Town of Bradford West Gwillimbury
2025 Wastewater Performance Report

Infrastructure Services, March 2026

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Introduction

This report contains the relevant information to meet the annual reporting requirements for the Town of Bradford West Gwillimbury's (Town's) Wastewater system. The performance report is for the period from January 1, 2025 to December 31, 2025. Annual performance reports for the wastewater system are required to be submitted to the Ministry of the Environment, Conservation and Parks (MECP) by March 31st.

The requirements are outlined in the regulatory documents for the system, they are as follows:

- Water Pollution Control Plant Environmental Compliance Approval (ECA) No. A-500-3314249181
- Wastewater Sewage System Consolidated Linear Infrastructure (CLI) ECA No. 116-W601 Issue 2.

1. General Wastewater System Information

1.1. Service Information

The Town's wastewater system services a population of approximately 38,720. This includes 11,784 residential connections and 331 general connections (industrial, commercial and institutional). The Water Pollution Control Plant (WPCP) and Wastewater Collection (WWC) system is owned and operated by the Town of Bradford West Gwillimbury.

1.2. General Wastewater System Maintenance

To ensure that all WPCP and Collection System equipment is reliable and in good working order, the Town has a Preventative Maintenance (PM) program in place for all wastewater system equipment and associated facilities. The PM program is based on the recommendations of the original equipment manufacturer as per the WPCP ECA section (8) Operation and Maintenance and WWC System Schedule E Section (3) Operations and Maintenance.

To conduct efficient and effective maintenance at each facility, plant maintenance activities are tracked on a computerized maintenance management system (CMMS). The CMMS monitors and schedules all the WPCP and associated facilities maintenance plans, issues work orders for these plans and any other scheduled and unscheduled work that may be required.

Inspection, testing, and calibration of electrical, mechanical, instrumentation, and Supervisory Control and Data Acquisition (SCADA) equipment is performed and documented by fully trained and qualified technicians. Identified PM deficiencies are flagged and scheduled for repair in a priority manner. Critical process equipment that is not performing to specification is repaired or replaced immediately.

The Wastewater Division uses the system WorkTech to automatically generate work orders for the wastewater system's current PM program. A total of 2,887 work orders were completed in the wastewater system during 2025.

1.3. Calibration of Wastewater System Equipment

The calibration of all electrical, mechanical, instrumentation, and SCADA equipment is completed by trained and qualified technicians. All annual calibrations of major equipment of the works have been completed which includes but is not limited to laboratory equipment and flow meters. All flow meter calibrations are completed at minimum once a year. Annual calibrations of flow monitoring equipment at the WPCP and in the WWC pumping stations were completed by third-party technicians.

The calibrations of the flow meters were completed in the months of May and June 2025. Calibration of the laboratory equipment was completed in June 2025.

1.4. Wastewater System Complaints

In 2025, two (2) odour complaints were received by wastewater operations. One (1) complaint was related to the WPCP. The details of the complaint and the investigation completed by WPCP staff were shared with the MECP Barrie District Office as required by the WPCP Air ECA. There was one (1) complaint received for the WWC system.

Table 1 below contains a summary of the complaint received for the wastewater system and the corrective actions taken to address the issues.

Table 1. Summary of Wastewater System Complaints.

System	Complaint	Corrective Action
WPCP	A general bad odour was experienced in the affected area.	A thorough investigation of the WPCP grounds was completed. No abnormal or strong odours were noted.
WWC	Reoccurring odour issue where forcemain transitions to gravity sewer due to low flows causing septic sewage.	Ongoing mitigation efforts continue. Manholes in area have been resealed, water is being added to the wet well at the impacted pumping station, gases are being monitored, and carbon filters are being tested quarterly.

2. Bradford Water Pollution Control Plant

2.1. General Facility Description

The WPCP is located at 225 Dissette Street, Bradford West Gwillimbury.

In 2012 the Town's WPCP was re-rated to its current classification, a Class four (4) system. Currently the facility is comprised of Plant B, C and D. Plant B was offline for all of 2025.

Table 2 contains an overview of the Bradford WPCP. It includes the current rated capacity, the 2025 service area, the major processes of each plant, and other applicable information regarding the operation of the WPCP.

Table 2. Water Pollution Control Plant Details.

Water Pollution Control Plant	
Rated Capacity	19,400 m^3/day
Service Area	Bradford West Gwillimbury
2025 Service Population	38,720
In-service Date	Plant B 1982 Plant C 1997 Plant D 2009
Effluent Receiver	West Holland River
Major Processes	
Plant B	Extended Aeration
Plant C	Sequencing Batch Reactors (SBR)
Plant D	Extended Aeration
	Tertiary treatment
	U.V Disinfection Continuous Discharge
	Biosolids Storage Ponds 20,000 m^3 (only 10,000 m^3 aerated)
	Digester Sludge Stabilization
	Biosolids Storage Tanks 25,000 m^3
	Emergency Sewage Overflow Pond 44,000 m^3

2.2. Regulatory Requirements

The WPCP reporting requirements and the section of the report that addresses each topic is found in **Table 3.**

Table 3. ECA Reporting Requirements

ECA Reporting Requirement	Report Section
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.	**2.3**
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.	**2.4**
C. A summary of all operating issues encountered, and corrective actions taken.	**2.8**
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.	**1.2, 2.7**
E. A summary of any effluent assurance or control measures undertaken.	**2.5**
F. 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.	**1.3**
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 are 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.	**2.4.2**
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.	**2.10**
I. A summary of any complaints received, and any steps taken to address the complaints.	**1.4**
J. A summary of all Bypasses, Overflows, other situations outside of Normal Operating Conditions and spills within the meaning of Part X of EPA and abnormal discharge events.	**2.9**
K. A summary of all Notice of Modification to Sewage Works completed under Paragraph I. d. of Condition 10, including a report on status of implementation of all modification.	**2.12**
L. A summary of efforts made to achieve conformance with Procedure F-5-1 including but not limited to projects undertaken and competed 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.	**2.13**
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	**2.11**
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.	**2.6**

2.3. Influent and Imported Sewage Monitoring Data

Influent flows, the flows coming into the WPCP, are continuously monitored and recorded at the WPCP. The following sections detail the influent flows to the WPCP and the concentration of influent parameters.

2.3.1. Influent Flows

Table 4 contains a summary of the influent flow data for 2025. The annual average daily influent flow for the WPCP was 12,505 m^3/day. Influent flows remain below the 19,400 m^3 annual average daily influent flow rated capacity of the WPCP. For further information, refer to **Section 2.4.2 Design Objectives Summary**.

Table 4. WPCP Influent Flows in 2025.

Influent Flows 2025					
Month	**Maximum Daily Flow[1] (m^3)**	**Average Daily Influent (m^3)**	**Total Flow (m^3)**	**Maximum Flow Plant C[2] (m^3)**	**Maximum Flow Plant D[2] (m^3)**
Jan	13,189	11,958	370,706	3,816	9,459
Feb	12,361	11,613	325,177	3,627	8,755
Mar	23,783	15,402	477,477	5,330	18,585
Apr	29,471	14,821	444,628	6,080	23,391
May	13,910	12,800	396,796	3,851	10,141
Jun	21,361	12,555	376,638	6,135	15,226
Jul	12,363	11,665	361,618	3,456	9,029
Aug	12,707	11,563	358,466	3,424	9,343
Sep	12,412	11,624	348,720	3,441	9,053
Oct	12,084	11,391	353,136	3,482	10,547
Nov	13,558	11,834	355,008	3,828	10,379
Dec	18,735	12,768	395,795	4,551	14,184
		Annual Total (m^3)	**4,564,165**		

2.3.2. Influent Flow Concentrations

The following sections include a summary of the influent flow concentrations for the 2025 year. Influent samples are required monthly by the WPCP ECA. Additional samples are taken beyond the minimum requirements. Full influent samples are taken every other week.

[1] The Maximum Daily Flow is the highest total single daily influent flow seen in a month.

[2] The Maximum Daily Influent Flow for Plant C and Plant D are extracted individually from the Maximum Daily Flow. The date the Maximum Daily Flow occurs per treatment system may differ; therefore, the total of Plant C and Plant D maximums flows may not always sum to the Maximum Daily Flow.

2.3.2.1. BOD_5

The monthly average influent concentrations for Biochemical Oxygen Demand (BOD_5) are graphed in **Figure 1**. September experienced the highest BOD_5 monthly average concentration of 286 mg/L, and March had the lowest concentration of 234 mg/L. The annual average influent concentration for BOD_5 was 258 mg/L.

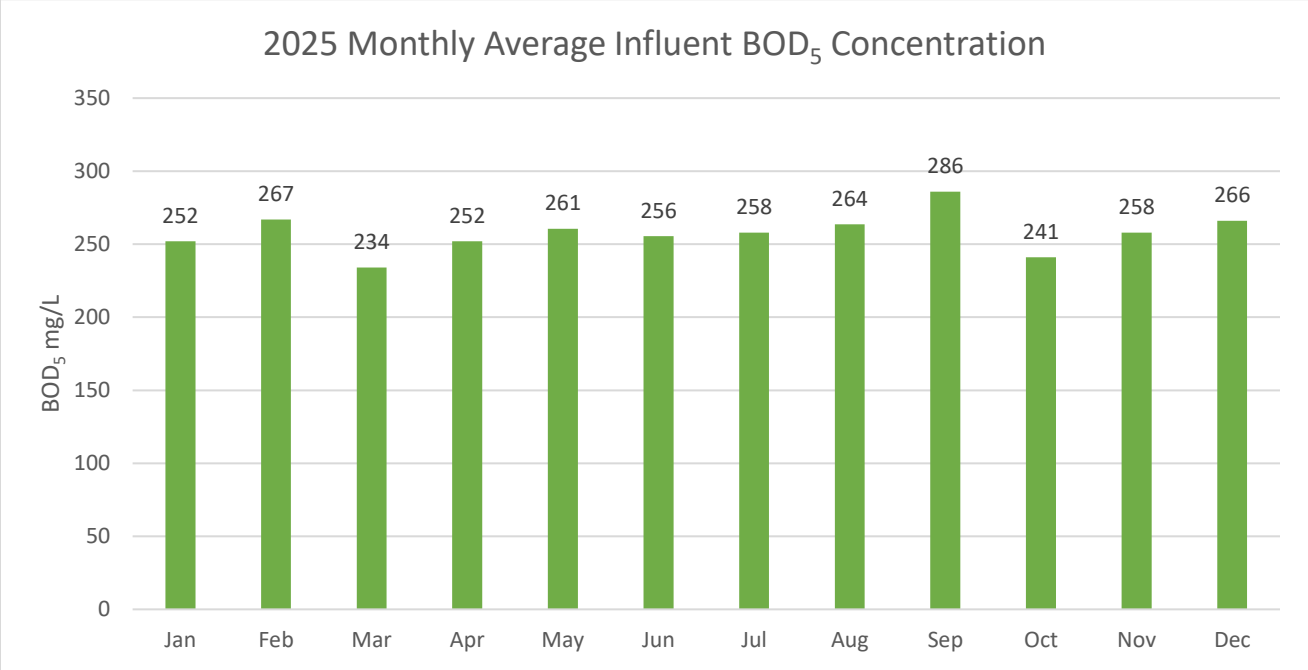


Figure 1. Monthly Average Influent BOD_5 Concentration.

The historical trend of influent BOD_5 concentrations can be found in **Appendix B**. Monthly average concentrations are captured from 2017 to 2025 within the graph. Over the past five (5) years the annual average BOD_5 concentration has ranged from 223 to 258 mg/L. 2025 saw a minor increase from 2024 from 257 mg/L to 258 mg/L. The single highest monthly average concentration remains the outlier sample from March 2019 at 560 mg/L.

2.3.2.2. TSS

The monthly average influent Total Suspended Solids (TSS) concentration has been graphed in **Figure 2**. The highest TSS concentration was in February at 532 mg/L. The lowest concentration was in June at 246 mg/L. The annual average influent concentration for TSS was 361 mg/L.

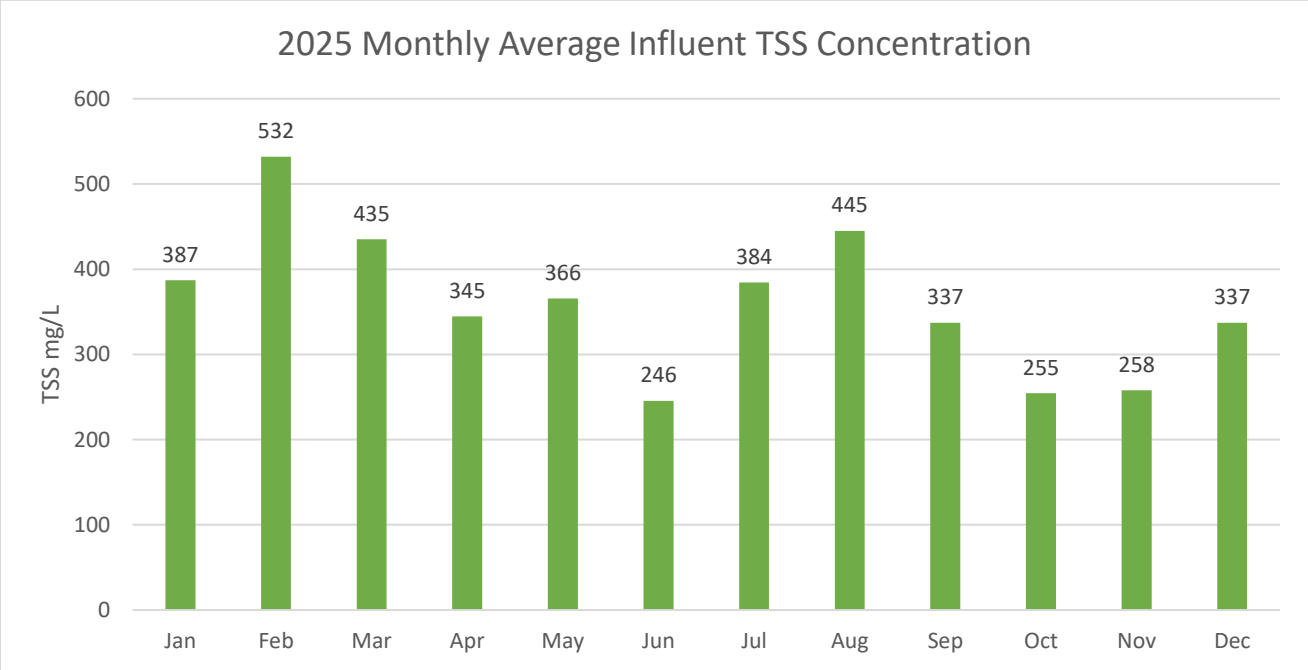


Figure 2. Monthly Average Influent TSS Concentration.

A historical trend of influent TSS concentrations can be found in **Appendix C**. Monthly average concentrations of TSS from 2017 to 2025 is graphed to create the trend. There was an 8.1% decrease in the monthly average annual TSS concentration compared to 2024. 2025 influent TSS concentrations values were similar to those seen from 2019 to 2023.

2.3.2.3. Total Phosphorus

The monthly average influent Total Phosphorus concentration is graphed below in **Figure 3**. January had the highest average monthly concentration at 5.51 mg/L, and the lowest concentration was in May at 3.55 mg/L. The annual average influent concentration for Total Phosphorus was 4.71 mg/L.

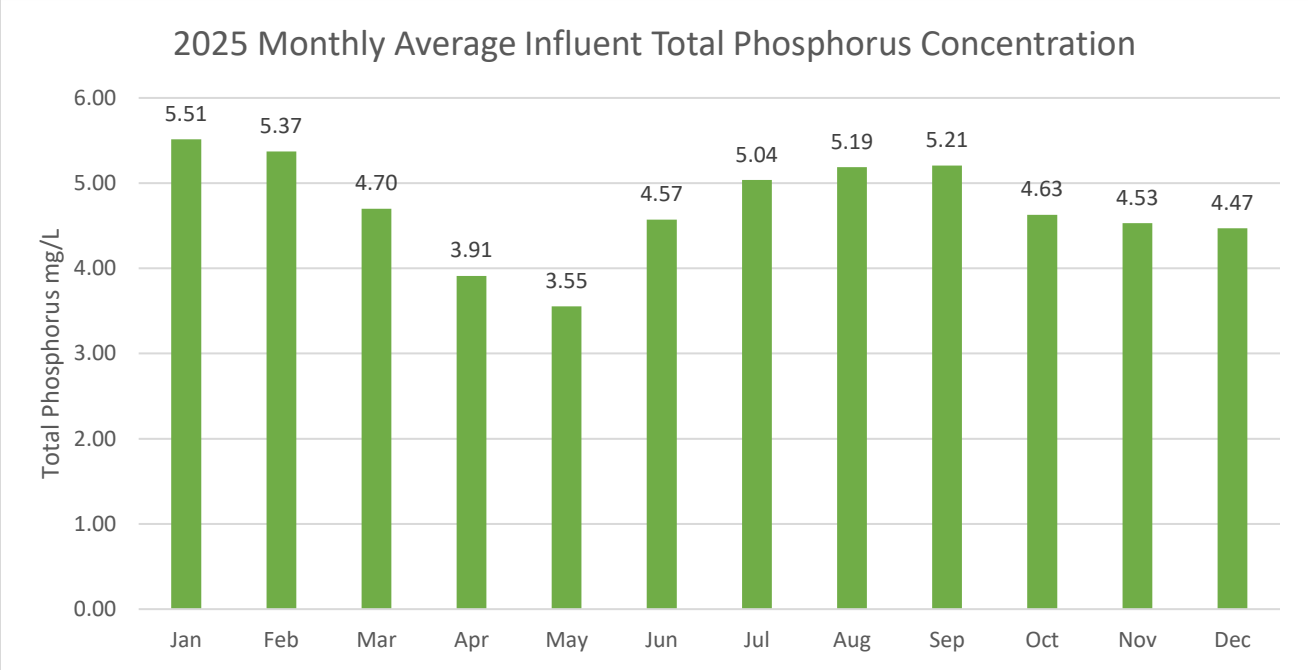


Figure 3. Monthly Average Influent Total Phosphorus Concentration.

Appendix D shows the historical trend of influent Total Phosphorus concentrations. The historical trend graph displays monthly average data from 2017 to 2025. Overall, the 2025 monthly average Total Phosphorus concentration increased by 4.7% compared to the previous year. While November 2024 experienced the largest phosphorus spike since 2017, the single high value did not cause 2024 to have a higher annual monthly average. 2022 continues to have the highest monthly annual Total Phosphorus concentration at 5.4%.

2.3.2.4. TKN

The monthly average influent concentrations for Total Kjeldahl Nitrogen (TKN) are graphed in **Figure 4**. February had the highest monthly average TKN concentration at 48.3 mg/L. April had the lowest monthly average TKN concentration of 35.1 mg/L. The annual average influent concentration of TKN was 43.6 mg/L.

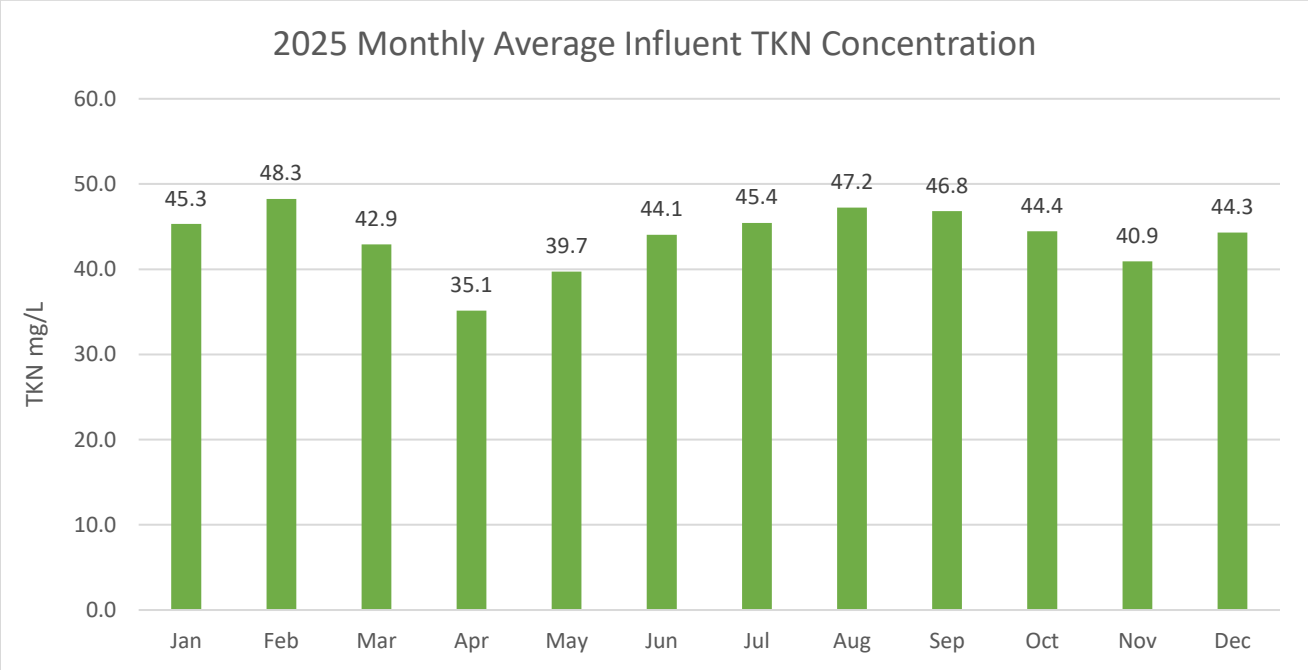


Figure 4. Monthly Average Influent TKN Concentration.

