50
Antimony	mg/L	5	1.00	1.00	0.05	0.08	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Barium	mg/L	-	2.20	0.65	0.15	0.22	1.00	1.95	0.50	1.15	0.57	0.50	0.50	0.70
Beryllium	mg/L	-	0.50	0.50	0.01	0.01	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50
Boron	mg/L	-	10.00	10.00	0.77	0.27	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00
COD	mg/L	600	150,550	4,545	25,340	5,527	17,550	39,150	9,660	18,260	56,770	88,675	113,570	15,500
Conductivity	us/cm	-	3,980	2,415	3,763	2,820	2,670	4,125	22,300	3,020	2,787	1,870	1,640	2,790
Iron	mg/L	-	39.50	9.95	15.90	16.86	107.40	110.05	2.40	121.95	19.97	9.45	20.45	29.00
Manganese	mg/L	-	1.00	1.00	1.72	1.15	3.00	4.00	1.00	2.00	1.33	1.00	1.00	1.50
pH		6-11	4.65	7.40	5.50	6.23	6.40	6.25	8.70	6.05	6.10	5.35	3.65	7.05

Analyte	Units	SUBL Limit	January	February	March	April	May	June	July	August	September	October	November	December
Silver	mg/L	5	0.50	0.50	0.01	0.01	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50
Tin	mg/L	5	1.00	1.00	0.13	0.16	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Total Volatile Solids	mg/L	-	60,565	2,060	5,403	1,890	31,200	45,550	3,780	7,470	18,467	27,370	43,760	8,110
Vanadium	mg/L	-	0.20	0.20	0.01	0.02	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20

Review of Final Effluent Sampling and Monitoring Activities

In 2025, 105 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 BR-T-3 below summarizes the number of monthly objective and compliance limit exceedances at the Baker Road WWTP in the reporting year.

The ECA compliance limit for TP was not met in December of 2025. The ECA objectives for TP were also not met in June, July and November. Baker Road WWTP experienced sporadic influent values high in total phosphorus.

The ECA compliance limit for ammonia was not met in March. The ECA objective for ammonia was not achieved in April.

The ECA objective for TSS was not met in March and November.

A more fulsome discussion of the operational issues encountered, and corrective actions taken is included in BR-T-3 below.

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

- CBOD – 4%
- TSS – 25%
- TP – 27%
- Ammonia – 12%
- E.Coli – 10%

Final effluent sample results did not exceed the ECA objectives greater than 50% of the time.

For most of the year, the Baker Road WWTP provided effective wastewater treatment. Online phosphate monitoring is being implemented at the plant in 2026 to improve phosphorus removal performance. An annual summary of monthly average final effluent sample results is available in Table BR-T-4 below.

Table BR-T-3: Evaluation of Final Effluent sample results to ECA objectives and compliance limits

Parameter	ECA Monthly Concentration Objective	ECA Monthly Concentration Limit	Annual Loading Limit	Number of Objective Concentration Exceedances	Number of Monthly Limit Concentration Exceedances	Annual Loading Limit Exceeded? Yes / No
pH	6.5-8.5	6.5-8.5	-	0	0	-
Carbonaceous Biochemical Oxygen Demand (CBOD)	15 mg/L	25 mg/L	782 kg/d	0	0	No
Total Suspended Solids (TSS)	15 mg/L	25 mg/L	782 kg/d	2	0	No
Total Phosphorus (TP)	0.4 mg/L	0.5 mg/L	15.6 kg/d	4	1	No
Total Ammonia Nitrogen: January-April	8 mg/L	10 mg/L	312.8 kg/d	2	1	No
Total Ammonia Nitrogen: May-June	5 mg/L	7 mg/L	219.0 kg/d	0	0	No
Total Ammonia Nitrogen: July-October	3 mg/L	4 mg/L	125.2 kg/d	0	0	No
Total Ammonia Nitrogen: November-December	5 mg/L	7 mg/L	219.0 kg/d	0	0	No
Total Residual Chlorine (TRC)	0.01 mg/L (non-detect)	0.02 mg/L	-	0	0	-
E-Coli (geomean)	100 MPN/100 mL	200 MPN/100 mL	-	0	0	-

