Corporation of the City of Quinte West

Trenton Wastewater Treatment Plant

2023 Annual Performance Report

A Natural Attraction

Executive Summary

The Trenton Wastewater Treatment Plant (WWTP), MOE Identifier number: 110000775, is located at 25 Couch Crescent in the City of Quinte West. It is rated as a Class III facility and has a rated Average Daily Flow (ADF) capacity of 15,900 m^3/d, and a Peak Flow Rate capacity of 51,100 m^3/d. The facility is described as a conventional activated sludge treatment plant, with Tertiary treatment consisting of two shallow-bed sand media filters. The facility and associated main Sewage Pumping Station lifecycle upgrades have been completed as of 2020. The next phase upgrade will be undertaken once, either the facility is operating in the range of its Rated Capacity, or the Ministry mandates Effluent compliance criteria the facility is not designed to meet.

The annual reporting requirements as per Environmental Compliance Approval (ECA) number 6269-BTVJ8Q, issued on October 21, 2020, have been listed below. In accordance with Condition 10, a performance report shall be prepared and submitted to the *Water Supervisor* 90 days following the end of the period being reported upon. The following is a list of the information to be included in this annual report in accordance with the applicable ECA's:

a) *A summary and interpretation of all Influent and Imported Sewage monitoring data, and a review of the historical trend of the sewage characteristics and flow rates;*

b) *A summary and interpretation of all Final Effluent monitoring data, including concentration, flow rates, loading and a comparison to the design objectives and compliance limits in this Approval, including an overview of the success and adequacy of the Works;*

c) *A summary of any deviation from the monitoring schedule and reasons for the current reporting year and a schedule for the next reporting year;*

d) *A summary of all operating issues encountered and corrective actions taken;*

e) *A summary of all normal and emergency repairs and maintenance activities carried out on any major structure, equipment, apparatus or mechanism forming part of the Works;*

f) *A summary of any effluent quality assurance or control measure undertaken;*

g) *A summary of the calibration and maintenance carried out on all Influent, Imported Sewage and Final Effluent monitoring equipment to ensure that the accuracy is within the tolerance of that equipment as required in this Approval or recommended by the manufacturer;*

h) *A summary of efforts made to achieve the design objectives in this Approval, including an assessment of the issues and recommendations for proactive actions if any are required under the following situations:*

   a. *When any of the design objectives is not achieved more than 50% of the time in a year, or there is an increasing trend in deterioration of Final Effluent quality;*

   b. *When the Annual Average Daily Influent Flow reaches 80% of the Rated Capacity;*

i) *A tabulation of the volume of sludge generated, and outlined of anticipated volumes to be generated in the next reporting period and a summary of the locations to where the sludge was disposed;*

j) *A summary of any complaints received and any steps taken to address the complaints;*

k) *A summary of all Bypasses, Overflows, other situations outside Normal Operating Conditions and sills within the meaning of Part X of EPA and abnormal discharge events;*

l) *A summary of all Notices of Modifications to Sewage Works completed under Paragraph 1.d. Of Condition 10, including a report on status of implementation of all modifications;*

m) *A summary of efforts made to achieve conformance with Procedure F-5-1 including but not limited to projects undertaken and completed in the sanitary sewer system that result in overall Bypass/Overflow elimination including expenditures and proposed projects to eliminate Bypass/Overflows with estimated budget forecast for the year following that for which the report is submitted; and*

n) *Any changes or updates to the schedule for the completion of construction and commissioning operation of major process(es)/equipment groups in the Proposed Works.*

Summary and Interpretation of Monitoring Data

Final Effluent parameter monitoring - with Limits								
Month	**[CBOD5]** *(mg/L)*	**[TSS]** *(mg/L)*	**[TP]** *(mg/L)*	**GMD E.Coli** *(cfu/100mL)*	**Acute Lethality RBT** *(% Mortality)*	**Acute Lethality DM** *(% Mortality)*	**pH - MIN**	**pH - MAX**
	Limit: 25.0mg/L; Objective: 15.0mg/L	*Limit: 25.0mg/L; Objective: 15.0mg/L*	*Limit: 0.30mg/L; Objective: 0.15mg/L*	*Limit: 200 cfu/100mL; Object.: 100 cfu/100mL*	Non-lethal	Non-lethal	*Limit: 6.0*	*Limit: 9.5*
January	2.20	2.60	0.03	2.0	0	0	7.03	7.38
February	4.50	5.75	0.06	1.4			6.85	7.46
March	4.17	3.50	0.05	2.0			6.81	7.57
April	2.14	2.71	0.04	4.6	0	3.3	6.72	7.41
May	2.00	3.60	0.06	2.0			6.69	7.40
June	2.00	3.40	0.08	1.4			6.81	7.46
July	2.89	4.56	0.11	3.0	0	0	6.80	7.12
August	2.50	3.13	0.09	2.3			7.05	7.35
September	3.75	2.50	0.10	2.0			6.86	7.40
October	2.25	2.00	0.08	4.8	0	0	6.85	7.59
November	2.00	2.00	0.08	2.0			6.53	7.23
December	2.00	3.00	0.05	2.6			6.94	7.21
Annual Avg	**2.70**	**3.23**	**0.07**	**2.5**			**6.83**	**7.38**

Final Effluent parameter monitoring - without Limits			
	Total Ammonia Nitrogen (TAN) (mg/L)	**Unionized Ammonia** (mg/L)	**Temperature - Avg** (deg.C)
January	0.25	0.0013	12.18
February	1.58	0.0035	11.84
March	2.68	0.0092	11.48
April	0.18	0.0013	14.13
May	0.10	0.0010	15.53
June	0.10	0.0010	19.17
July	0.10	0.0010	20.67
August	0.10	0.0010	21.56
September	0.10	0.0010	21.77
October	0.10	0.0010	19.83
November	0.16	0.0010	16.85
December	0.68	0.0025	14.69
Annual Avg	**0.51**	**0.0021**	**16.64**

Monthly Average Effluent Waste Loadings			
Month	**CBOD5** *(kg/d)*	**Total Suspended Solids** *(kg/d)*	**Total Phosphorus** *(kg/d)*
	Limit: 397.5 kg/d	*Limit: 397.5 kg/d*	*Limit: 4.77 kg/d*
January	33.1	39.1	0.51
February	64.1	81.9	0.85
March	66.3	55.7	0.80
April	35.5	44.9	0.59
May	27.7	49.9	0.86
June	21.4	36.5	0.86
July	31.4	49.5	1.15
August	29.1	36.4	1.05
September	32.6	21.7	0.85
October	18.4	16.3	0.67
November	17.6	17.6	0.72
December	24.2	36.3	0.57
Annual Avg	**33.4**	**40.5**	**0.79**

Raw Sewage Monthly Average Concentrations						
	Monthly Average BOD5 Concentration *(mg/L)*	**Monthly Average Total Suspended Solids Concentration** *(mg/L)*	**Monthly Average Total Phosphorus Concentration** *(mg/L)*	**Monthly Average Total Kjeldahl Nitrogen Concentration** *(mg/L)*	**Total Ammonia Nitrogen** *(mg/L)*	**pH**
January	119.3	179.0	2.1	17.7	13.0	7.18
February	132.3	200.0	3.0	21.3	18.1	7.05
March	102.4	153.2	1.5	19.1	17.0	7.25
April	96.3	172.0	1.8	20.2	16.1	7.30
May	165.2	234.2	2.7	21.0	19.4	7.26
June	140.8	231.5	3.3	26.3	23.4	7.21
July	137.0	189.8	3.0	26.5	24.6	7.37
August	126.8	168.0	2.9	24.6	21.6	7.29
September	154.3	244.8	3.7	33.3	26.3	7.41
October	276.8	294.8	4.2	32.3	30.2	7.44
November	147.0	227.0	3.9	31.4	25.7	7.48
December	267.8	364.0	4.2	30.2	19.6	7.25
Annual Avg	**155.5**	**221.5**	**3.0**	**25.3**	**21.2**	**7.29**

	Facility Influent Flow Monitoring			Facility Effluent Flow Monitoring		
Month	**Average Daily Influent Flow** *(cu.m/day)*	**Month Max Daily Influent Flow** *(cu.m/day)*	**Total Influent Flow** *(cu.m/month)*	**Average Daily Effluent Flow** *(cu.m./day)*	**Month Max Daily Effluent Flow** *(cu.m./day)*	**Total Effluent Flow** *(cu.m./month)*
	Rated Capacity: 15,900 cu.m./day	*Peak Rated Capacity: 51,100 cu.m./day*				
January	14,056	27,977	435,733	15,046	29,589	466,436
February	13,219	22,124	370,136	14,242	22,817	398,768
March	14,994	24,488	464,819	15,920	26,195	493,510
April	15,072	23,511	452,157	16,545	25,119	496,348
May	12,982	22,375	402,436	13,873	23,803	430,070
June	10,169	14,084	305,067	10,723	15,499	321,679
July	9,739	15,129	301,918	10,856	16,091	336,523
August	10,607	15,408	328,802	11,650	16,694	361,164
September	7,771	8,526	233,125	8,688	9,564	260,637
October	7,360	8,047	228,172	8,172	9,142	253,325
November	7,965	10,609	238,959	8,781	11,559	263,443
December	11,091	15,239	343,831	12,094	16,826	374,929
	Annual Avg Daily = 11,252 cu.m./day	**Annual Max = 27,977 cu.m./day**	**Total Influent = 4,105,155 cu.m.**	**Annual Avg = 12,216 cu.m./day**	**Annual Max = 29,589 cu.m./day**	**Total Effluent = 4,456,832 cu.m.**

Summary of Bypass, Spill, or Abnormal Discharge Event(s)