A historical trend of influent TKN concentrations can be found in **Appendix E**. The trend graph displays the average monthly concentration data for influent TKN from 2017 to 2025. From 2024 to 2025 the monthly annual average for TKN increased by 6.9%. However, this increase represents a change from 40.9 mg/L to 43.7 mg/L. Since 2020 the TKN monthly annual average ranges from a low of 39.7 mg/L (2020) to a high of 52.4 mg/L (2022).

2.3.3. Imported Sewage Flows

Imported Septage is the waste removed from a sewage system within the Town contained within either a septic tank or sewage holding tank. These properties are not connected to the Town's WWC system and require the removed septage to be trucked to the WPCP for disposal and treatment.

The Septage Hauling Program, in conjunction with the Sewer Use By-law 2013-68, was implemented January 1st, 2017. The program increased the ability of the Town to ensure the source of septage received at the WPCP is only from within the geographical boundaries of the Town. The program will continue in 2026 with no changes.

The monitoring parameters for imported sewage sampling can be found in Schedule D of the WPCP ECA.

Table 5 shows the volume of imported sewage accepted in 2025 by month.

Table 5. Imported Sewage Volume in 2025.

Imported Sewage Flows 2025	
Month	**Total Flows (m^3)**
Jan	9.18
Feb	40.04
Mar	69.29
Apr	56.18
May	112.02
Jun	117.64
Jul	136.06
Aug	92.47
Sep	107.72
Oct	63.44
Nov	76.44
Dec	16.76
Total	**897.24**

2.3.4. Imported Sewage Concentrations

Figures 5-8 depict the analysis of the required imported sewage monitoring parameters: BOD_5, TSS, TKN, and Total Phosphorus. There are no current parameter objectives or limits for imported sewage. A large range of concentrations for all parameters analyzed exists for imported sewage due to the variability in the material. Imported sewage was received in all months of 2025.

While imported sewage loads were accepted by the WPCP in the month of May, the sample was not taken due to error. Further details of the missed sample can be found in **Section 2.6 Summary of Deviations from the Monitoring Schedule**.

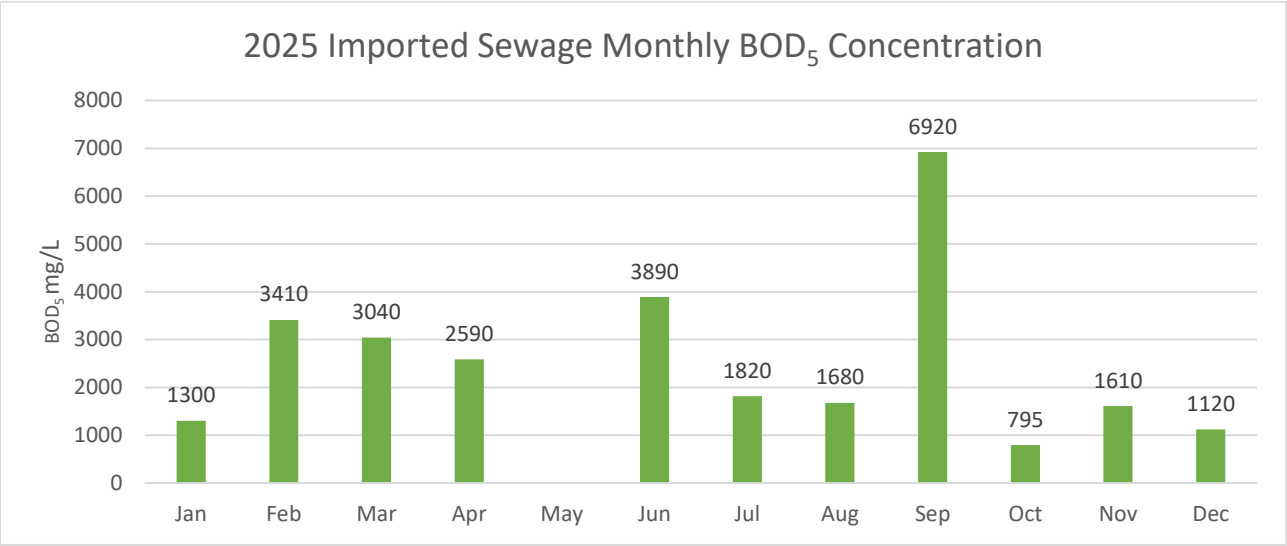


Figure 5. Imported Sewage Monthly BOD_5 Concentration.

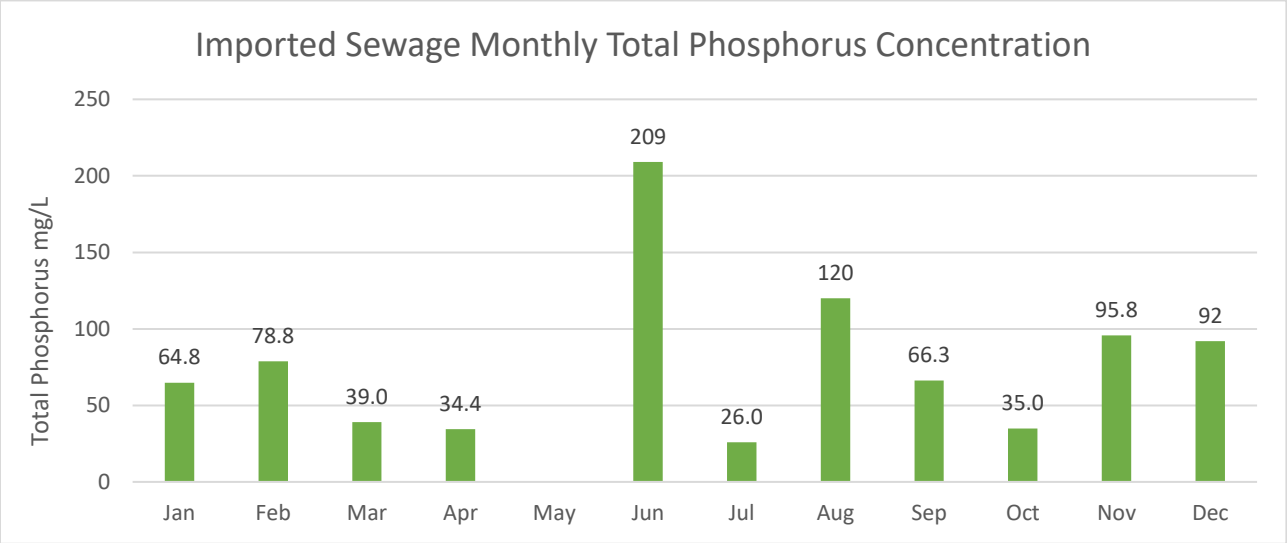


Figure 6. Imported Sewage Monthly Total Phosphorus Concentration.

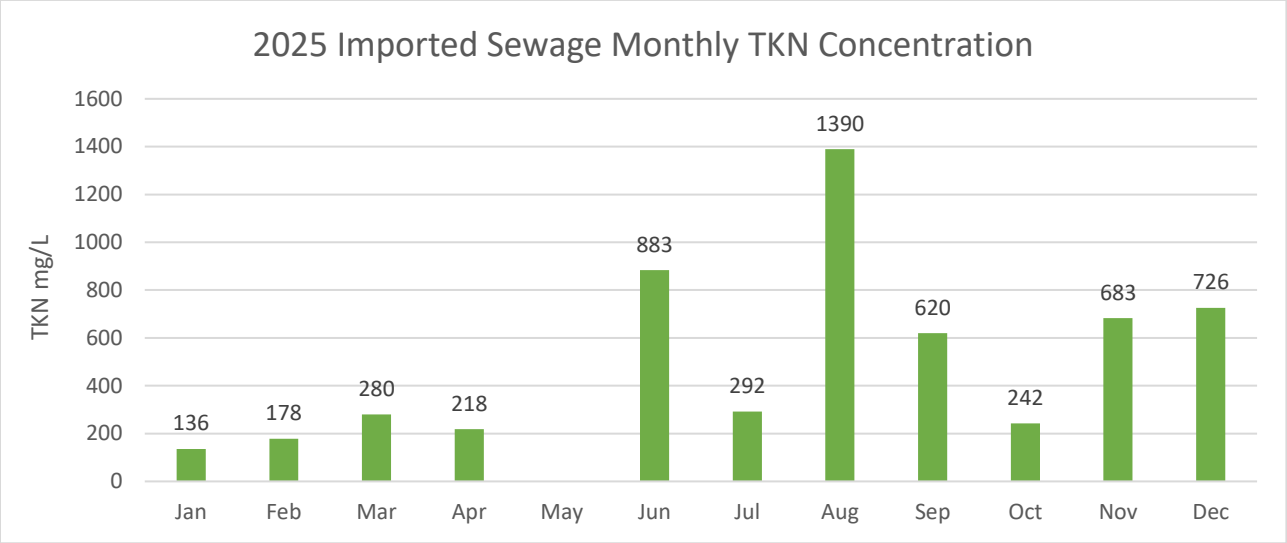


Figure 7. Imported Sewage Monthly TKN Concentration.

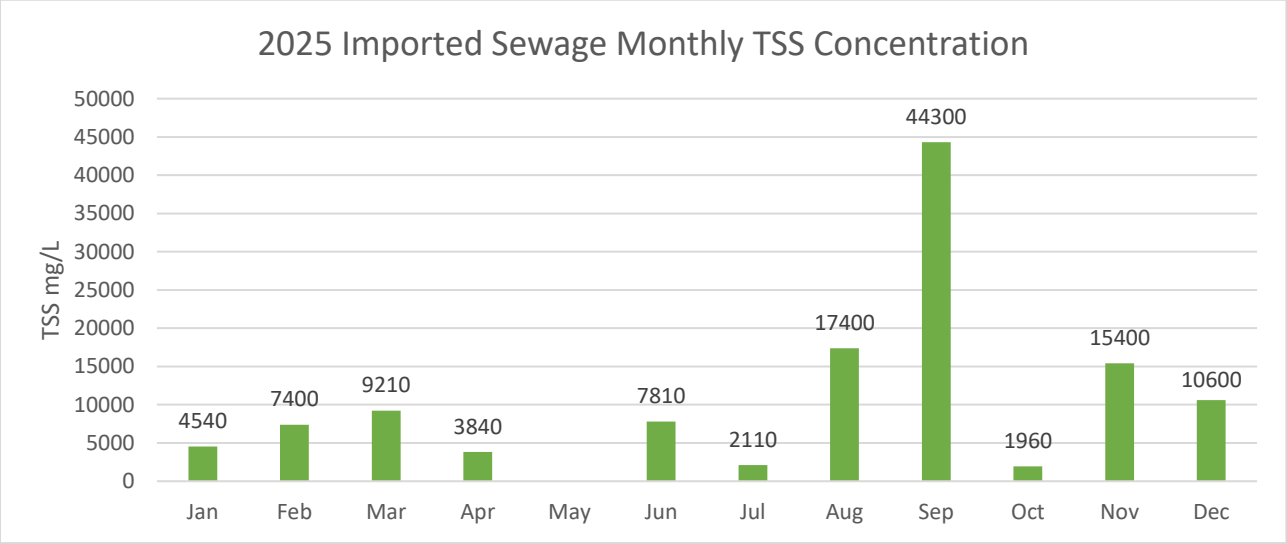


Figure 8. Imported Sewage Monthly TSS Concentration.

2.4. Final Effluent Monitoring Data

Like influent flows to the WPCP, effluent flows (treated wastewater discharged to the environment) are monitored and recorded as required by the ECA. The following sections detail the final effluent flows, compares influent and effluent flows, and analyzes the final effluent concentrations for the monitoring parameters required.

2.4.1. Final Effluent Flows

A summary of effluent flow data can be found in **Table 6.** The maximum daily effluent flow occurred on April 3rd, 2025. The annual average daily effluent flow for the WPCP was 10,512 m^3/day.

Table 6. WPCP Effluent Flows in 2025.

Effluent Flows 2025					
Month	**Maximum Daily Flow[3] (m^3)**	**Average Daily Effluent (m^3)**	**Total Flow (m^3)**	**Maximum Flow Plant C[4] (m^3)**	**Maximum Flow Plant D[4] (m^3)**
Jan	11,995	10,865	336,814	2,997	9,000
Feb	11,282	10,523	294,645	2,773	8,520
Mar	21,549	13,864	429,775	3,974	17,575
Apr	26,756	13,136	394,069	4,635	22,121
May	12,151	10,917	338,419	3,089	9,090
Jun	11,432	9,699	290,974	3,032	8,400
Jul	10,030	9,061	280,878	2,870	7,160
Aug	10,664	9,243	286,519	3,620	7,760
Sep	10,593	9,528	285,842	2,926	7,680
Oct	11,536	9,283	287,777	3,664	9,380
Nov	11,287	9,701	291,041	3,087	8,820
Dec	16,643	10,328	320,173	3,843	12,800
Annual Total (m^3)			**3,836,924**		

[3] The Maximum Daily Flow is the highest total single daily effluent flow seen in a month.

[4] The Maximum Daily Effluent Flow for Plant C and Plant D are extracted individually from the Maximum Daily Flow. The date the Maximum Daily Flow occurs per treatment system may differ; therefore, the total of Plant C and Plant D maximums flows may not always sum to the Maximum Daily Flow.

A comparison of total monthly influent and total monthly effluent flows can be found in **Figure 9.** Influent flow is higher than effluent flow for all months of the year. The month of March experienced the highest total monthly flows for both influent (477,477 m^3) and effluent (429,775 m^3). The lowest total monthly influent flows were seen February (325,177 m^3), and the lowest total monthly effluent flows were in July (280,878 m^3).

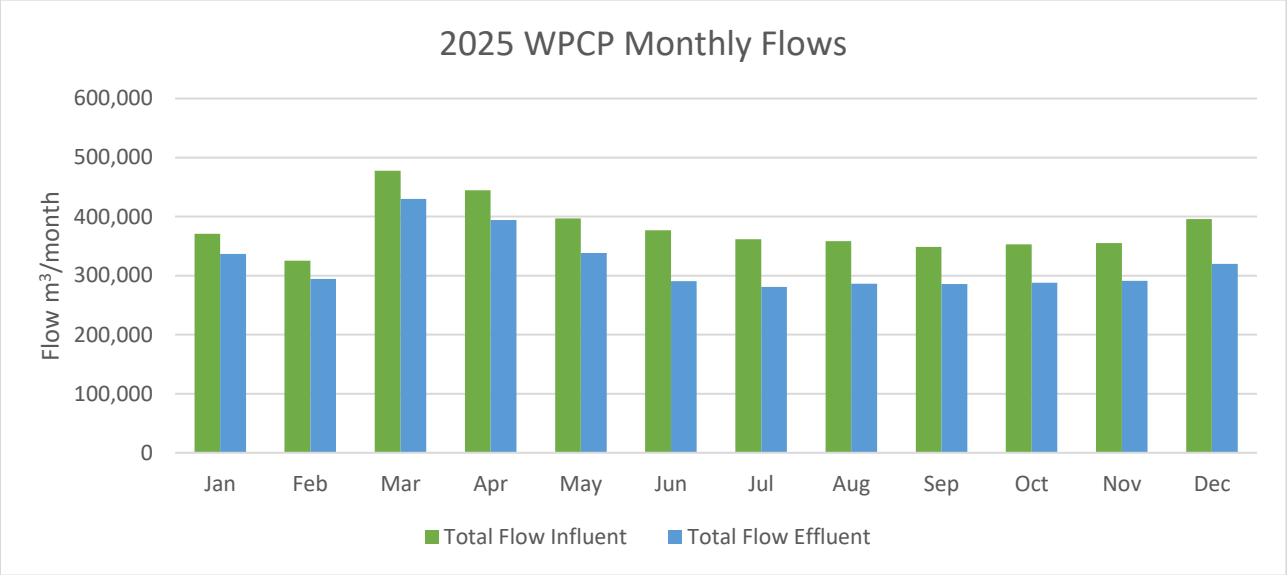


Figure 9. WPCP Total Monthly Flows.

Figure 10 below displays the monthly average influent and effluent flows for the year. The rated capacity refers to the annual average daily influent flow for which the works is approved to handle. Both monthly average influent and effluent flow remained below the rated capacity throughout 2025.

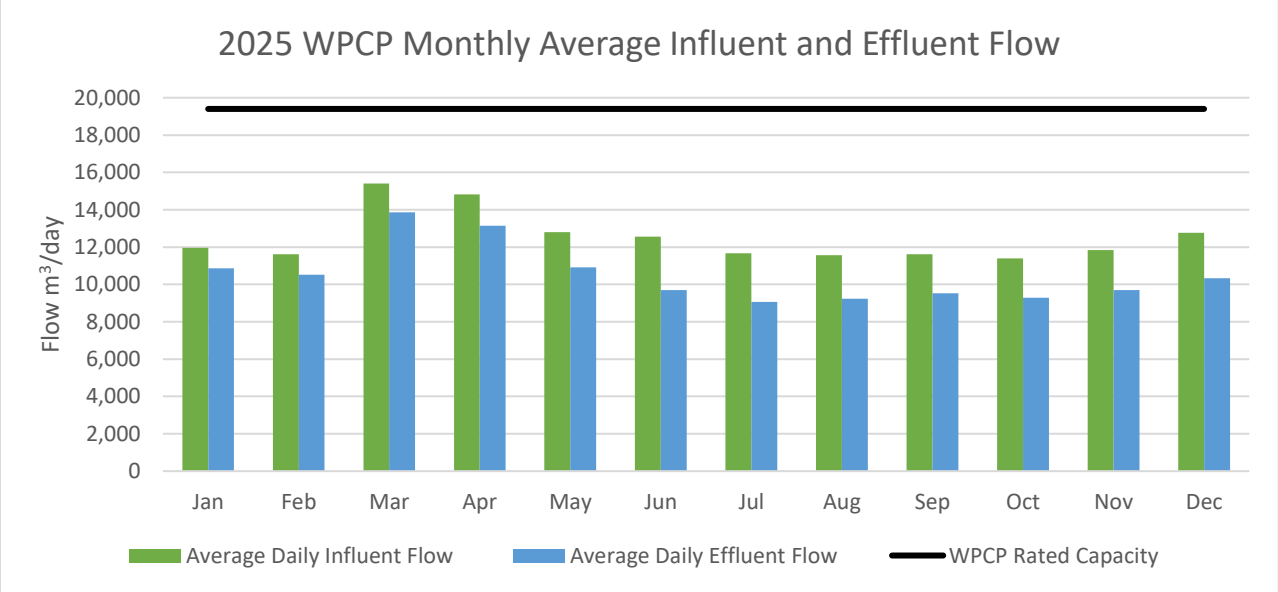


Figure 10. Average Daily Influent and Effluent Flow.

In 2025, the total volume of effluent discharged to the West Holland River saw a decrease of 5.8%. More specifically the WPCP discharged 234,999 m^3 less effluent in 2025 compared to 2024. **Figure 11** visually identifies the year over year trend from 2015 to 2025 in monthly total effluent discharged from the WPCP.

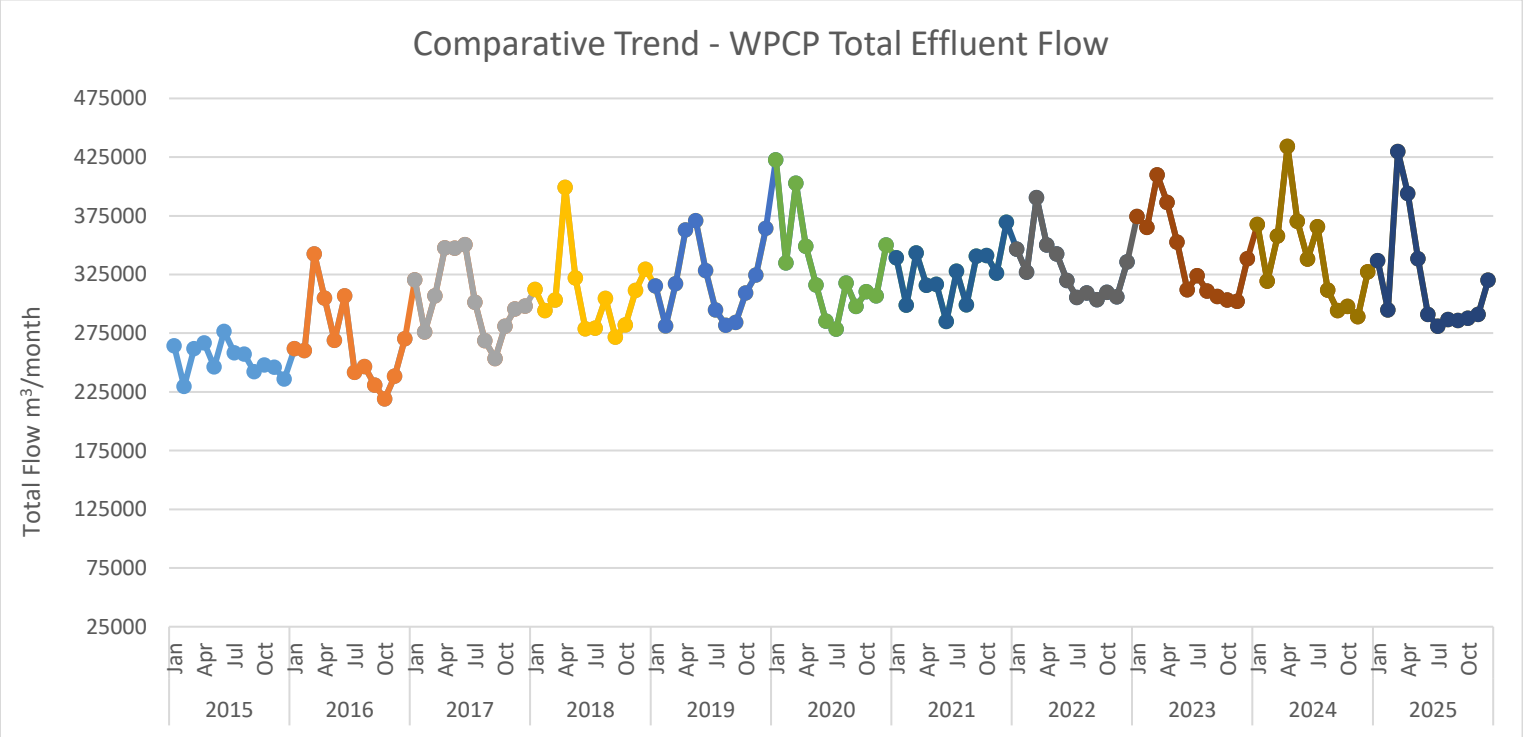


Figure 11. Historical Trend Total Effluent Flow.