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

Measured Parameter	January	February	March	April	May	June	July	August	September	October	November	December	Total / Average	Samples Collected
Influent - Monthly Average TSS (mg/L)	256	421	191	305	397	349	365	348	351	289	316	262	321	
Number of Influent TSS Samples	9	8	9	9	8	8	10	8	10	8	9	9		105
Influent - Monthly Average TBOD (mg/L)	210	289	200	206	346	240	223	221	267	270	297	239	251	
Number of Influent TBOD Samples	9	8	9	9	8	8	10	8	10	8	9	9		105
Influent - Monthly Average TP (mg/L)	3.9	5.4	3.2	4.1	5.6	5.4	5.5	5.8	6.0	5.0	4.7	5.1	5.0	
Number of Influent TP Samples	9	8	9	9	8	8	10	8	10	8	9	9		105
Influent - Monthly Average TKN (mg/L)	45.72	48.03	33.50	38.26	42.76	41.89	44.58	46.69	46.43	43.05	40.24	42.88	42.84	
Number of Influent TKN Samples	9	8	9	9	8	8	10	8	10	8	9	9		105
Total Plant Flows (ML)	528.825	533.998	852.480	770.646	804.878	644.517	589.634	541.836	525.016	568.334	562.529	613.548	7536.241	
Daily Average (MLD)	17.059	19.071	27.499	25.688	25.964	21.484	19.020	17.479	17.501	18.333	18.751	19.792	20.647	
Maximum Flow (ML)	29.020	41.068	52.058	48.385	50.153	31.060	21.590	22.081	32.754	31.678	24.341	48.721	MAX	52.058
Minimum Flow (ML)	14.789	13.936	18.816	19.765	19.853	16.606	17.183	15.412	15.131	13.129	15.272	15.489	MIN	13.129
Volume Imported Sewage Received (ML)	0.332	0.438	0.431	0.801	0.867	0.495	0.407	0.569	1.145	1.903	1.282	0.623	9.292	
Final Effluent - Monthly Average TSS (mg/L)	13.6	10.8	15.7	7.7	9.8	13.1	9.2	7.4	4.3	13.5	20.1	14.4	11.6	
Final Effluent - Average Daily TSS Loading (kg/d)	232	206	432	198	254	281	175	129	75	248	377	285	240	
Number of Final Effluent TSS Samples	9	8	9	9	8	8	10	8	10	8	9	9		105
Final Effluent - Monthly Average CBOD (mg/L)	4.1	10.4	9.6	4.4	4.1	4.3	4.0	4.0	4.0	6.3	7.7	6.3	5.8	
Final Effluent - Average Daily CBOD Loading (kg/d)	70	198	264	113	106	92	76	70	70	116	144	125	119	
Number of Final Effluent CBOD Samples	9	8	9	9	8	8	10	8	10	8	9	9		105
Final Effluent - Monthly Average TP (mg/L)	0.30	0.34	0.29	0.21	0.27	0.46	0.49	0.32	0.28	0.36	0.49	0.62	0.37	
Final Effluent - Average Daily TP Loading (kg/d)	5.12	6.48	7.97	5.39	7.01	9.88	9.32	5.59	4.90	6.60	9.19	12.27	7.62	
Number of Final Effluent TP Samples	9	8	9	9	8	8	10	8	10	8	9	9		105
Final Effluent - Monthly Average TKN (mg/L)	3.27	8.15	15.82	10.99	1.90	2.59	2.25	2.53	1.96	3.49	3.18	3.06	4.93	
Number of Final Effluent TKN Samples	9	8	9	9	8	8	10	8	10	8	9	9		105
Final Effluent - Monthly Average NH3 (mg/L)	1.20	5.06	13.13	8.71	0.26	0.45	0.32	0.41	0.15	0.54	0.33	0.66	2.60	
Final Effluent - Average Daily NH3 Loading (kg/d)	20.47	96.50	361.07	223.74	6.75	9.67	6.09	7.17	2.63	9.90	6.19	13.06	53.72	
Number of Final Effluent NH3 Samples	9	8	9	9	8	8	10	8	10	8	9	9		105
Final Effluent - Monthly Average NO3 (mg/L)	15.79	10.39	1.14	5.97	14.81	13.75	16.12	14.98	10.77	6.94	7.00	13.74	10.95	
Number of Final Effluent NO3 Samples	9	8	9	9	8	8	10	8	10	8	9	9		105
Final Effluent - Monthly Average NO2 (mg/L)	2.10	1.43	0.40	0.40	0.40	0.45	0.40	0.40	0.40	0.51	1.08	0.69	0.72	
Number of Final Effluent NO2 Samples	9	8	9	9	8	8	10	8	10	8	9	9		105
Final Effluent - Monthly Geomean E.Coli (MPN/100mL)				2	11	7	14	8	10	61			10	
Number of Final Effluent E.Coli Samples				9	8	8	10	8	10	8				61

Measured Parameter	January	February	March	April	May	June	July	August	September	October	November	December	Total / Average	Samples Collected
Final Effluent - Monthly Average TRC (mg/L)				0.00	0.00	0.00	0.00	0.00	0.00	0.00			0.00	
Number of Final Effluent TRC Samples				30	31	30	31	31	30	31				214
Final Effluent - Monthly Average Temperature (°C)	9.67	7.76	10.78	12.12	14.28	17.59	20.48	21.06	19.94	19.35	13.20	11.36	14.80	
Number of Final Effluent Temperature Samples	9	8	9	9	8	8	10	8	10	8	9	9		105
Final Effluent - Monthly Average pH	7.36	7.49	7.42	7.33	7.10	7.06	7.14	7.25	7.19	7.13	7.27	7.14	7.24	
Number of Final Effluent pH Samples	9	8	9	9	8	8	10	8	10	8	9	9		105

Effluent Quality Assurance Measurements and Control Measures

To ensure Baker Road 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
- Development of an ISO 14001:2015 Environmental Management System
- 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 Baker Road 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 2025, seven (7) deviations from the scheduled sampling days occurred. Table BR-T-5 below provides the instances where a deviation occurred and a reason for the deviation.

The 2026 sampling schedule is available upon request.

