

2025 ANNUAL WASTEWATER TREATMENT SYSTEM SUMMARY REPORT

Drumbo Wastewater Treatment Plant

1. GENERAL INFORMATION

Oxford County (the County) prepares a report summarizing wastewater treatment operation and treated effluent discharge quality for every municipal wastewater treatment plant (WWTP) annually. The reports detail the latest effluent quality testing results and quantity statistics, and any non-compliance conditions that may have occurred for the previous year. They are available for review by the end of March on the County website at <http://www.oxfordcounty.ca/waterwastewater> or by contacting the Public Works Department.

All efforts have been made to ensure the information presented in this report is as accurate as possible.

If you have any questions or comments concerning the report, please contact the County at the address and phone number listed below or by email at wastewater@oxfordcounty.ca.

Wastewater Treatment Plant:	Drumbo WWTP
Wastewater Treatment Plant Number:	120002479
Environmental Compliance Approval (ECA):	7607-BYQRYA (April 29, 2021)
Reporting Period:	January 1, 2025 – December 31, 2025

Wastewater Treatment Plant Owner & Contact Information:

Oxford County Public Works Department - Wastewater Services
P.O. Box 1614
21 Reeve Street
Woodstock, ON N4S 7Y3
Telephone: 519-539-9800
Toll Free: 866-537-7778
Email: wastewater@oxfordcounty.ca

1.1 System Description

The Drumbo MBR WWTP is a Class II rated treatment facility as defined by Ontario Regulation (O. Reg.) 129/04, servicing the Village of Drumbo. The separate wastewater collection system includes three (3) sewage pumping stations (SPS), 6.9 kilometers of sanitary gravity sewers, and 2.7 kilometers of sanitary forcemain sewers.

The Drumbo WWTP consists of headworks, aeration reactors, two MBR trains and ultra-violet light for disinfection. A forcemain conveys treated effluent to an outfall pipe within a wetland area which discharges to the Cowan Drain. The County operates the Drumbo WWTP, utilizing the staff located at the Woodstock WWTP. Biosolids are temporarily stored at the Drumbo WWTP and routinely transported to the Woodstock or Ingersoll WWTP for digestion.

A standby generator is available to run the onsite Water Treatment Facility and the Drumbo WWTP in the event of a power failure. The wastewater system is maintained by licensed wastewater treatment system operators and licensed mechanics that operate, monitor, and maintain the treatment equipment, in accordance with the regulations, and collect samples as required by the ECA. Alarms automatically notify operators in the event of failure of critical operational requirements.

The Drumbo WWTP is located at 93 Peterson Street, Drumbo, Ontario, with the Facility description provided below.

Facility	Drumbo WWTP
Design Capacity	450 m ³ /d
2025 Average Daily Flow	236 m ³ /d
2025 Maximum Daily Flow	761 m ³ /d
2025 Total Volume of Wastewater	86,276 m ³ /year

1.2 Major Expenses

In 2025, the Drumbo WWTP had forecast operating and maintenance expenditures of approximately \$450,000.

Planning for major wastewater system expenses is included within Oxford County's Wastewater Services Master Plan and managed according to our Asset Management and Capital Replacement Program. In addition to regular operational and maintenance expenditures, Capital Improvement Projects for the Village of Drumbo were forecast at approximately \$420,000 which included improvements to the wastewater collection system and the Drumbo WWTP.

Notable Drumbo Capital Improvement Projects included:

- \$400,000 for the Phase 2 expansion of the Drumbo WWTP Class Environmental Assessment (EA) Study and Assimilative Capacity Study.

Capital Improvement Projects for all systems included:

- \$1,340,000 to develop Countywide Supervisory Control and Data Acquisition (SCADA) Master Plan for all wastewater systems.

2. SUMMARY AND INTERPRETATION OF MONITORING DATA

2.1 Effluent Quality Assurance and Control Measures

Sampling Procedure

Influent samples are taken using a 24-hour composite sampler on a monthly basis (at a minimum) from the transfer tank. This tank receives flow from the trash tank, which has been screened in the upstream headworks area.

Effluent samples are taken weekly using a 24-hour composite sampler programmed to sample several times each hour, following MBR treatment and disinfection. Samples are taken on site and tested for pH, dissolved oxygen (DO), and temperature.

Laboratory and Field Testing

Laboratory analysis is performed by SGS Lakefield Research Ltd. on all samples that are reported for compliance except for pH, DO, and temperature which are collected and analyzed in the field.

