REQUIREMENTS FOR ANNUAL PERFORMANCE REPORT

This annual performance report was prepared in accordance with Amended Environmental Compliance Approval No. 7826-BRPRAW for the Angus Water Pollution Control Plant as per section 11.(4) and with Environmental Compliance Approval #118-W601, Issue 1 for the Township of Essa Municipal Collection System.

ECA No. 7826-BRPRAW- SECTION 11 REPORTING REQUIREMENTS

(4) The Owner shall prepare performance reports on a calendar year basis and submit to the District Manager by March 31 of the calendar year following the period being reported upon. The reports shall contain, but shall not be limited to, the following information pertaining to the reporting period:

(a) a summary and interpretation of all Influent 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 all operating issues encountered and corrective actions taken;

(d) 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;

(e) a summary of any effluent quality assurance or control measures undertaken;

(f) a summary of the calibration and maintenance carried out on all Influent 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;

(g) a summary of efforts made to achieve the design objectives in this Approval, including an assessment of the issues and recommendations for pro-active actions if any are required under the following situations:
    i. 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;
    ii. when the Annual Average Daily Influent Flow reaches 80% of the Rated Capacity;

(h) a tabulation of the volume of sludge generated, an outline of anticipated volumes to be generated in the next reporting period and a summary of the locations to where the sludge was disposed;

(i) a summary of any complaints received and any steps taken to address the complaints;

(j) a summary of all Bypasses, Overflows, other situations outside Normal Operating Conditions and spills within the meaning of Part X of EPA and abnormal discharge events;

(k) a summary of all Notice of Modifications to Sewage Works completed under Paragraph 1.d. of Condition 10, including a report on status of implementation of all modification;

(l) 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;

(m) 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;

(n) a summary of any deviation from the monitoring schedule and reasons for the current reporting year and a schedule for the next reporting year.

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List of Appendices

The enclosed 2024 Annual Performance Report for the Angus Water Pollution Control Plant (WPCP) summarizes the performance and related activities in accordance with its Amended Environmental Compliance Approval (ECA) Number 7826-BRPRAW (issued on September 11, 2020) and with Environmental Compliance Approval #118-W601, Issue 1 for the Township of Essa- Angus Sanitary Sewer System- Municipal Collection System as per Section 4.0 elements 4.6 through 4.7 during the 'Reporting Period' of January 1, 2024 to December 31, 2024.

1. System Description

The Angus Water Pollution Control Plant (WPCP) is an extended aeration plant with tertiary treatment located at 147 Centre Street in Angus, Ontario. The Township of Essa is the Owner and Ontario Clean Water Agency (OCWA) is the operating authority of the WPCP and its collection system. As per ECA 7826-BRPRAW, the plant's rated capacity is 5,511 m^3/d and its peak capacity is 11,911 m^3/d. The major process units consist of: inlet works, preliminary treatment consisting of screening and grit removal, influent flow measurement, secondary treatment systems consisting of biological treatment in aerations tanks, secondary sedimentation in two clarifiers, and tertiary treatment consisting of a disk filtration system, phosphorus removal and UV disinfection. Biosolids are managed through sludge digestion in a primary digester, stored in two sludge storage tanks and hauled off site for land application. The WPCP discharges the treated effluent via its outfall into the Nottawasaga River. The facility is equipped with standby power in the event of a power failure.

An overview of the Angus Water Pollution Control Plant can be found in the following table.

Table 1. Angus Water Pollution Control Plant System Overview

Facility Name:	Angus Water Pollution Control Plant
Facility Type:	Extended Aeration with Tertiary Treatment
Plant Classification:	WWT II, WWC II
Works Number:	110003282
Rated Capacity:	5,511 m^3/d
Discharge Point:	Nottawasaga River
Environmental Compliance Approval:	Number 7826-BRPRAW (issued September 11, 2020)

2. Monitoring Data Influent

Where ECA 7826-BRPRAW, section 11.4(a) requires:
"a summary and interpretation of all Influent monitoring data, and a review of the historical trend of the sewage characteristics and flow rates;"

2.1 Influent ECA Monitoring Program

As required by the most current ECA, Table 2 outlines the influent monitoring program at the Angus WPCP for the reporting period. Process performance monitoring uses additional in house analysis of samples taken throughout the year for adjustment, and optimization. These parameters were analyzed by an accredited analytical laboratory (SGS Canada Inc., Lakefield, Ontario).

Table 2: Raw Sewage (Influent) Water Quality Monitoring Program and Sampling Points- *as per ECA 7826-BRPRAW, Schedule D*

Parameters[2A]	Sample Type	Minimum Frequency
Biochemical Oxygen Demand (BOD_5)	24-hour Composite	Monthly
Total Suspended Solids (TSS)	24-hour Composite	Monthly
Total Phosphorous (TP)	24-hour Composite	Monthly
Total Kjeldahl Nitrogen (TKN)	24-hour Composite	Monthly

[2A]Refer to Appendix A 2024 Annual Performance Report for monthly sample results.

2.2 Raw Sewage (Influent) Characteristics: Summary and Interpretation of Reporting Year

The following parameters in Table 3 are not reportable as they do not have limits or objectives but are monitored as required by the ECA and used to characterize the contents of incoming sewage flow.

A summary of the influent laboratory results of samples taken and analyzed during the reporting period is in Table 3. Sample results are based on weekly 24-hour composite samples that were taken and analyzed by an accredited external laboratory. As per the ECA, only monthly sampling is required, however OCWA has be proactively sampling influent on a weekly basis for the majority of the reporting period - a total of 21 influent samples were analyzed in 2024.

Table 3: Raw Sewage (Influent) Quality Analysis for 2024

Month[3A]	Monthly Influent Concentrations (mg/L)			
	BOD_5	Total Suspended Solids	Total Phosphorus	Total Kjeldahl Nitrogen
January	216.75	106.50	4.03	39.82
February	301.33	202.67	4.76	49.77
March	262.00	181.67	3.94	45.53

Month[3A]	Monthly Influent Concentrations (mg/L)			
	BOD_5	Total Suspended Solids	Total Phosphorus	Total Kjeldahl Nitrogen
April	161.50	97.50	3.04	28.90
May	136.00	61.00	3.33	32.10
June	203.00	90.00	4.21	40.10
July	179.00	79.00	4.69	42.60
August	142.00	47.00	3.90	42.20
September	167.00	84.00	4.44	45.90
October	182.00	81.00	5.44	51.30
November	212.00	49.00	4.19	43.50
December	193.00	75.00	4.34	46.35
2024 Annual Average	**213.67**	**115.00**	**4.15**	**42.54**

[3A] *Refer to Appendix A 2024 Annual Performance Report for monthly sample results.*

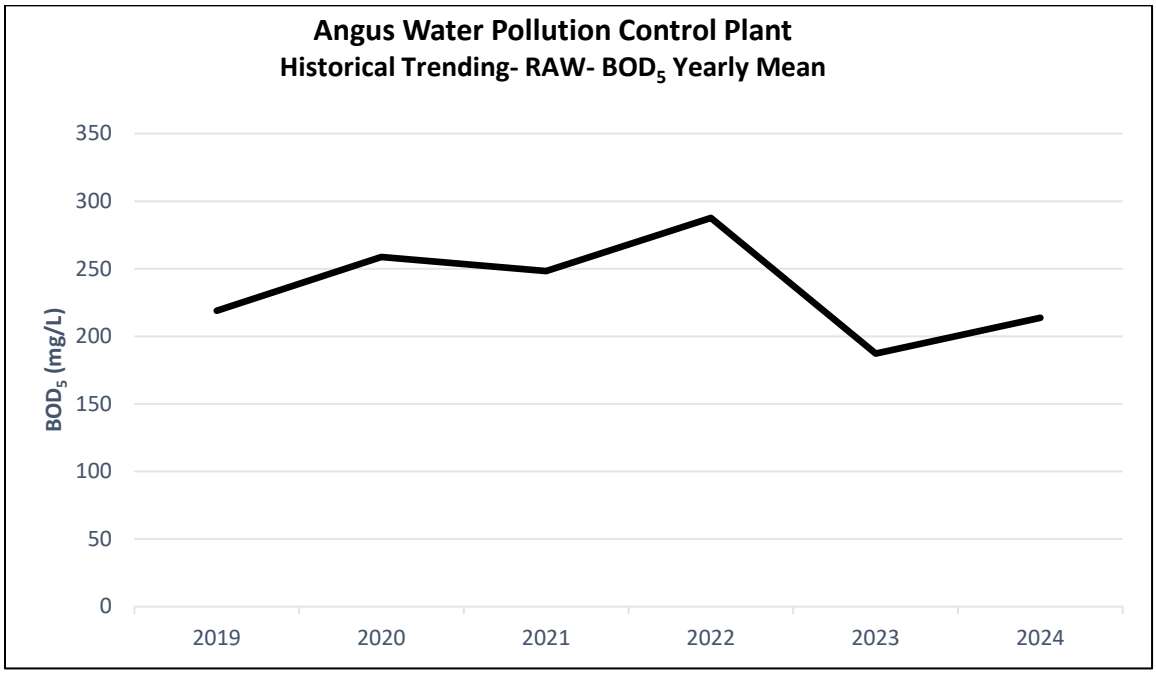
A review of the above information shows the average concentration for BOD_5 in 2024 was 213.67 m/L, higher than in 2023 (187.22 mg/L). Total suspended solids average concentration in 2024 was 115.00 mg/L, higher than in 2023 (103.3 mg/L). Total Phosphorus annual average concentration was 4.15 mg/L, lower than in 2023 (4.65 mg/L). Total Kjeldahl Nitrogen annual average concentration in 2024 was 42.54 mg/L, lower than in 2023 (46.05 mg/L).