Table BR-T-5: Table of sampling schedule deviations

Sampling Date Deviation	Sample Type(s)	Reason
2025-12-22 2025-12-29	Plant Influent, Plant Effluent	Sample was collected and submitted next day.
2025-01-22 2025-03-05 2025-08-20 2025-07-25	Imported Sewage	No imported sewage samples available on sample day.
2025-12-22	Imported Sewage	Sample submitted next day.

BR-T-3 Description of Operating Problems Encountered and Corrective Actions Taken

ECA Limit and Objective Exceedances – Total Phosphorus (TP)

The Baker Road WWTP experienced operational difficulties with intermittent phosphorus loading to the plant during 2025. TP exceeded the ECA compliance limit in December. The ECA objective for TP was also exceeded in June, July and November.

On December 2, elevated influent TP concentrations and operational issues with the coagulant dosing system contributed to an increased effluent TP result. This single day exceedance resulted in the monthly average being over the limit for the month. The remainder of results for the month were within compliance limits.

For the remainder of the months where an objective was not met, comparing days where the final effluent TP was over the ECA limit to the plant influent, the influent was found to be high in phosphorus. Due to the sporadic nature of the TP loading, it is difficult to properly dose chemical to combat these spikes resulting in final effluent with TP values over the objective.

Operations staff will adjust coagulant dosing where high influent phosphorus has been observed.

This plant has several industries in its sewer shed, five of which have active over strength agreements with Niagara Region. Environmental Enforcements Officers (EEO) increased monitoring and sampling in the area to evaluate any discharges that may be over the Sewer Use By-law or terms and conditions over strength agreements.

Operations started to increase phosphorus monitoring in fall of 2023. An online phosphate analyser is anticipated to be in service starting in 2026, to have a near real time control of coagulant dosing.

ECA Limit and Objective Exceedances – Total Ammonia Nitrogen

The ECA limit for Total Ammonia Nitrogen was not achieved in March 2025. The objective was also not met in April.

Throughout the end of February and into the month of March, the plant experienced high flow events, specifically March 6, 7 and 8, with peak flows up to 63.4ML/D as a result of spring melt and continued precipitation. Increased inflow can overwhelm the plant’s capacity. Continued high flow can resuspend settled solids causing solids to carryover into the final effluent, impact plant performance and cause washout or loss of biomass from the secondary treatment process. The loss of solids reduces the effectiveness of biological treatment processes, in particular, the nitrifying bacteria responsible for converting ammonia. These bacteria are sensitive to washout and can be significantly reduced or lost during high-flow conditions.

Following the wash-out, the plant also experienced foaming issues, leading to floating solids. To address foaming, operations staff increased wasting rates. The increased wasting rates reduced the age of the bacteria below what is required for nitrification in cold weather.

Operations staff made process adjustments to increase the sludge age and nitrification levels. Final effluent ammonia levels were observed to decrease once bacterial populations were re-established. No further ammonia issues occurred in 2025.

BR-T-4 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 Baker Road WWTP:

- Repair of gas booster
- Repair of aeration blower #3
- Repair of secondary clarifier #2 distribution gate
- Replacement of raw sewage pump #5

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

The following is a list of capital upgrades forecasted for the Baker Road WWTP:

- Baker Road WWTP Capacity Upgrade – Environmental Assessment and pre-design stage
- Imported Sewage Station Improvements –Design

Summary and Update of Notice of Modifications Completed

Through the facility ECA, 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 2025, 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 2025 reporting period.

BR-T-5 Summary Calibration Activities

Flow Meter Calibration – Influent, Effluent and Imported Sewage

Flow meters measuring discharges to the environment are calibrated at minimum, once per calendar year. Below in Table BR-T-6 provides a summary of flow meter calibration

Table BR-T-6: Summary of Flow Meter Calibration

Meter Name	Date Calibrated	Comments
Baker Road WWTP Influent Meter	2025-07-28	Passed
Baker Road WWTP Plant Overflow Meter	2025-07-28	Passed
Baker Road Final Effluent Meter	2025-06-25	Passed
Baker Road Final Effluent Meter	2025-11-06	Passed
Baker Road Secondary Bypass Meter	2025-06-25	Passed
Baker Road Secondary Bypass Meter	2025-11-06	Passed

Calibration certificates are available upon request.

The volume of Imported Sewage received at site is reported by the sewage hauler on submitted paper manifests. No calibration required.

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 contractor performs calibration or verification on all effluent monitoring equipment. A summary of calibration/verification activities are available in Table BR-T-7 below.

Table BR-T-7: Summary of Calibration/Verification of Effluent Monitoring Equipment

Equipment Description	Date Calibrated	Comments
DR1900 Spectrophotometer	2025-09-15	Passed
COD Reactor (HACH DRB200)	2025-09-15	Passed
HQ40D with Dissolved Oxygen and pH probe	2025-09-15	Passed
Bench pH Meter (Thermo)	2025-09-15	Passed
Chlorine Portable Pocket Colorimeter	2025-09-15	Passed
Balance – ML3001E/03	2025-08-14	Passed
Balance – ML204/03	2025-08-14	Passed

Calibration certificates are available upon request.