Month	Date	Duration	Event Type	Volume (cu.m)
July	16	4 hours	Unplanned partial Tertiary Bypass as a result of wet weather event, failed bridge	70.5
	24	16 mins	UV disinfection failure as a result of PLC fail	158
	27	2 hours 40 mins	Unplanned partial Tertiary Bypass as a result of wet weather event	570
August	12-13	13 hours	Unplanned partial Tertiary Bypass as a result of wet weather event	1880

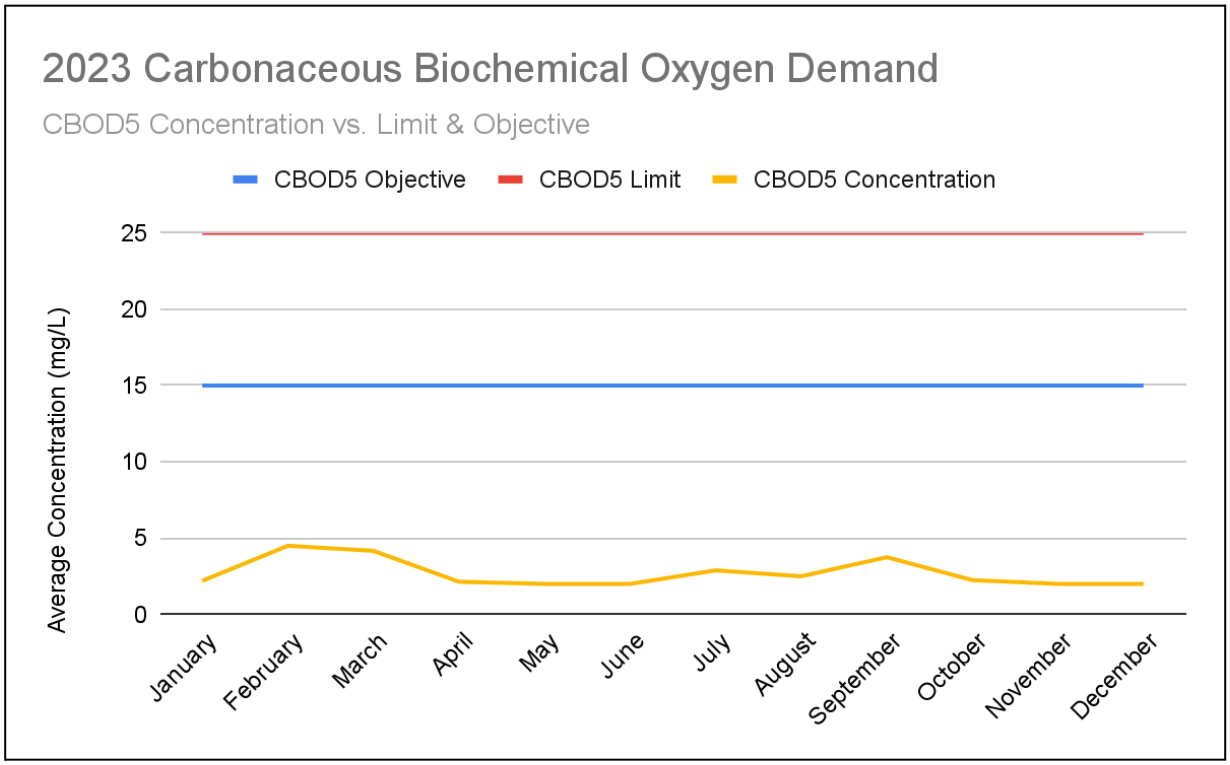
Summary of Operating Problems throughout Monitoring Period

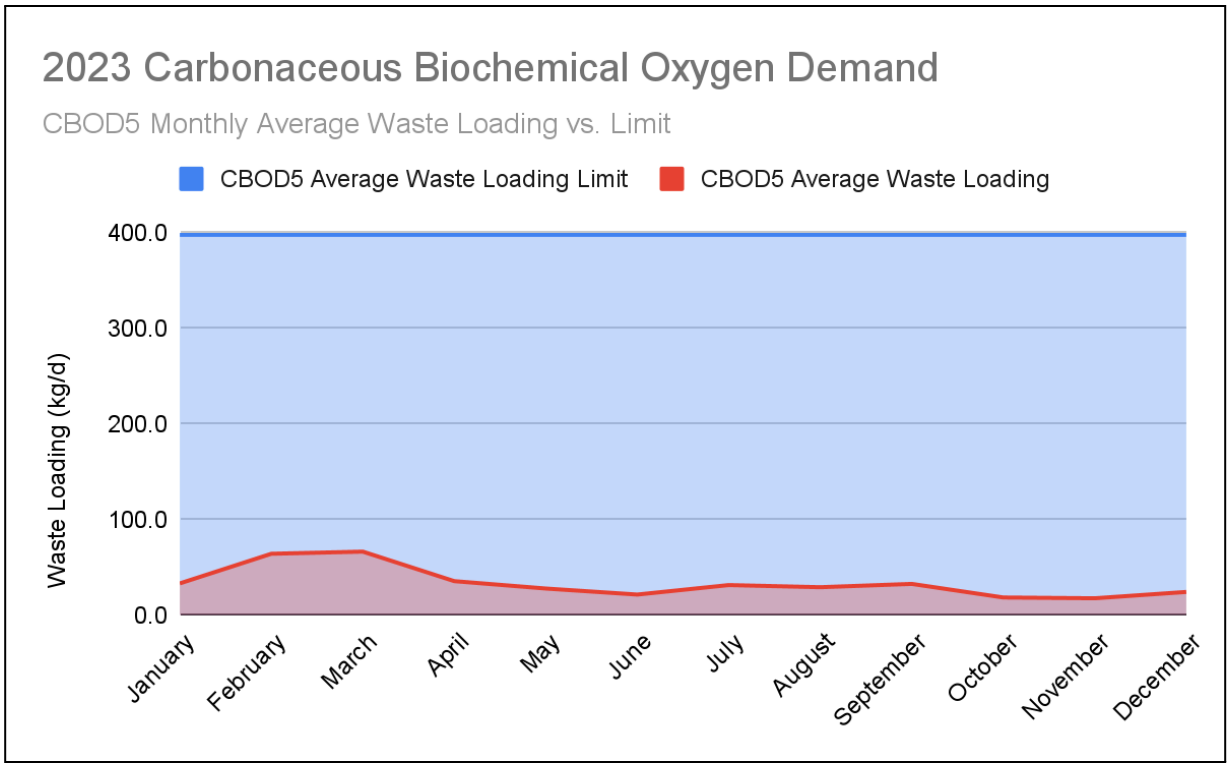
Outside of those reportable events identified above, no substantial operating problems presented themselves throughout the reporting period. Eight (8) sampling events were facilitated to satisfy Condition 9(2) of the ECA. In each event, sample results measured below the Effluent Objective.

Analysis of Final Effluent Monitoring Dataset

Carbonaceous Biochemical Oxygen Demand (CBOD5) / Biochemical Oxygen Demand (BOD5)

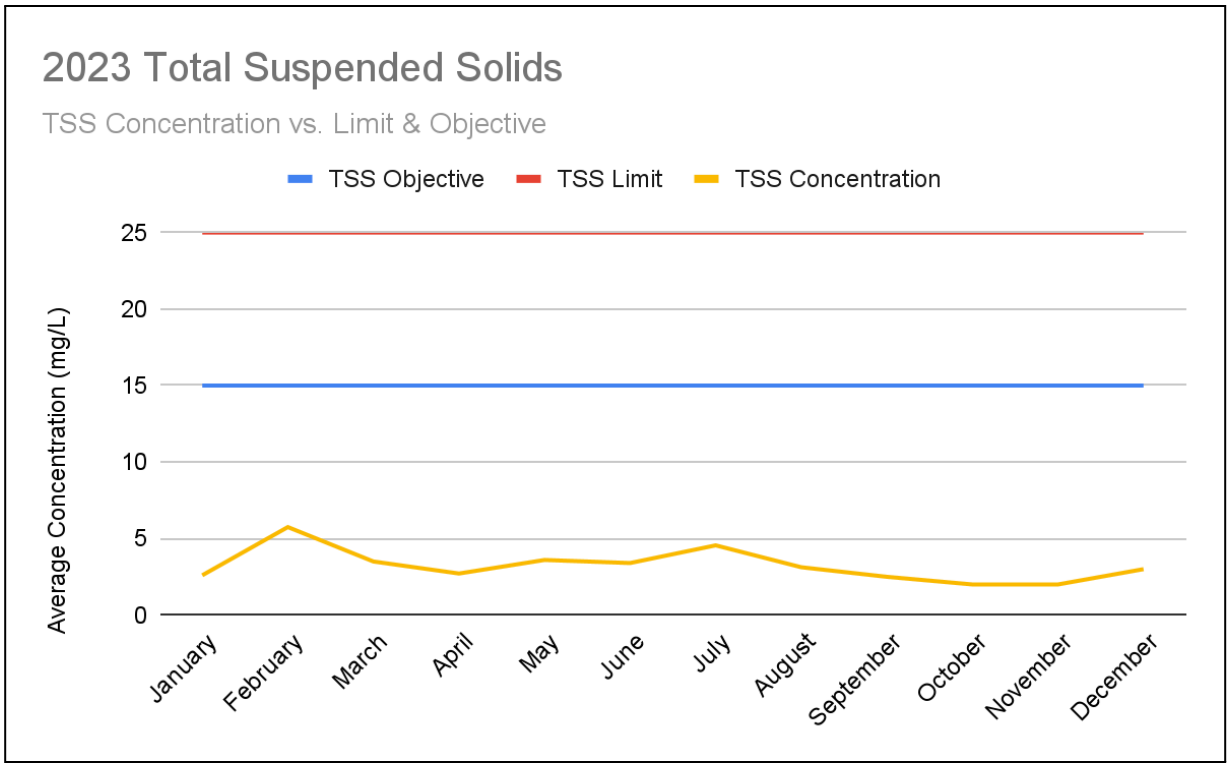
It is apparent in the following Figures that the facility operated well to remove BOD in the wastewater stream throughout the reporting period. The highest monthly average concentration of CBOD5 in the Final Effluent was measured in February, with a calculated monthly average concentration of 4.5 mg/L; 30% of the Effluent Objective.