2.3 Raw Sewage (Influent) Characteristics: Review of Historical Trends

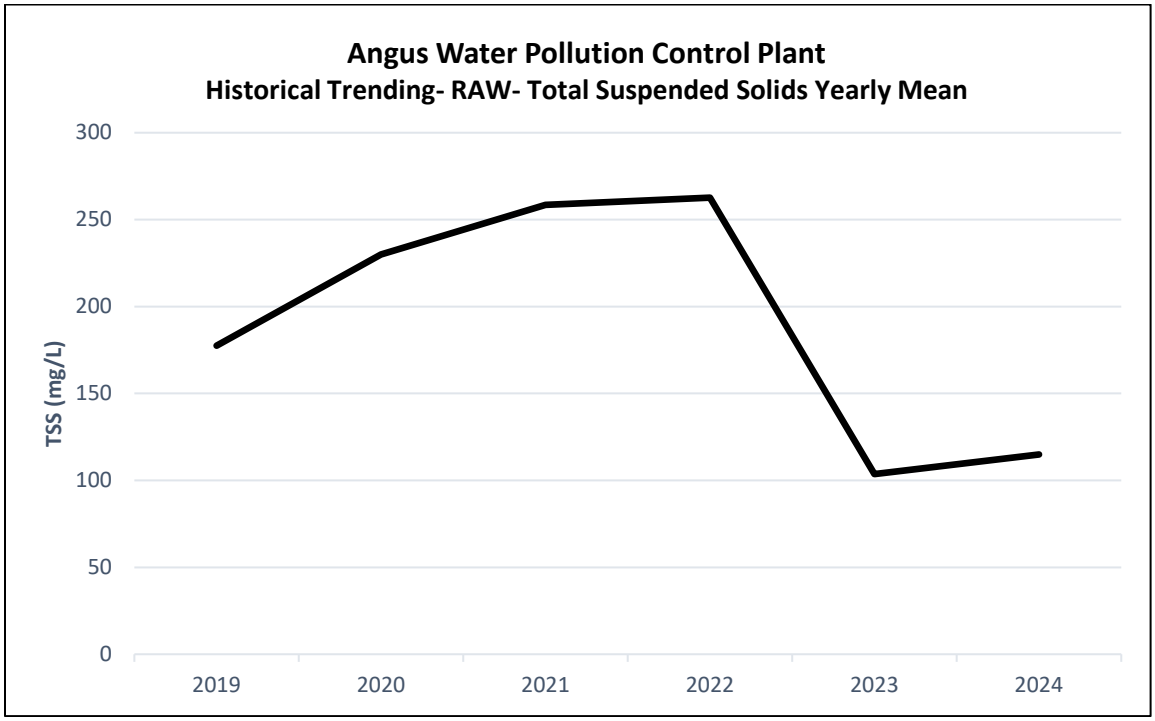
A review of the historical trends for influent sewage characteristics, shown in Graphs 1 to Graphs 4, indicates the following:

- BOD_5 – average BOD_5 has fluctuated between 2020 and 2024, with a decrease in 2023 (187.22 mg/L), in 2024 the average BOD_5 was 213.67 mg/L similar to results in 2019 (219.00 mg/L). *Graph 1* shows the trend.
- Total Suspended Solids – average TSS concentrations were increasing throughout 2019 (177.58 mg/L), 2020 (229.91 mg/L), 2021 (258.45 mg/L) and 2022 (262.65 mg/L), average concentrations in 2023 (103.63 mg/L), and 2024 (115.00 mg/L) are lower than previous years. *Graph 2* shows the trend.
- Total Phosphorus – the average Total Phosphorus concentration in 2024 (4.15 mg/L) and 2023 (4.65 mg/L) were lower than previous years: 2019 (5.66 mg/L), 2020 (7.46 mg/L), 2021 (6.65 mg/L) and 2022 (6.84 mg/L). *Graph 3* shows the trend.
- Total Kjeldahl Nitrogen – the average TKN concentration in 2024 (42.54 mg/L) and 2023 (46.05 mg/L) were lower than in previous years: 2019 (55.60 mg/L), 2020 (65.09 mg/L), 2021 (63.54 mg/L) and 2022 (63.91 mg/L). *Graph 4* shows the trend.

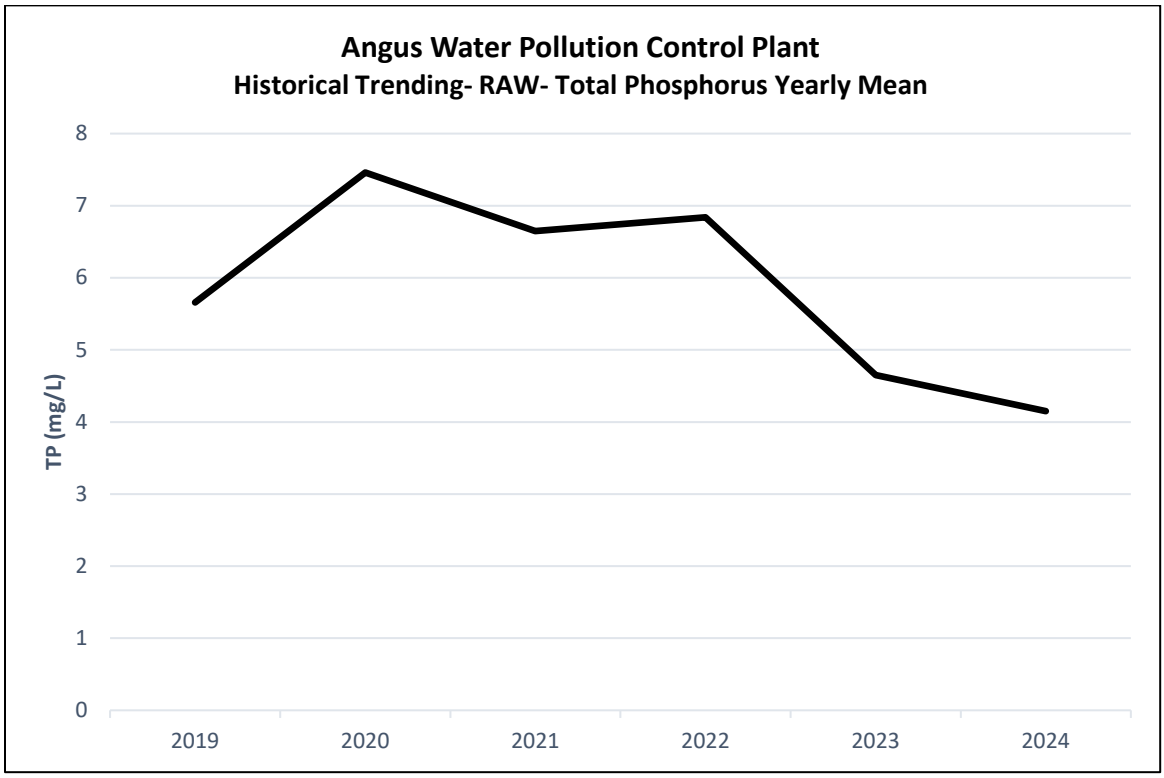
Graph 1: BOD_5 Historical Influent Trends 2019 to 2024



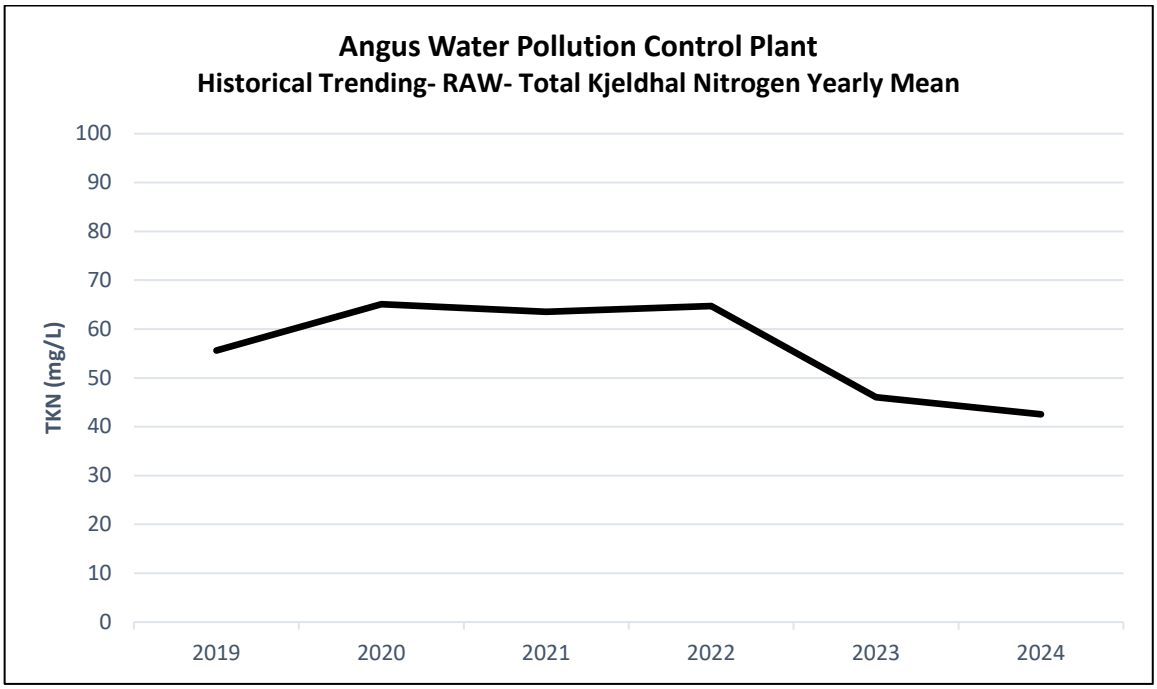
Graph 2: Total Suspended Solids Historical Influent Trends 2019 to 2024



Graph 3: Total Phosphorus Historical Influent Trends 2019 to 2024



Graph 4: Total Kjeldahl Nitrogen Historical Influent Trends 2019 to 2024



2.4 Raw Sewage (Influent) Flow: Summary and Interpretation of Reporting Year

The Rated Capacity listed in the most current ECA for Angus WPCP is 5,511 cubic metres per day (m^3/d). Typically the Rated Capacity listed in an ECA is determined based on the highest average annual flow during which the sewage treatment plant can consistently meet site specific effluent quality criteria (as per the Ontario Design Guidelines for Sewage Works); this is usually dictated by the most limiting treatment/process unit in the system. ECA No. 7826-BRPRAW Section 6(1) requires the Owner to design and undertake everything practicable to operate the Sewage Treatment Plant in accordance with its objective so that the Annual Average Daily Influent Flow is within the Rated Capacity of the Sewage Treatment Plant.

Based on the definition of the Rated Capacity, a single exceedance does not necessarily result in a non-compliance event, however, if a system continually exceeds its Rated Capacity, this could result in reduced treatment efficiency and lead to effluent objective exceedances.

2.4.1 Comparison of Influent Flow to Rated Capacity

A summary of influent flows data and comparison to the Rated Capacity during the reporting period can be found in the below table and graph.