BR-T-6 Solids Handling

Processed Organics Received

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

13.5 ML of water treatment plant residuals were received at Baker Road WWTP for further processing.

Volumes of Sludge Generated and Removed From Site

Solids removed from the treatment process are thickened, digested and transported from site for further processing and beneficial re-use. All sludge removed from the Baker Road WWTP is taken to Niagara Region's Garner Road Biosolids Facility where it is stored, further thickened and either sent for land application or for dewatering and conversion to a pelletized fertilizer. Table BR-T-8 provides a summary of 2024 and 2025 sludge volumes removed from site.

Table BR-T-8: Summary of Sludge Removed from Site 2025

Month	2025 Volume Sludge Hauled (ML)	Prior Year Volume Sludge Hauled (ML)
January	6.677	5.897
February	5.116	5.897
March	6.981	5.810
April	7.588	7.068
May	6.851	6.894
June	5.897	6.287
July	6.157	6.504
August	3.902	4.466
September	4.770	4.509
October	8.455	7.111
November	8.499	8.152
December	6.721	6.461
TOTAL	77.614	75.056

There was a 3% increase in sludge removed from site in 2025 versus reporting year 2024. Operational issues related to mixing in the primary digester is a factor in this increase. New gas compressors were installed in 2024 to improve mixing.

A small decrease in water treatment plant residual received to site was noted in 2025.

With continuous digester mixing and supernating, a reduction in sludge removal is anticipated in 2026 at the Baker Road WWTP.

Sludge Quality Monitoring

Sludge is 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. Average monthly results for 2025 sludge analysis from the Baker Road WWTP is included in Table BR-T-9.

Table BR-T-9: Summary of Monthly Average Sludge Results

Analyte	Units	NMA Limits	January	February	March	April	May	June	July	August	September	October	November	December
Total Solids	%	-	2.55	2.35	1.80	1.65	2.35	2.75	2.07	2.75	2.30	2.30	2.40	2.07
Ammonia as N	mg/kg	-	670	685	815	935	880	840	910	830	805	845	740	793
Nitrate+Nitrite	mg/kg	-	1.00	1.00	1.00	1.00	1.00	1.00	0.99	1.00	1.00	1.00	0.99	1.00
Phosphorus	mg/kg	-	24,800	27,400	23,350	25,300	29,350	26,350	24,767	29,450	27,850	27,000	24,350	25,433
Arsenic	mg/kg	170	5.45	4.85	4.30	6.15	7.10	5.50	4.60	4.95	4.25	4.90	3.55	3.23
Cadmium	mg/kg	34	0.50	0.50	3.20	2.90	1.75	0.90	0.60	0.55	0.50	3.75	3.40	1.93
Chromium	mg/kg	2,800	107.60	134.50	110.00	98.30	103.60	146.00	137.67	121.50	118.50	102.50	84.05	101.00
Cobalt	mg/kg	340	3.45	2.70	2.20	2.85	2.90	4.20	4.67	5.45	6.95	5.60	3.70	3.73
Copper	mg/kg	1,700	394.00	416.00	366.00	371.00	401.00	412.00	362.33	395.50	414.50	387.50	353.50	383.00
Lead	mg/kg	1,100	16.00	16.00	16.00	17.50	16.00	19.00	12.33	14.00	13.50	13.50	12.00	11.67
Mercury	mg/kg	11	0.10	0.09	0.09	0.06	0.11	0.07	0.07	0.09	0.13	0.13	0.11	0.10
Molybdenum	mg/kg	94	22.00	22.00	22.50	19.00	13.50	19.50	24.00	27.50	29.50	25.00	20.00	19.00
Nickel	mg/kg	420	65.25	43.15	34.75	57.05	76.05	77.55	121.33	133.50	89.90	69.40	97.90	135.33
Potassium	mg/kg	-	3,635	4,250	6,945	7,855	5,615	4,775	4,187	3,145	3,585	4,050	3,485	4,363
Selenium	mg/kg	34	2.55	2.95	2.50	1.95	3.25	3.40	3.20	3.80	3.00	3.15	2.05	2.23
Zinc	mg/kg	4,200	797	737	932	1,012	995	980	823	973	988	1,057	895	736

BR-T-7 Complaints

Six (6) odour complaints were received in 2025 regarding the operation of the Baker Road WWTP. When a complaint is received, operations staff attend the site to verify the complaint. Corrective actions are taken if required based on the site verification. All complaints and corrective actions are logged in a complaint tracking system. Nine (9) odour complaints were received regarding the Baker Road WWTP collection system. These complaints are included in section BR-C-6 Summary of Collection System Complaints below.

BR-T-8 Bypasses, Overflows, other situations outside Normal Operating, Spills and Abnormal Discharge Events

Bypasses and Overflows

There were four (4) secondary bypass events at the Baker Road WWTP in 2025. Secondary bypasses from this facility receive partial treatment prior to discharge including screening, grit removal, settling (solids removal), chlorination and dechlorination (from April 1 to October 31). Table BR-T-10 provides a monthly breakdown of secondary bypass events occurring at the Baker Road WWTP during the reporting period.

Table BR-T-10: Annual Summary of Secondary Bypass Events by Month

Month Name	Number of Overflow Events	Total Volume (ML)
January	0	0.000
February	0	0.000
March	1	6.115
April	1	39.168
May	1	27.080
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	1	3.520
Total	**4**	**75.883**

Secondary bypasses are sampled and submitted for analysis. Results are shown in Table BR-T-11 below.