2.4.2. Design Objectives Summary

The rated capacity is defined as the Annual Average Daily Influent Flow for which WPCP is designed to handle. The rated capacity of the WPCP is 19,400 m^3/day.

Table 7 contains a comparison of the Annual Average Daily Influent Flow for the year to Rated Capacity of the WPCP for influent. The Annual Average Daily Influent Flow is below 80% of the WPCP's Rated Capacity of the WPCP, as required by the ECA. At current growth projections, the WPCP maintains adequate available capacity. Ongoing secondary and tertiary treatment system upgrades will further strengthen the WPCP's resilience.

Table 7. Rated Capacity Utilization.

	Influent
Annual Average Daily Flow in 2025	12,505 m^3
Percentage of Rated Capacity Utilized	64%

The Final Effluent Design objectives were consistently achieved throughout the year: there is no evidence of a deteriorating Final Effluent quality trend.

2.4.3. Final Effluent Concentrations

The following subsections provide an overview of effluent concentration data analysis.

2.4.3.1. Effluent Objectives

The WPCP ECA outlines effluent objectives to establish non-enforceable effluent quality concentration goals which act as a trigger to maintain the operational effluent quality. The WPCP has used best efforts to maintain operational effluent objectives outlined below in **Table 8**. The Effluent Objectives Table from ECA No. A-500-3314249181 has been displayed to identify the requirements.

Table 8. ECA Effluent Objectives.

Effluent Objectives		
Effluent Parameter	Averaging Calculator	Objective (mg/L unless otherwise indicated)
$CBOD_5$	Monthly Average Effluent Concentration	5
Total Suspended Solids	Monthly Average Effluent Concentration	5
Total Phosphorus	Monthly Average Effluent Concentration	0.096
Total Ammonia Nitrogen	Monthly Average Effluent Concentration	0.6 (May 1 to October 31)
		2.0 (November 1 to April 30)
E. coli	Monthly Geometric Mean Density	50 CFU/100mL
pH	Single Sample Result	6.5-8.5 inclusive

2.4.3.2. Effluent Limits

The WPCP ECA outlines effluent limits to maintain the health of the West Holland River and to meet the MECP's effluent quality requirements. The effluent limits are outlined below in **Table 9**. Analytical results used are from the analysis by SGS Canada Inc.

All sampling is completed within the guidelines of the ECA and carried out in compliance with the sampling methods and procedures set out by the MECP. The sample frequency and analysis either meet or surpass the minimum requirements.

The WPCP operated within the requirements for all parameters outlined within the current WPCP ECA.

Table 9. Final Effluent Compliance Limits.

Final Effluent Compliance Limits		
Effluent Concentration Limits		
Final Effluent Parameter	**Averaging Calculator**	**Limit (maximum unless otherwise indicated)**
CBOD5	Monthly Average Effluent Concentration	10 mg/L
Total Suspended Solids	Monthly Average Effluent Concentration	10 mg/L
Total Phosphorus	Annual Average Effluent Concentration	0.098 mg/L
Total Ammonia Nitrogen	Monthly Average Effluent Concentration	0.8 (May 1 to October 31) 2.5 (November 1 to April 30)
E. coli	Monthly Geometric Mean Density	100 CFU/100mL
pH	Single Sample Result	6.0-9.5 inclusive
Effluent Loading Limits		
Final Effluent Parameter	**Averaging Calculator**	**Limit (maximum unless otherwise indicated)**
CBOD5	Monthly Average Daily Effluent Loading	194 kg/d
Total Suspended Solids	Monthly Average Daily Effluent Loading	194 kg/d
Total Phosphorus	Annual Average Daily Effluent Loading	1.912 kg/d

2.4.3.3. Nitrite and Nitrate

The following **Figures 12** and **13** graph the monthly average effluent concentrations for Nitrate and Nitrite. The ECA does not prescribe objectives or limits for the parameters.

Nitrite concentrations remained constant throughout the year, no fluctuations were observed. Nitrate concentrations, on the other hand, varied throughout the year. The highest values were seen in the colder months, with the peak in February (23.95 mg/L). The lowest concentration was in June at 16.90 mg/L.

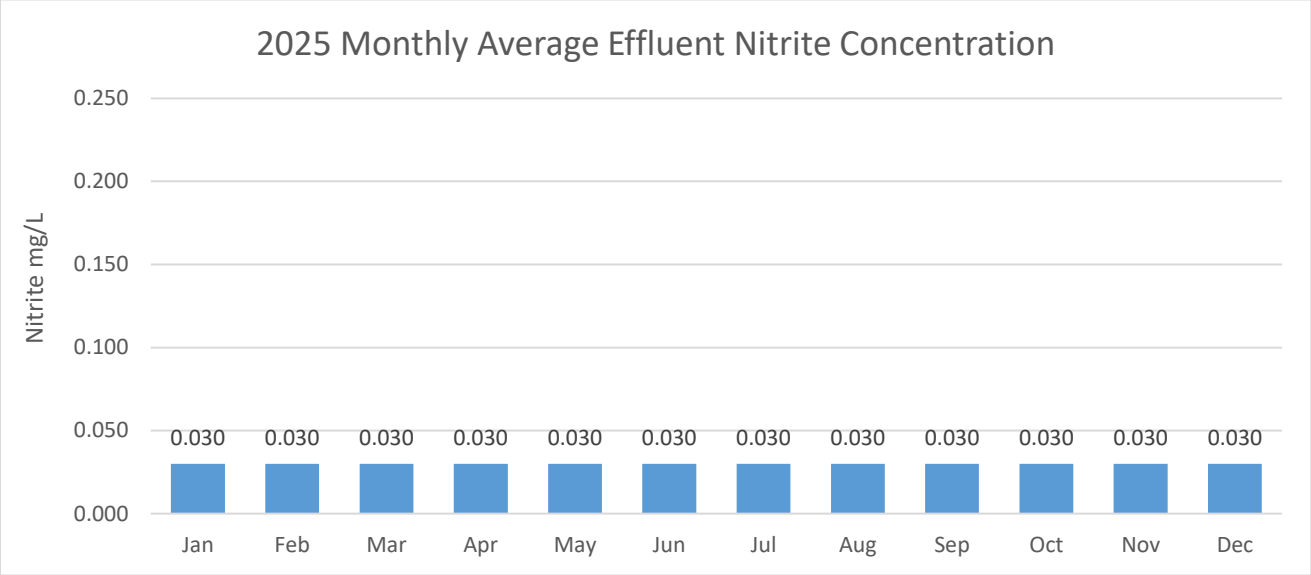


Figure 12. Monthly Average Effluent Nitrite Concentration.

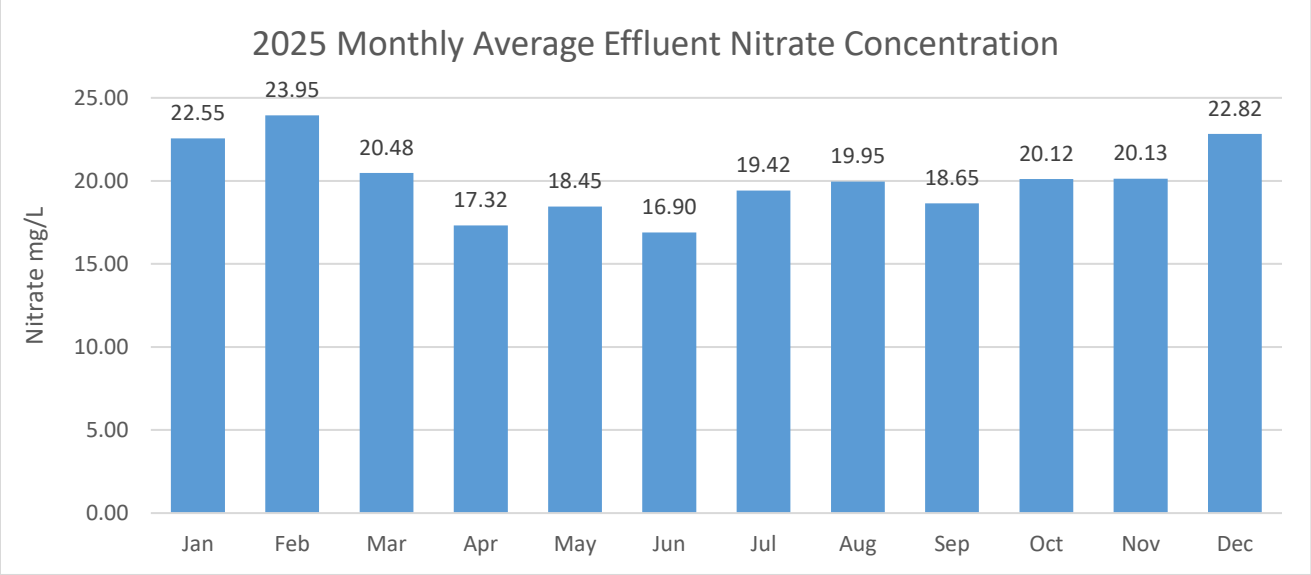


Figure 13. Monthly Average Effluent Nitrate Concentration.

2.4.3.4. Unionized Ammonia

Unionized Ammonia is a calculated parameter using the effluent TAN concentration, pH, and temperature. pH and temperature are determined in the field at the time of sampling for TAN.

The unionized ammonia concentration remained stable throughout 2025. The monthly average for all months is at 0.0010 mg/L as seen in **Figure 14**.

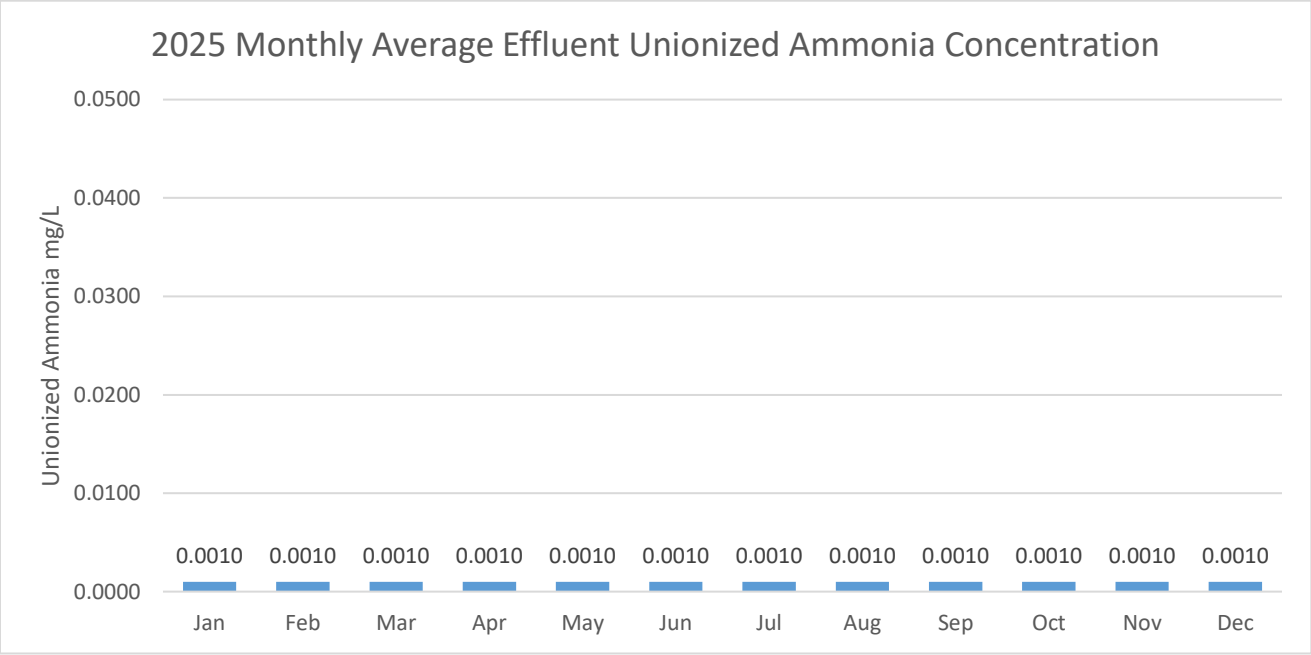


Figure 14. Monthly Average Effluent Unionized Ammonia Concentration.

2.4.3.5. TKN

The monthly average effluent TKN concentrations saw some fluctuations throughout the year. The monthly average concentrations are graphed below in **Figure 15**.

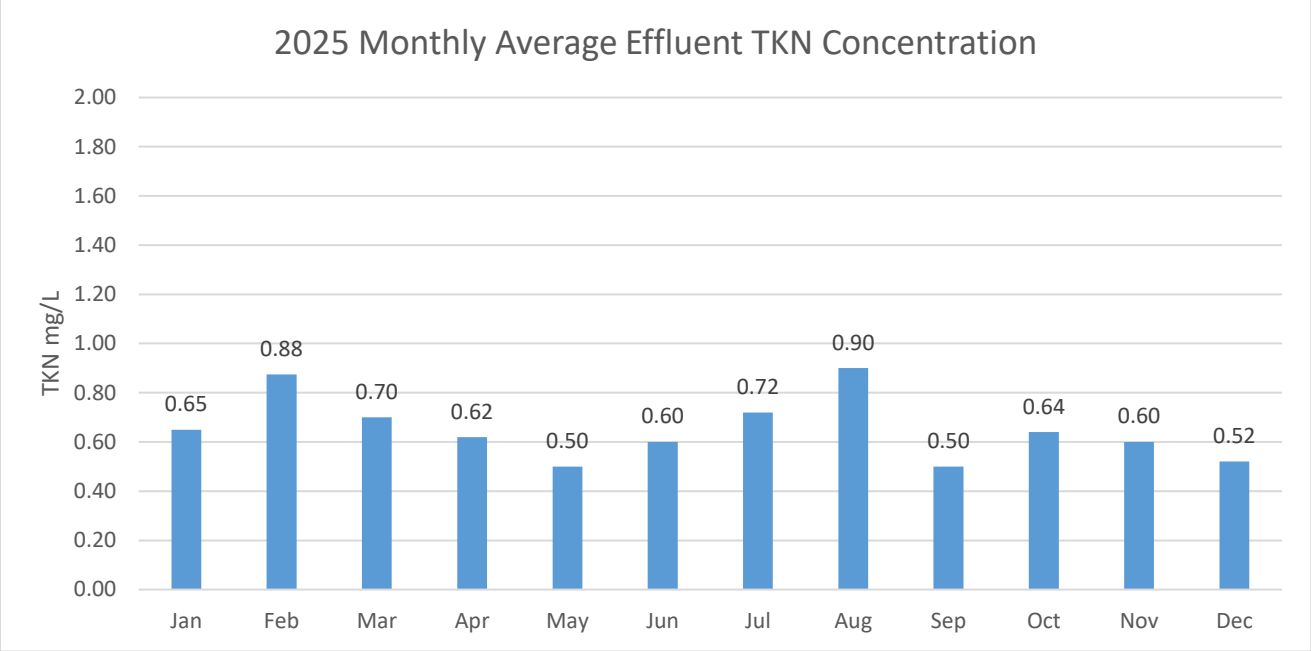


Figure 15. Monthly Average TKN Concentration.

Effluent TKN concentrations did see normal variation throughout the months. August had the highest monthly average at 0.90 mg/L. Both May and September were tied for the lowest monthly average at 0.50 mg/L.

2.4.3.6. pH

pH was maintained between the ECA limits of 6.0 to 9.5 within the reporting year as shown in **Figure 16**. The monthly averages for pH ranged from 6.7 to 7.5. The daily pH reading results ranged within 6.5 - 8.0. A single pH reading of 6.5 occurred September 1st, which met but did not exceed the objective. pH was maintained within both the high and low limits and objectives of the ECA. The annual average for pH was 6.99.

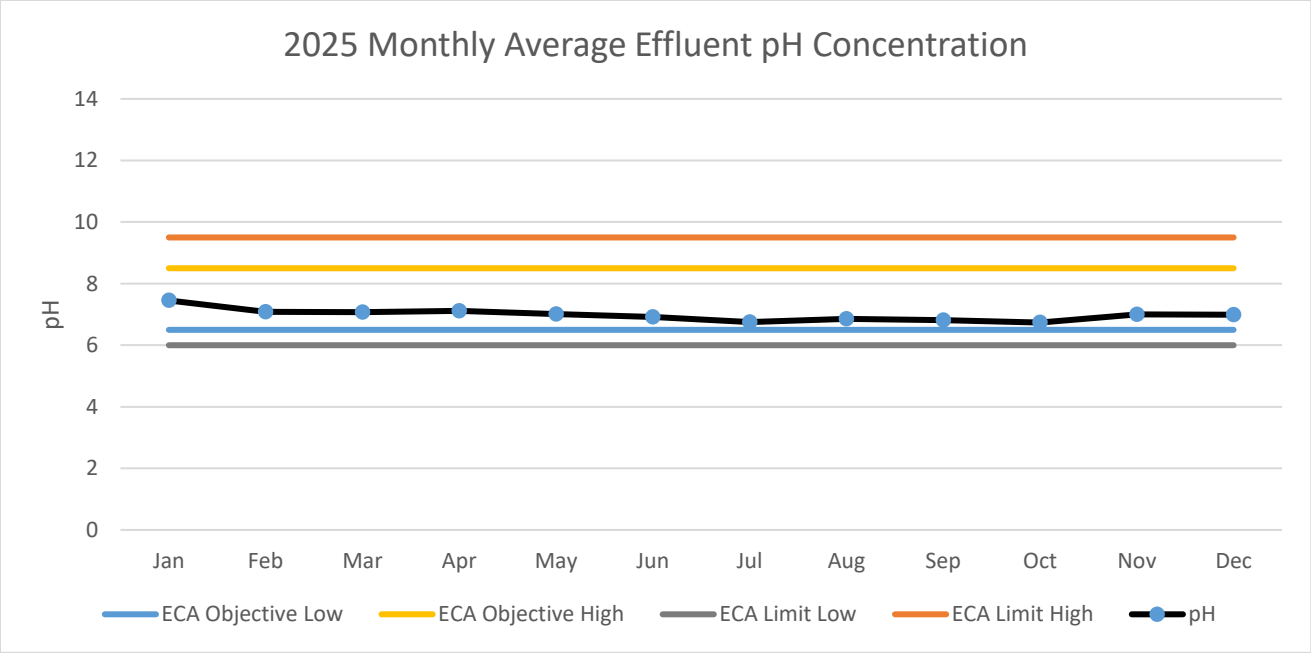


Figure 16. Monthly Average pH Compared to the ECA.

In **Appendix F** a graph showing the historical data for the monthly average annual concentration of pH from 2015 to 2025 can be found. 2025 saw about a 1% decrease in the monthly annual average pH concentration from 7.05 to 6.99. Since 2020, the monthly annual average has range from 6.86 (2021) to 7.05 (2024).

2.4.3.7. TSS

Figure 17 below graphs the 2025 monthly average TSS data compared to the limit and objective set by the WPCP ECA. TSS concentrations did experience some fluctuations throughout the year. February and March both had the highest monthly average at 4.50 mg/L. The lowest average TSS concentration was in June at 2.25 mg/L. All monthly average effluent concentration for TSS remained below both the ECA objective and limit.

The annual average effluent concentration for TSS was 3.38 mg/L.