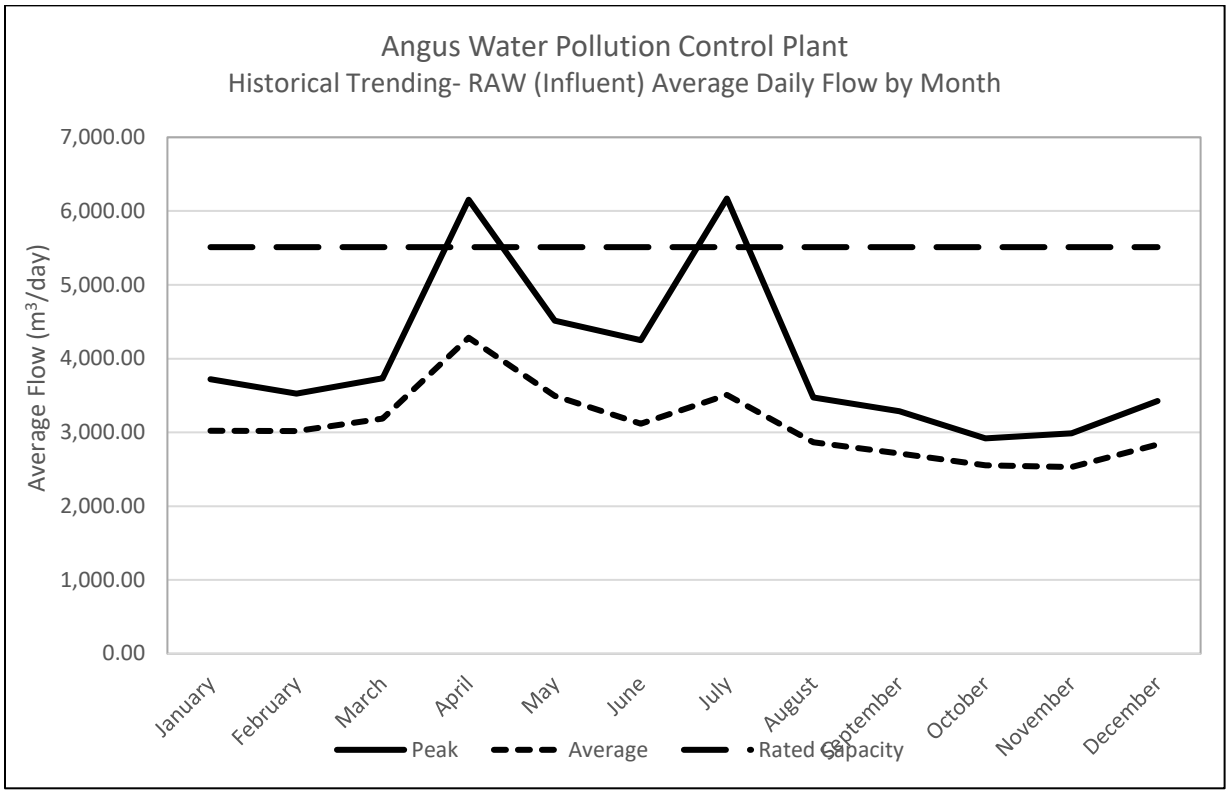
Table 4: 2024 Influent Flow Average and Maximum Daily Flow Data with Comparison to the Rated Capacity

Month	Average Influent Flow (m^3/day)	% of Rated Capacity (5,511 m^3/d)	Peak Influent Flow (m^3/day)	% of Rated Capacity (5,511 m^3/d)	Total Volume (m^3/day)
January	3,023.00	54.85%	3,721.00	67.52%	93,713.00
February	3,015.93	54.73%	3,525.00	63.96%	87,462.00
March	3,186.12	57.81%	3,732.00	67.72%	98,770.00
April	4,283.53	77.73%	6,154.00	111.67%	128,506.00
May	3,495.83	63.43%	4,514.00	81.91%	108,371.00
June	3,118.83	56.59%	4,249.00	77.10%	93,565.00
July	3,508.03	63.66%	6,170.00	111.96%	108,749.00
August	2,865.74	52.00%	3,474.00	63.04%	88,838.00
September	2,713.46	49.24%	3,289.00	59.68%	81,404.00
October	2,551.90	46.31%	2,919.00	52.97%	79,109.00
November	2,530.53	45.92%	2,988.00	54.22%	75,916.00
December	2,836.77	51.47%	3,425.00	62.15%	87,940.00
2024	**3,093.83**	**56.14%**	**6,170.00**	**111.96%**	**1,132,343.00**

Note: As per the ECA, 'Rated Capacity' is defined as "the Average Daily Flow for which the Works are approved to handle".

Note: As per the ECA, 'Average Daily Flow' is defined as "the cumulative total sewage flow to the sewage works during a calendar year divided by the number of days during which sewage was flowing to the sewage works that year".

Graph 5: 2024 Influent Average and Maximum Daily Flow Data Compared to Rated Capacity



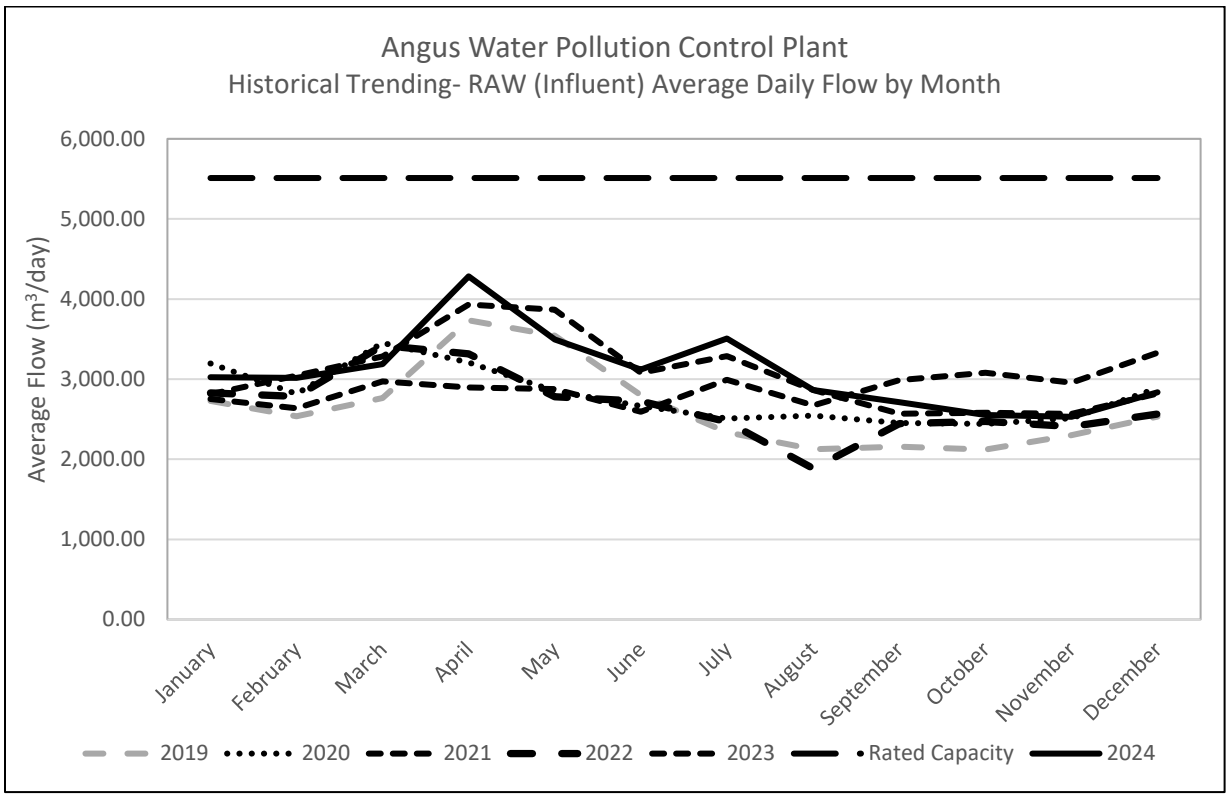
If the Annual Average Daily Flow reaches/exceeds 80% of the Rated Capacity, current best practice is to assess issues and provide recommendations for proactive actions. For 2024, the annual Average Daily Flow was below 80% of the Rated Capacity. For details of monthly and annual influent flow information, refer to *Appendix A.*

For 2024, the Angus WPCP operated within the ECA Rated Capacity. The Annual Average Daily Flow for the reporting period was 3,093.83 m^3/day, which was 56.14% of the Rated Capacity. The July 11, 2024 peak flow of 6,170 m^3 which was 111.96% of the Rated Capacity. The peak flow was due to two days of heavy precipitation. Similarly, April 14, 2024 had a peak flow of 6,154.00 m^3 due to heavy precipitation.

2.5 Influent Flow and Volume: Review of Historical Trends

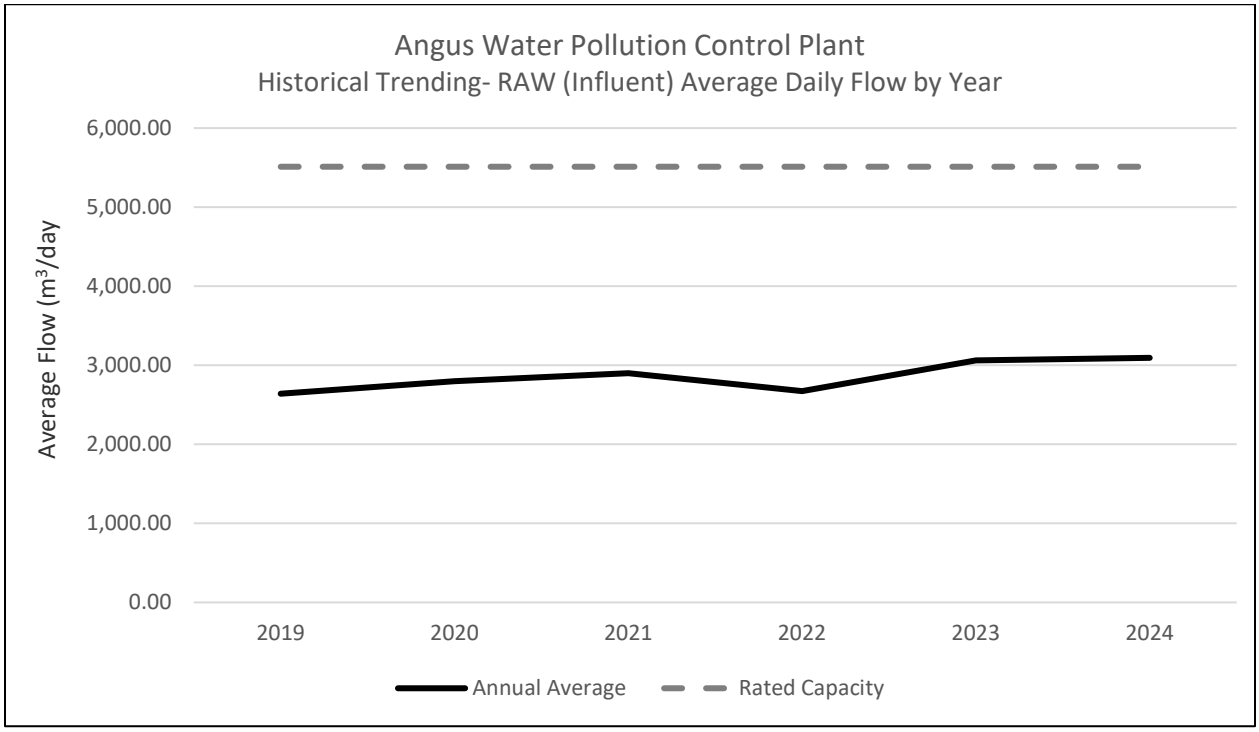
The below graphs show historical average raw (influent) daily flow by month (Graph 6) and by year (Graph 7) from 2019 to 2024.