Table BR-T-11: Baker Road WWTP Secondary Bypass Sampling Results

Date	CBOD (mg/L)	TSS (mg/L)	TP (mg/L)	TKN (mg/L)	Ammonia as N (mg/L)	Nitrate (mg/L)	Nitrite (mg/L)	E.Coli[1] (MPN/ 100mL)
2025/03/06	270	75	0.7	11.6	8.2	1.5	0.2	
2025/04/02	97	129	1.8	22.8	13.3	0.2	0.1	10,000
2025/05/22	24	49	1.2	8.9	2.5	5.3	0.4	340,000
2025/12/28	110	128	3.1	36.8	13.3	0.2	0.6	

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.

The plant did not operate outside of Normal Operating Conditions during the reporting year.

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 to safely complete required maintenance to critical equipment. If 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. Spills are communicated to the System Owner (Council) through a public report. Below in Table BR-T-12 summarizes spills that occurred at the Baker Road WWTP in 2025 and includes a link to the public report with details of the spill.

[1] Sampling and Testing of E.Coli is completed April 01 to October 31 annually

Table BR-T-12: Summary of spills occurring at the Baker Road WWTP during the reporting year

Spill Date	MECP Incident Number	Short Description of Spill	Link to Public Spill Report
2025-03-07	1-IGYUEL	Hauled Sewage Station- Sewer Blockage	CWCD 2025-55 https://www.niagararegion.ca/council/CouncilDocuments/2025/council-correspondence-march-28-2025.pdf

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 Baker Road WWTP during this reporting year.

BR-T-9 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 BR-T-2, Baker Road WWTP provides effective secondary treatment. The Final Effluent annual average quality for CBOD was 5.8 mg/L, TSS was 11.6 mg/L and TP was 0.37 mg/L. All annual averages in 2025 were below the secondary treatment equivalent MECP 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 Baker Road WWTP experiences high flow conditions due to inflow and infiltration in the collection system that require overflows to occur to prevent emergency situations. Being a two-

tier system, Niagara Region works closely with the Town of Grimsby, Town of Lincoln and Township of West Lincoln to reduce overflows at the wastewater treatment plant. Niagara Region participates in a cost sharing strategy with lower tier municipalities to fund overflow reduction projects. In 2025, Niagara Region had an approved budget totaling $4.0M for the overflow reduction cost sharing program. Three (3) projects in the Town of Lincoln, Town of West Lincoln and Town of Grimsby were approved for cost sharing with Niagara Region contributing $1,132,000 to support a sewer inflow and infiltration study and rehabilitation activities.

Excess Primary Treatment Capacity

F-5-1 allows for excess primary treatment where it is impractical or uneconomical to provide secondary treatment to wet weather flow. Baker Road is equipped with two storm tanks that provide excess primary treatment to wet weather flow. Flows greater than the plant design peak flow of 62,600 m^3/d are diverted to the storm system. Storm flows diverted to the storm treatment system receive screening, grit removal and settling (solids removal) before recombining with the final effluent to receive chlorination and dechlorination (from April 1 to October 31) prior to discharge to Lake Ontario via the plant effluent outfall.

The two storm tanks can store approximately 2,000 m^3 in the settling tanks prior to a secondary bypass occurring. This volume is returned to the plant for full treatment when wet weather events are over.

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 as well as sampling and monitoring of industrial discharges on a routine basis to ensure that they meet the Sewer Use By-law limits.

In 2024, an update to the Sewer Use By-law was approved by Council. Sewer Use By-law 2024-51 is now in place ensuring better protection of Niagara Region wastewater infrastructure.

Summary of Efforts – Procedure F-5-5

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

BR-C-1 Overview of the Baker Road WWTP Collection System

The Baker Road WWTP collection system is a class II system that collects wastewater from domestic, commercial and some industrial sources from the municipalities of Grimsby, Lincoln and West Lincoln. The collection system consists of the following:

- Local sanitary sewers
- 19.5 kilometres of regional gravity mains
- 43.4 kilometres of regional force mains
- 15 pumping stations:
    - Bal Harbour Sewage Pumping Station
    - Biggar Lagoon Sewage Pumping Station and Sewage Detention Tank
    - Bridgeport Sewage Pumping Station
    - Campden Avenue Sewage Pumping Station
    - Jordan Valley Sewage Pumping Station
    - Lake Street Sewage Pumping Station
    - Lakewood Gardens Sewage Pumping Station
    - Laurie Avenue Sewage Pumping Station
    - Old Orchard Sewage Pumping Station
    - Ontario Street Sewage Pumping Station
    - Roberts Road Avenue Sewage Pumping Station
    - Smithville Sewage Pumping Station and Sewage Detention Tank
    - Streamside Sewage Pumping Station
    - Victoria Avenue Sewage Pumping Station
    - Woodsview Sewage Pumping Station
- Grimsby Works Yard Sewage Detention Facility
- Three odour control facilities (OCF):
    - Park Road OCF
    - Sann Road OCF
    - Thirty Road OCF
- A total of nine Sanitary Sewage Outfalls (SSO) outfalls, including overflow structures at eight of the 15 pumping stations

Figure BR-C-1: Map of Baker Road WWTP Collection System

The collection system is operated under a two-tier system, where the Town of Grimsby, Town of Lincoln and Township of West Lincoln own and operate local gravity sanitary sewers and Niagara Region owns and operates sewage pumping stations, forcemains and larger gravity sanitary sewers or trunk sewers. It is classified as a nominally separated system meaning that storm water is collected separately from sanitary sewage but the system may still be impacted by inflow and infiltration from sources such as roof leaders, foundation drains, leaky pipes and joints and maintenance holes.