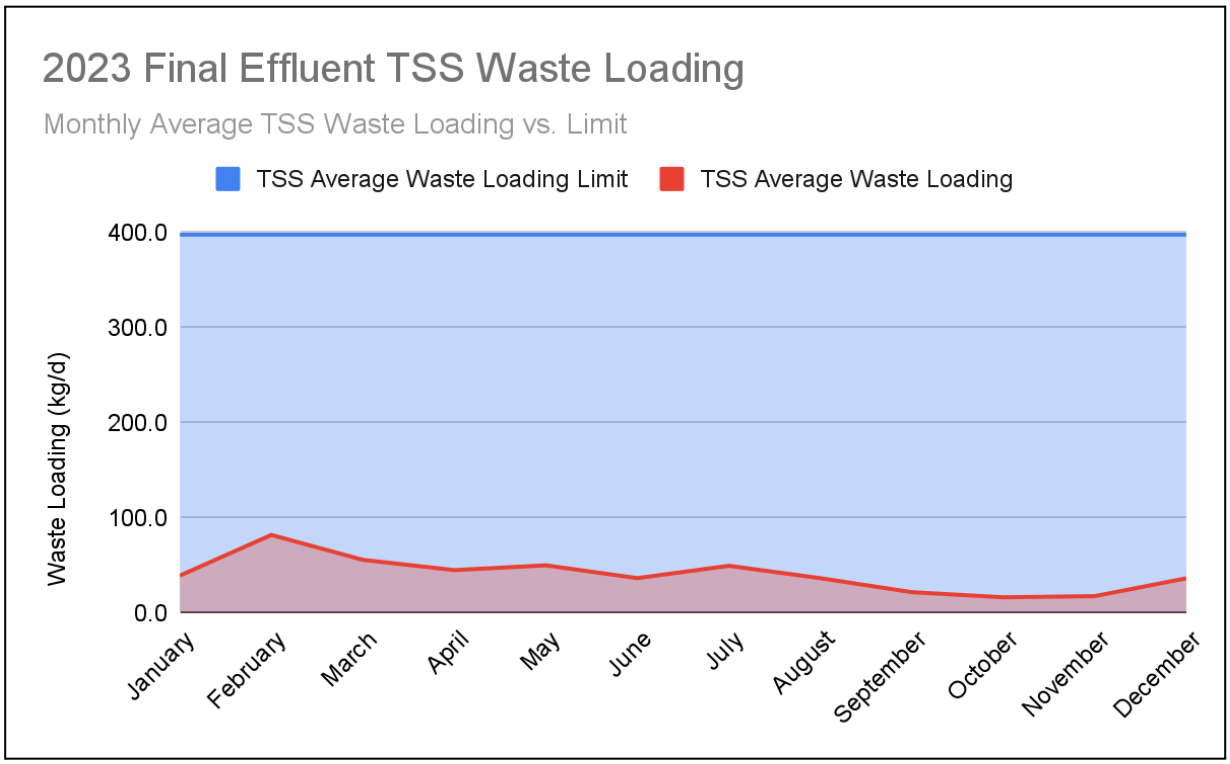

2023 Carbonaceous Biochemical Oxygen Demand
CBOD5 Concentration vs. Limit & Objective
CBOD5 Objective
CBOD5 Limit
CBOD5 Concentration
Average Concentration (mg/L)
25
20
15
10
5
0
January
February
March
April
May
June
July
August
September
October
November
December


2023 Carbonaceous Biochemical Oxygen Demand
CBOD5 Monthly Average Waste Loading vs. Limit
CBOD5 Average Waste Loading Limit
CBOD5 Average Waste Loading
Waste Loading (kg/d)
400.0
300.0
200.0
100.0
0.0
January
February
March
April
May
June
July
August
September
October
November
December

Total Suspended Solids (TSS)

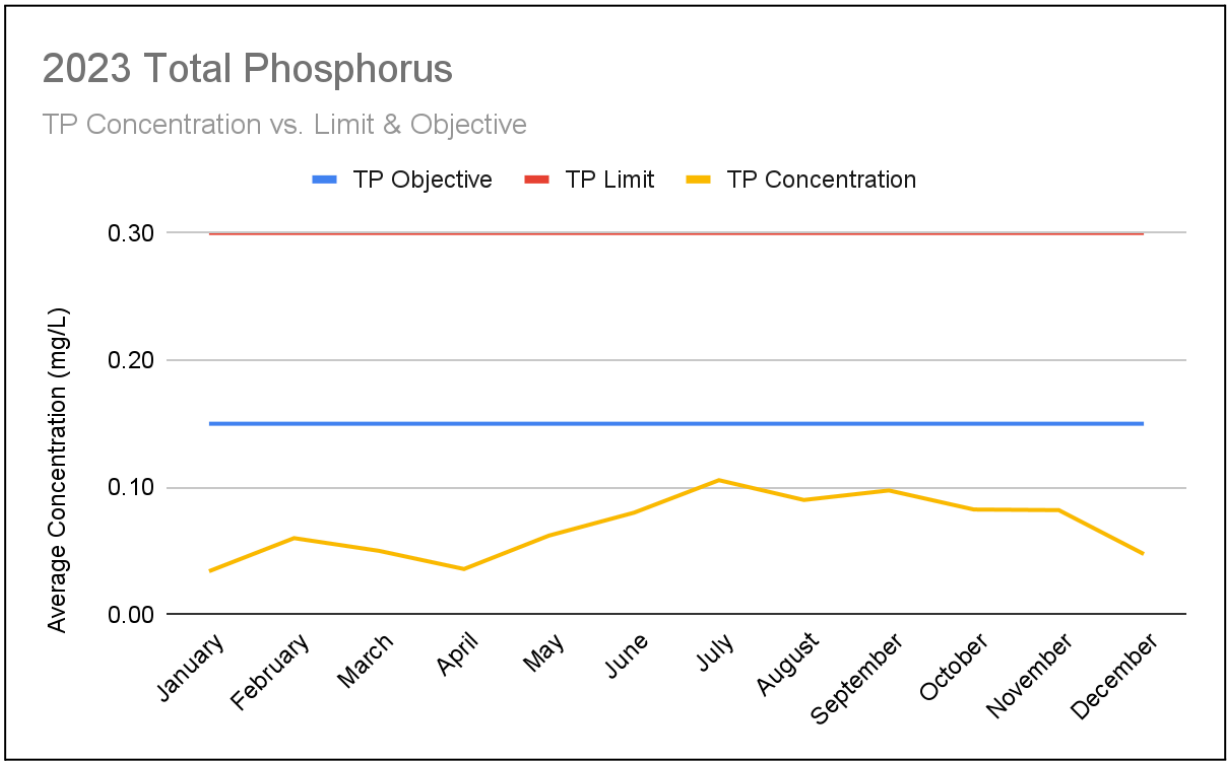
The following figures depict monthly average TSS concentrations and loadings in relation to their respective Objectives and Limits. It is clear from the charts below that the facility performed quite well over the reporting period.

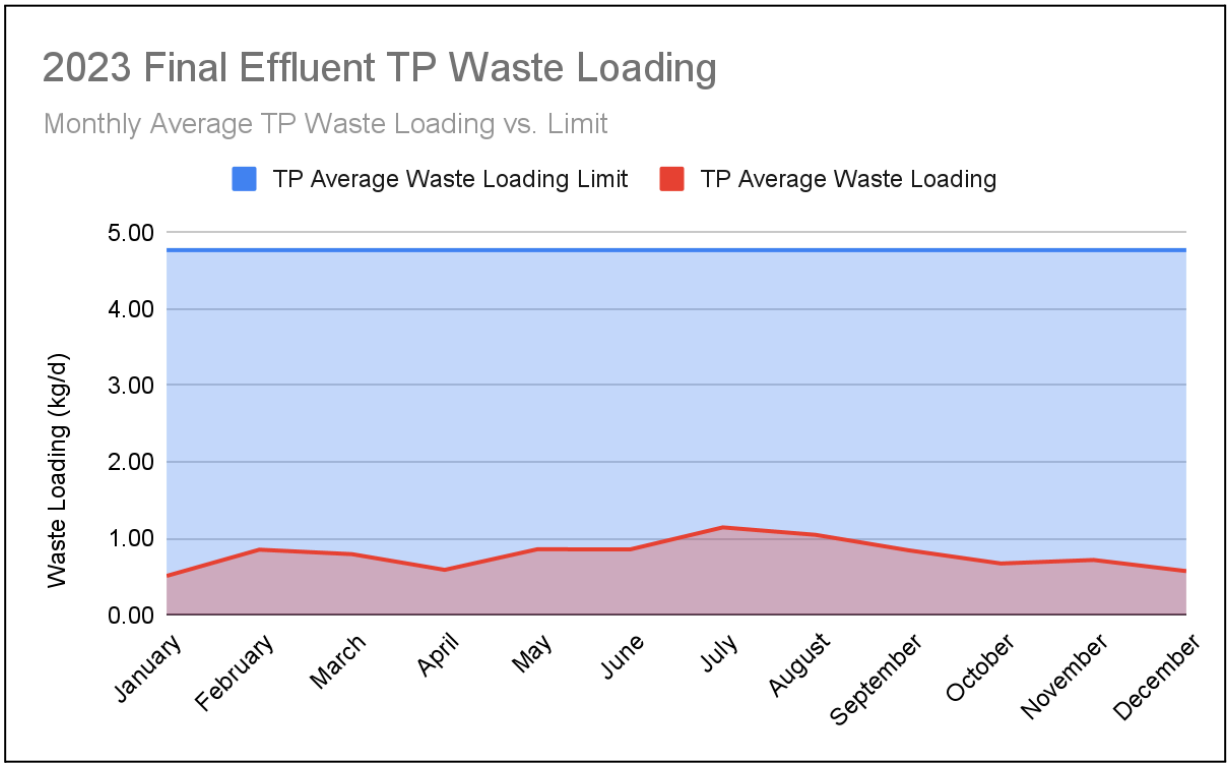




Total Phosphorus (TP)

The following two figures depict monthly average TP concentrations and loadings in relation to their respective effluent Limits and Objectives. The annual average coagulant dosage in 2023 was calculated to be 63.0 mg/L. This is an increase of 4% from the 2022 average dosage of 60.8 mg/L. From the figures below you can see that the monthly TP concentration was below the Operating Objective and Limit for the entire Reporting Period.