Graph 6: 2019 to 2024 Average Daily Influent Flow Compared to Rated Capacity



The above graph shows that the average daily influent flows from 2020 to 2024 has remained fairly consistent year over year. Typically, the highest average daily flows are found in the month of March and April and corresponds with heavy precipitation events, poor infiltration and seasonal snow melt.

Graph 7: 2019 to 2024 Yearly Daily Average Influent Flow Compared to Rated Capacity



The total raw sewage volume of wastewater treated in 2024 (1,132,343 m^3) was higher than 2023 (1,116,761 m^3). The annual average daily flow of influent in 2024 was 3,093.83 m^3/day, 56% of the rated capacity (5,511 m^3). In 2023 the annual average daily flow of raw sewage was lower at 3,059.62 m^3/day, 48.5% of the rated capacity.

3. Effluent Monitoring

Where ECA 7826-BRPRAW, section 11.4(b) requires:
"a summary and interpretation of all Final Effluent monitoring data, including concentration, flow rates, loading and a comparison of the design objectives and compliance limits in this Approval, including an overview of the success and adequacy of the Works;

Where: Condition 7 is "regarding compliance limits is imposed to ensure that the Final Effluent discharged from the Works to the environment meets the Ministry's effluent quality requirements"

3.1 Effluent ECA Monitoring Program

The following table outlines the monitoring programs at the Angus WPCP as required by the most current ECA for the reporting period. There are additional in-house samples taken and analyzed throughout the year in order to help with process performance monitoring, adjustment, and optimization.

Table 5: Final Effluent Monitoring Program- ***as per ECA 7826-BRPRAW, Schedule D***

Parameter[5C]	Sample Type	Minimum Frequency
Carbonaceous Biochemical Oxygen Demand ($CBOD_5$)	24-hour Composite	Weekly
Total Suspended Solids (TSS)	24-hour Composite	Weekly
Total Phosphorous (TP)	24-hour Composite	Weekly
Total Ammonia Nitrogen	24-hour Composite	Weekly
Total Kjeldahl Nitrogen (TKN)	24-hour Composite	Weekly
Nitrate as Nitrogen	24-hour Composite	Weekly
Nitrite as Nitrogen	24-hour Composite	Weekly
E.Coli	Grab	Weekly
pH[5A]	Grab	Weekly
Temperature[5A]	Grab	Weekly
Un-ionized Ammonia[5B]	As Calculated	Weekly

[5A] As per ECA 7826-BRPRAW Schedule D, pH and temperature of the Final Effluent shall be determined in the field at the time of sampling for Total Ammonia Nitrogen.

[5B]As per ECA 7826-BRPRAW Schedule D, the concentration of un-ionized ammonia shall be calculated using the total ammonia concentration, pH and temperature using the methodology stipulated in "Ontario's provincial Water Quality Objectives" dated July 1994, as amended.

[5C]Refer to Appendix A 2024 Annual Performance Report for monthly sample results.

The following tables outlines the final effluent objectives, limits and loadings at the Angus WPCP as per its most current ECA. The applicable effluent parameters are either "concentrations" expressed as milligrams per litre or "loadings" expressed as kilograms per day. As per Schedule C, concertation Limits for $CBOD_5$, TSS, TP, and TAN are reportable based on a monthly average effluent concentration, *E.Coli* based on a monthly Geometric Mean Density, pH based on a single sample result (inclusive, at all times), and the Loading Limits are reportable based on a monthly average daily effluent Loading.

Table 6: Final Effluent Design Objectives- ***as per Schedule B of ECA 7826-BRPRAW***

Effluent Parameters	Concentration Objective (mg/L unless otherwise indicated)
Carbonaceous Biochemical Oxygen Demand ($CBOD_5$)	5.0
Total Suspended Solids	5.0
Total Phosphorus	0.2
Total Ammonia Nitrogen- (June 1 – October 31)	0.4
Total Ammonia Nitrogen- (November 1 – March 31)	2.5
E. Coli	150 CFU/100 mL
pH	6.5 to 8.5, inclusive, at all times

Table 7: Final Effluent Design Limits- ***as per Schedule C of ECA 7826-BRPRAW***

Effluent Parameters	Compliance Limit (mg/L unless otherwise indicated)	Loading Limit (kg/day unless otherwise indicated)	Reportable
$CBOD_5$	10.0	55.0	Monthly
Total Suspended Solids	10.0	55.0	Monthly
Total Phosphorus	0.30	1.65	Monthly
Total Ammonia Nitrogen (June 1- October 31)	0.60	3.3[7B]	Monthly
Total Ammonia Nitrogen (November 1- March 31)	3.10	17[7B]	Monthly
E. Coli	200 organisms/100 mL	--	Monthly
Total Kjeldahl Nitrogen[7A]	N/A	N/A	N/A
Nitrate as Nitrogen[7A]	N/A	N/A	N/A
Nitrite as Nitrogen[7A]	N/A	N/A	N/A
pH of the effluent maintained between 6.0 to 9.5, inclusive, at all times			

[7A]As per ECA 7826-BRPRAW Schedule C, there are no objective or compliance limits for the parameters of TKN, Nitrate as Nitrogen or Nitrite as Nitrogen, however these parameters must be sampled on a monthly basis based upon the sampling requirements for monitoring purposes.

[7B]As per ECA 7826-BRPRAW Schedule C, the effluent loading limits for Total Ammonia Nitrogen are listed as 0.33 kg/d (June 1- October 31) and 1.7 kg/d (November 1- May 31). However, in an email dated March 25, 2022 from the MECP it was confirmed that the loading limits were inaccurately transcribed in the ECA and the loading limits for TAN should be 3.3 kg/d (June 1- October 31) and 17 kg/d (November 1- May 31).

3.2 Effluent Monitoring Data: Summary and Interpretation of Reporting Year and Comparison to Objectives and Limits

A review of the effluent monitoring data shows that the following parameters were within the objectives (as applicable) and limits set out in the most current ECA for the duration of the 2024 reporting period:

- $CBOD_5$ monthly average daily effluent concentration
- $CBOD_5$ monthly average daily effluent loading
- TSS monthly average daily effluent loading
- TP monthly average daily effluent concentration
- TP monthly average daily effluent loading
- TAN monthly average daily effluent loading
- *E.Coli* monthly geometric mean density

A review of the effluent monitoring data shows that the following parameters were within the limits set out in the most current ECA for the duration of reporting period but were unable to meet the objectives in the following instances:

- TSS monthly average daily effluent concentration – February and May 2024
- TAN monthly average daily effluent concentration – November and December, 2024
- pH for 4 single samples out of 136 samples taken during the reporting year- samples were in January and October, 2024

It should be noted that as per the ECA, the objectives are non-enforceable design objectives to be used as a mechanism to trigger corrective action proactively and voluntarily before environmental impairment occurs. Exceedances of objectives is not reportable.

A review of the effluent monitoring data shows that the following parameters were not within the limits set out in the most current ECA during the reporting period in the following instances and were reportable as non-compliance events with the ECA:

- TAN monthly average daily effluent concentration – November, 2024

The below tables compare monthly and annual data to the applicable ECA objectives and limits. For further details, refer to *Appendix A – Annual Flow and Effluent Quality Summary*

Table 8: Effluent Sampling Results: $CBOD_5$ and $CBOD_5$ Loading Concentrations

Month	**Monthly Average Concentration** (mg/L)	**Within Monthly Objective?** (5.0 mg/L)	**Within Monthly Compliance Limit?** (10.0 mg/L)	**Monthly Loading Limit** (kg/d)	**Within Loading Limit?** (55.0 kg/d)
January	3.40	Yes	Yes	10.06	Yes
February	4.50	Yes	Yes	13.04	Yes
March	3.25	Yes	Yes	10.33	Yes
April	2.00	Yes	Yes	8.52	Yes
May	4.25	Yes	Yes	17.22	Yes
June	2.00	Yes	Yes	7.05	Yes
July	2.60	Yes	Yes	9.98	Yes
August	2.00	Yes	Yes	6.24	Yes
September	2.25	Yes	Yes	6.85	Yes
October	2.20	Yes	Yes	6.63	Yes
November	2.00	Yes	Yes	5.70	Yes
December	2.80	Yes	Yes	8.45	Yes
2024 Average	**2.75**	**-**	**-**	**9.13**	**-**

**As per the ECA, $CBOD_5$ Concentration Averaging Calculator is a Monthly Average Effluent Concentration*

**As per the ECA, $CBOD_5$ Loading Limits Concentration Averaging Calculator is a Monthly Average Daily Effluent Loading*