The collection system operates under the following Consolidated Linear Infrastructure ECA:

- Baker Road Wastewater Catchment System, 007-W608, issue number 1

Annual reporting has been prepared to meet the requirements of this approval.

The Niagara Region also has an ECA for the Smithville Lagoon site.

- Smithville Lagoon, ECA 3-1192-79-006

This site is no longer in operation, but details of the monitoring and status of this site have been included to satisfy site annual reporting requirements.

BR-C-2 Summary and Interpretation of Collection System Monitoring Data

Monitoring of Pump Station Operations

Pump stations operate through automatic control and are monitored continuously using Supervisory Control and Data Acquisition (SCADA). Stations alarms are programmed to alert the operations staff at the Baker Road WWTP 24 hours a day of potential issues including but not limited to high wet well levels, pump faults, communication failures and standby generator status. Operators will respond to station alarms as required to ensure proper station operation.

Station operation is trended in SCADA. SCADA trends are reviewed daily by operations staff to evaluate station performance. Operators will look at pump cycle times, station discharge flow and pump duty rotation to identify potential issues. Where potential issues are identified, work orders are generated for follow up by maintenance staff.

In addition to SCADA monitoring, monthly station inspections are completed by operations staff. This includes inspection of the station and testing of standby generator equipment. In addition, starting in 2025, operations staff conducted 11 visual inspections of sanitary sewer overflow locations and wet weather storage tanks.

Sanitary Sewer Closed-Circuit Television Inspection Program

Niagara Region owns and maintains 151 kilometers of trunk sanitary gravity sewers, 175 kilometers of sanitary forcemains, and 2,093 sanitary access chambers across 11 municipalities. Approximately 85% of its conventional trunk sanitary gravity system is inspected using closed-circuit television (CCTV) once every three years. The remaining 15% is large diameter trunk sewers, which are inspected once every 10 to 15 years due to the necessity for specialized equipment to access and inspect sewers that have continuous high flow levels.

Table BR-C-1 details the total length of sewers inspected over the past four years.

Table BR-C-1- CCTV Program Summary

Measurement in Kilometers (km)	2022	2023	2024	2025
Inspection Length (km)	59.3	33.0	31.3	58.7

Observations from the inspections are recorded for structural and operational deficiencies of the pipes. Operational deficiencies (blockage from grease, roots, debris) are addressed through the cleaning/flushing program. Structural deficiencies (broken, fractured, surface damage, holes) as well as Inflow and Infiltration are forwarded for consideration in the asset management plan and capital upgrade program.

Flow Monitoring

Niagara Region monitors sewer flows at 158 locations. Flow monitoring information is used for municipal Pollution Prevention and Control Plans (PPCPs), Master Servicing Plans (MSPs) including the 2021 Water and Wastewater MSP, Inflow and Infiltration studies, billing, development planning, and capital project design.

BR-C-3 Summary of Operating Issues Encountered and Corrective Actions Taken

Pump Stations and Forcemains

During the reporting period, the Sann Road and Thirty Road hydrogen peroxide odour control stations were taken out of service due to safety concerns. After the hydrogen peroxide dosage stopped, multiple odour complaints, particularly downstream of the Victoria Avenue SPS forcemain discharge, were received.

In response to the complaints, a new chemical odour control system was installed at the Victoria Sewage Pumping Station. This system uses a safer chemical that is already used in other parts of the collection system. After it was put in use, levels of odour-causing gases went down, and no further complaints were reported.

Gravity Trunk Sewers

No operational issues were encountered with Niagara Region gravity trunk sewers in 2025.

BR-C-4 Summary of Major Maintenance, Capital Projects and Pre-Authorized Alterations

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 in the Baker Road Collection System:

- Jordan Valley SPS - Rebuild of pump #2
- Victoria SPS – Forcemain repair
- Ontario Street SPS:
    - Forcemain repair

    - Rebuild of pump #1 and #2
- Woodsview SPS – Replaced pump #3

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

Planned Capital Upgrades

The following is a list of capital upgrades forecasted for the Baker Road Collection System:

- Jordan Valley SPS station upgrades – Construction anticipated in 2026
- Bal Harbour SPS Upgrades – in Construction
- Lake Street SPS station upgrades – Design
- Lakewood Gardens SPS – Design
- Victoria Avenue SPS forcemain upgrades - Design
- Biggar Lagoon SPS – Design
- Streamside SPS – Design
- Smithville Servicing Study
- Woodsview SPS Upgrades - Design

The Smithville Lagoon site operates under ECA 3-1192-79-006 and is under the care and control of Baker Road WWTP Operations staff. This site has not received sewage since 2006. No discharge from the site occurred in 2025. A capital project is underway to decommission the facility. A risk assessment was initiated and completed in 2022. Decommissioning of the site will occur as funding permits.