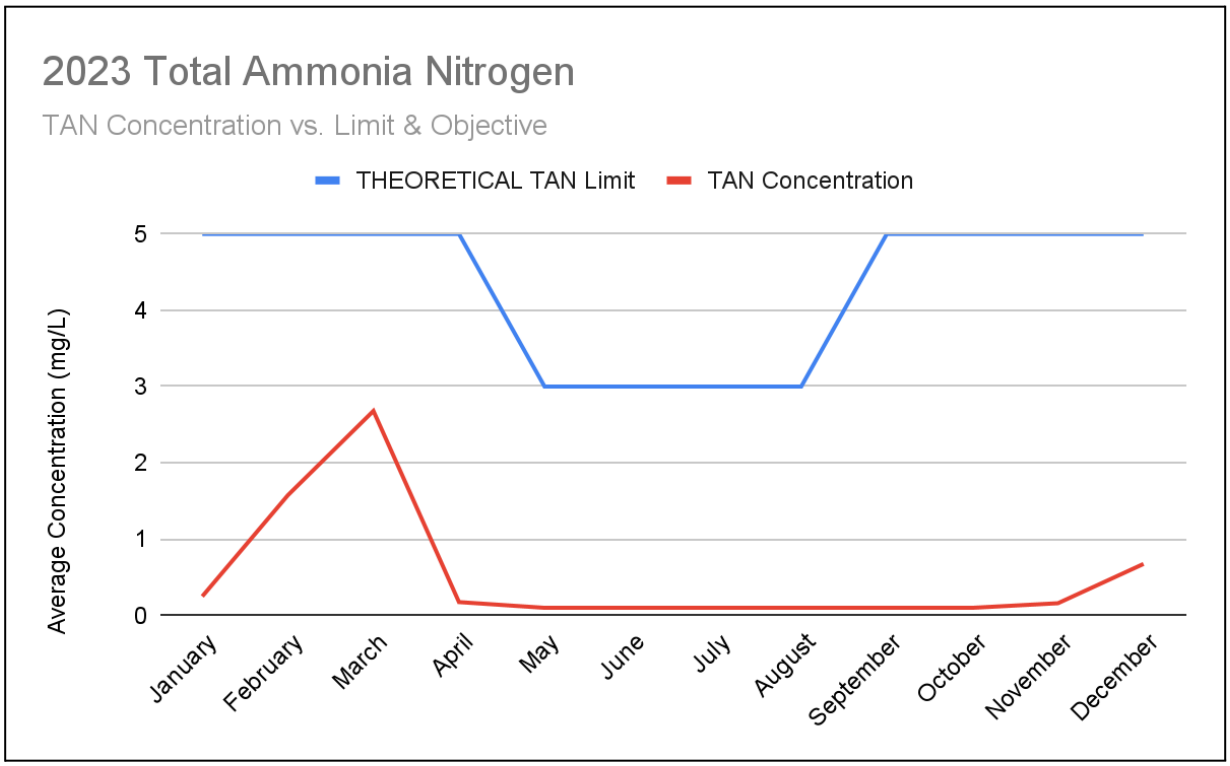

2023 Total Phosphorus
TP Concentration vs. Limit & Objective
TP Objective
TP Limit
TP Concentration
Average Concentration (mg/L)
0.30
0.20
0.10
0.00
January
February
March
April
May
June
July
August
September
October
November
December


2023 Final Effluent TP Waste Loading
Monthly Average TP Waste Loading vs. Limit
TP Average Waste Loading Limit
TP Average Waste Loading
Waste Loading (kg/d)
5.00
4.00
3.00
2.00
1.00
0.00
January
February
March
April
May
June
July
August
September
October
November
December

Total Ammonia Nitrogen (TAN) - Ammonia (NH_3) / Ammonium (NH_4^+)

As the facility is not designed to nitrify, there are no Effluent Limits established by the ECA. However, the theoretical TAN limit is shown below in relation to the TAN concentration. It is apparent that the facility remained well below the Theoretical TAN limit throughout the duration of the Reporting Period. The spike in March can be attributed to seasonal wastewater characteristics and flow resulting in lower biological efficiency.

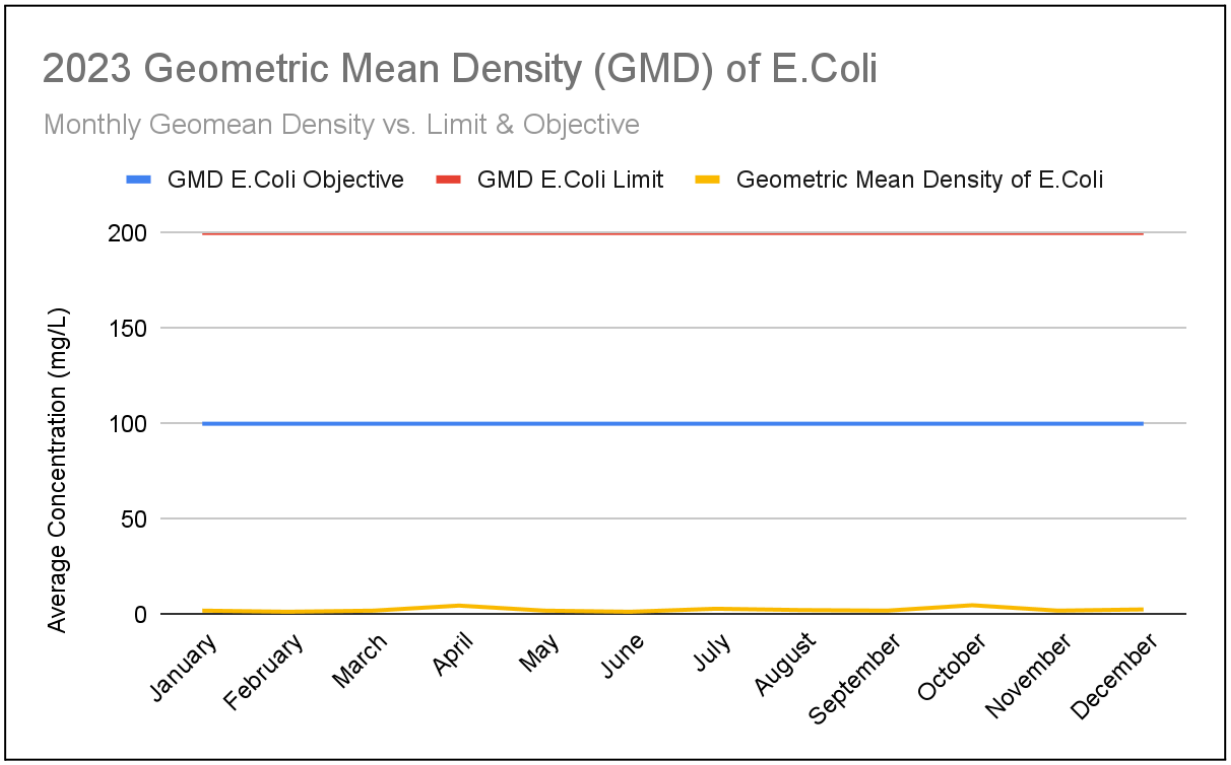
The annual average Un-ionized ammonia concentration is calculated to be 0.0021 mg/L with a maximum calculated concentration of 0.015 mg/L on March 29, 2023.