2.2 WWTP Performance and Effluent Quality

Final Effluent Compliance Limits

Compliance limits are defined as the maximum effluent concentrations permitted for a given parameter set by the Ministry of Environment, Conservation and Parks (MECP). Compliance limits are detailed within each WWTP ECA. The limits are determined to prevent impairment to the receiving water body quality. The Owner is legally obligated to operate and maintain the treatment system to ensure the compliance limits are achieved.

The Drumbo WWTP provided effective treatment in 2025 and was 100% in compliance with all its regulatory limits for all effluent discharged from the WWTP.

Influent Streams and Effluent Streams

On a weekly basis, as a minimum, the operator measures pH of both the influent and effluent streams.

There was no single pH result for the effluent outside the discharge limit of 6.0 - 9.5 in 2025.

Influent wastewater characteristics and effluent discharge values are presented in the tables below.

Graphs of discharge parameters versus effluent discharge limits are included in this report in Appendix 'A'.

Influent Wastewater Characteristics (annual average)		
Parameter	Concentration (mg/L)	Loading (kg/d)
BOD ₅	160	38
Total Suspended Solids	111	26
Total Phosphorus	4.5	1
Total Kjeldahl Nitrogen	38	9

Effluent Parameter	Sample Frequency	ECA Effluent Limit (Monthly Average) (mg/L unless otherwise indicated)	Monthly Average Result Min-Max (mg/L unless otherwise indicated)	Percentage Removal
Carbonaceous Biochemical Oxygen Demand (CBOD ₅)	weekly	6.2	2.0 – 2.3	98.3 – 98.5
Total Suspended Solids (TSS)	weekly	6.2	2.0 – 2.5	97.8 – 98.2
Total Phosphorus (TP)	weekly	0.30	0.06 – 0.24	94.7 – 98.7
Total Ammonia Nitrogen (TAN) (May 1 to October 31)	weekly	1.8	0.1	--
Total Ammonia Nitrogen (TAN) (Nov. 1 to April 30)	weekly	3.0	0.1	--
E. coli	weekly	200 MPN*/100 mL (Monthly Geometric Mean Density)	0 MPN/100 mL (Monthly Geometric Mean Density)	--
DO (any single sample)	weekly	5.0 or higher	5.1 – 10.0	--
pH (any single sample)	weekly	6.0 - 9.5	6.7 – 7.5	--

*MPN: Most Probable Number

2.3 Final Effluent Design Objectives

Objectives are non-enforceable effluent quality values which the Owner is obligated to use best efforts to strive towards achieving on an ongoing basis. These objectives (summarized below) are to be used as a mechanism to trigger corrective action proactively, and voluntarily, before environmental impairment occurs and before the compliance limits are exceeded.

The following table presents the range of effluent discharge values vs. ECA Objectives:

Effluent Parameter	Sample Frequency	Monthly Average Objective Concentration (mg/L unless otherwise indicated)	Monthly Average Result Min-Max (mg/L unless otherwise indicated)
Carbonaceous Biochemical Oxygen Demand (CBOD ₅)	weekly	4.7	2.0 – 2.3
Total Suspended Solids (TSS)	weekly	4.7	2.0 – 2.5
Total Phosphorus (TP)	weekly	0.27	0.06 – 0.24
Total Ammonia Nitrogen (TAN) (May 1 to October 31)	weekly	1.8	0.1
Total Ammonia Nitrogen (TAN) (November 1 to April 30)	weekly	3.6	0.1
E. coli	weekly	150 MPN/100 mL (Monthly Geometric Mean Density)	0 MPN/100 mL (Monthly Geometric Mean Density)
DO (any single sample)	weekly	6 or higher	5.1 – 10.0
pH (any single sample)	weekly	6.5 - 8.5	6.7 – 7.5

All effluent monthly objectives were met in 2025. Failure to achieve the required Single Sample Objective Concentrations in 2025, are included in the following table:

Date	Parameter	Objective (mg/L unless otherwise indicated)	Result (mg/L unless otherwise indicated)
April 25, 2025	DO	6.0	5.4
June 16, 2025	DO	6.0	5.1
June 17, 2025	TP	0.27	0.31
June 24, 2025	TP	0.27	0.33
June 27, 2025	DO	6.0	5.7
July 15, 2025	DO	6.0	5.9
July 22, 2025	TP	0.27	0.34
August 11, 2025	DO	6.0	5.8
August 19, 2025	TP	0.27	0.36
August 26, 2025	DO	6.0	5.4
September 23, 2025	TP	0.27	0.28

The effluent objective concentration failures related to total phosphorus were a result of insufficient aluminum sulphate dosage. Operations increased dosage setting several times and modified the dosing control strategy to become compliant with the effluent total phosphorus objective concentration.