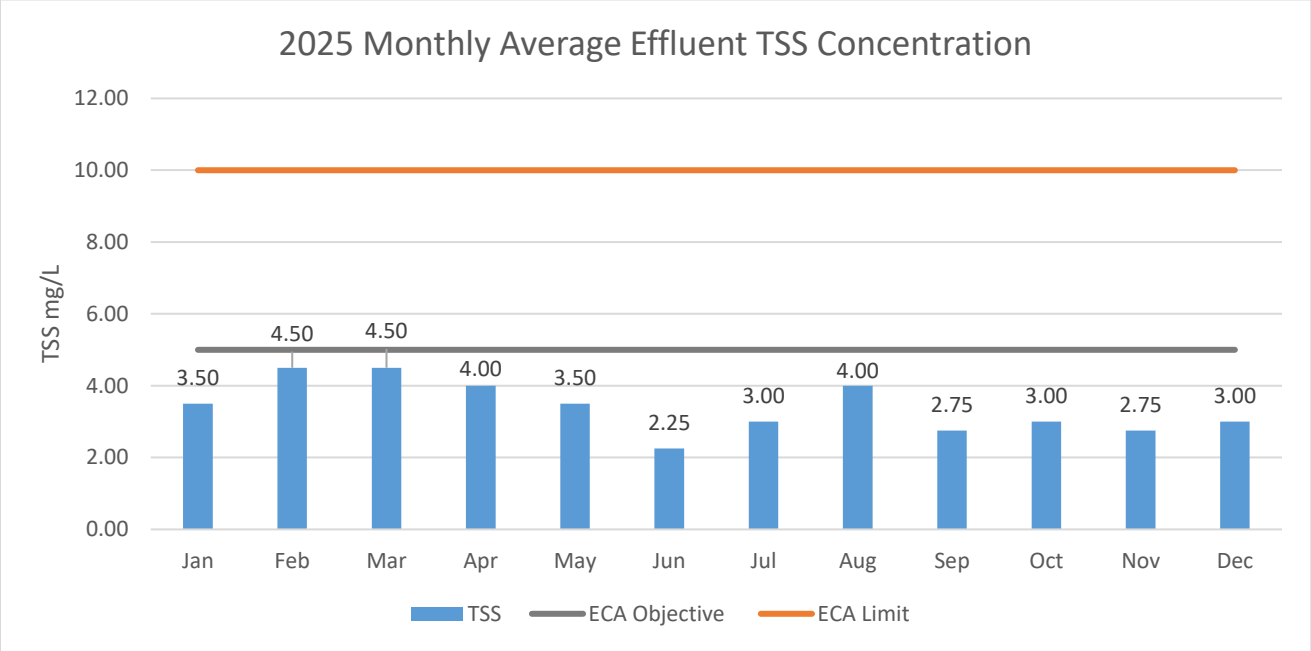


Figure 17. Monthly Average Total Suspended Solids Concentration Compared to the ECA.

The historical trend of monthly average TSS effluent concentrations from 2017 to 2025 can be found in **Appendix G**. The annual monthly average TSS concentration saw a 23% increase compared to the previous year. However, it should be noted that 2024 saw the lowest average concentration seen since 2017. The 2025 annual monthly average was in line with values seen in the past six years, excluding 2024.

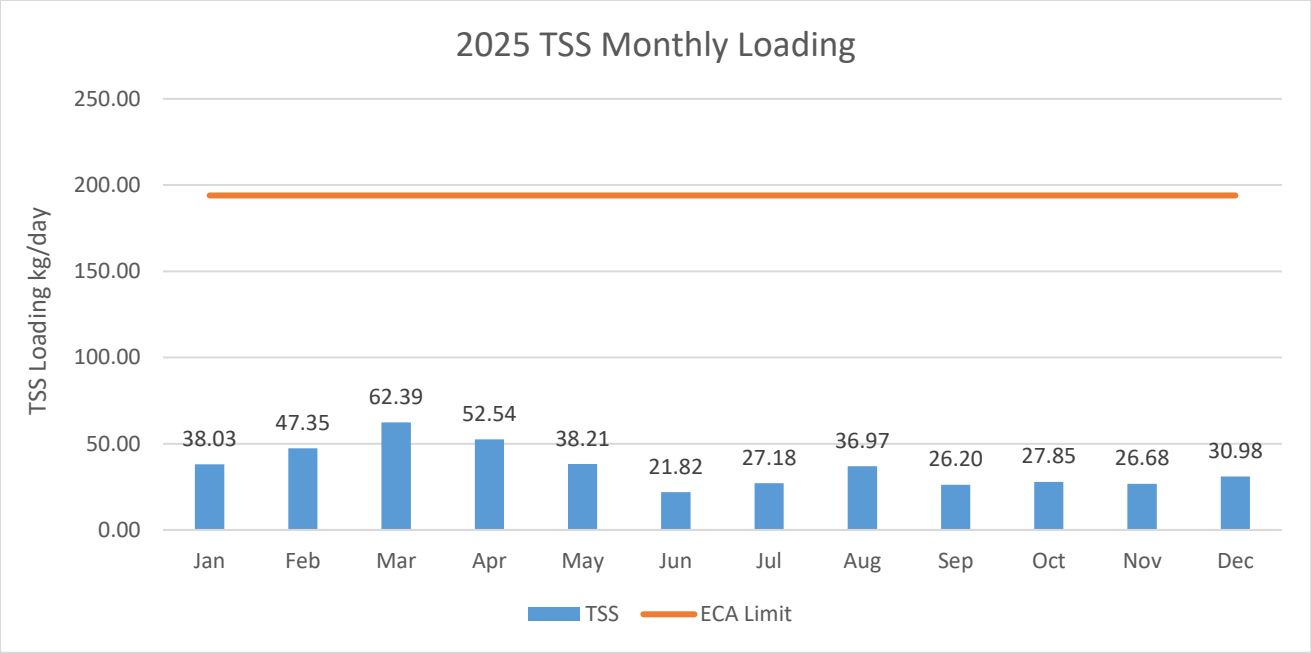


Figure 18. Monthly Average TSS Waste Loading Concentration Compared to the ECA.

The monthly TSS loading rate was below the ECA limit of 194 kg/day for all months of the year in 2025. Refer to **Figure 18** below for the TSS loading rates per month. The highest loading rate was in March (62.39 kg/day). The annual average daily effluent loading rate for TSS was 35.85 kg/d in 2025.

2.4.3.8. *E. coli*

Figure 19 below displays the *E. coli* effluent data throughout 2025 compared to the ECA limit and objective. *E. coli* did not exceed the ECA limit or objective in the year.

The monthly geometric mean for *E. coli* ranged from 1.00 to 2.95 CFU/100mL. The single sample results for the year ranged from 0 to 13 CFU/100mL. There were sixteen (16) occurrences where the *E. coli* sample result was zero (0) (Feb 12th, March 12th & 26th, April 30th, June 4th, July 16th & 23rd, Aug 6th, 20th & 27th and Oct 1st & 8th, Nov 13th, 19th & 26th, and Dec 24th). To calculate the geometric mean, the value 1 was used when the sample result was 0.

The annual geometric mean density of *E. coli* in 2025 was 1.54 CFU/100 mL.

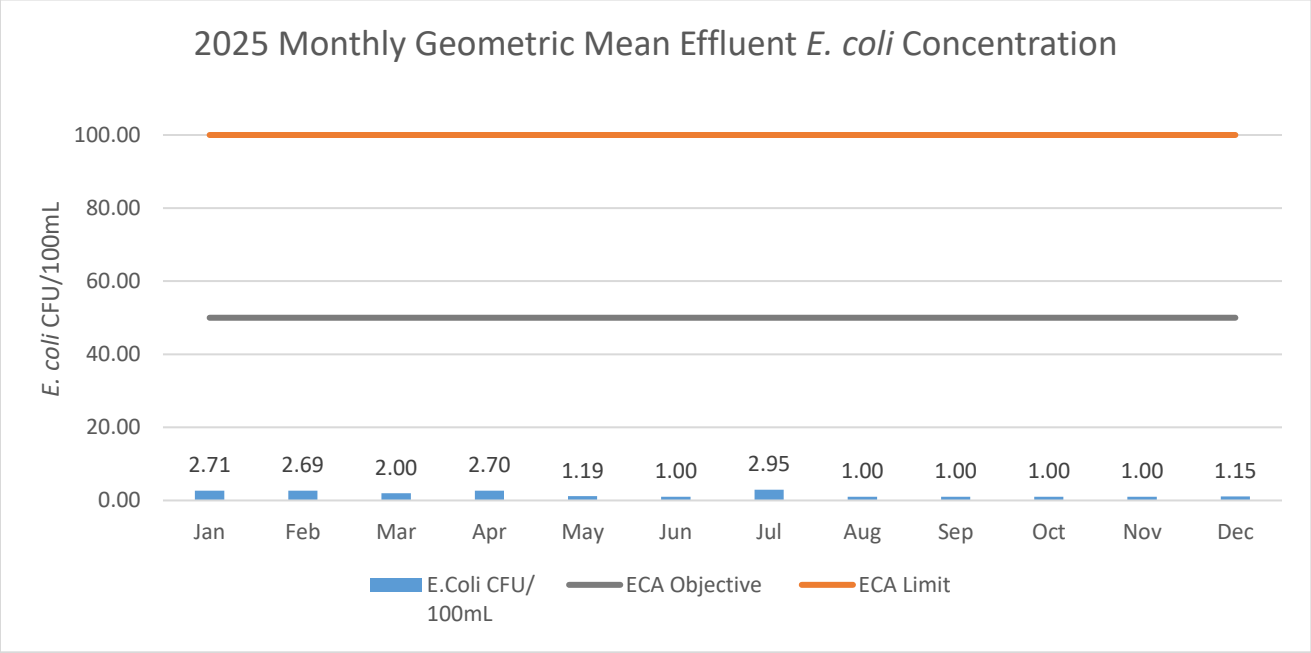


Figure 19. Monthly Geometric Mean *E. coli* Concentration Compared to the ECA.

The historical trend of monthly average effluent concentrations for *E. coli* can be found in **Appendix H**. The trend contains monthly average data graphed from 2015 to 2025. The 2025 *E. coli* annual monthly average concentration decreased roughly 16% to 1.70 CFU/100 mL from the 2024 concentration of 2.02 CFU/100 mL. 2025 saw the lowest monthly annual average since 2015 (1.92 CFU/100 mL).

2.4.3.9. Carbonaceous Biochemical Oxygen Demand

In 2025 the Carbonaceous Biochemical Oxygen Demand ($CBOD_5$) concentration did not exceed either the ECA objective or limit. **Figure 20** below displays the monthly $CBOD_5$ concentrations for the year compared to the ECA objective and limit. The highest monthly average concentration in the year was 3.00 mg/L in February. The lowest monthly average concentration of 2.00 mg/L $CBOD_5$ occurred in the months of September and October.

The annual average concentration for $CBOD_5$ was 2.40 mg/L in 2025.

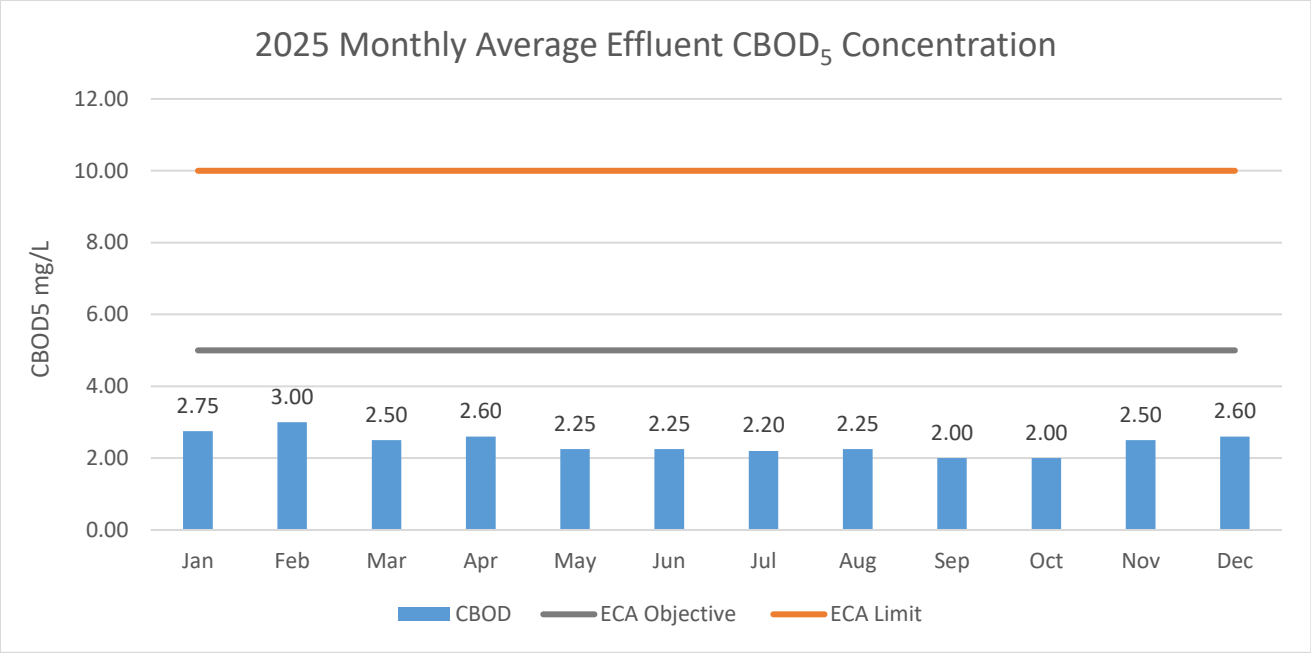


Figure 20. Monthly Average $CBOD_5$ Concentration Compared to the ECA.

In **Appendix I**, a historical trend of the monthly averages for $CBOD_5$ is graphed for the last ten years. The monthly annual average in 2025 increased 6.8% from 2024. However, the actual value increase was from 2.25 mg/L to 2.41 mg/L. Since 2020, the monthly annual average ranged from 2.18 mg/L (2022) to 2.53 mg/L (2021).

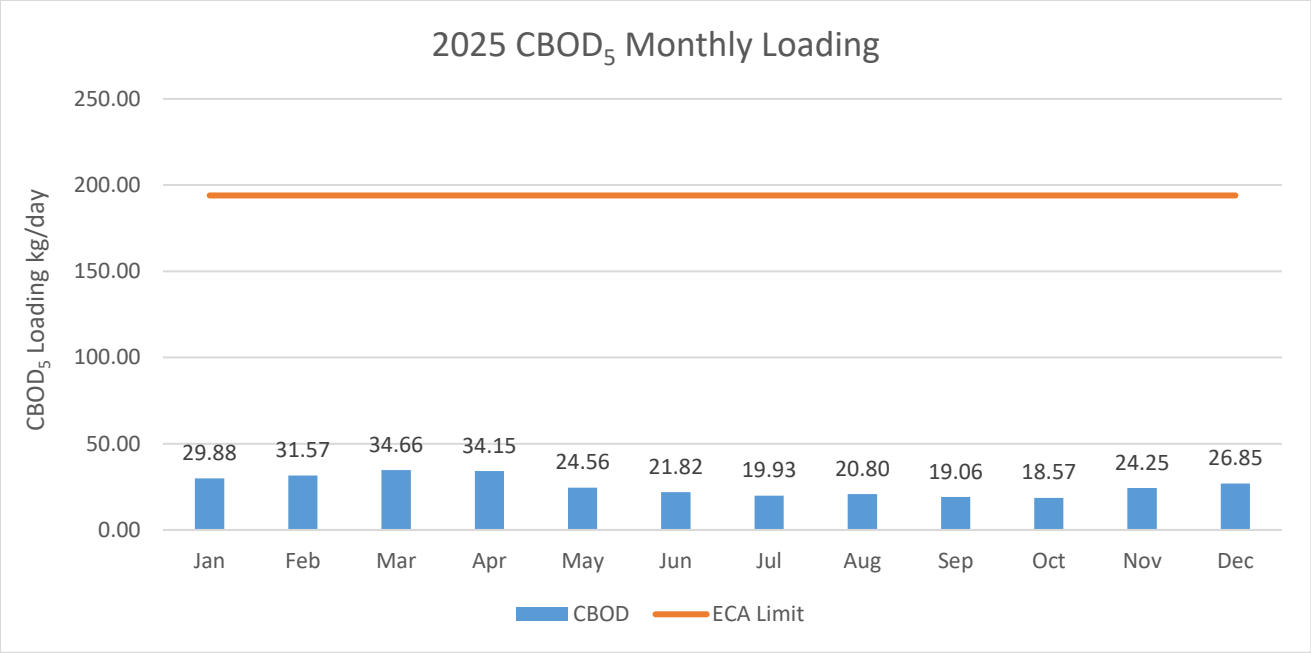


Figure 21. Monthly Effluent Average $CBOD_5$ Waste Loading Compared to the ECA.

The $CBOD_5$ monthly average daily effluent loading rate stayed below the ECA limit consistently through the year, as shown in **Figure 21**. The average daily effluent loading rate for $CBOD_5$ ranged from 18.57 kg/day to 34.55 kg/day. The monthly average daily loading limit prescribed by the ECA is 194 kg/day. No objective rate is set for the loading limits. The annual average daily effluent loading rate for $CBOD_5$ was 25.27 kg/d in 2025.

2.4.3.10. Total Ammonia Nitrogen

Total Ammonia Nitrogen (TAN) monthly average concentrations were below the objective and limit of the ECA for all of 2025 as shown in **Figure 22** below. The limit and objective for TAN increases to 2.5 mg/L and 2.0 mg/L respectively from November to April and decreases to 0.8 mg/L and 0.6 mg/L respectively from May to October. The monthly average concentrations ranged from a high of 0.09 mg/L (February) to a low of 0.04 mg/L (August, September, October). Overall, there is minimal variability in concentrations throughout the year.

The annual average effluent concentration for TAN was 0.06 mg/L in 2025.

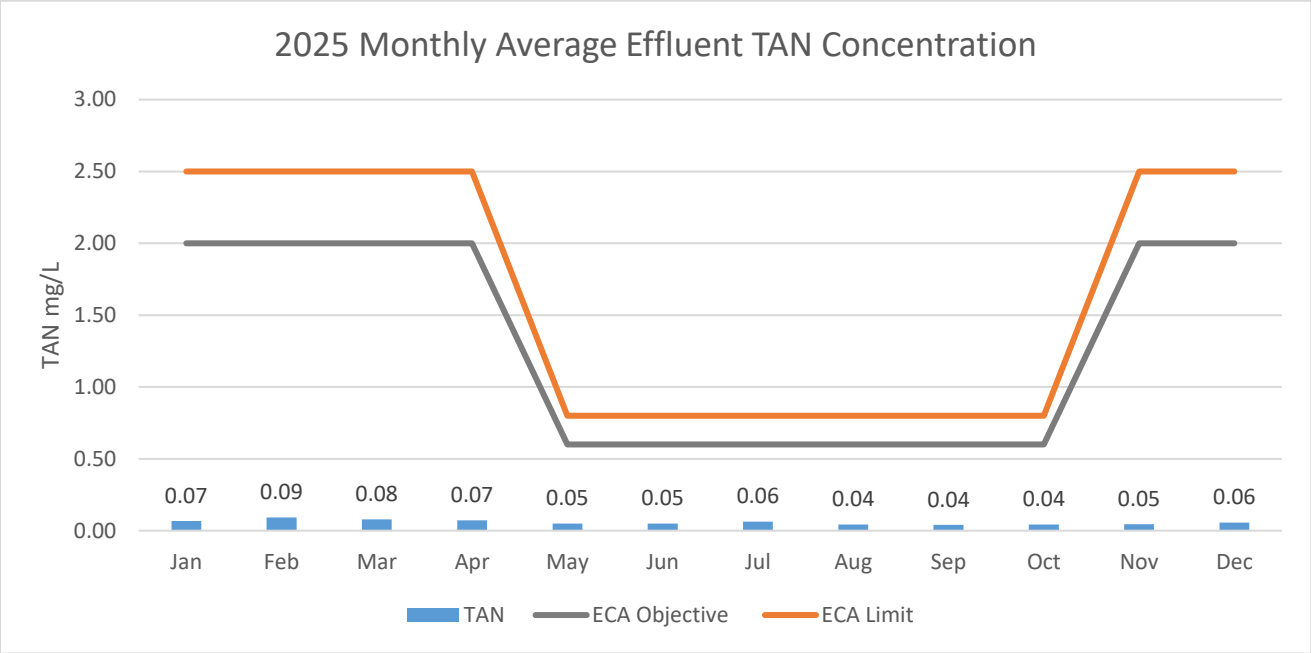


Figure 22. Monthly Average TAN Concentration Compared to the ECA.

In **Appendix J**, the historical trend of monthly average TAN concentrations is graphed from 2015 to 2025. The monthly annual average concentration of TAN saw a slight increase in 2025, going from 0.05 mg/L to 0.06 mg/L. The concentrations for 2023-2025 remain well below the previous averages seen in years prior.

2.4.3.11. Total Phosphorus

In 2025, the monthly average Total Phosphorus concentrations fluctuated from 0.043 mg/L to 0.094 mg/L. Compliance with the ECA limit for Total Phosphorus is determined based on the annual average effluent concentration. Only the ECA objective for Total Phosphorus is subject to a monthly average concentration. Total Phosphorus concentrations remained below both the monthly average objective (0.096 mg/L) and the annual average limit (0.098 mg/L) in 2025. The annual average effluent concentration for Total Phosphorus was 0.063 mg/L.

Early 2025 experienced several months (January to April) of high phosphorus concentrations. Prolonged cold temperatures in January and February negatively impact settling rates leading to higher phosphorus concentrations in effluent. Volatile temperatures and heavy rains in April led to pin floc and increased phosphorus concentrations for the month. **Figure 23** below depicts the average monthly effluent concentrations for Total Phosphorus.