Table 9: Effluent Sampling Results: TSS and TSS Loading Concentrations

Month	Monthly Average Concentration (mg/L)	Within Monthly Objective? (5.0 mg/L)	Within Monthly Compliance Limit? (10.0 mg/L)	Monthly Loading Limit (kg/d)	Within Loading Limit? (55.0 kg/d)
January	4.20	Yes	Yes	12.53	Yes
February	7.25	No	Yes	22.07	Yes
March	4.50	Yes	Yes	14.58	Yes
April	3.80	Yes	Yes	17.09	Yes
May	5.75	No	Yes	23.54	Yes
June	4.00	Yes	Yes	14.81	Yes
July	4.40	Yes	Yes	18.07	Yes
August	2.75	Yes	Yes	9.14	Yes
September	4.00	Yes	Yes	12.64	Yes
October	3.80	Yes	Yes	11.63	Yes
November	3.50	Yes	Yes	10.47	Yes
December	4.60	Yes	Yes	14.01	Yes
2024 Average	**4.36**	**-**	**-**	**14.98**	**-**

**As per the ECA, TSS Concentration Averaging Calculator is a Monthly Average Effluent Concentration*

**As per the ECA, TSS Loading Limits Concentration Averaging Calculator is a Monthly Average Daily Effluent Loading*

Table 10: Effluent Sampling Results: TP and TP Loading Concentrations

Month	Monthly Average Concentration (mg/L)	Within Monthly Objective? (0.2 mg/L)	Within Monthly Compliance Limit? (0.3 mg/L)	Monthly Loading (kg/d)	Within Loading Limit? (1.65 kg/d)
January	0.14	Yes	Yes	0.40	Yes
February	0.14	Yes	Yes	0.43	Yes
March	0.11	Yes	Yes	0.36	Yes
April	0.06	Yes	Yes	0.25	Yes
May	0.14	Yes	Yes	0.59	Yes
June	0.09	Yes	Yes	0.34	Yes
July	0.12	Yes	Yes	0.48	Yes
August	0.14	Yes	Yes	0.45	Yes
September	0.19	Yes	Yes	0.59	Yes
October	0.16	Yes	Yes	0.48	Yes
November	0.16	Yes	Yes	0.49	Yes
December	0.18	Yes	Yes	0.54	Yes
2024 Average	**0.13**	**-**	**-**	**0.45**	**-**

**As per the ECA, TP Concentration Averaging Calculator is a Monthly Average Effluent Concentration*

**As per the ECA, TP Loading Limits Concentration Averaging Calculator is a Monthly Average Daily Effluent Loading*

Table 11: Effluent Sampling Results: TAN and TAN Loading Concentration

Month	Monthly Average Concentration (mg/L)	Within Monthly Objective? (0.4 mg/L June 1-Oct 31) (2.5 mg/L Nov 1-Mar 31)	Within Monthly Compliance Limit? (0.6 mg/L June 1-Oct 31) (3.1 mg/L Nov 1-Mar 31)	Monthly Loading Limit (kg/d)	Within Loading Limit? (3.3 kg/d June 1-Oct 31) (17 kg/d Nov 1-Mar 31)
January	0.56	Yes	Yes	1.67	Yes
February	1.20	Yes	Yes	3.65	Yes
March	0.10	Yes	Yes	0.32	Yes
April	0.10	Yes	Yes	0.45	Yes
May	0.18	Yes	Yes	0.72	Yes
June	0.10	Yes	Yes	0.37	Yes
July	0.14	Yes	Yes	0.58	Yes
August	0.10	Yes	Yes	0.33	Yes
September	0.10	Yes	Yes	0.32	Yes
October	0.12	Yes	Yes	0.37	Yes
November	3.57	No	No[11A]	10.69	Yes
December	2.92	No	Yes	8.89	Yes

**As per the ECA, TAN Concentration Averaging Calculator is a Monthly Average Effluent Concentration*

**As per the ECA, TAN Loading Limits Concentration Averaging Calculator is a Monthly Average Daily Effluent Loading*

[11A]TAN monthly average effluent concentration reported as a non-compliance to the MECP on December 10, 2024. See section 4. Operational Issues and Corrective Actions for more details.

Table 12: Effluent Sampling Results: *E.Coli* Concentrations

Month	Monthly Geometric Mean Density (mg/L)	Within Monthly Objective? (150 CFU/100 mL)	Within Monthly Compliance Limit? (200 CFU/100 mL)
January	27.01	Yes	Yes
February	7.48	Yes	Yes
March	13.54	Yes	Yes
April	10.32	Yes	Yes
May	5.63	Yes	Yes
June	4.60	Yes	Yes
July	2.00	Yes	Yes
August	2.00	Yes	Yes
September	2.00	Yes	Yes
October	2.00	Yes	Yes
November	8.97	Yes	Yes

Month	Monthly Geometric Mean Density (mg/L)	Within Monthly Objective? (150 CFU/100 mL)	Within Monthly Compliance Limit? (200 CFU/100 mL)
December	6.36	Yes	Yes

**As per the ECA, E.Coli Concentration Averaging Calculator is a Monthly Geometric Mean Density*

Table 13: Effluent Sampling Results: pH

Month	pH Min	pH Max	Within Monthly Objective? (6.5-8.5 Inclusive)	Within Monthly Compliance Limit? (6.0-9.5 Inclusive)
January	6.49	6.71	No	Yes
February	6.68	6.94	Yes	Yes
March	6.64	6.96	Yes	Yes
April	6.68	6.87	Yes	Yes
May	6.65	6.88	Yes	Yes
June	6.63	7.00	Yes	Yes
July	6.60	6.81	Yes	Yes
August	6.79	6.98	Yes	Yes
September	6.58	7.06	Yes	Yes
October	6.33	7.07	No	Yes
November	6.63	7.08	Yes	Yes
December	6.56	6.83	Yes	Yes

The following table represents parameters that do not have objectives and limits in the ECA but are required to be sampled as part of the monitoring program. A summary of the monthly sampling results is included in the table below.

Table 14: Additional Effluent Sampling Results: TKN, Nitrate as Nitrogen & Nitrite as Nitrogen

Month	Monthly Average Concentration TKN (mg/L)	Monthly Average Concentration Nitrate as Nitrogen (mg/L)	Monthly Average Concentration Nitrite as Nitrogen (mg/L)
January	1.64	23.52	0.39
February	2.10	16.60	1.39
March	0.88	18.88	0.30
April	1.00	13.68	0.11
May	0.95	20.50	0.08
June	0.72	21.70	0.05
July	0.80	23.52	0.10
August	0.70	24.60	0.05
September	0.95	22.95	0.06

Month	Monthly Average Concentration TKN (mg/L)	Monthly Average Concentration Nitrate as Nitrogen (mg/L)	Monthly Average Concentration Nitrite as Nitrogen (mg/L)
October	0.56	26.42	0.06
November	4.22	17.67	0.26
December	4.02	18.70	0.35
2024 Average	**1.50**	**20.77**	**0.26**

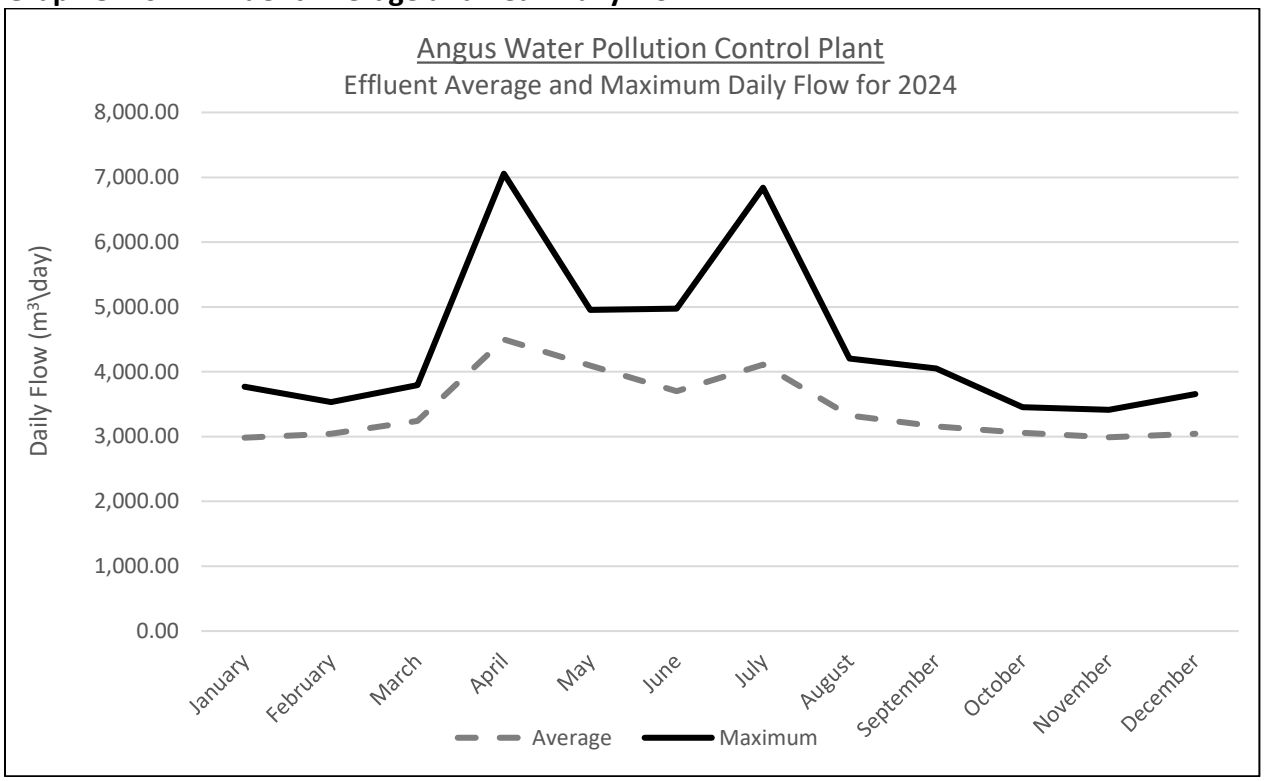
3.3 Effluent Flow: Summary and Interpretation of Reporting Year

The below table outlines the final effluent average daily flow data in 2024 and Graph 8 shows the final effluent daily and peak final effluent flow by month.