Summary of Pre-Authorized Alterations Undertaken

Through collection system ECAs, MECP has given System Owners the ability to complete low risk changes to a sewage pumping station, forcemain or gravity main without requiring further approval from the MECP. These modifications are documented on an applicable MECP form and 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 2025, upgrades to the Laurie Avenue SPS approved under Schedule C were completed. A Director’s Notification form was submitted to notify the MECP that the new works were in service

A chemical odour control system was installed at the Victoria Avenue SPS. This system was installed under an SS2 form.

Prior to pre-authorized work proceeding, a review is completed to ensure the work does not pose a threat to drinking water. The proposed pre-authorized installation of the chemical odour control system at the Victoria Avenue SPS was reviewed. As this station is not located in a

source water protection area, it was determined this alteration did not pose a threat to drinking water.

BR-C-5 Summary of Calibration Activities

The following calibration activities were completed in the Baker Road collection system in 2025:

Table BR-C-2: Annual Summary of Collection System Calibration Activities Completed

Equipment Description	Date Calibrated	Comments
Smithville SPS Station Discharge Meter	2025-05-05	Passed
Smithville SPS Station Discharge Meter	2025-11-06	Passed
Old Orchard SPS Overflow Meter	2025-08-11	Passed
Ontario Street SPS Station Discharge Meter	2025-05-06	Passed
Ontario Street SPS Station Discharge Meter	2025-11-06	Passed
Lake Street SPS Overflow Meter	2025-07-29	Passed
Grimsby Works Yard Overflow Meter	2025-07-29	Passed

Calibration certificates are available upon request.

BR-C-6 Summary of Complaints

Nine (9) odour complaint was received in 2025 regarding the operation of the Baker Road collection system. When a complaint is received, operations staff attend the site to verify the complaint. Corrective actions are taken if required based on the site verification. All complaints and corrective actions are logged in a complaint tracking system.

Additional odour complaints were received in the sewer shed downstream of the Victoria Avenue SPS due to Sann Road odour control system being out of service. To address the increased complaints, a chemical odour control system was installed at the Victoria Road SPS to prevent the formation of odour causing hydrogen sulphide.

BR-C-7 Summary of Collection System Overflows and Spills

Collection System Overflows

Although the Baker Road wastewater collection system is nominally separated, collection system overflows occur during wet weather events due to inflow and infiltration into the sewage collection system. Overflows are necessary to prevent basement flooding and to protect downstream infrastructure and wastewater treatment processes.

Table BR-C-3 provides a summary of collection system overflows that occurred during the reporting year. The table includes volume discharge, overflow durations as well as pollutant loading to the environment.

More information on sewage overflows and inflow and infiltration, is available on the Region's website (www.niagararegion.ca/living/sewage/cso).

Table BR-C-3: Collection System Overflow Event Details. Where NS is indicated, no sample results are available.

Overflow Location	Overflow Date	Overflow Volume (ML)	Overflow Duration (hhh:mm)	BOD Loading (kg)	TSS Loading (kg)	TP Loading (kg)	TKN Loading (kg)	E.Coli (MPN/100 mL)	Was the Overflow Disinfected (Yes/No)	Were Any Adverse Impacts Observed (Yes/No)	Corrective Actions Taken
Grimsby Works Yard CSO	2025-03-06	1.815	23:20	73	49	1.5	12.5	620,000	No	No	Awaited End of Event
Grimsby Works Yard CSO	2025-04-02	14.308	28:20	NS	NS	NS	NS	NS	No	No	Awaited End of Event
Grimsby Works Yard CSO	2025-05-22	4.603	09:15	364	350	5.1	40.0	2,060,000	No	No	Awaited End of Event
Grimsby Works Yard CSO	2025-10-30	2.731	08:20	NS	NS	NS	NS	NS	No	No	Awaited End of Event
Grimsby Works Yard CSO	2025-12-28	10.046	24:00	402	382	7.0	53.2	770,000	No	No	Awaited End of Event
Jordan Valley SPS	2025-04-03	1.300	17:22	NS	NS	NS	NS	NS	No	No	Awaited End of Event
Jordan Valley SPS	2025-05-22	0.043	02:27	NS	NS	NS	NS	NS	No	No	Awaited End of Event
Jordan Valley SPS	2025-10-07	0.098	01:00	45	58	0.6	3.7	3,080,000	No	No	Awaited End of Event
Old Orchard SPS	2025-04-02	4.359	17:20	NS	NS	NS	NS	NS	No	No	Awaited End of Event
Old Orchard SPS	2025-05-22	0.370	07:24	NS	NS	NS	NS	NS	No	No	Awaited End of Event
Old Orchard SPS	2025-06-18	1.713	05:22	69	75	0.9	4.3	250,000	No	No	Awaited End of Event
Old Orchard SPS	2025-12-28	1.550	15:45	NS	NS	NS	NS	NS	No	No	Awaited End of Event
Ontario Street SPS	2025-04-02	7.200	20:12	NS	NS	NS	NS	NS	No	No	Awaited End of Event
Smithville SPS	2025/03/05	4.447	19:00	302	365	6.7	95.6	2,480,000	No	No	Awaited End of Event
Smithville SPS	2025/04/02	8.392	36:00	764	806	18.5	170.4	7,700,000	No	No	Awaited End of Event
Smithville SPS	2025/05/22	5.099	11:00	535	398	11.7	113.7	4,880,000	No	No	Awaited End of Event
Smithville SPS	2025-10-07	1.525	06:45	NS	NS	NS	NS	NS	No	No	Awaited End of Event
Smithville SPS	2025-12-28	3.084	13:36	NS	NS	NS	NS	NS	No	No	Awaited End of Event
Victoria Avenue SPS	2025-04-02	6.500	14:26	NS	NS	NS	NS	NS	No	No	Awaited End of Event
Victoria Avenue SPS	2025-10-07	0.014	00:47	2	8	0.1	0.4	6,870,000	No	No	Awaited End of Event
Woodsview SPS	2025-04-02	1.99	18:10	NS	NS	NS	NS	NS	No	No	Awaited End of Event