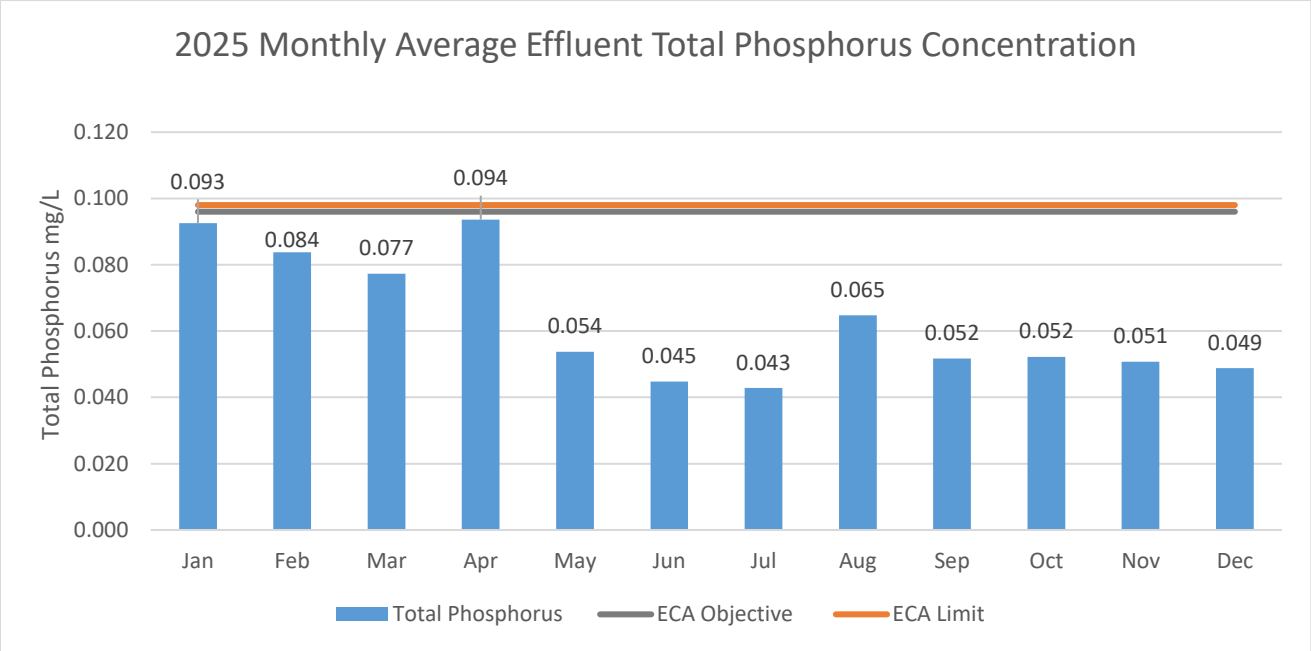


Figure 23. Monthly Average Total Phosphorus Concentration Compared to the ECA.

The historical monthly average trend for Total Phosphorus concentrations is graphed in **Appendix K**. Variation in Total Phosphorus concentrations continues to be seen on a seasonal basis. 2025 did see an increase in the monthly annual average Total Phosphorus concentration, going to 0.063 mg/L from 0.057 mg/L. This represents a roughly 10% increase from 2024. Since 2020 the monthly annual average has ranged from a high of 0.074 mg/L (2021) to a low of 0.057 mg/L (2024).

The annual average daily effluent Loading of Total Phosphorus for the WPCP in 2025 was 0.660 kg/day. The loading limit was well below the compliance limit of 1.912 kg/day. The annual average daily effluent loading is depicted in **Figure 24**.

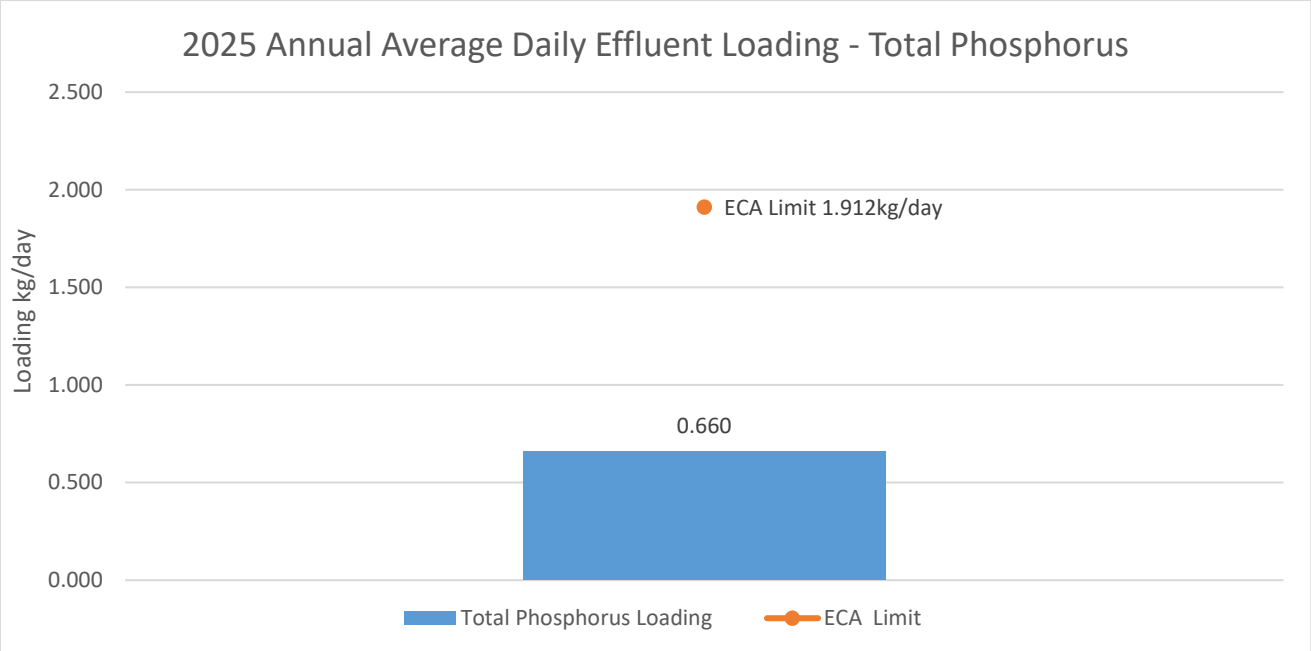


Figure 24. Annual Average Daily Effluent Loading Total Phosphorus.

The annual average daily influent loading rate for Total Phosphorus coming into the WPCP was calculated to be 58.86 kg/day. With an annual average daily effluent loading rate of 0.66 kg/day, the WPCP has a Total Phosphorus removal efficiency of 98.88%.

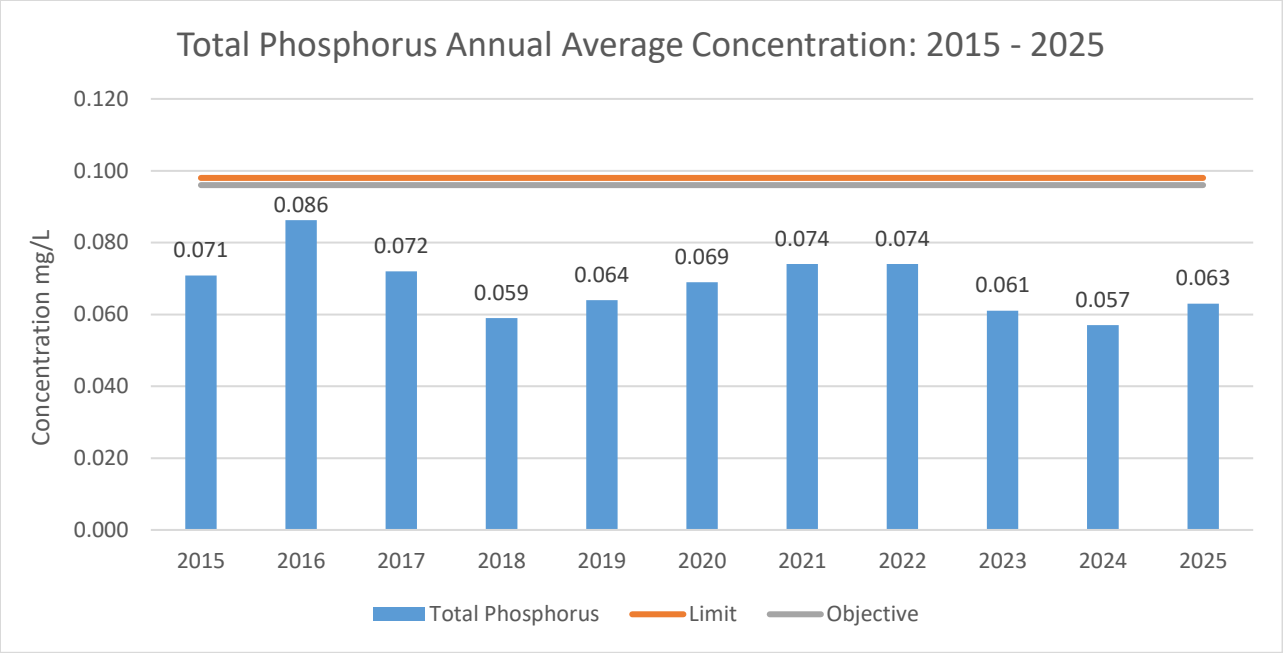


Figure 25. Total Phosphorus Annual Average Concentration Trend 2015 - 2025.

The annual average Total Phosphorus concentrations have been compared over the last ten years in **Figure 25**. The highest annual average concentration occurred in 2016 (0.086 mg/L) and lowest in 2024 (0.057 mg/L). 2025 saw an increase from 2024 levels with the annual average concentration changing from 0.057 mg/L to 0.063 mg/L.

2.4.3.12. Benthic Study

A benthic invertebrate study is completed in the WPCP receiving stream every two years as due diligence. The abundance of and species variety of benthic invertebrates can be used as an indicator of water quality in a specific area. Regular monitoring of benthic species helps to determine if wastewater discharge from the WPCP is negatively impacting the receiving stream.

The last study was completed in 2024 by Hutchison Environmental Ltd. The results of this study were detailed in the 2024 Wastewater Annual Performance Report. The study concluded that treated effluent from the WPCP was not significantly impacting benthic invertebrate populations. The next benthic invertebrate study will be done in 2026.

2.5. Effluent Quality Assurances or Control Measures

The WPCP has continued to meet strict regulatory requirements for effluent disposal into the receiving stream. This protects water quality, fish, and other aquatic life, as identified within the current ECA.

In 2025, the WPCP utilized SGS Canada Inc. to conduct all required testing. SGS is an accredited service provider certified by the Canadian Association of Laboratory Accreditation (CALA). SGS carried out all necessary analyses on WPCP influent, imported sewage, and effluent samples in compliance with the prescribed frequency outlined in the WPCP ECA. Below is a list of the analyzed parameters:

- Biochemical Oxygen Demand (BOD_5)[5]
- Unionized Ammonia[6]
- Carbonaceous Biochemical Oxygen Demand ($CBOD_5$)
- *E. coli*[6]
- Total Suspended Solids (TSS)
- Total Ammonia Nitrogen (TAN)
- Total Phosphorus
- Total Kjeldahl Nitrogen (TKN)
- Nitrite as Nitrogen[6]
- Nitrate as Nitrogen[6]

The analytical results provided by SGS laboratory are tracked internally to monitor compliance with regulatory requirements.

In addition to the sample analysis conducted by SGS laboratory, the WPCP has its own laboratory on-site. The on-site laboratory allows operational analysis to be conducted to inform process adjustments and improvements to enhance effluent quality. The regulatory parameters analyzed internally are as follows:

- pH
- Temperature
- Total Phosphorus
- TAN
- Alkalinity

The WPCP has continued to implement and update a Quality Management System, Standard Operating Procedures (SOP's) and Policies. Additionally, the Septage Hauling Program under the Sewer Use By-law 2013-68 (By-law) remains enforced. The Town has continued to monitor new Industrial, Commercial and Institutional (ICI's) facilities connected to Town infrastructure through the By-law.

[5] Influent analysis only.

[6] Effluent analysis only.

2.6. Summary of Deviations from the Monitoring Schedule

Condition 9 Monitoring and Recording of the ECA requires a scheduled monitoring program, that meets the requirements of Schedule E of the ECA. This includes sample type, location, and frequency of analysis.

The Town maintains a sampling schedule to meet the requirements of the ECA, the 2026 schedule can be found in **Appendix A**. The 2025 sample schedule can be found in the 2024 Wastewater Performance Report.

Two variances from the 2025 sampling schedule occurred in the year.

The first variance occurred in May 2025 and was due to the missed monthly Imported Sewage Sample previously noted in **Section 2.3.4 Imported Sewage Concentrations**. The sample was missed in error and was identified by staff in June 2025. At the time of the missed sample's identification the collection of a late sample was not possible as the month had passed. The MECP Barrie District Office was notified on June 23rd, 2025 on the date that the missed sample was identified.

As an additional note, a monthly imported sewage sample is required by the WPCP ECA as per Schedule D Monitoring Program. The missed sample is a regulatory non-compliance and was self-reported to the MECP Barrie District office by the Town upon identification. No adverse environmental impact results from the missed sample. Further details on the corrective actions to prevent reoccurrence of this incident can be found in **Section 2.8 Operating Issues Encountered and Corrective Actions**.

The second change to the 2025 sampling schedule occurred because of the sample date landing on a statutory holiday. The July monthly biosolids sample was set to be taken on Tuesday July 1st. Due to the holiday, the sample date was moved to Wednesday July 2nd to accommodate closure of the external laboratory. The local MECP Barrie District Office was notified of the sampled date change on June 26th, 2025.

With the exception of the missed Imported Sewage sample in May, all required sampling was completed in 2025.

2.7. WPCP Maintenance Summary

The WPCP met the operational and maintenance requirements stipulated within the ECA. Maintenance activities are tracked and recorded using the Town's work order system. In addition to the routine maintenance previously discussed in **Section 1.2**, the following list provides a highlight to maintenance completed within the reporting year:

- Plant C diffuser membranes and rings replaced in both Sequencing Batch Reactor basins.
- The Sludge Storage Pond cells cleaned out, removing approximately 5,119 m^3 of biosolids.
- Plant C Filter Inlet/UV channel cleaned out.

- Cleanout of Raw Wet Wells, grit vortexes, scum pits, Plant D Aeration tanks inlet, Imported Sewage station, and Plant C selector zones.

2.8. Operating Issues Encountered and Corrective Actions

In 2025, there were a total of five (5) operating events that were reported to the MECP Barrie District Office. An operating event does not immediately imply non-compliance with the ECA and does occur from time to time. Each event is detailed below in **Table 10**.

One of the five (5) events represents a non-compliance with the WPCP ECA, MECP Event No. 1-OMKQOI. Please see below for further information.

Table 10. Operating Issues and Events at the WPCP with Corrective Actions in 2025.

Date	MECP Event No.	Cause	Corrective Action
3/16/2025 – 3/18/2025 & 3/30/2025 - 4/8/2025	1-OHDLQG	WPCP staff identified unusually consistent repeating effluent flow numbers from the Plant D Effluent flowmeter during high flow periods in the spring months.	WPCP Staff, the third-party SCADA system provider, and a third-party flowmeter technician attended the WPCP to investigate. It was found that the standard set pulse rate for the flowmeters' totalizer was being maxed out by the high flow events. The flowmeter settings were adjusted to address the pulse rate. A backup totalizer was also setup by the third-party SCADA provider.
5/24/2025 & 5/25/2025	1-OH72N5	The Town's WPCP SCADA communications failed as a result of a fault with the main server computer. WPCP alarms were tested and confirmed to still be received during the server outages.	After each failure, the server was reset to restore communications. The Town's IT Division investigated the server error and found the fault causing the server crashes. Updates were installed by IT to address the faults.

Date	MECP Event No.	Cause	Corrective Action
05/2025	1-OMKQOI	On June 23rd it was identified that the May Imported Sewage sample had been missed. It was missed due to human error. The Imported Sewage sample is required by the WPCP ECA Schedule D Monitoring Program. Upon identification, the non-compliance was self - reported to the MECP Barrie District Office.	Immediate mitigation efforts were put into place to prevent the event from reoccurring. These include additional staff training, procedural updates, and increasing the alerts for sample review. A previously planned compliance software will be implemented in Q1 and Q2 of 2026 as a further improvement.
8/3/2025	1-PABMUF	The WPCP staff identified that the SCADA server had failed. The Town's IT Division investigated the failure and found a hardware issue.	Replacements parts for the server were installed by the Town's IT Division on August 6th. The repair returned the server system back to normal operations. During the server failure the WPCP alarms continued to function properly.
10/23/2025	1-POCTKI	A failure related to the Plant C filter building effluent pump caused a backup in the Plant C UV Banks. This led to the Plant C UV Panel shorting. To protect the UV banks from further damage approximately 54 m^3 of tertiary treated effluent was pumped from the UV channel to the final effluent channel. At the time, hydro line work at the Plant D filter building meant all flows were diverted through the Plant C filter building.	A chlorine drip was started two minutes after the start of the event. Power was restored to Plant D, and all flow was diverted to the inlet of the Plant D filter building to receive UV disinfection. This ended the event. The entire event was ended within twelve (12) minutes. Due to the disinfection failure lasting less than 15 (fifteen) minutes, the event was not deemed a bypass as per the MECP.

2.9. Bypasses, Overflows, and Spills at WPCP

There are no bypass or overflow events to report in 2025. Six (6) contractor error spill events occurred in the reporting year. All spills had no environmental impact. Following the spills, enhanced oversight measures and updated site-specific operating procedures were implemented to reduce recurrence. **Table 11** includes a summary of the spill events that occurred in 2025.

Table 11. Summary of WPCP Spill Events in 2025.

Date	SAC No.	Cause	Corrective Action
4/29/2025	1-O658TP	Human error by the contractor led to a pump running after the loading of a truck. Approximately 0.5 m^3 of biosolids material was spilled.	WPCP staff completed cleanup and remediation of the area. All material was contained onsite at the location of the spill and disposed of at the WPCP. WPCP management requested additional site-specific training and the creation of an updated Standard Operating Procedure (SOP) for the contractor's staff.
6/6/2025	1-OJBJXR	Contractor equipment failure caused material to spill from the truck. Less than 100 L (0.1 m^3) of biosolids material was spilled.	WPCP staff completed cleanup of the area. The material was disposed of on-site at the WPCP. The contractor updated their internal SOP to include additional checks after loading.
6/24/2025	1-OMSLW5	A combination of human error and faulty contractor equipment caused the spill. Approximately 40 L (0.04 m^3) of biosolids material was spilled.	All cleanup and area remediation was completed by WPCP staff. Material was disposed of on-site at the WPCP. A specific trained person was assigned by the contractor complete all loading. In addition, hauling trailer were inspected by the contractor.
7/22/2025	1-P72UKD	The spill was caused by contractor equipment failure. A faulty lid led to 20 L (0.02 m^3) of biosolids material spilling.	All cleanup and site remediation was completed by WPCP staff. Collected material was disposed of at the WPCP. It was confirmed that the trailer was also responsible for the June 6th and 24th spills. The trailer was removed from the hauling rotation.

Date	SAC No.	Cause	Corrective Action
7/22/2025	1-P75MTG	The spill was caused by human error by a contractor. The spill was immediately stopped by the on-site contractor supervisor. Approximately 50 L (0.05 m^3) of biosolids material was spilled.	Cleanup and remediation were completed by WPCP staff. Collected material was disposed of at the WPCP. The area was hosed down and remediated. WPCP and contractor management met to discuss further mitigation efforts.
10/2/2025	1-PL0SCB	The spill was caused by contractor equipment failure. A faulty trailer venting pipe caused approximately 20 L (0.02 m^3) of biosolids material to spill.	WPCP staff completed the cleanup. The collected material was disposed of on-site at the WPCP. Inspections of equipment by the contractor prior to every use at the WPCP was implemented.

2.10. Biosolids Management

The WPCP produced 29,770 m^3 of sludge in the reporting year. The biosolids that were produced met the MECP Ontario Guidelines for Sewage Sludge Utilization on Agricultural Lands and conditions specified under the Nutrient Management Act. An additional 5,119 m^3 of biosolids material was removed from the onsite storage pond cells at the WPCP for application to agricultural fields.

The biosolids produced by the WPCP were land applied to agricultural fields from April to November in accordance with the Nutrient Management Act. A summary of NASM land application is provided below (**Table 12**). The total amount of Non-agricultural Source Material (NASM) applied to agricultural land is an approximate total of 34,889 m^3. The volume of sludge expected to be produced within 2026 is roughly 32,000 m^3.

Table 12. NASM Land Application Totals 2025

NASM Land Application Total 2025			
NASM Plan	**Total Land Applied (m^3)**	**NASM Plan**	**Total Land Applied (m^3)**
24084	79	61671	2,305
24529	563	61754	529
24738	45	62134	340
24915	92	62463	362
25020	678	62464	899
25065	1,013	62563	1,876
25105	1,299	62701	2,138
25122	2,443	62708	1,638
25146	1,934	62731	794
25165	1,190.42[7]	62899	640.51[7]
25185	2,321	62919	836.22[7]
60483	1,521	62925	1,138.04[7]
60608	924	61536	1,160
60629	2,318.03[7]	61511	1,210
60749	1,295	61492	126
61174	507	61336	675
		Total Sum	**34,889.22**

[7] The difference in significant digits provided is due to different flowmeters being used at different locations (biosolids tanks and the sludge storage pond cells).

2.11. Construction or Commissioning of Works Updates

The construction of the new Biosolids Building was ongoing throughout 2025. The substantial performance date has been delayed to Q1 2026. This is behind schedule from the previously reported anticipated completion date of September 30, 2025. The delays are the result of issues encountered during testing and commissioning. The Secondary Treatment System upgrades for Plant D and the Tertiary Treatment System Upgrades both went out to tender in 2025. Tender was awarded in Q4 2025. Preliminary works for the project began in Q4 2025. Construction for the projects will begin in 2026.

2.12. Notice of Modification to Sewage Works

There was one (1) Notice of Modification to Sewage Works prepared in 2025. A previous prepared Notice of Modification to Sewage Works from 2024 was completed in 2025. A summary can be found below in **Table 13**.