Geometric Mean Density of E. Coli

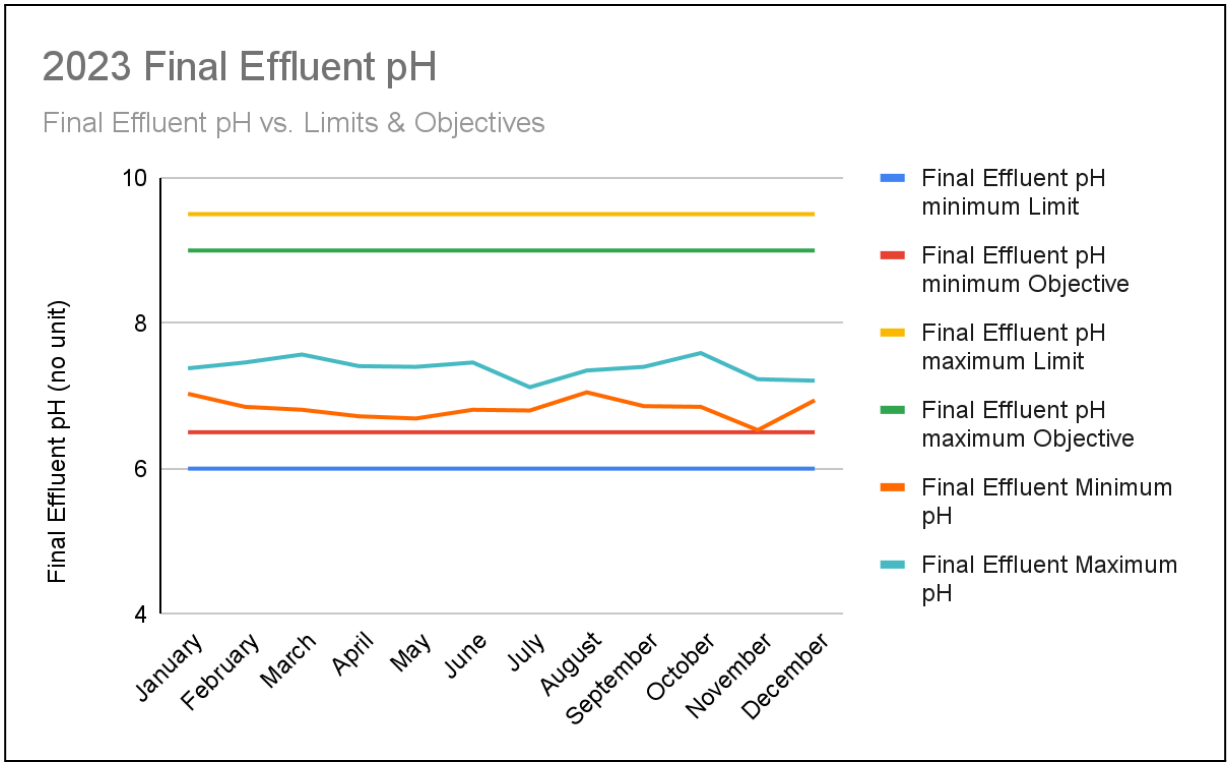
The facility UV irradiation disinfection system is capable of treating a Peak Hydraulic Flow of 79,000 cu.m/day, and an Average Daily Flow of 23,200 cu.m/day. There are two banks of lamps set up to operate in a duty/standby configuration, and power will ramp up as flows increase or effluent UV transmittance drops.

Apparent in the figure below is that this system continues to perform quite well by providing reliable disinfection.



Final Effluent pH

Approximately 250 samples were collected of the Final Effluent throughout the reporting period, and pH measurement taken. As illustrated in the following figure, the Final Effluent pH was consistently measured between the allowable Limits identified in Schedule B and C of the ECA. Effluent pH measurements are performed by the Operators on a Daily basis, normally Monday to Friday. It is important to note that pH measurements used to determine compliance with the ECA have no quality assurance/ quality control (QA/QC) measures in place, other than routine calibration procedures of the pH probe.



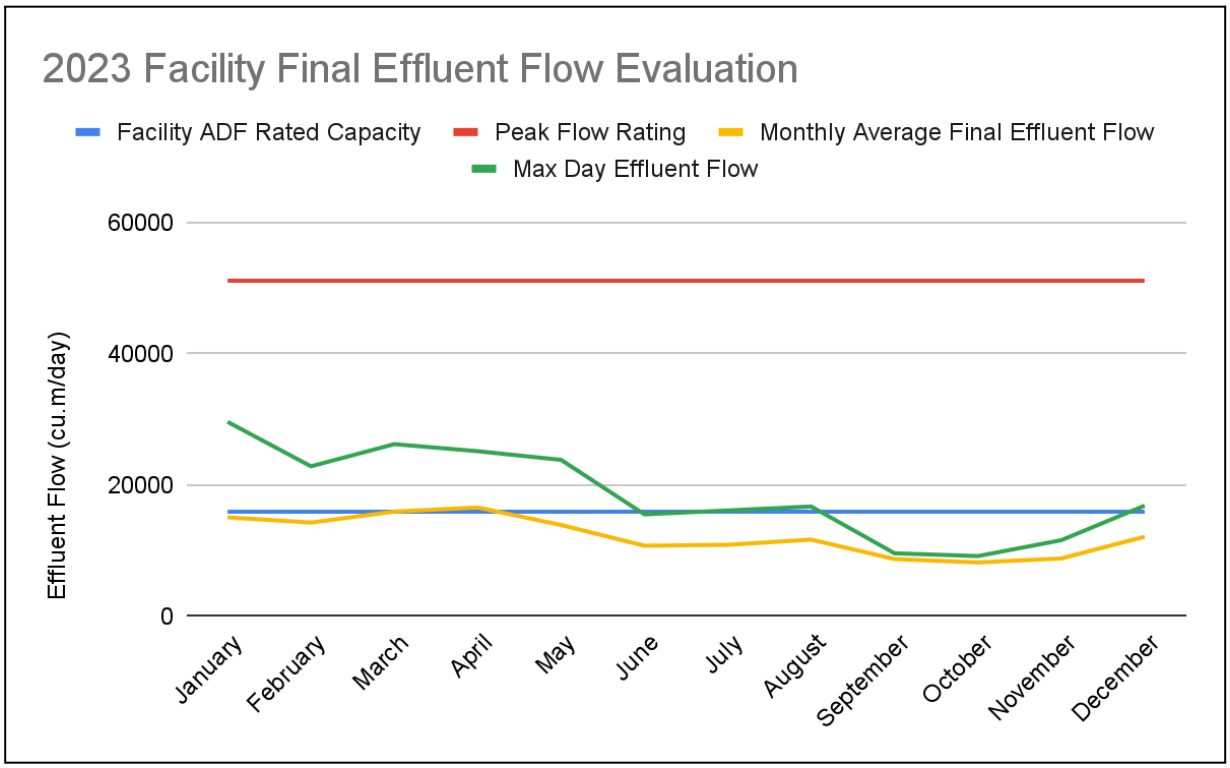
Acute Lethality to Rainbow Trout and Daphnia Magna

The City contracts all Acute Lethality testing to *Nautilus Environmental*. Quarterly sample results yielded 0% Mortality at 100% Effluent concentration tested in accordance with the Procedure for pH stabilization during the Testing of Acute Lethality of Wastewater Effluent to Rainbow Trout. While quarterly sample results for Acute Lethality of Effluents to *Daphnia magna* yielded 0% Mortality at 100% Effluent.

Final Effluent Flows

In 2023, an estimated 872 mm of total precipitation was measured at the Environment Canada Belleville, ON monitoring station. In those months where rainfall totals exceeded the monthly average rainfall total of approximately 73 mm of rain, the facility measured a corresponding seasonal increase in Influent flows, and consequently Effluent Flows.

The 3-year average daily flow is 10,907 m^3/d and the 5-year average daily flow is 11,664 m^3/d, trends show effluent flows increased from the previous year.



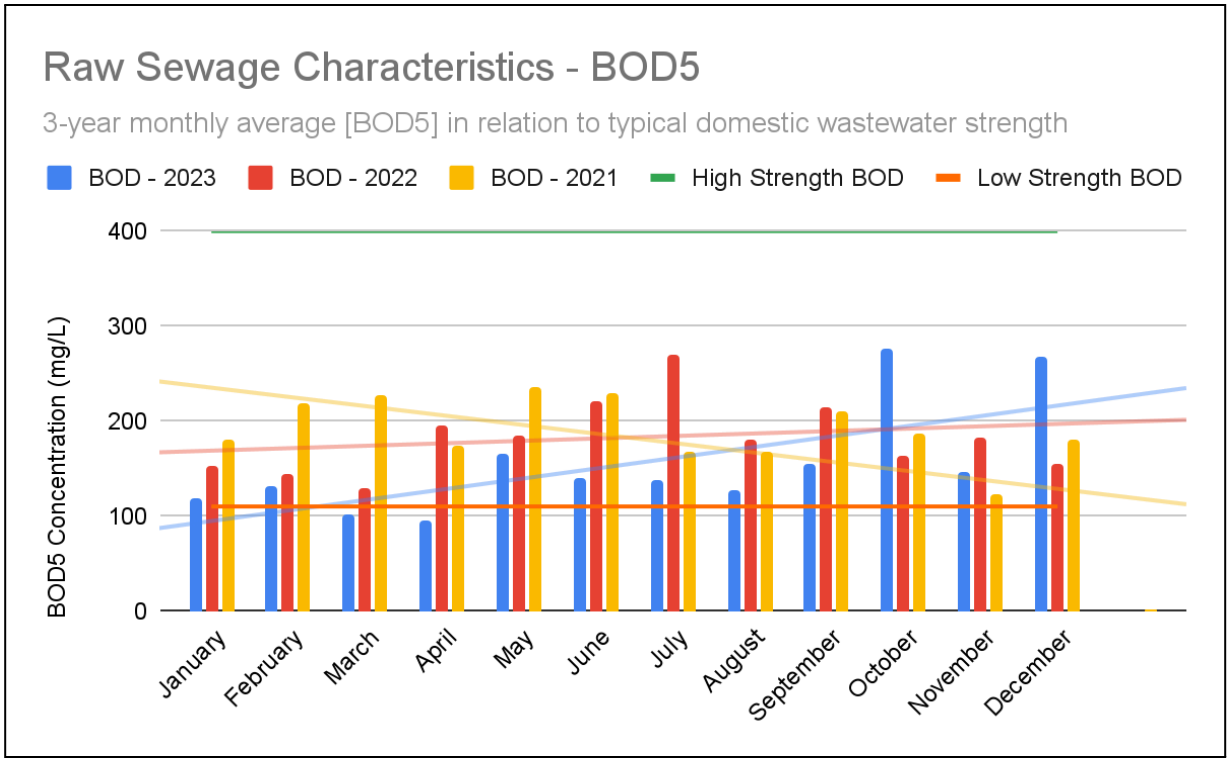
Raw Sewage Characterization

Raw sewage concentrations tend to share an inverse relationship with influent flows, meaning that when influent flows are low (during drought conditions), raw sewage concentrations of measured contaminants, tend to be higher. Outlined in the chart below are monthly average concentrations measured in raw sewage over the last three years along with associated trendlines. Also plotted on the chart are the typical high and low strengths for the associated contaminants in raw wastewater, as measured in a sample of untreated domestic wastewater. The author of this report referenced an online publication that refers to the Metcalf and Eddy Inc. *Wastewater Engineering and Treatment Reuse* manual for these figures (Metcalf and Eddy Inc. 20). Further, it is important to note that the Trenton WWTP received a significant amount of its raw sewage supply from an Industrial source in 2020 and into 2021, therefore the strengths identified in the charts should only be used as a general reference point.