Table 15: Final Effluent Average Daily Flow and Peak Flow Data by Month for 2024

Month	Average Daily Effluent (m^3/day)	Peak Daily Effluent (m^3/day)	Total (m^3/day)
January	2,982.96	3,768.00	92,472.00
February	3,043.65	3,534.00	88,266.00
March	3,239.09	3,796.00	100,412.00
April	4,498.43	7,056.00	134,953.00
May	4,094.25	4,956.00	126,922.00
June	3,701.50	4,973.00	111,045.00
July	4,107.58	6,839.00	127,335.00
August	3,322.74	4,206.00	103,005.00
September	3,159.50	4,052.00	94,785.00
October	3,059.96	3,452.00	94,859.00
November	2,991.00	3,413.00	89,730.00
December	3,044.96	3,654.00	94,394.00
2024	**3,437.64**	**7,056.00**	**1,258,178.00**

Graph 8: 2024 Effluent Average and Peak Daily Flow



During the reporting period, the annual average effluent flow was 3,437.64 m^3/day. The highest annual peak effluent flow of 7,056.00 m^3/day occurred on April 14, 2024, which corresponds with the high influent peak flows observed on April 14, 2024. These high flow events were due to heavy precipitation which occurred in the area between April 11 to 14, 2024.

3.4 Success & Adequacy of the System

The following table outlines Angus WPCP effluent contaminant removal rates:

Table 16: Angus WPCP Effluent Contaminant Removal Rates

Parameter	Average Removal Rate for 2024
Total Suspended Solids	96.79%
Total Phosphorus	97.63%

During the reporting period, Angus WPCP provided effective wastewater treatment, producing effluent with removal rates of 95.62% for Total Suspended Solids and 97.63% for Total Phosphorus.

Carbonaceous Biochemical Oxygen Demand ($CBOD_5$) - Remained in compliance with monthly ECA limit (10.0 mg/L), objective (5.0 mg/L) and loading limit (55 kg/day) for the duration of the reporting period.

For the duration of the reporting period, Total Suspended Solids (TSS) remained in compliance with the ECA limit (10.0 mg/L). The ECA objective (5.0 mg/L) was in compliance for the majority of 2024, with the exception of February (7.25 mg/L) and May (5.75 mg/L) 2024 where the monthly averages were above the objective. The TSS loadings were within the compliance limit for loadings (55.00 kg/d) for the duration of the reporting period.

For the duration of the reporting period Total Phosphorus (TP) monthly average concentrations and loadings remained in compliance with the ECA objective and compliance limits, demonstrating effective removal of phosphorus prior to discharge.

For the majority of the reporting period, Total Ammonia Nitrogen (TAN) monthly average concentration remained in compliance with ECA limits and objectives. For the month of November 2024, the monthly average concentration exceeded both the ECA limit and objective. For the month of December, just the objective was exceeded. TAN remained in compliance with monthly loading limits for the duration of the reporting period. See *Section 4. Operational Issues and Corrective* Actions for more details regarding the November 2024 exceedance.

The bacteriological quality of the effluent complied with the ECA monthly geometric mean density objective (100 cfu/100 mL) and limit (200 cfu/100 mL), indicating effective effluent disinfection.

For the duration of the reporting period, pH remained within the ECA compliance limit (6.0 to 9.5, inclusive, at all times). However, there were 4 single samples that fell outside of the objective (6.5 to 8.5, inclusive, at all times) which occurred on January 24 (6.49), October 9 (6.49), October 10 (6.33) and October 25 (6.39) 2024.

4. Operational Issues and Corrective Actions

Where ECA 7826-BRPRAW, section 11.4(c) requires:
"A summary of all operating issues encountered and corrective actions taken;"

During the reporting period there was one (1) reported issue of non-compliance related to operational issues, which is summarized below and includes any corrective actions taken:

1) November, 2024 - Non-compliance for the monthly average final effluent concentration for TAN ECA limit exceedance. The monthly average for TAN in November was 3.57 mg/L and the ECA limit is 3.1 mg/L, an overage of 0.47 mg/L. The exceedance was caused by ongoing aeration blower issues. The aeration blower was repaired and brought back online on November 10, 2024. Verbal and written notice of non-compliance was provided to MECP on December 10, 2024.

5. Maintenance Activities

Where ECA 7826-BRPRAW, section 11.4(d) requires:
"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;"

There were a number of repairs/maintenance during the reporting period, they are as follows:

- Clarifier #2 repair
- Water Line repair
- UV Light replacements
- Transfer building sludge valve replacement
- Sludge tower #2 clamp replacement
- SCADA upgrades
- Replacement of disk filter clothes

5.1 Work Management System

Planned maintenance, including scheduled and non-scheduled maintenance activities are scheduled using a computerized Work Management System (WMS) that allows user to:

- Enter detailed asset information
- Generate and process work orders
- Access maintenance and inspection procedures
- Plan, schedule, and document all asset related tasks and activities
- Access maintenance records and asset histories

Work Orders are automatically generated by the WMS program and are assigned to the applicable Operations staff accordingly.

Please refer to *Appendix B* for a complete summary of work orders completed during the reporting period.

5.2 Preventative Maintenance Activities

There were a number of preventative maintenance tasks completed throughout the reporting period. They are as follows:

- Annual calibrations
- Monthly and annual facility health & safety inspections
- Annual pump servicing and inspections
- Annual lifting equipment inspection
- Monthly oil checks
- Annual fuel storage inspection
- Weekly security inspections

- Monthly filter inspections
- Monthly blower/motor inspections
- Monthly UV inspections

Please refer to *Appendix B* for a complete summary of preventative maintenance work orders completed during the reporting period.

5.3 Repairs and Improvement

For a complete summary of preventative maintenance, repairs and improvement work orders completed during the reporting period, refer to *Appendix B – Facility Work Order Summary*.

6. Effluent Quality and Control Assurance

Where ECA 7826-BRPRAW, section 11.4(e) requires:
"A summary of any effluent quality assurance or control measures undertaken;"

Quality assurance and control measures undertaken during the reporting period include adherence to provincial regulations, use of accredited laboratories, operation of the system by licensed operators, scheduled sampling and analysis, in-house laboratory analysis and calibration of equipment. The sections below provide further details of these measures.

6.1 Adherence to Provincial Regulations

The Ontario Clean Water Agency (OCWA) operates the Angus Water Pollution Control Plant (WPCP) in accordance with provincial regulations.

6.2 Use of Accredited Laboratories

During the reporting period, all chemical sample analyses were conducted by SGS (Lakefield) Canada Inc.; a laboratory audited by the Canadian Association for Laboratory Accreditation Inc. (CALA) and accredited by the Standards Council of Canada (SCC). Accreditation ensures that the laboratory has acceptable laboratory protocols and test methods in place. It also requires the laboratory to provide evidence and assurances of the proficiency of the analysts performing the test methods.

6.3 Operation by Licensed Operators

The WPCP was operated and maintained by licensed operators. The mandatory licensing program for operators of sewage treatment facilities in Ontario is regulated under the Ontario Water Resources Act (OWRA) Regulation 435/93 and Ontario Regulation 129/04. A Licensed individual has successfully passed the licensing exam and meets the education and experience requirements set out in the regulation.

6.4 Sampling and Analysis

The Ontario Clean Water Agency followed a sampling and analysis schedule that meets the requirements of the ECA.

6.5 In-house Analysis

To support process performance monitoring, adjustment, and optimization, in-house samples are routinely collected and analyzed at the WPCP laboratory. In-house analysis is conducted by licensed operators, using Standard Methods. The data generated from these tests is used to determine the treatment efficiency.

In 2023, the OCWA Innovation, Process and Optimization Team (IPOT) completed an optimization study for the Angus WPCP. On June 6, 2024 the final report was received. The report suggested several recommendations for improvement, however many of the recommendations are not fiscally or practically possible at this time. The suggested idea of a Rotary Drum Thickener is being explored. The following changes were made as per the recommendations in this report:

- SCADA system upgrades
- Place one of the two clarifiers offline

6.6 Calibrations

According to manufacturer recommendations, third-party and in-house calibrations were completed on various equipment and monitoring and analysis items. For details refer to *Section 7. Calibration and Maintenance Procedures*

7. Calibration and Maintenance Procedures

Where ECA 7826-BRPRAW, section 11.4(f) requires:
"A summary of the calibration and maintenance carried out on all Influent 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;"

The flow meters for influent and effluent flows at Angus WPCP were calibrated June 18, 2024, by Indus Control Inc. All program parameters received a passing inspection. A copy of the calibration records is in *Appendix C*.

8. Design Objectives

Where ECA 7826-BRPRAW, section 11.4(g) requires:
"A summary of efforts made to achieve the design objectives in this Approval, including an assessment of the issues and recommendations for pro-active actions if any are required under the following situations:

i. 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;
ii. When the Annual Average Daily Influent Flows reaches 80% of the Rated Capacity

Where: Condition 6 is "imposed to establish non-enforceable effluent quality objectives which the Owner is obligated to use best efforts to strive towards on an ongoing basis. These objectives are to be used as a mechanism to trigger corrective action proactively and voluntarily before environmental impairment occurs and before the compliance limits of Condition 7 are exceeded."

Best efforts were made to achieve the design objectives as per Amended Environmental Compliance Approval 7826-BRPRAW. Throughout the reporting period there were a few instances where Angus WPCP did exceedance the ECA design objectives, however none of the design objectives were exceeded more than 50% of the time during the reporting year, and there is not an increasing trend of final effluent quality deterioration. See section 3.3 of this report for final effluent objective and limit exceedances.

During the reporting period, the annual average daily flow of raw sewage in was 3,093.83 m^3/day or 56% of the rated capacity (5,511 m^3/day), indicating that pro-active actions are not required as the works did not reach an annual average that was 80% or more of the rated capacity.

For 2024 best efforts were also made to ensure that the effluent from the works was free of floating and settleable solids and did not contain oil or any other substances in amounts sufficient to create a visible film or sheen or foam or discolouration on the receiving waters.

Refer to *Appendix A* for detailed Performance Assessment Report for the facility, including raw and final effluent discharge data and influent and effluent flow data.