Overflow Location	Overflow Date	Overflow Volume (ML)	Overflow Duration (hhh:mm)	BOD Loading (kg)	TSS Loading (kg)	TP Loading (kg)	TKN Loading (kg)	E.Coli (MPN/100 mL)	Was the Overflow Disinfected (Yes/No)	Were Any Adverse Impacts Observed (Yes/No)	Corrective Actions Taken
Woodsview SPS	2025-06-18	0.81	06:01	NS	NS	NS	NS	NS	No	No	Awaited End of Event
Woodsview SPS	2025-12-28	0.58	10:10	NS	NS	NS	NS	NS	No	No	Awaited End of Event

Collection System Spills

Niagara Region strives to maintain and operate wastewater infrastructure so spills to the environment do not occur. However, circumstances arise where a spill occurs due to equipment malfunction, failure or other reasons. Occasionally, a planned spill may be required to safely complete required maintenance to critical equipment. If 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 BR-C-4 summarizes spills that occurred in the Baker Road collection system in 2025.

Table BR-C-4: Summary of Spills Occurring in the Baker Road Collection System

Spill Date	MECP Incident Number	Short Description of Spill	Link to Spill Report
2025-01-07	1-FQ5N71	Victoria Ave SPS Forcemain break	CWCD 2025-23 (https://www.niagararegion.ca/council/Council Documents/2025/council-correspondence-jan-31-2025.pdf)
2025-02-10	1-H6YQE8	Ontario St SPS Forcemain Strike	CWCD 2025-41 (https://www.niagararegion.ca/council/Council Documents/2025/council-correspondence-march-07-2025.pdf)
2025-04-02	1-N6ZZGV	Jordan Valley SPS - Spill of Sewage During Wet Weather	CWCD 2025-69 https://www.niagararegion.ca/council/Council Documents/2025/council-correspondence-may-02-2025.pdf

BR-C-8 Summary of Efforts to Reduce WWTP Bypasses/Overflows and Collection System Overflows

Projects Undertaken to Reduce Bypasses or Overflows

The Baker Road WWTP experiences high flow conditions that require overflows to occur due to inflow and infiltration in the collection system to prevent emergency situations. Being a two-tier system, Niagara Region works closely with the Town of Grimsby, Town of Lincoln and Township of West Lincoln to reduce overflows at the wastewater treatment plant and from the

collection system. Niagara Region participates in a cost sharing strategy with lower tier municipalities to fund overflow reduction projects. In 2025, Niagara Region had an approved budget totaling $4.0M for the overflow reduction cost sharing program. Three (3) projects in the Town of Lincoln, Town of West Lincoln and Town of Grimsby were approved for cost sharing with Niagara Region contributing $1,132,00 to support a sewer inflow and infiltration study and rehabilitation activities.

The Baker Road collection system had 25 overflows in 2025. A Pollution Prevention and Control Plan (PPCP) update was undertaken by Niagara Region with participation and support from area municipalities serviced by the Baker Road WWTP. This project was completed in December 2021 and provided recommendations to target areas of high inflow and infiltration.

Many stations are forecasted for upgrades in the Baker Road collection system which include increases to the capacity of the station. Capacity increases have been completed at the Laurie Avenue SPS. Capacity upgrades are in design for Lake Street SPS and Victoria Avenue SPS. Capacity increases will help alleviate collection system overflows.

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)

A new public tool is now available that shows bypass and overflow status in near real time. It includes a map of overflow locations and their current status. The status shows if an overflow is happening now or if one occurred in the past 48 hours. This tool can help people make informed decisions about recreational water use. (https://experience.arcgis.com/experience/76c72e893f93447c87e6ff717f78556d#data_s=id%3AdataSource_1-1922f276303-layer-1-0%3A37)

In 2024, Niagara Region posted signs at publicly accessible sites close to overflow locations that warn about potential hazards and precautions on water use following wet weather. These precautions are not in place at all times but are recommended after wet weather when overflows may affect water quality and safety.

Figure BR-C- 2 - Image of Sanitary Sewer Overflow Public Signage