The following sections and charts will provide a description of the raw sewage characteristics and flow rates.

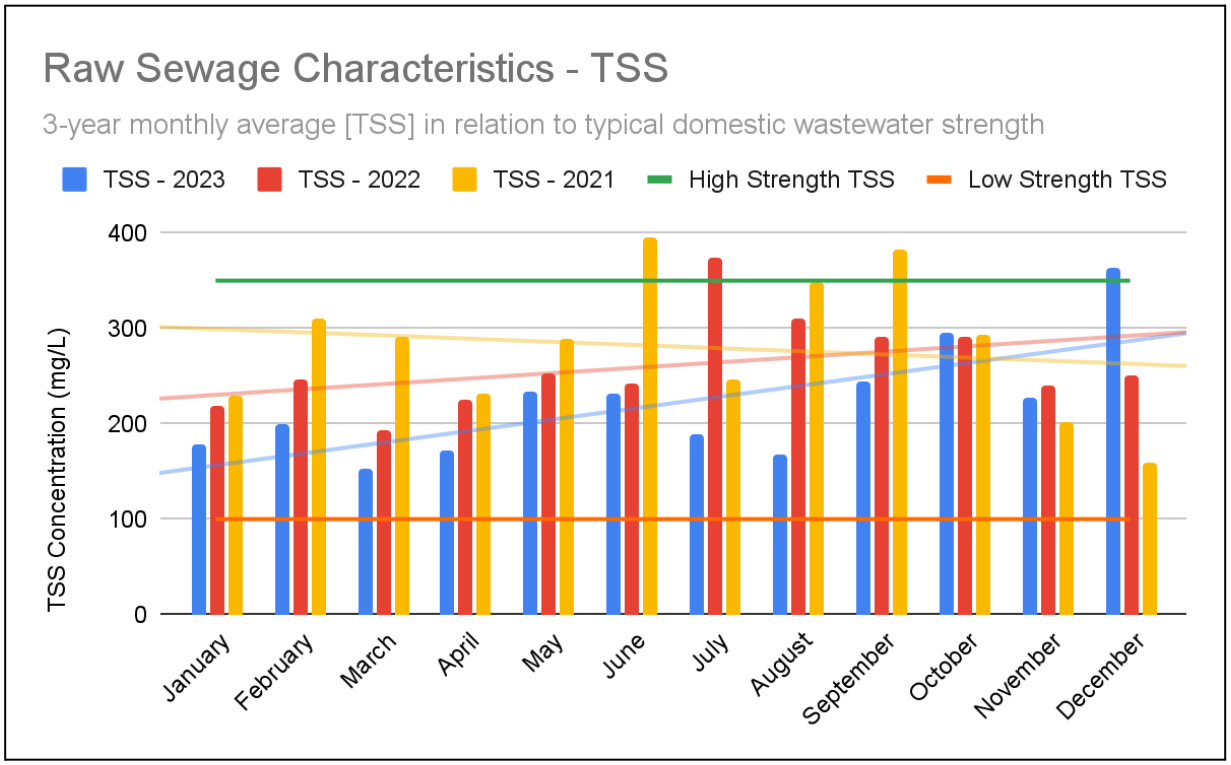
Raw Sewage Biological Oxygen Demand (BOD5)

In review of the chart below, it is apparent that raw sewage characteristics tend to trend downward in 2021, they remain fairly stable in 2022, and trend upwards toward the end of 2023. It is likely that these trends were impacted by seasonal temperatures and associated Influent flows. In 2021 industrial operations have decreased and two of the largest food manufacturing industries connected to the Trenton Wastewater Collection System (WWCS) have ceased operations completely. These industries may have played a role in the characteristics of BOD5 concentrations. Notably another large industry in Trenton has ceased operations in 2024, and could have an impact on these trends.



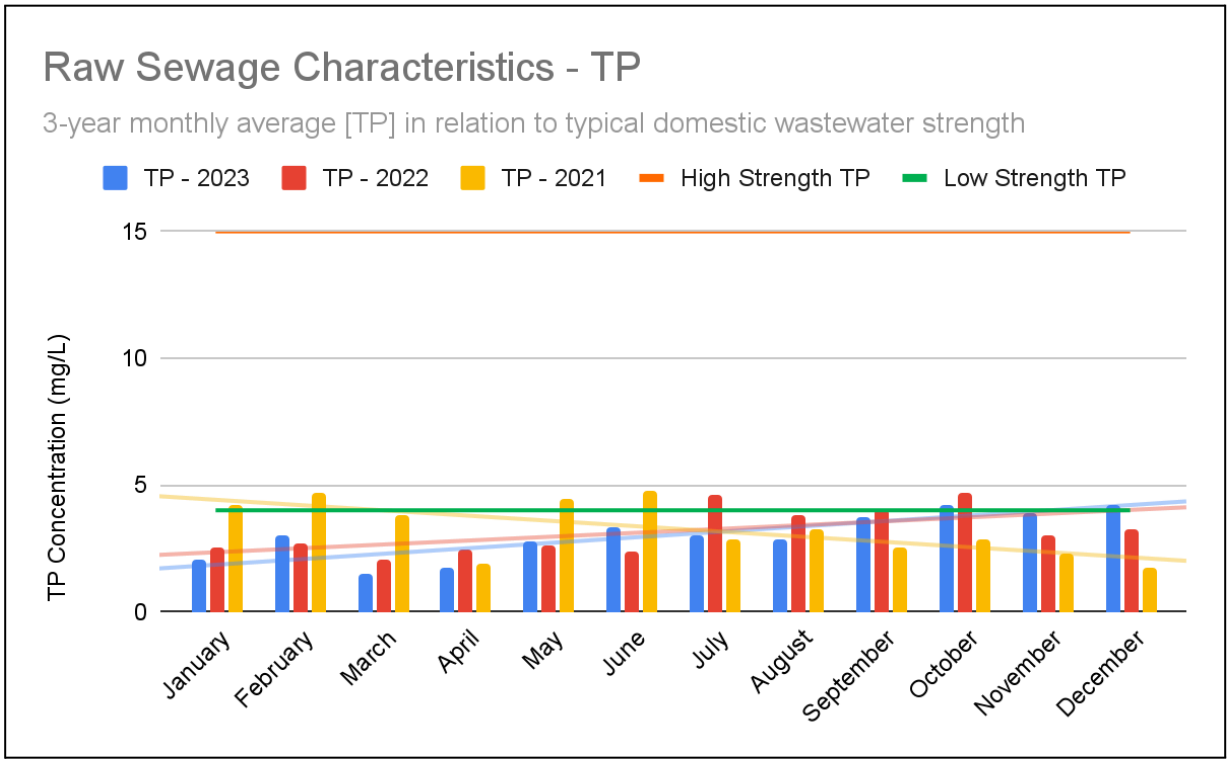
Raw Sewage Total Suspended Solids (TSS)

The characteristics for raw sewage TSS concentrations share a similar relationship with BOD5 characteristics in terms of trending. It is likely that these trends were impacted by seasonal temperatures and associated Influent flows. In 2021, industrial operations have decreased as previously described in the raw sewage BOD5 characteristics. These industries may have also played a role in the characteristics of TSS concentrations.



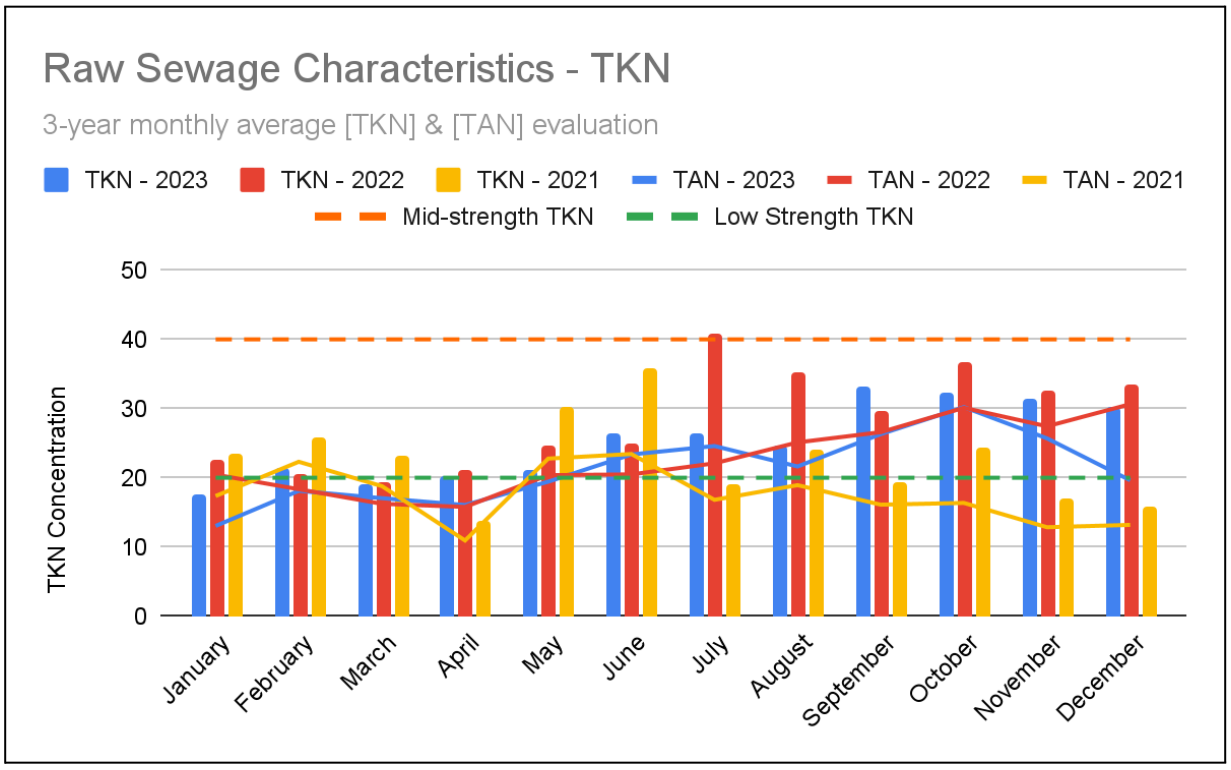
Raw Sewage Total Phosphorus (TP)