9. Sludge Production and Disposal

Where ECA 7826-BRPRAW, section 11.4(h) requires:
"a tabulation of the volume of sludge generated, an outline of anticipated values to be generated in the next reporting period and a summary of the locations to where the sludge was disposed;"

Digested sludge produced at the Angus WPCP is hauled, and either stored in lagoons or land-applied in accordance with the Nutrient Management Act 2002 and Ontario Regulation 267/03 by the Region of Huronia Environmental Services (ROHES) under Amended Waste Management System Certificate of Approval #7383-4LAHXD, issued March 31, 2011. The below table shows a summary of sludge haulage in the reporting period:

Table 17: Biosolids Hauled from Angus WPCP

Month	NASM #	Hauled To	Volume (m^3)
February	N/A	RHOES 7 Lagoon	588.00
March	N/A	RHOES 7 Lagoon	168.00
April	N/A	RHOES 4 and 7 Lagoon	3,507.20
	24224	Kerr South-Field: NORTH	2,168.00
August	60644	Agar-Field:1	1,432.00
	24678	Haverson-Field:1	1,302.00

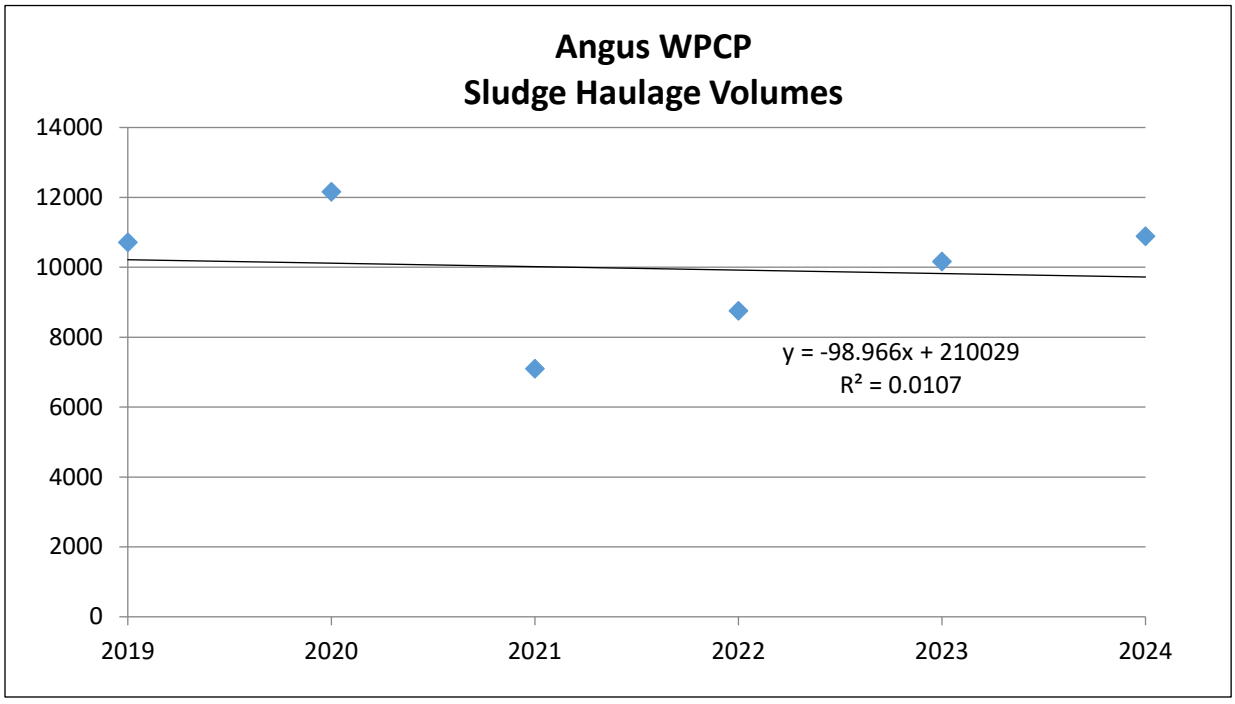
October	N/A	RHOES 5 Lagoon	714.80
November	N/A	RHOES 5 Lagoon	1,012.80
		Total Sludge Haulage 2024	**10,892.80**

During the reporting period, a total volume of 10,892.80 m^3 of sludge was produced by the WPCP, 4,902.00 m^3 was hauled by ROHES to field and 5,990.80 m^3 to RHOES storage lagoons for holding and further processing. The total amount hauled was 6% more than 2023 (10,172.00 m^3).

Biosolids produced at the Angus WPCP met all the quality criteria specified in the Regulation for the reporting period. A summary of the Angus WPCP sludge quality with a comparison to quality criteria can be referenced in *Appendix D*.

Typically, to estimate the volume of sludge generated in the next reporting period, a linear regression using data from the previous years is used. The regression model estimates the sludge volume for 2025 to be approximately 9,800 m^3. Operations staff will continue to optimize the dewatering process to reduce the relative volume of sludge.

Graph 9: Angus WPCP Sludge Haulage Regression



10. Community Complaints

Where ECA 7826-BRPRAW, section 11.4(i) requires:
"a summary of any complaints received and any steps taken to address the complaints;"

There is a standard operating procedure (SOP) in place outlining the steps required for receiving and addressing community complaints. All complaints are discussed and/or investigated, and resolved as required. Community complaints are logged in the facility logbook. Pertinent details are entered into the OCWA electronic database "Maximo." This database contains the history of all complaints with the relevant information.

During the reporting period, there was one (1) complaint received for the WPCP by OCWA.

Date	Detail of Community Complaint
April 16, 2024	Odour Complaint – Reoccurring odour: Operations staff determined that the odour occurrences were due to hauling and a blower failure causing excessive tower smell. Smells were mitigated by keeping the tower level low while the blower was out of service, and increased hauling to prevent extended retention of sludge without aeration.

11. Bypass, Spill or Abnormal Discharge Events

Where ECA 7826-BRPRAW, section 11.4(j) requires:
"a summary of all Bypasses, Overflows, other situations outside Normal Operating Conditions and spills within the meaning of the Part X of EPA and abnormal discharge events;"

During the reporting period there were no reportable bypass events, no overflow events, and one (1) spill and/or abnormal discharge event at the Angus WPCP. In all instances, reporting notifications were made in accordance with ECA 7826-BRPRAW Sections 6.(3)(4) and Sections 6.(3)(4) and quarterly summary reports of Bypass and Overflow Event(s) were prepared in accordance with the facility's most current ECA, Sections 5.(6) and 6.(6). See the below sections 11.1 to 11.3 for further details. See *Appendix E* for all records of Environmental Incident Forms submitted during the reporting period.

11.1 Emergency Bypass Events

According to the facility's most current ECA, Section 5(1) a bypass is prohibited, except in the event of an emergency bypass when a structural, mechanical, or electrical failure causes a temporary reduction in the capacity of the treatment process or when an unforeseen flow condition exceeds the design capacity of the treatment processes and could result in injury, loss of life, health hazard, basement flooding, severe property damage, equipment damage or treatment process upset, if a portion of the flow is not bypassed.

During the reporting period, no (0) emergency bypass events occurred.

11.2 Emergency Overflow Events

According to the facility's most current ECA, Section 6(1) any overflow is prohibited, except in the event of an emergency overflow situation when a structural, mechanical, or electrical failure causes a temporary reduction in the capacity of the Works or when an unforeseen flow condition exceeds the design capacity of the Works and could result in personal injury, loss of life, health hazard, basement flooding, severe property damage, equipment damage or treatment process upset, if a portion of the flow is not overflowed.

During the reporting period, no (0) reportable overflow events occurred

11.3 Spill and/or Abnormal Discharge Events

Under the facilities post current ECA, Section 11.(2) spills within the meaning of the Part X of Environmental Protection Act and abnormal discharge events must be reported.

During the reporting period, there was one (1) reportable spill(s) and/or abnormal discharge event.

Date	Estimated Volume (m^3)	Details
April 3, 2024	20 m^3	SAC Reference Number: 1-5DQJBF Spill Location: Low land area on WPCP property Spill Date & Time: April 3, 2024 at 1453 to 1504 hrs Duration: 11 minutes Spill Contents: Biosolids Approximate Volume: 20 m^3 <u>Incident Description</u> OCWA staff responded to a high level tower 2 alarm. Upon arrival staff observed the decanting chamber overflowing to the low land at the Angus WPCP property, north of the old aeration tank. <u>Actions Taken to Control Incident</u> Operations staff responded to the alarm and stopped the decant pump. A routine biosolids sample was taken April 2, 2024. The biosolids spilled had already met the requirements for land application. The MECP advised that leaving the material in situ was approved. <u>Reporting</u> Verbal notification was provided on April 3, 2024 to the Spills Action Centre (SAC), Simcoe Muskoka District Health Unit (SMDHU), MECP local office, and Owner. Written notification was provided April 10, 2024. No further actions were advised.

12. Notice of Modification (Limited Operational Flexibility)

Where ECA 7826-BRPRAW, Section 11.4(k) requires:
"a summary of all Notice of Modifications to Sewage Works completed under Paragraph 1.d. of Condition 10, including a report on status of implementation of all modification;"

Where: Schedule B, Section 1 is the "Limited Operational Flexibility Criteria for Modifications to Municipal Sewage Works."

During the reporting period, there were no new notices of modification submitted to the Water Supervisor.

OCWA continues to use two products from the Notice of Modification #1 signed on May 5, 2016 in order to improve operations:

- XLR8 at the Angus WPCP and;
- MICROCAT – BioPOP at Pumping Station #3

XLR8 is a highly concentrated, scientifically developed, naturally bio-energized waste degrader which uses the power of highly diverse strains of bacterial/enzymatic activity to efficiently break down organic waste. On a weekly basis, Operations Staff will brew 3 lbs. of XLR8 and add to the Digester(s) prior to transferring contents to the sludge storage tanks #1 and or #2 at the Angus WPCP.

MICROCAT–BioPOP slowly dissolves and releases safe, naturally occurring microbes that can reduce odour and improve fat, oil, and grease degradation. It is to be suspended in Pumping Station No. 3 located at Mill Street and Commerce Road.

Refer to *Appendix F* for a copy of Notice of Modification #1 and correspondence with the MECP Barrie District Office regarding the Limited Operational Flexibility.

13. Conformance with Procedure F-5-1

Where ECA 7826-BRPRAW, Section 11.4(l) requires:

"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 results 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;"

In 2024, the Angus WPCP treatment and collection systems were operated at an adequate level to ensure the requirements outlined in the ECA are met on a reliable basis. OCWA continues to

promptly resolve operational issues related to bypass and overflows with emergency repairs and upgrade implementation and recommendations, as necessary.

There are various major upgrade and replacement projects outlined in the Capital Plan for upcoming work to aid in eliminating Bypass and Overflow events into the coming years that are summarized in the below table.

Table 19: Summary of Proposed Works to Eliminate Bypass/Overflow Events

Proposed Work	Estimated Budget Allocation	Estimated Forecast Date
Clarifier Cleanouts and Maintenance	$15,000	2025
Annual Sewer Maintenance/Flushing	$30,000	2025

14. Changes to Schedule and Proposed Works

Where ECA 7826-BRPRAW, Section 11.4(m) requires:
"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;"

The Proposed Works section of the Angus WPCP most current ECA lists upgrades to the Tertiary Filtration System and the Sludge Management System. There were no new updates to the schedule during the reporting period for the completion of construction and commissioning operation. The below information was provided in previous years and remains the same.