Table 13. Summary of 2025 Notice of Modification to Sewage Works

Part 4 Declaration	Description	Status
12/2024	A carry-over modification from the 2024 Annual Performance Report. The installation of four (4) odour control units on the septage receiving station to control vent stack emissions.	Installed on 04/02/2025
12/2025	The modification included 4 additional components added to the new sludge management system building that were not included with the ECA application package at the time of submission. These were documented through LOF under the direction of the MECP. The components include: - A Drainage pumping Station - Submersible Mixers - Foam Suppression System - Automatic Strainers	Installation complete – Project construction ongoing

2.13. Conformance with Procedure F-5-1 Summary

The Town continues to undertake proactive measures to prevent bypasses and overflows at the WPCP in accordance with MECP Procedure F-5-1.

MECP Procedure F-5-1 is a provincial guideline that requires municipalities to take proactive steps to prevent sewage bypasses and overflows. The purpose is to protect receiving water bodies, such as the West Holland River, by ensuring wastewater systems are operated, maintained, and upgraded to minimize environmental risk.

In 2025, there were no bypasses or overflows at the Water Pollution Control Plant (WPCP). The plant operated at 64% of its rated capacity, maintaining sufficient available capacity and operational resilience under both average and peak flow conditions.

The following measures support conformance with Procedure F-5-1 objectives:

- A comprehensive Preventative Maintenance (PM) program supported by a computerized maintenance management system (CMMS).
- SCADA monitoring system with routine alarm testing.
- Sanitary sewer model which supports growth planning.
- A 1,000 kW standby generator providing 100% backup power to the WPCP to prevent overflows during power outages.
- On-site emergency sewage storage capacity (44,000 m^3) to manage extreme flow conditions.
- Completion of a comprehensive Inflow & Infiltration (I&I) study in 2025 to identify capacity constraints and inform long-term capital planning.
- Ongoing capital upgrades, including a new biosolid thickening building and secondary and tertiary treatment system upgrades to enhance system capacity and reliability.

Based on system performance, maintenance programs, and infrastructure upgrades, the Town continues to meet the objectives of Procedure F-5-1. Ongoing capital planning and I&I mitigation strategies will further reduce overflow risk and support future growth. Addition measure within the WWC system can be found in **Section 3.8** of this report.

2.14. Wastewater System Effluent Regulation (WSER)

WSER is a Federal Regulation in place to protect the environment and human health. The regulation applies to facilities that deposit deleterious substances into areas frequented by fish and areas referred to in the Fisheries Act subsection 36(3). The regulation also applies to facilities that have an influent of at least 100 m^3 per day or year. The BWG WPCP is required to follow the regulation.

The Town of BWG submitted all required quarterly reports for 2025. Each quarterly report includes the total effluent volume deposited (m^3), the number of day's effluent was deposited, and the average $CBOD_5$ and average TSS concentrations in the quarter.

In addition, one (1) report in each year must include acute lethality testing. The acute lethality sampling was conducted in the second quarter on June 11th, 2025. The results of the test determined that the WPCP effluent was not acutely lethal. Nautilus Environmental conducted the acute lethality testing for the WPCP. **Figures 26 and 27** graph the quarterly average for TSS and CBOD5 WSER reporting.

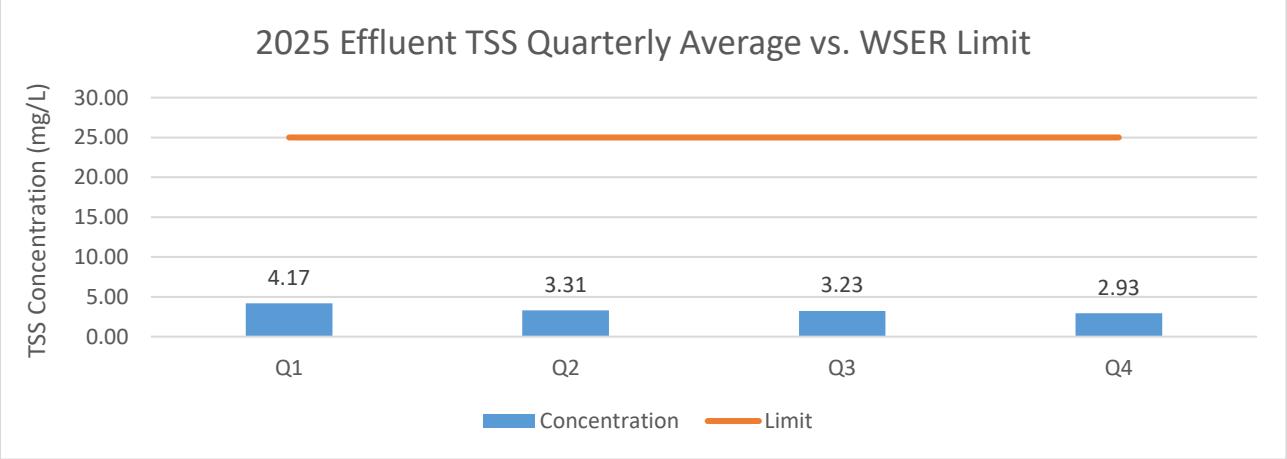


Figure 26. Effluent TSS Quarterly Average vs. WSER Limit.

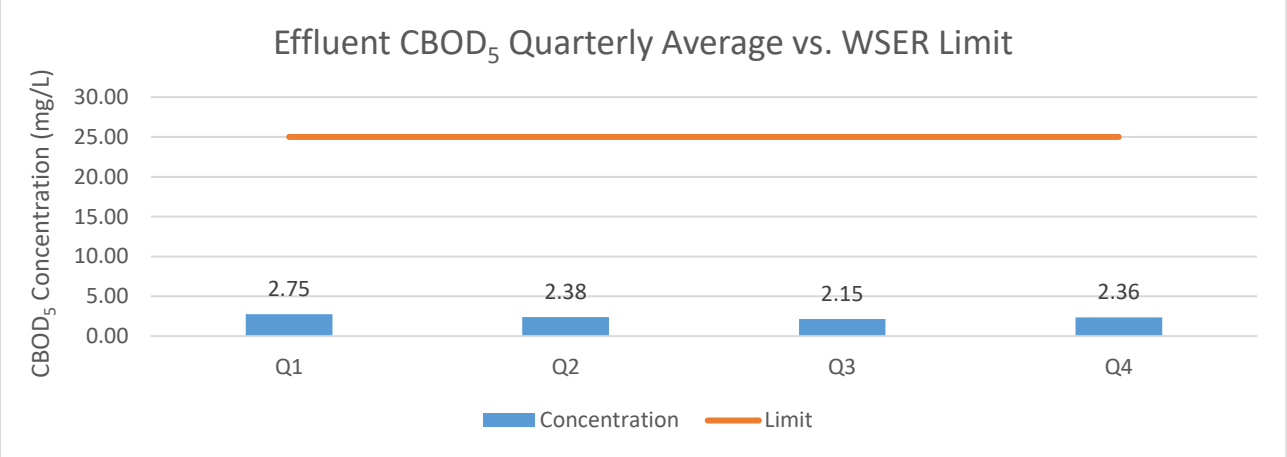


Figure 27. Effluent $CBOD_5$ Quarterly Average vs. WSER Limit.

3. Bradford West Gwillimbury Wastewater Collection System

3.1. General Collection System Description

The Town's Collection System is categorized as a Class three (3) system. The BWG collection system consists of approximately 2,131 maintenance holes, 36.93 km of forcemain, 131.8 km of gravity sewers, and nine (9) Pumping Stations.

The purpose of the BWG Collection System is to collect and transmit sewage to the Bradford WPCP. The sewage pumping stations, sanitary gravity sewers, and sanitary forcemains all play a role in the transportation of sewage.

A detailed description of each pumping station can be found in the Town's Sanitary CLI ECA (116-W601). A copy of the CLI ECA is available upon request.

3.2. Regulatory Requirements

The WWC system reporting requirements and the section of the report that addresses each topic is found in **Table 14**.

Table 14. CLI ECA Reporting Requirement

CLI ECA Reporting Requirement	Report Section
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.	**3.3**
B. Includes a summary of any operating problems encountered and corrective actions taken.	**3.4**
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.	**1.3, 3.4**
D. Includes a summary of any complaints related to the Sewage Works received during the reporting period and any steps taken to address the complaints.	**1.4**
E. Includes 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.	**3.6**
F. Includes a summary of all Collection System Overflow(s) and Spill(s) of Sewage, including: 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 impact(s) and any corrective actions, if applicable.	**3.7**
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.	**3.8**

3.3. Monitoring Data

All sewage that enters the Town's WWC system eventually reaches the WPCP for treatment. The monitoring data for the WPCP influent quality can be found in **Section 2.3.2**. The following table, **Table 15**, details the main monitoring programs for the WWC system.

Table 15. Monitoring Programs for the WWC System

Monitoring Program	Program Process	Program Purpose
Flow Monitoring at Sewage Pumping Stations	All pumping stations are monitored by SCADA. Flow data for the pumping stations is recorded by the system and stored on a data server. In addition, during routine pump station inspections flow measurements are recorded in station specific logbooks.	To allow for real-time remote monitoring of the pumping stations.
SCADA Alarm Testing	Routine testing of the SCADA alarm system is completed at all pumping stations. These tests are done on either a weekly or monthly basis.	To ensure the remote monitoring system for the pumping stations is functioning properly.
Closed-Circuit Television (CCTV) Inspections	Sewers within the Authorized System are inspected using specialized video camera equipment on a 5-year cycle.	The data collected during inspections are used to determine maintenance, repair, and replacement needs in the sanitary sewer system.
Manhole Inspections	Detailed 3D inspection scans of manholes within the Town were initially completed as part of the I&I Study and will continue on a rotating basis.	To allow for a condition assessment of the sanitary manholes within the Town.
Surrogate Sampling of Pumping Stations with Sewer Overflow Points	A grab sample is taken from select pumping stations noted in the CLI ECA and tested for specific parameters.	The test results are to provide a baseline contaminant concentration in case of an overflow. The program is to meet the requirements of the CLI ECA.
Sanitary Sewer Modeling	A sanitary sewer model tracks the actual and theoretical capacity of the WWC system. The model was created using the existing sewer design (diameter of pipes, material, etc.) and hydraulic capacity.	The sanitary sewer model is important to support the Town's growth. As development applications are received their potential impacts on the system can be properly calculated to ensure the sewer capacity is not exceeded. The model is also used to identify potential capital improvement projects where sanitary sewer size can increase to improve capacity.

The volume of flows received and transmitted by each pumping station varies due to their catchment areas. Six (6) of the pump stations have flow meters, while three smaller less complex stations have other metering measures. **Table 16** contains monthly total flow volumes for four of the largest pump stations in Town in 2025. From the pumping stations, sewage flows are directed to the Bradford WPCP for treatment.

Table 16. Monthly Flow Volumes by Pumping Station in 2025.

Month	Dissette PS Flows (m^3)	Middletown PS Flows (m^3)	Ritchie Stong PS Flows (m^3)	Highway 400 PS Flows (m^3)
January	54,618	6,229	136,953	6,130
February	46,283	4,937	118,970	4,891
March	72,431	7,728	165,160	13,215
April	73,368	6,770	150,466	8,808
May	58,423	6,327	142,385	6,466
June	50,883	5,775	132,529	6,033
July	46,836	5,867	138,700	6,230
August	48,271	5,923	138,335	5,645
September	47,449	5,789	136,058	5,052
October	49,071	5,753	135,816	4,814
November	53,287	6,233	139,366	6,000
December	57,368	6,608	145,238	5,803
TOTAL	**658,288**	**73,939**	**1,679,976**	**79,087**

3.4. Operational Issues and Corrective Actions

There were two operating issues that were reported to the MECP Barrie District Office. These events were reported as a precautionary measure in case the issues became more severe or extended over a longer period. Both issues were the result of telecommunication failures outside of operations control.

Table 17. Operational Issues and Events with Corrective Action in 2025.

Date	Cause	Corrective Action
5/18/2025	The communication line failed at the Ritchie Stong Pumping Station. With the line down, alarms were no longer being received from the station by the Town's third-party monitoring company. Full local and remote SCADA control remained in place.	An accelerated ticked with the telecommunication provider was immediately placed. Continuous 24-hour monitoring by WPCP staff began after the failure was identified. Peak-hour monitoring was approved by the MECP Barrie District Office on May 21st after several repair delays by the telecommunication provider. Communication was restored on May 27th after a repair by the communication provider.
12/28/2025	A communication equipment failure caused a network outage in the Middletown Pumping station area. The station went offline as a result. In spite of the outage, all SCADA functions continued normally and alarms from the station were still paging out.	The network was restored by the telecommunication provider on December 29th. Operations reviewed SCADA, pumping station trend information, and total flows to confirm that all data was still captured during the outage.

Improper disposal of rags and wipes by residents continues to be an issue in the WWC system. Regular removal of rags from all active bar screens is required. The "I Don't Flush" Campaign continues to be featured on the Town's Wastewater page to educate residents on what should and should not be flushing down the drain.

3.5. Maintenance and Repairs

As mentioned in **Section 1.2 General Wastewater System Maintenance**, the Town utilized a PM program to schedule and track maintenance related to the WWC system. All required maintenance has been carried out to ensure the WWC System is in compliance with all regulatory requirements.

Notable maintenance activities completed in 2025 include:

- 375 segments of sanitary main line and property line laterals inspected via CCTV.
- 96 new build lateral line inspected via CCTV.
- 893 segments of sanitary sewer lines flushed in Town as part of the internal sanitary line flushing program.
- Semi-Annual valve exercising in the WWC System to prevent seizing of valves.
- Annual pumping station wet well cleaning for all stations that required cleaning.
- Two sanitary lateral repairs completed internally.

The Wastewater Division has shifted to completing most maintenance in-house. The flushing programs, pump inspections, infrared inspections, and all CCTV inspections are completed internally by staff.

3.6. Summary of Alterations to the Authorized System

Within the reporting period there were three (3) new SS1 forms submitted to the Town. SS1 forms were introduced as part of the CLI ECA approvals process. They are a MECP provided document used to formally record and approve alterations to the municipal sewage collection system undertaken in accordance with the CLI ECA conditions. **Table 18** below has a summary of all alteration applications to the existing system received in 2025.

Table 18. Summary of Alteration Applications to the Existing System.

Alternation Type	Project Name	Part 4 Signature Date	Description	Status
SS1-Separate Sewer/Forcemain	FNB Phase 5	7/22/2025	Sanitary mainline and services installation for a new residential development at the intersection of Crossland Blvd and McKenzie Way.	Under construction.
SS1-Separate Sewer/Forcemain	Lindvest Bond Head Southeast	7/24/2025	Sanitary mainline and services installation for a new residential development. The development is located at 4155 County Road 88.	Under construction.
SS1-Separate Sewer/Forcemain	Highway 400 Sanitary Crossing	10/1/2025	To service the 400 Lands Employment Area, a sanitary cross of High 400 is to be installed via micro-tunneling that will connect existing truck sewer to the Employment Lands parcel.	Construction has not begun.

Each of the submitted Alterations were determined to not pose a Significant Drinking Water Threat. The Proposed Works are all wholly located within the municipal boundaries of the Town of BWG.

3.7. Summary of Collection System Overflows and Spills

There were two (2) spill events within the Town's collection system in 2025. **Table 19** includes a summary of the spill events in the WWC system.

Table 19. Summary of WWC System Spill Events in 2025.

Date	SAC No.	Cause	Corrective Action
9/12/2025	1-PHSU2D	A blockage in the sanitary sewer main caused a backup and spill of sewage from the mainline manhole and adjacent lot line manhole at 305 Barrie Street. The spill was identified at 07:24 HR and stopped at 08:11 HR.	Wastewater staff flushed the impacted sanitary main line to clear the blockage and restore flow. Approximately 4 m^3 of sewage was spilled during the event. Spilled sewage was contained to the property parking/driveway area and a portion of the nearby roadway. The site was cleaned and remediated by Town staff. A sample was taken and submitted to SGS Laboratory for potential environmental loading calculations. No spilled material entered the natural environment; therefore, loading concentrations to the environment are not applicable. Follow up CCTV was conducted by Wastewater staff. Additional debris was found in the line. Thorough flushing was done to clear the remaining debris. The impacted section of sewer has been placed on a monitoring program with flushing scheduled to be completed on a quarterly basis with adjustments on frequency as necessary.
10/21/2025	1-PNV96L	The spill was caused by contractor error on a development site. The contractor struck a sanitary line while digging,	The Town's Wastewater Division was notified of the spill at 20:16 HR. Town staff arrived on site at 21:05 HR to assist with cleaning the area and daylighting the impacted sanitary pipe segment for repair. Approximately 0.7 m^3 of raw sewage was spilled. All spilled material was collected via vacuum truck for disposal at the WPCP.

Date	SAC No.	Cause	Corrective Action
		causing a break and a minor spill.	The spill was entirely contained to the trench dug by the contractor. No material entered the natural environment; therefore, loading concentrations to the environment are not applicable. A temporary repair was completed by Town staff at 02:15 HR on 10/22 and the final repair was completed at 09:56 HR.

3.8. Efforts to Reduce Collection System Overflows, Spills, STP Overflows, and/or STP Bypasses

The Wastewater department performs regular maintenance activities in the WWC system to reduce the risks of overflows and spills within the collection system and bypass or overflow events downstream at the WPCP. These programs include:

- Sanitary sewer flushing
- Pumping station wet well cleanouts
- CCTV inspections

The Town's sanitary sewer system is flushed on a 2-year cycle as a preventative measure to reduce the likelihood of blockages forming in the WWC system. Certain higher risk areas are flushed on a yearly basis. Pumping station wet well cleanouts are completed internally on an annual basis at minimum.

The Town retained a consultant to conduct a comprehensive Inflow and Infiltration (I&I) study that concluded with a report received in October 2025. The main objectives of the study were to identify sources of I&I and quantify their impacts on the wastewater system, to assess the WWC system condition, and to recommend long-term strategies to reduce I&I and support future development.

The results of the smoke testing previously mentioned in the 2024 Wastewater Annual Performance Report were included within the I&I report. The study identified several possible sources of storm system connections to the sanitary system. Internal CCTV investigations will be used to further investigate.

The information from the study included sanitary pipe rehabilitation recommendations to be included within the Town's 5-to-10-year capital rehabilitation plan. The study also recommended the creation of a defined extraneous flow removal program with set KPI's and a monitoring system.

4. Summary

Table 20. WPCP Annual Summary Information Table

2025 WPCP Annual Summary Table			
Service Population		38,720	
Flow			
Item		**Influent**	**Effluent**
Average Daily Flow (m^3)		12,505	10,512
Average Daily Flow Plant D (m^3)		9,027	7,798
Average Daily Flow Plant C (m^3)		3,478	2,714
Rated Capacity (**19,400m^3/day**) Used		64%	54%
Total Flow (m^3)		4,564,165	3,836,924
Max Day Flow Plant D (m^3)		23,391	22,121
Max Day Flow Plant C(m^3)		6,135	4,635
Total Phosphorus Concentrations and Loadings			
Parameter		**Concentration/ Loading**	**ECA Limit**
Annual Average Daily Effluent Loading (kg/day)		0.660	1.912
Annual Average Effluent Concentration (mg/L)		0.063	0.098
Chemical Usage			
Total Alum (L)		771,493 L	
Odour Inquires			
Number of odour Inquiries attributed to the Wastewater System		2	
Biosolids			
Approximate volume of biosolids produced (m^3)		29,770 m^3	
Volume of biosolids land applied (m^3)		34,889.22 m^3	
Septage Hauling Program			
Number Haulers Enrolled:	4	Amount of Septage Received (m^3):	897.24

Appendix A

Bradford West Gwillimbury — A Growing Tradition	WPCP Sampling Schedule - 2026 WWD-031	Wastewater Department Resources
Revised: December 4, 2025	Revision: 12	Page 1 of 1

Parameter	pH (Field Analysis)	Temperature (Field Analysis°C)	Total Phosphorus	Total Ammonia Nitrogen (TAN)	Total Kjeldahl Nitrogen (TKN)	Total Suspended Solids (TSS)	Carbonaceous Biological Oxygen Demand (CBODS)	Biological Oxygen Demand (BODS)	E.Coli	Total Solids	Nitrate as Nitrogen	Nitrite as Nitrogen	Metals (Al, As, Cd, Co, Cr, Cu, Fe, Hg, K, Mn, Mo, Ni, Pb, Se, Na, Zn)	Un-ionized Ammonia	Benthic Monitoring (NOTE 7)	Acute Lethality (NOTE 6)
Internal Laboratory Analysis																
Raw Influent	Grab															
Frequency	W															
Requirement	Due Diligence															
Final Effluent	Grab/ Probe/ Analyzer	Grab/ Probe/ Analyzer	24Hr Comp	24Hr Comp												
Frequency	W	W	W	W												
Requirement	ECA/ MUMP	ECA	Due Diligence	Due Diligence												
External Laboratory Analysis																
Raw Influent			24Hr Comp	24Hr Comp	24Hr Comp	24Hr Comp	24Hr Comp	24Hr Comp					Grab			
Frequency			W	W	W	BM	BM	BM					Q			
Requirement			ECA/ MUMP	Due Diligence	ECA/ MUMP	ECA/ MUMP	Due Diligence	ECA/ MUMP					NPRI			
Final Effluent			24Hr Comp	24Hr Comp	24Hr Comp	24Hr Comp	24Hr Comp		Grab		24Hr Comp	24Hr Comp	Grab	Calculated	Grab	Grab
Frequency			W	W	W	W	W		W		W	W	Q	W	2 Year	Y
Requirement			ECA/ MUMP	ECA/ MUMP	ECA/ MUMP	ECA/ MUMP/ WSER	ECA/ MUMP/ WSER		ECA/ MUMP		ECA	ECA	NPRI	ECA	Due Diligence	WSER
Sludge/ Biosolids			8Hr Comp	8Hr Comp	8Hr Comp				8Hr Comp	8Hr Comp	8Hr Comp	8Hr Comp	8Hr Comp			
Frequency			M	M	M				M	M	M	M	M			
Requirement			ECA	ECA	Due Diligence				O.Reg 267/03 General	O.Reg 267/03 General/ ECA	O.Reg 267/03 General/ ECA	O.Reg 267/03 General	O.Reg 267/03 General/ ECA			
Imported Sewage			Grab		Grab	Grab		Grab								
Frequency			M		M	M		M								
Requirement			ECA		ECA	ECA		ECA								

ECA A-500-3314249181 Condition 9.d. **Sampling Rotation Schedule 2026:**	Influent/ Effluent:	Thursday	Imported Sewage	First load of the month received	Biosolids: Tuesday Monthly

Legend	
W	Weekly
D	Daily
Q	Quarterly
BM	Bi-monthly, twice per month
M	Monthly
Y	Yearly
2 Year	Every two (2) years
RED	Scheduled Analysis

Note 1: This schedule is to be used as a reference only and may be altered by the ORO conforming with all applicable legislation.