To address the effluent objective concentration failures related to dissolved oxygen, an inline air sparger was installed within the effluent discharge pipework in January 2026.

3. OVERFLOWS, BYPASSING, UPSETS, SPILLS, AND ABNORMAL CONDITIONS

There were no overflow events, bypasses, spills, or abnormal conditions at the Drumbo WWTP in 2025.

There were no complaints in 2025.

In 2025 there was no specific work undertaken to eliminate Bypass/Overflow events (in conformance with MECP Procedure F-5-1, meant to ensure all wastewater receives at minimum secondary treatment or greater, as the normal standard of treatment). In 2026, upgrades have been planned for the supervisory control and data acquisition (SCADA) systems at the Drumbo SPS.

4. MAINTENANCE OF WORKS

The operating and maintenance staff at the Drumbo WWTP conducts regularly scheduled maintenance of the plant equipment. The Drumbo WWTP utilizes a database system known as Cartegraph to issue work orders and maintain records for regular maintenance and repair at the Drumbo WWTP.

The Limited Operational Flexibility for modifications to the Drumbo WWTP was not used in 2025.

5. MONITORING EQUIPMENT MAINTENANCE AND CALIBRATION

The calibration of flow meters is conducted yearly by JBF Controls Ltd. in accordance with the requirements of the ECA. The records are kept on-site at the Drumbo WWTP.

All other operational monitoring equipment is calibrated by staff and records are kept on-site at the Drumbo WWTP.

6. BIOSOLIDS PROGRAM

Co-thickened primary sludge and thickened waste activated sludge is transported from the Drumbo WWTP to the Woodstock or Ingersoll WWTP for further treatment.

Biosolids are anaerobically digested and dewatered at the Woodstock or Ingersoll WWTP using Alfa-Laval Centrifuges. The biosolids are then stored at the County Biosolids Centralized Storage Facility (BCSF) prior to land application. The sampling results and land application details are summarized in a separate Biosolids Annual report, available at:

www.oxfordcounty.ca/services-for-you/water-wastewater/wastewater/reports-and-policies.

7. INSPECTION, PILOTS, AND TRIALS

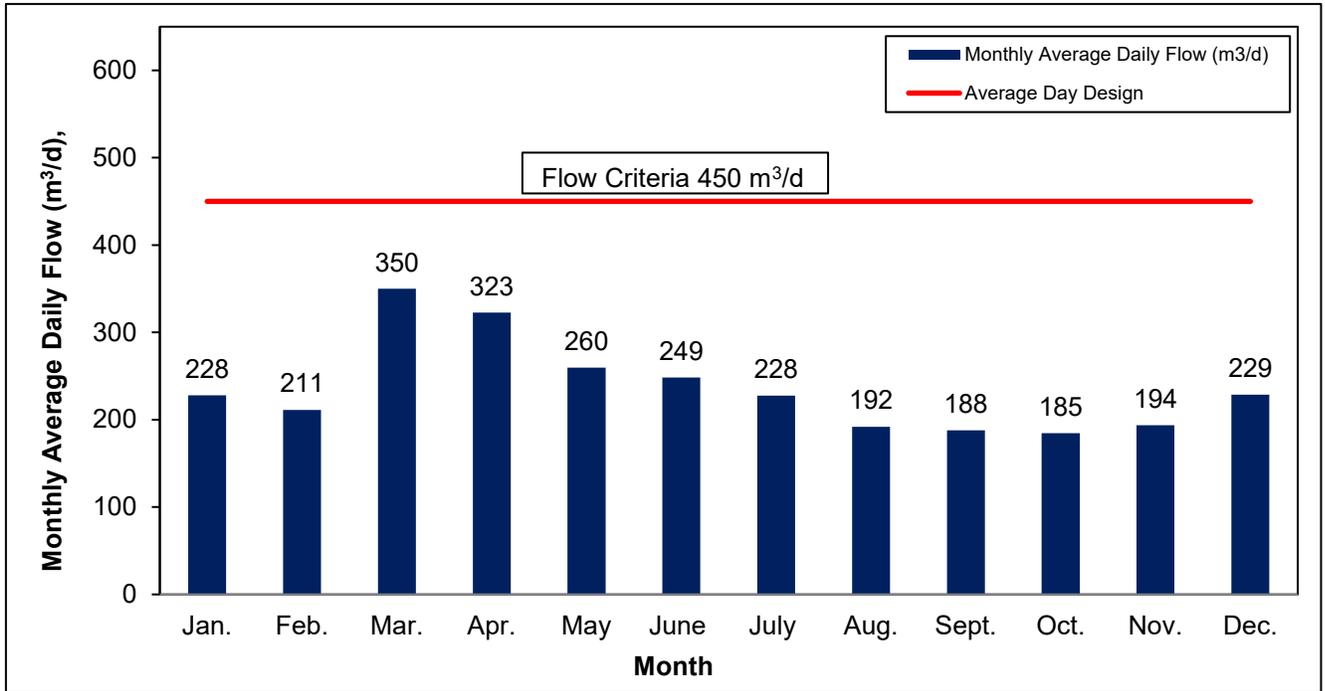
The MECP did not conduct a facility inspection of the Drumbo WWTP in 2025. The MECP inspections typically occur on a three-year schedule.