Table 20: ECA Listed Proposed Works Completion, Commissioning and Status Updates

Tertiary Filtration System - Installation of a disk filter unit with higher Peak Flow Rate Capacity - Installation of 1 flow distribution weir to distribute flow between both disk filters - Removal of Sand Filter System **Comments**: Implementation of this upgraded system will aid in the elimination of Overflow and Bypass events by increasing Peak Flow treatment capacities. **Status**: Completed. Disk Filter #2 Commissioned in January, 2022
Sludge Management System - Installation of a Rotary Drum Thickener - Installation of a Sludge Hopper with a TWAS Pump **Comments**: A Rotary Drum Thickener will reduce the amount of sludge haulage by increasing sludge thickness and improving dewatering **Status**: Not Complete. The facility underwent an internal optimization program in 2023 with the final report issued on June 6, 2024. The report suggested several recommendations for improvement, including completing the Rotary Drum Thickener installation which is being explored.

15. Monitoring Schedule

Where ECA 7826-BRPRAW, Section 11.4(n) requires:
"a summary of any deviation from the monitoring schedule and reasons for the current reporting year and a schedule for the next reporting year;"

As per the ECA, Section 9(1) "the Owner shall, upon commencement of operations of the Works, carry out a scheduled monitoring program of collecting samples at the required sampling points, at the frequency specified or higher, by means of the specified sample type and analyzed for each parameter listed in Schedule D and record all results.

Where, Section 9(1) requires:

- (a) all samples and measured are to taken at a time and in a location character characteristic of the quality and quantity of sewage stream over the period of time being monitored and follows the Ministry publication "Protocol for the Sampling and Analysis of Industrial/Municipal Wastewater Version 2.0" (January, 2016) at the prescribed frequency.

- (c) at a frequency where (i) Weekly means once every week; (ii) Bi-weekly means once every two weeks; (iii) Monthly means once every month; and (iv) Quarterly means once every three months.".

- (d) and that a schedule of the day of the week/month for the scheduled sampling shall be created and that be schedule be revised and updated every year through the rotation of the week/month for the sampling program.

The 2024 sampling schedule was issued December 19, 2023. As per the ECA, the 2024 weekly and monthly sampling requirements were rotated and scheduled to be taken on Tuesdays.

During the reporting year the following deviations from the sampling plan occurred:

- December 3, 2024 – The composite sampler was not started, routine weekly effluent samples were collected December 4, 2024 instead

The monitoring schedule (sampling calendar) for the next reporting year (2025) can be found in *Appendix G*. It was issued to staff on December 27, 2024.

16. Municipal Sewage Collection System- Annual Performance Report

This report was prepared in accordance with the requirements of the Environmental Compliance Approval for a Municipal Sewage Collection Systems, Schedule E, Section 4.6.1.

Municipal Sewage Collection System ECA #	118-W601, Issue Number 1, Issued March 2, 2023
Sewage Works	Angus Sanitary Sewer System
Collection System Owner	The Corporation of the Township of Essa
Reporting Period	January 1, 2024 to December 31, 2024

Is the Annual Report available to the public at no charge on a website on the Internet?

Yes

Note: As per Schedule E, Section 4.7.1 of CLI-ECA #118-W601, the annual performance report must be made available, on request and without charge, to members of the public who are served by the Authorized System; and 4.7.2 must be made available, by June 1st of the same reporting year, to members of the public without charge by publishing the report on the Internet, if the Owner maintains a website on the Internet.

Location where Annual Performance Report required under CLI-ECA #118-W601, Schedule E will be available for inspection. *(CLI-ECA #118-W601, Schedule E, Section 4.6.1 & 4.7.1):*

- Township of Essa Municipal Office, 5786 Simcoe County Road 21, Utopia, Essa Township, ON, L0M 1T0
- http://www.essatownship.on.ca

Pursuant to Schedule E, sections 4.6.3 to 4.6.9, this Annual Performance Report shall:

a) If applicable, includes a summary of all required monitoring data along with an interpretation of the data and any conclusion drawn from the data evaluation about the need for future modifications to the Authorized System or system operations.

b) If applicable, include a summary of any operating problems encountered and corrective actions taken.

c) Includes a summary of all calibration, maintenance, and repairs carried out on any major structure, Equipment, apparatus, mechanism, or thing forming part of the Municipal Sewage Collection System.

d) Include a summary of any complaints related to the Sewage Works received during the reporting period and any steps taken to address the complaints.

e) Include a summary of all Alterations to the Authorized System within the reporting period that are authorized by this Approval including a list of Alterations that pose a Significant Drinking Water Threat.

f) Include a summary of all Collection System Overflow(s) and Spill(s) of Sewage.
   i. Dates;
   ii. Volumes and durations;
   iii. If applicable, loadings for total suspended solids, BOD, total phosphorus, and total kjeldahl nitrogen and sampling results for E.Coli;
   iv. Disinfection, if any; and
   v. Any adverse impacts(s) and any corrective actions, if applicable

g) Includes a summary of efforts made to reduce Collection System Overflows, Spills, STP Overflows, and/or STP Bypasses, including the following items, as applicable:
   i. A description of projects undertaken and completed in the Authorized System that result in overall overflow reduction or elimination including expenditures and proposed projects to eliminate overflows with estimated budget forecast for the year following that for which the report is submitted.
   ii. Details of the establishment and maintenance of a PPCP, including a summary of project progresses compared to the PPCP's timelines.
   iii. An assessment of the effectiveness of each action taken.
   iv. An assessment of the ability to meet Procedure F-5-1 or Procedure F-5-5 objectives (as applicable) and if able to meet the objectives, an overview of next steps and estimated timelines to meet the objectives.
   v. Public reporting approach including proactive efforts.

16.1 Description of the Works

The Township of Essa Municipal Sewage Collection System is comprised of the Angus Sanitary Sewer System, which is owned by the Corporation of the Township of Essa and operated by the Ontario Clean Water Agency (OCWA). The Angus Sanitary Sewer System consists of works for the collection and transmission of sewage, consisting of 49,657m of Sanitary Sewer and 1,924 m of forcemain. The discharge from SPS #1 is 7,171 m^3/d, from SPS#2 is 4,416 m^3/d, from SPS #3 is 1,316 m^3/d, and from SPS Mill Street is 34 m^3/d into the Angus Water Pollution Control Plant (WPCP).

The sewage pumping stations in the Authorized system include:

- Sewage Pumping Station #1 (SPS 1) – located on Elizabeth St., in Angus is comprised of a wet well/drywell type sewage pumping station, with submersible WFD pumps. The SPS connected to a 200mm diameter forcemain discharging to the Angus WPCP.

- Sewage Pumping Station #2 (SPS 2) – located on Centre St., in Angus is comprised of a deep wet well type SPS, with 2 submersible pumps connected to a 200mm diameter forcemain discharging to the Angus WPCP.
- Sewage Pumping Station #3 (SPS 3) – located at Mill St. and Commerce Rd. is comprised of a wet well type SPS with 2 submersible pumps, discharging to the Angus WPCP.
- Sewage Pumping Station Mill Street (SPS Mill) – located on Mill St., is a wet well type SPS with 2 submersible pumps, discharging to the Angus WPCP.

The Angus Sanitary Sewer System contains no combined sewage pumping stations, no combined sewage storage structures or combined storage tanks. The authorized collection system also contains no authorized combined sewer collection system overflow points and no authorized sanitary sewer overflow points.

16.2 Summary of Monitoring Data and Interpretation

No monitoring data was required within the municipal sewage collection system for the reporting period.

16.3 Summary of Operating Problems Encountered and Corrective Actions Taken

There were no operating problems encountered within the municipal sewage collection system during the reporting system.

16.4 Summary of Calibration, Maintenance, and Repairs

All in-house monitoring equipment is calibrated/verified as per manufacturer's recommendations. Preventative maintenance is scheduled for all equipment at the sewage treatment plant and pumping stations at regular frequency (frequency depends on the equipment and type of maintenance). Maintenance activities are scheduled within the work management system (WMS), upon completion, operators set the work order to complete. On a monthly basis, preventative work orders are reviewed for completion. The following is a summary of work completed during the reporting period.

- Angus Collection- Simcoe Street CCTV
- Annual Sewer System Flushing
- Annual Pump Station Cleanouts

16.5 Community Complaints Received in Relation to the Sewage Works

There were eight community complaints regarding the municipal collection system received during the reporting period:

2024	Details of Community Complaints
January 22, 2024	• Community complaint for sewer blockage: OCWA arrived on site, determined to be on private residence side.
March 15, 2024	• Community complaint for sewer blockage: OCWA arrived on site, determined to be on private residence side.
March 17, 2024	• Community complaint for sewer blockage: OCWA arrived on site, determined to be on private residence side.
April 14, 2024	• Community complaint for ditches full of water: OCWA arrived on site, determined Pump Station 4 was in proper operation and likely due to heavy rainfall
June 2, 2024	• Community complaint for sewer back up: Operations arrived on site and determined blockage between manholes. ROHES called to remove blockage.
July 16, 2024	• Community complaint for sewer back up: Operator arrived to investigate. Identified as a collection system issue, maintenance was completed in the sewage collection system.
September 2, 2024	• Community complaint for sewer back up: Operator arrived on site and inspected, no major blockages detected. Removed some debris from one manhole.
November 25, 2024	• Community complaint received: Complainant found Pump Station 1 door open and closed pump station door.

16.6 Alterations to the Authorized System

For any repairs or improvements made, see section *16.4 Summary of Calibrations, Maintenance and Repairs* for more details.

16.7 Summary of Collection System Overflow(s) and Spill(s) of Sewage

There were no collection system overflows/spills for the municipal collection system during the reporting period.

16.8 Efforts Made to Reduce Collection System Overflows, Spills, STP Overflows, and/or STP Bypasses

The sewage pumping stations are equipped with alarm monitoring for high flow events. Preventative maintenance procedures are in place to ensure the sewage pumping stations are operating as designed and include:

- Annual Wet Well/ Pump Station Cleanouts
- Weekly Pump Station Inspections
- Annual Sewer System Flushing
- Alarm Testing
- Headworks Inspections at Angus WPCP