Generally speaking, TP concentrations trended higher toward the end of 2022 and 2023. It is likely that seasonal influent flows impacted the monthly average concentrations. Further, TP concentrations in raw sewage tend to range in the low strength area according to Metcalf and Eddy, as discussed in previous sections. It is also likely that these trends were impacted by industrial associated Influent flows. In 2021, industrial operations have decreased as previously described in the raw sewage BOD5 characteristics. These industries may have played a role in the characteristics of TP concentrations.



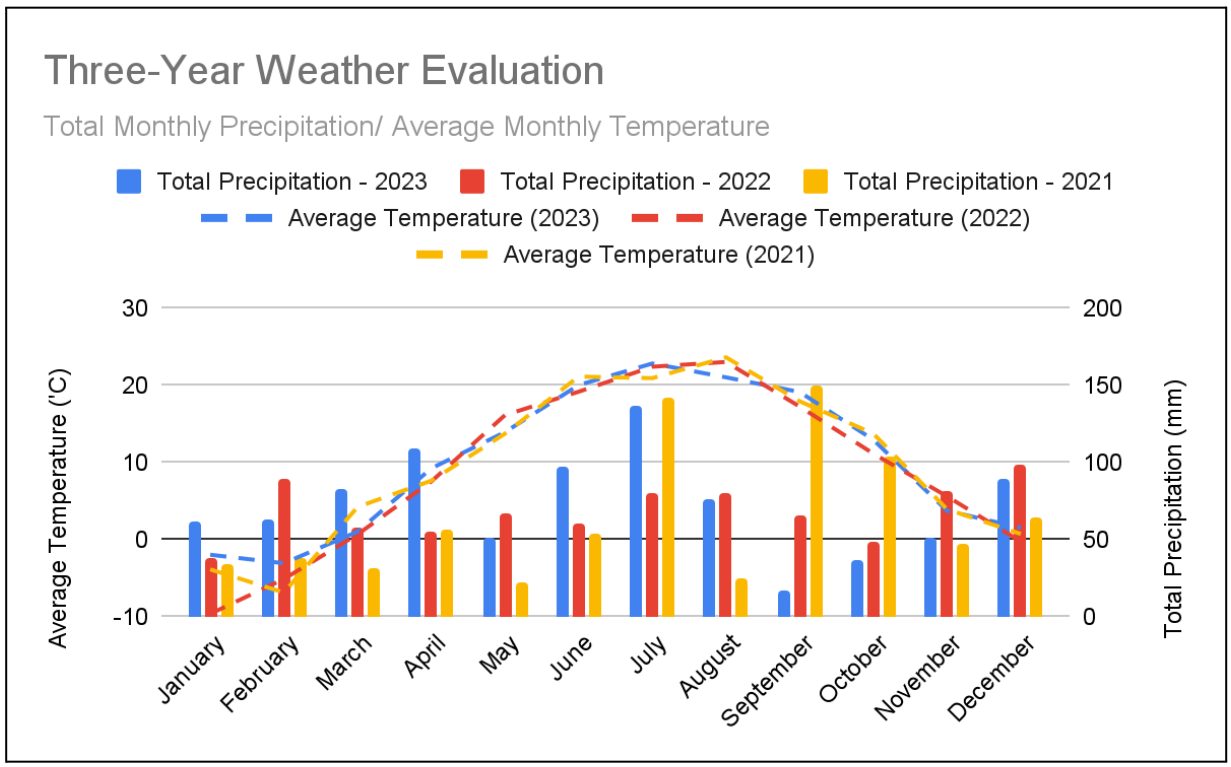
Total Kjeldahl Nitrogen (TKN) / Total Ammonia Nitrogen (TAN)

Total Kjeldahl Nitrogen (TKN) is the sum of organic nitrogen, and Total Ammonia Nitrogen (TAN) - Total Ammonia Nitrogen is the sum of Ammonia and Ammonium. Over the past three years, TAN has accounted for an average 84%, 82%, and 78% of the raw sewage TKN in 2023, 2022, and 2021 respectively. This indicates a generally stable relationship between TKN and TAN. According to Metcalf and Eddy, the TKN is considered to be in the range of low - mid-strength concentration.



Facility Influent Flow Evaluation

The following three charts provide a visual representation of weather patterns in relation to monthly average temperatures, a 3-year evaluation of the monthly average influent flows in relation to the total precipitation measured at Environment Canada Belleville, ON monitoring station, and a close look at the 2023 monthly average Influent flows in relation to the total precipitation measured at the Belleville, ON monitoring station, respectively. The chart below provides an indication that while generally seasonal temperatures remained stable, the total amount of precipitation measured in the last three years didn't necessarily follow the same seasonal pattern year after year. The total annual precipitation has increased each year, for the last three, with 770 mm in 2021, 819 mm in 2022, and 871 mm in 2023.

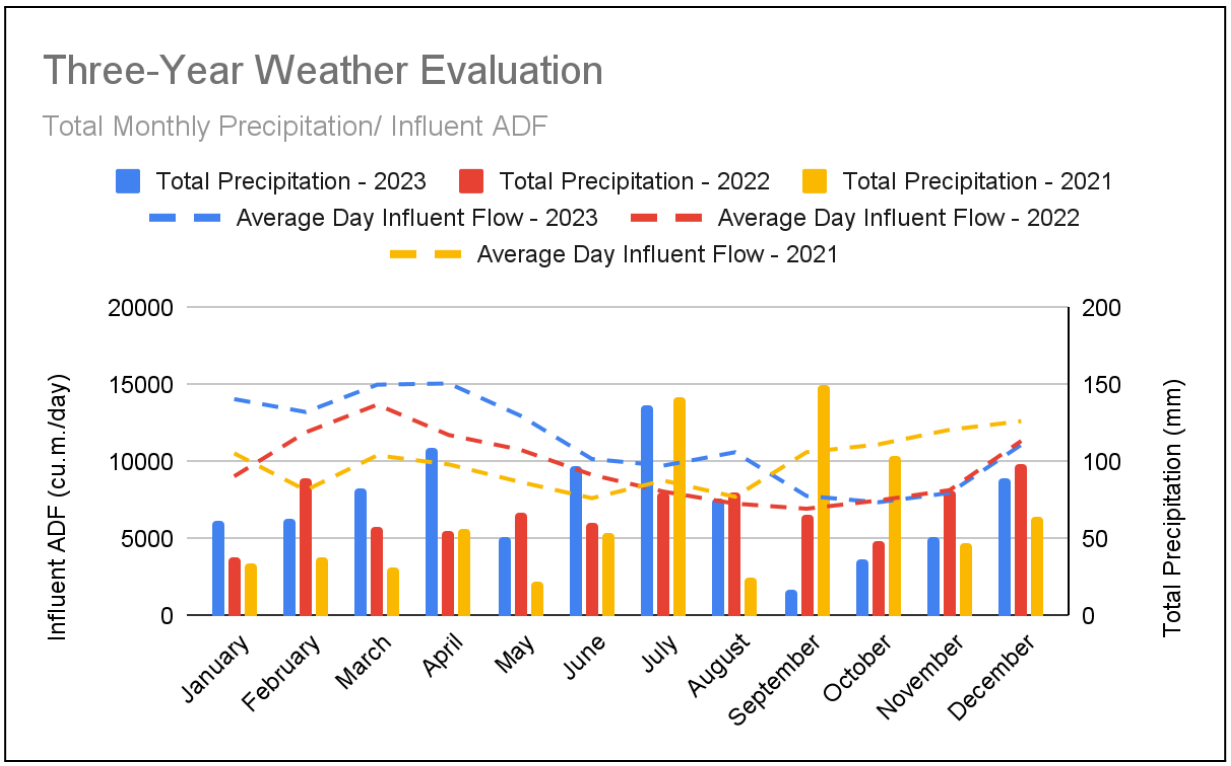


The following chart provides a depiction of how Inflow & Infiltration (I&I) may be impacting the Trenton facility as, generally speaking, Influent flows are trending in the same fashion to the corresponding weather patterns, with a seasonal decline in the second half of the year. Outlined below are assessments of the Influent Annual Average Daily Flow over the last three years:

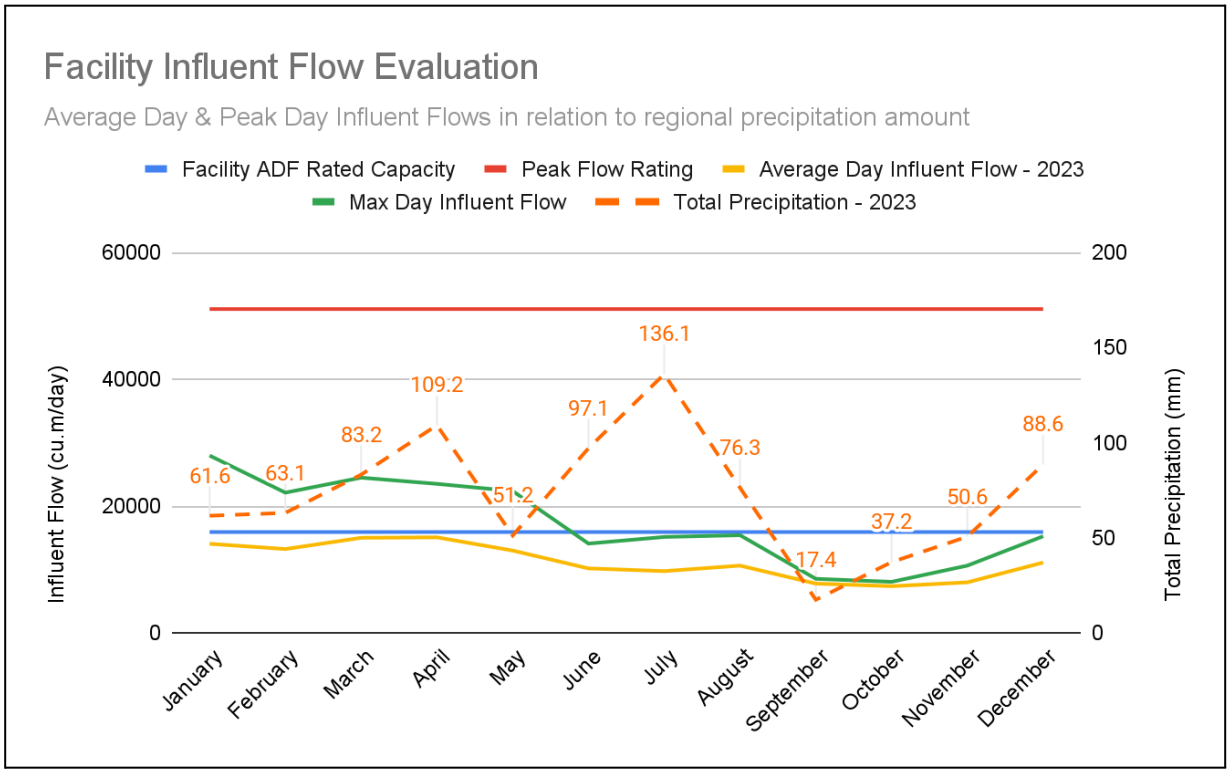
2021 - Influent AADF = 9,854 cu.m/day; 62% of Rated Capacity

2022 - Influent AADF = 9,613 cu.m/day; 60% of Rated Capacity

2023 - Influent AADF = 11,252 cu.m/day; 71% of Rated Capacity



The facility operated at 71% of its Rated Capacity over the reporting period which is a 11% increase from 2022. The Owner has spent several million dollars over the last seven years to upgrade its WWTP and Wastewater Collection System (WWCS) infrastructure which is being realized in the Influent flows in an effort to extend the lifespan of the facility and reduce sources of I&I in the WWCS.



Imported Sewage

In 2023, a total of 260 cu.m. of biosolids were hauled from the Frankford WWTP and dewatered at the Trenton WWTP. Please refer to the Frankford WWTP Annual Performance Report for biosolids characteristics. Generally speaking, this material does not enter the treatment process and has no bearing on the overall effluent quality.

Summary of Maintenance performed throughout Reporting Period

The City continues to support an active Preventative Maintenance (PM) program to ensure the facility is maintained in a fit state of repair. Outside of Preventative Maintenance, the following Reactive Maintenance activities were completed by staff, or outside contractors as identified:

- Scum collector wiper blades

- Clarifier drive hubs and shear pins
- Polymer feed pump rebuild
- Air Blower actuator
- UV Panelview plus HMI replacement
- Tertiary PLC upgrade and spare hardware
- UPS replacements
- Transfer pump VFD replacement
- New eyewash for tertiary filter area
- On-going UV maintenance/ bulb replacement program
- Digester gas booster valve actuator
- Digester basement sump piping piping repair
- Phase 2 capacity expansion Design
- Filter PLC/control panel design

Biosolids Management Summary

Date Hauled	Volume Hauled (cu.m.)	Biosolids Destination
January	440	DES Storage & GFL Storage (Smith's)
February	836	DES Storage & GFL Storage (Smith's)
March	1,276	DES Storage & GFL Storage (Smith's)
April	132	GFL Storage (Smith's)
April 13-19	1280	Land Application - NASM Plan #23774
May	84	GFL Storage (Smith's)
May 19-24	1624	Land Application - NASM Plan #60339
May 31	280	Land Application - NASM Plan #23770
June 1-2	520	Land Application - NASM Plan #23774
June 8-9	680	Land Application - NASM Plan #24306

July 4-5	800	Land Application - NASM Plan #24590
August 22	464	Land Application - NASM Plan #23776
September 8-12	412	Land Application - NASM Plan #24244
September 29 & October 4	760	Land Application - NASM Plan #24252
October 3-4	960	Land Application - NASM Plan #23928
November 9-27	1372	Land Application - NASM Plan #60901
December	220	DES Storage & GFL Storage (Smith's)
Total Volume of liquid sludge generated and land applied = 12,140 cu.m.		
Estimated Sludge generated in 2024 - 13,000 cu.m.		

Summary of Effluent Quality Assurance and Control Measures

The City collects samples from Raw Sewage stream, Aeration Tanks, Secondary Clarifiers and Final Effluent on a routine basis throughout the week. The City satisfies its regulatory compliance requirements by submitting a set of samples to an accredited laboratory, SGS Canada Inc. on a weekly basis, normally on Wednesdays throughout the Reporting Period. These sample results are manually entered into a spreadsheet and evaluated for compliance with the ECA. In addition to these samples, Operators perform in-house analysis for Total Suspended Solids, pH, temperature, alkalinity, dissolved reactive phosphorus, and Final Effluent Dissolved Oxygen. Sample results are entered into a spreadsheet for facility evaluation and process optimization. On an annual basis, the spectrophotometer is calibrated by a third party. Operators calibrate other instrumentation, such as the bench top pH meter, regularly.

Monitoring Schedule

As mentioned in the previous section, the facility sampled in accordance with the ECA every Wednesday. In 2024, the facility will collect samples in accordance with the ECA, every Tuesday each week.

Final Effluent Monitoring Equipment Calibration and Maintenance

Works Orders are generated on an annual basis to calibrate the facility's flow meters. This calibration is completed by a third party contractor. The following figure is a copy of the Effluent Flow Meter Calibration Certificate. The Influent flow is taken from the addition of the

Tower Electronics Canada Calibration Certificate

Customer:
The City of Quinte West
7 Creswell Drive
PO Box 490
Trenton, ON K8V 5R6

Calibration by:
Dan Matchett

Standards:
Fluke 289 S/N 96220182 NIST Cal Due Apr 2024
Reed RTV

Instrument Type
Magnetic Flow Meter

Method of verification
Temperature based calculation of velocity of sound in water.

Units: M3/S
Zero: 0.00
Span: 0.926
Totalizer: M3

Meter Information

Date:	2023-08-30
Location:	Trenton WWTP
Meter Under Test	Final Effluent Meter
Client Tag:	QW00002704
Manufacturer:	Accusonics
Model:	7510+
Serial Number:	1468
Totalizer As Found:	1727261M3
Totalizer As Left:	1727265M3

Programming Parameters:

185VDC	Pulse Mode
Cal Factor	1.000
Temp (°C)	22.025
Calibration Due:	Aug-24
Water Temperature(C):	22.9

Velocity Vs Temperature Verification

Path	Theroctical V-Sound (m/s)	Meter V-Sound (m/s)	Error%
1	1485.89	1488	0.142
2	1485.89	1489	0.209
3	1485.89	1487	0.075
4	1485.89	1487	0.075
	Average Error%		0.125
	Result:		PASS

Output Test

Current Simulation mA	Reference Reading	Error%
4	4	0.000
8	7.999	-0.006
12	11.997	-0.019
16	15.996	-0.025
20	19.995	-0.031
	Average Error%	-0.016
	Result:	PASS

Comments:
Using Gaussian integration the meter calculates the water temperature base on path length and observed velocity. Only one temperature corresponds to one velocity at a given path length.
Unit passes verification.

Notice of Modifications

There were no 'Notice of Modifications' forms submitted to the Ministry during this Reporting Period. All maintenance performed throughout the reporting period was not subject to the LOF requirements.

Summary of complaints received throughout the reporting period

There were no complaints received by City staff regarding the Trenton WWTP throughout the reporting period.

Procedure F-5-1 compliance

The City will continue to consult its Asset Management Planning modeling tools in conjunction with Capital Planning exercises to determine reconstruction projects. Sanitary Collection rehabilitation projects are identified in the Sanitary Collection System 2023 Annual Report.

As outlined in Summary of Bypass, Spill, or Abnormal Discharge Event(s), three (3) Partial Tertiary Filter bypasses were reported at the Trenton Wastewater Treatment Plant itself during the reporting period. Notably, on November 1, 2023 the City, along with Consultants, met with the MECP to seek clarification on Procedure F-5-1 and its impact on the Design of Phase 2 BAF Expansion. The conversation concluded that TRWWTP is a secondary level treatment plant and the bypassed effluent around tertiary filter is acceptable, as long as extraneous wet weather peak flows are treated with primary-equivalent or higher treatment. The City will continue to consult with the MECP as required.