Note 2: The ECA requirement is in reference to the current Environmental Compliance Approval No. A-500-3314249181 issued to the Water Pollution Control Plant on September 9, 2025.

Note 3: MUMP requirement is in reference to the Municipal Utility Monitoring Program (MUMP) parameters that are reported to the MECP and the current Water Inspector quarterly.

Note 4: O.Reg 267/03 is the General regulation issued under the Nutrient Management Act, this governs the sampling requirements for non-agricultural source material.

Note 5: WSER requirement is in reference to the Federal Wastewater System Effluent Regulation.

Note 6: Acute Lethality sampling is conducted the second week of June annually.

Note 7: Benthic Monitoring last completed 2024, next sampling 2026. Sampling is conducted in the effluent receiving stream (West Holland River).

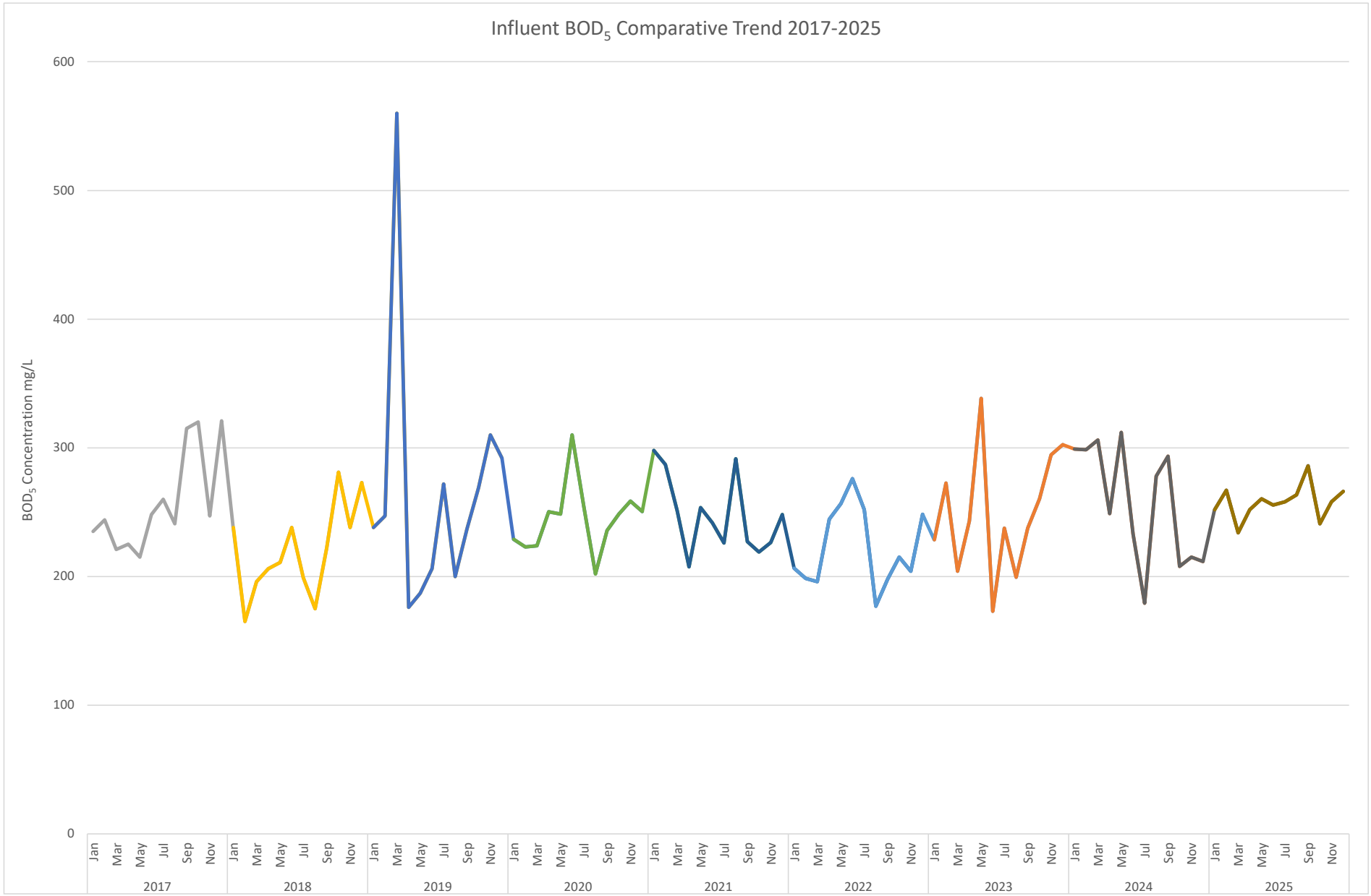
Note 8: Imported Sewage, sampling is only required when septage has been received within the month.

Note 9: The sampling schedule has been developed to conform with the requirements of applicable legislation. In some cases exceeds the frequency required in the legislative tool.

Note 10: NPRI is in reference to the National Pollutant Release Inventory.

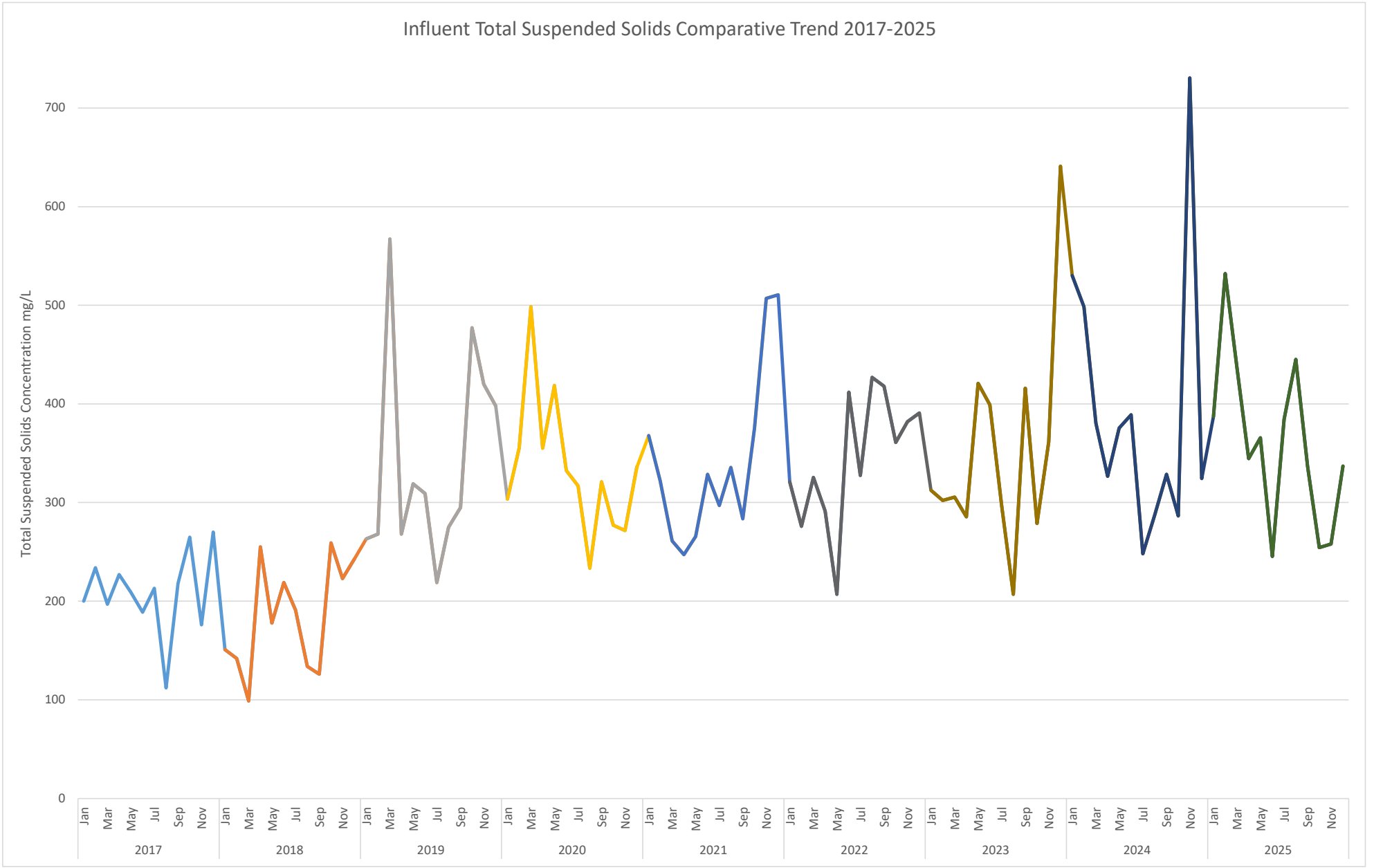
Appendix B

Appendix B


Influent BOD5 Comparative Trend 2017-2025
BOD5 Concentration mg/L
600
500
400
300
200
100
0
Jan Mar May Jul Sep Nov
2017
2018
2019
2020
2021
2022
2023
2024
2025

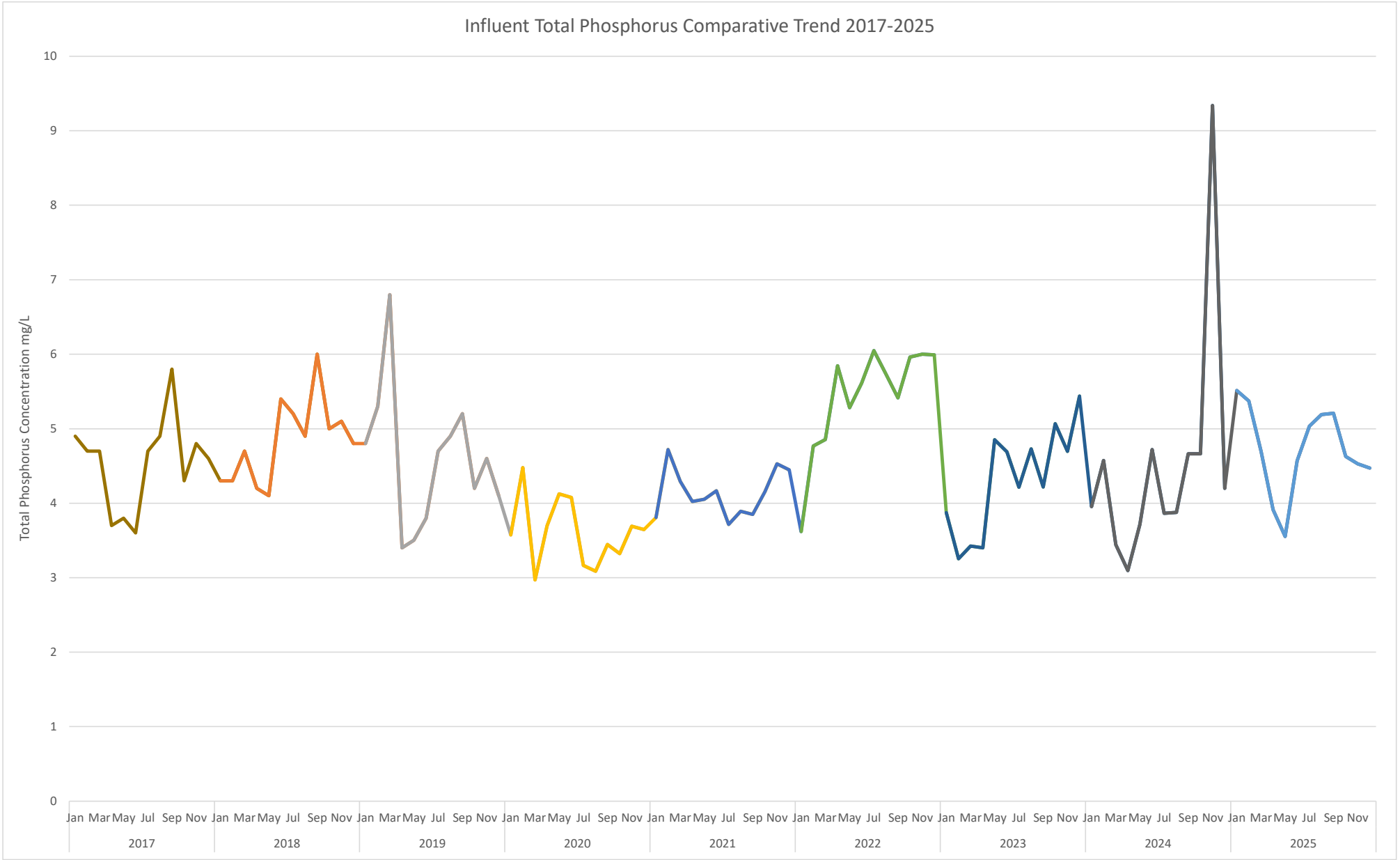
Appendix C

Appendix C


Influent Total Suspended Solids Comparative Trend 2017-2025
Total Suspended Solids Concentration mg/L
0
100
200
300
400
500
600
700
Jan Mar May Jul Sep Nov
2017
2018
2019
2020
2021
2022
2023
2024
2025

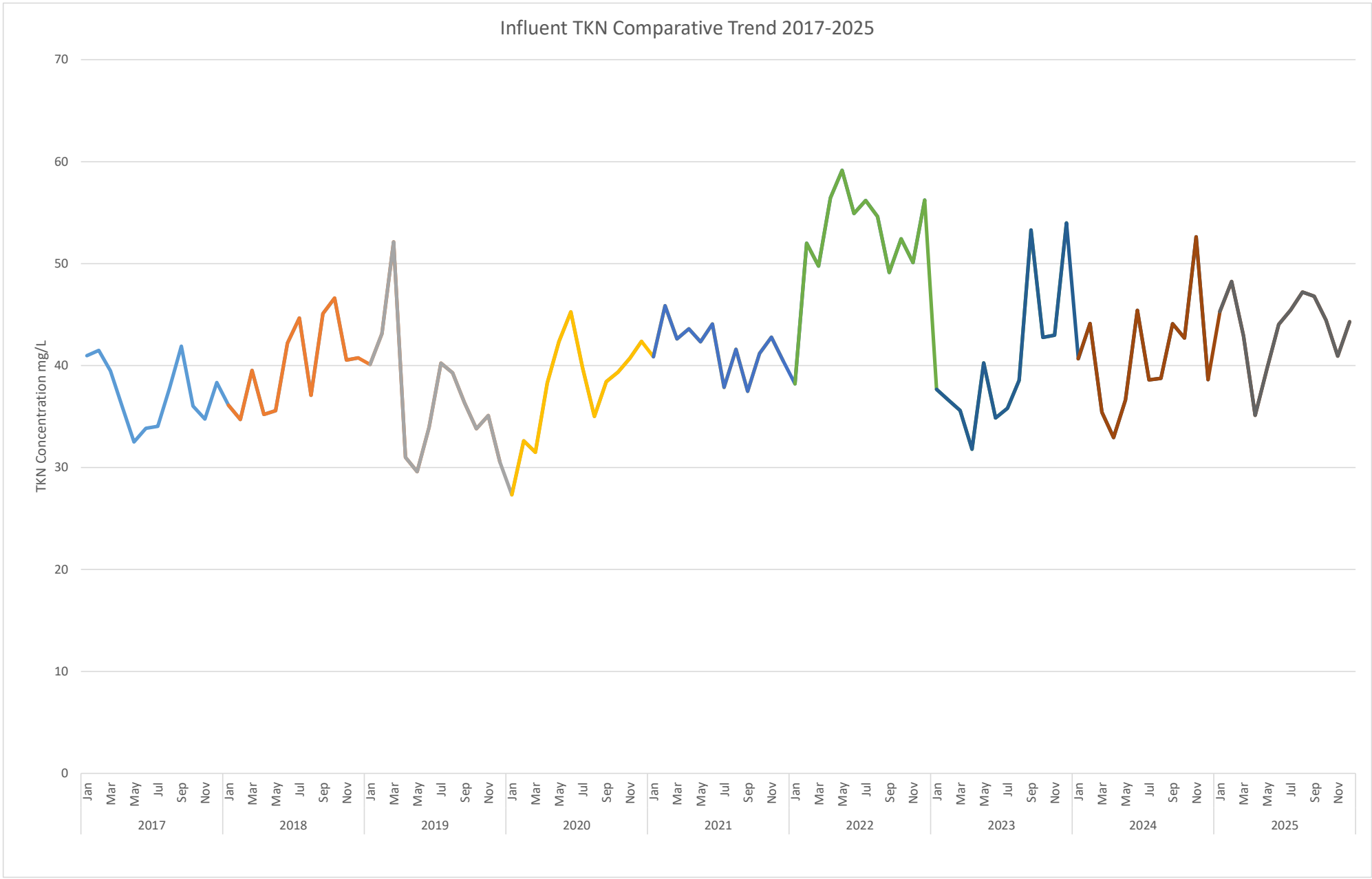
Appendix D

Appendix D


Influent Total Phosphorus Comparative Trend 2017-2025
Total Phosphorus Concentration mg/L
10
9
8
7
6
5
4
3
2
1
0
Jan Mar May Jul Sep Nov
2017
2018
2019
2020
2021
2022
2023
2024
2025

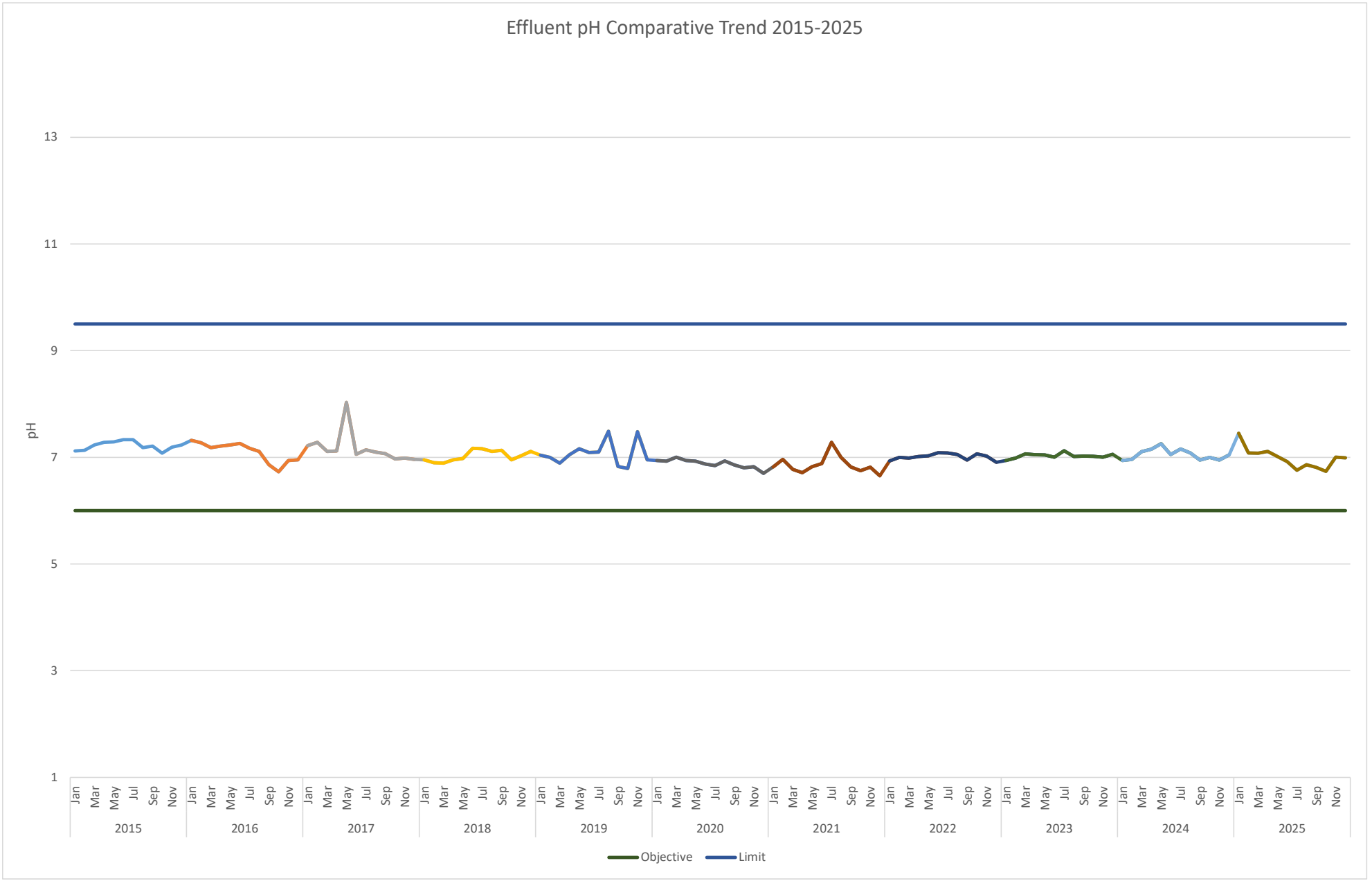
Appendix E

Appendix E


Influent TKN Comparative Trend 2017-2025
TKN Concentration mg/L
70
60
50
40
30
20
10
0
Jan Mar May Jul Sep Nov
2017
2018
2019
2020
2021
2022
2023
2024
2025

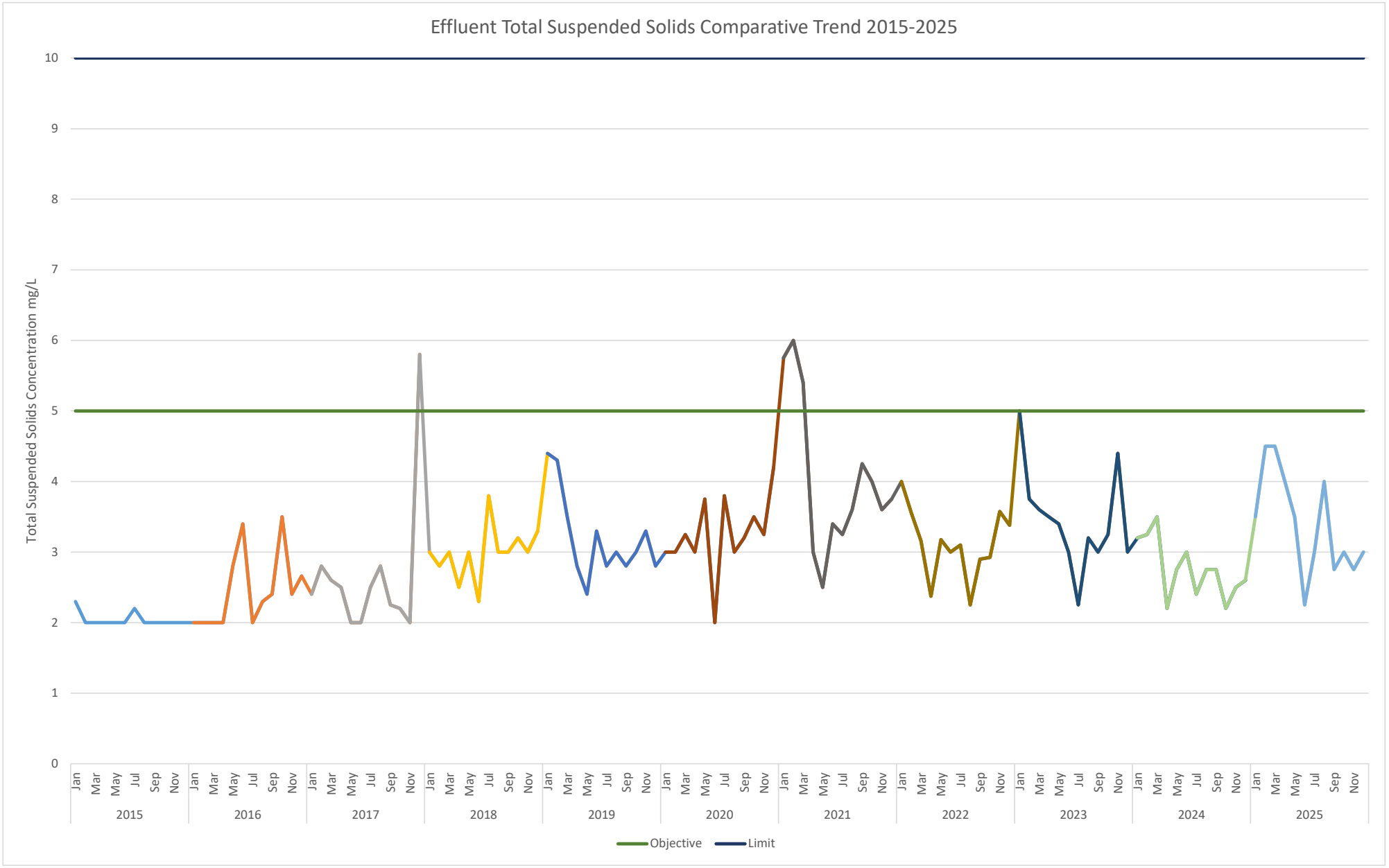
Appendix F

Appendix F


Effluent pH Comparative Trend 2015-2025
pH
13
11
9
7
5
3
1
Jan Mar May Jul Sep Nov
2015
2016
2017
2018
2019
2020
2021
2022
2023
2024
2025
Objective
Limit

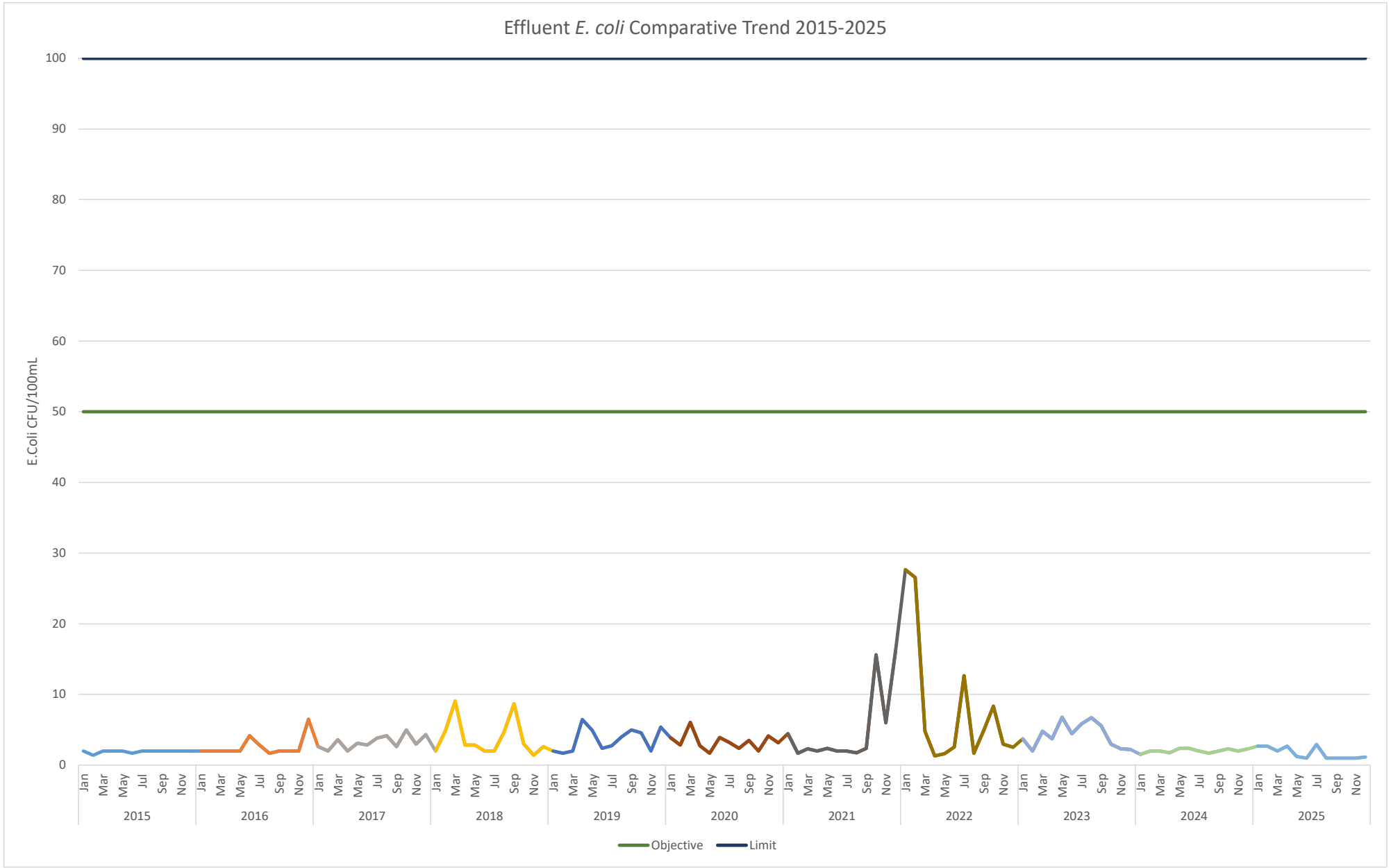
Appendix G

Appendix G


Effluent Total Suspended Solids Comparative Trend 2015-2025
Total Suspended Solids Concentration mg/L
10
9
8
7
6
5
4
3
2
1
0
Jan Mar May Jul Sep Nov
2015
2016
2017
2018
2019
2020
2021
2022
2023
2024
2025
Objective
Limit

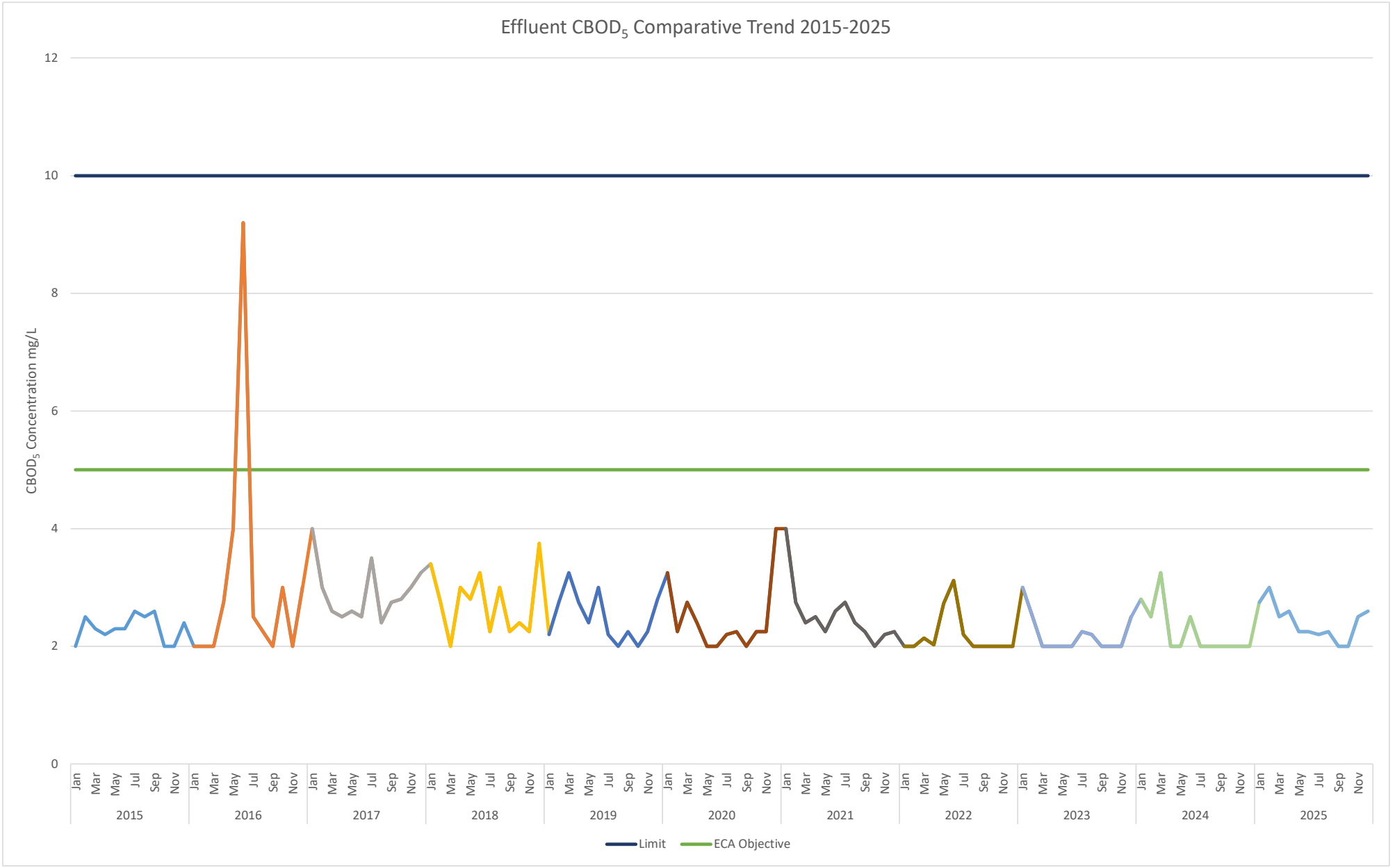
Appendix H

Appendix H


Effluent *E. coli* Comparative Trend 2015-2025
E.Coli CFU/100mL
100
90
80
70
60
50
40
30
20
10
0
Jan Mar May Jul Sep Nov
2015
2016
2017
2018
2019
2020
2021
2022
2023
2024
2025
Objective
Limit

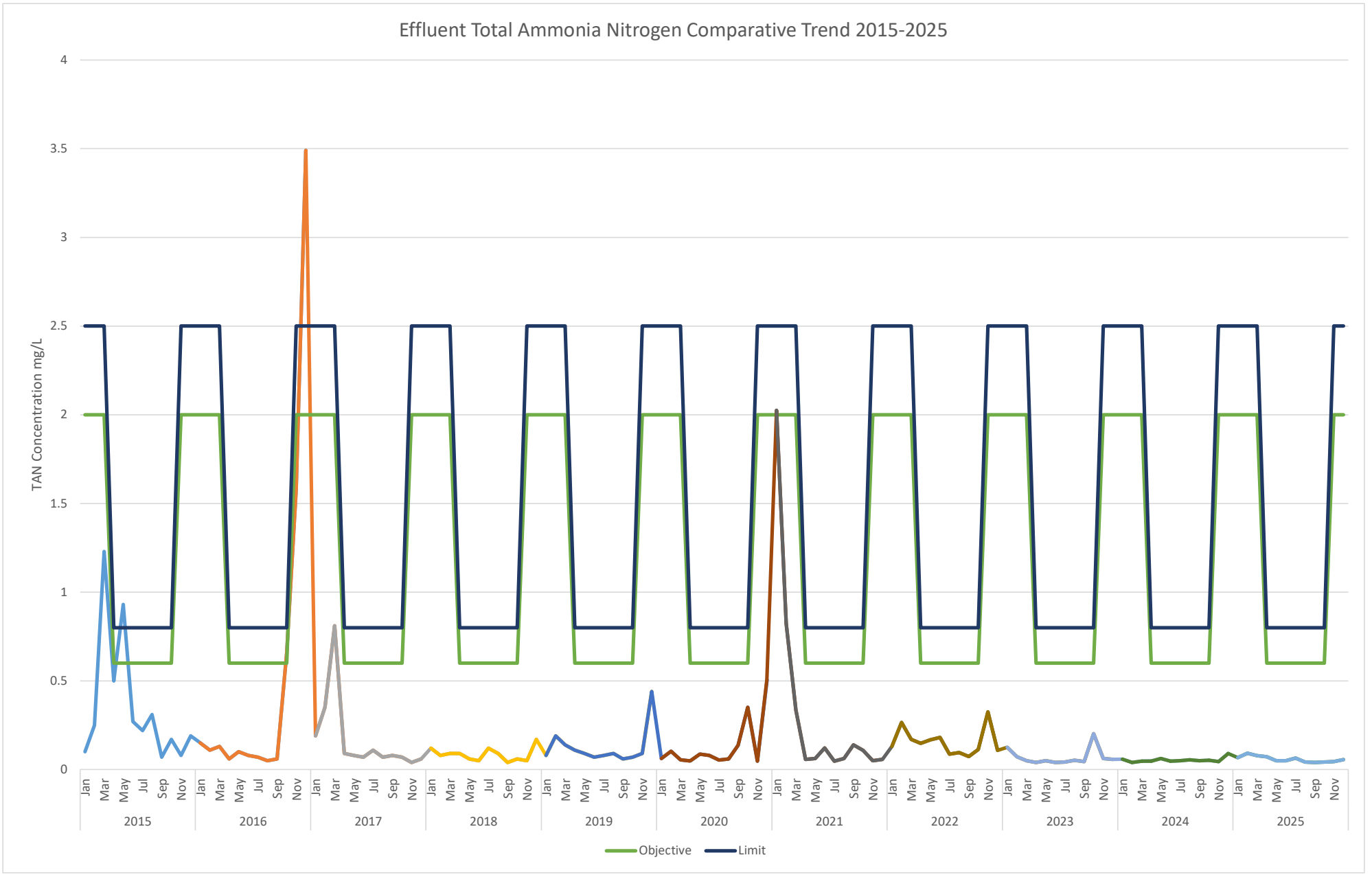
Appendix I

Appendix I


Effluent CBOD5 Comparative Trend 2015-2025
CBOD5 Concentration mg/L
0
2
4
6
8
10
12
Jan Mar May Jul Sep Nov
2015
2016
2017
2018
2019
2020
2021
2022
2023
2024
2025
Limit
ECA Objective

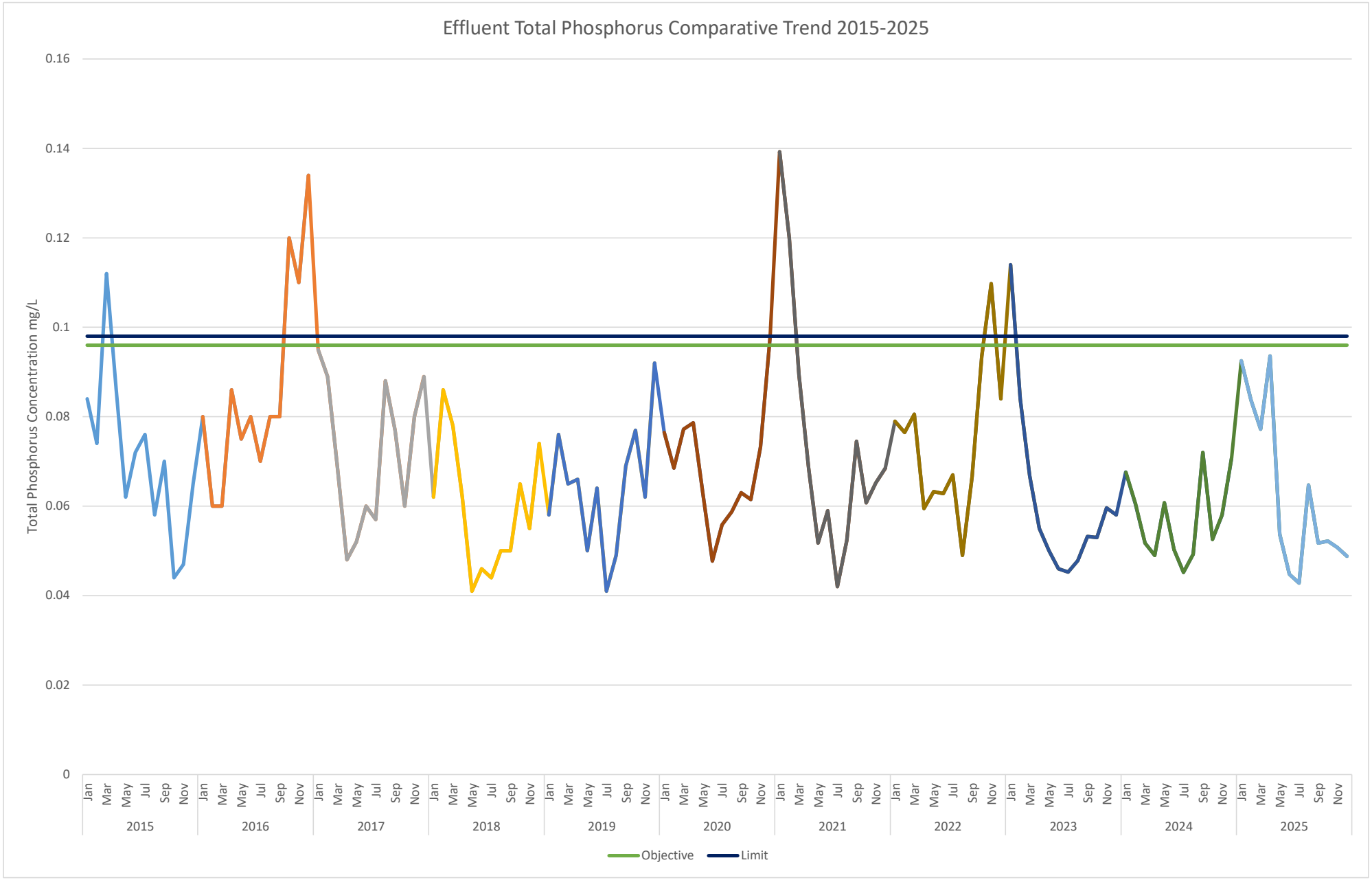
Appendix J

Appendix J


Effluent Total Ammonia Nitrogen Comparative Trend 2015-2025
TAN Concentration mg/L
4
3.5
3
2.5
2
1.5
1
0.5
0
Jan Mar May Jul Sep Nov
2015
2016
2017
2018
2019
2020
2021
2022
2023
2024
2025
Objective
Limit

Appendix K

Appendix K


Effluent Total Phosphorus Comparative Trend 2015-2025
Total Phosphorus Concentration mg/L
0.16
0.14
0.12
0.1
0.08
0.06
0.04
0.02
0
Jan Mar May Jul Sep Nov
2015
2016
2017
2018
2019
2020
2021
2022
2023
2024
2025
Objective
Limit