EA for Plant Expansion Phase 2 in Progress

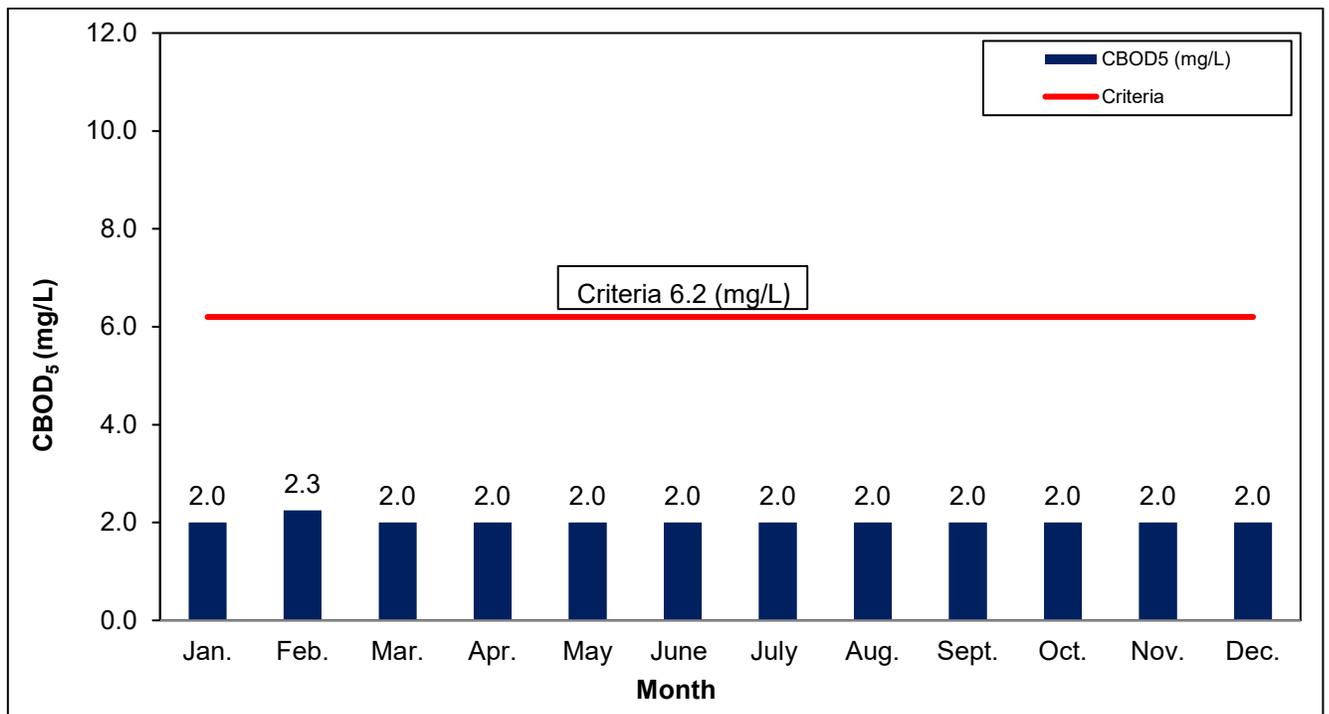
In April 2024, a Municipal Class Environmental Assessment (EA) Study for the Drumbo WWTP Phase 2 Expansion commenced. The purpose of the study is to explore a wide range of possibilities for expanding the Drumbo WWTP to increase capacity above 600 m³ per day in order to determine the most appropriate solution that will support the growing wastewater servicing needs within the Village of Drumbo, in the Township of Blandford-Blenheim. The study is expected to be completed in Q4 of 2026.

APPENDIX A: GRAPHS OF 2025 DISCHARGE PARAMETERS VS. EFFLUENT DISCHARGE LIMITS

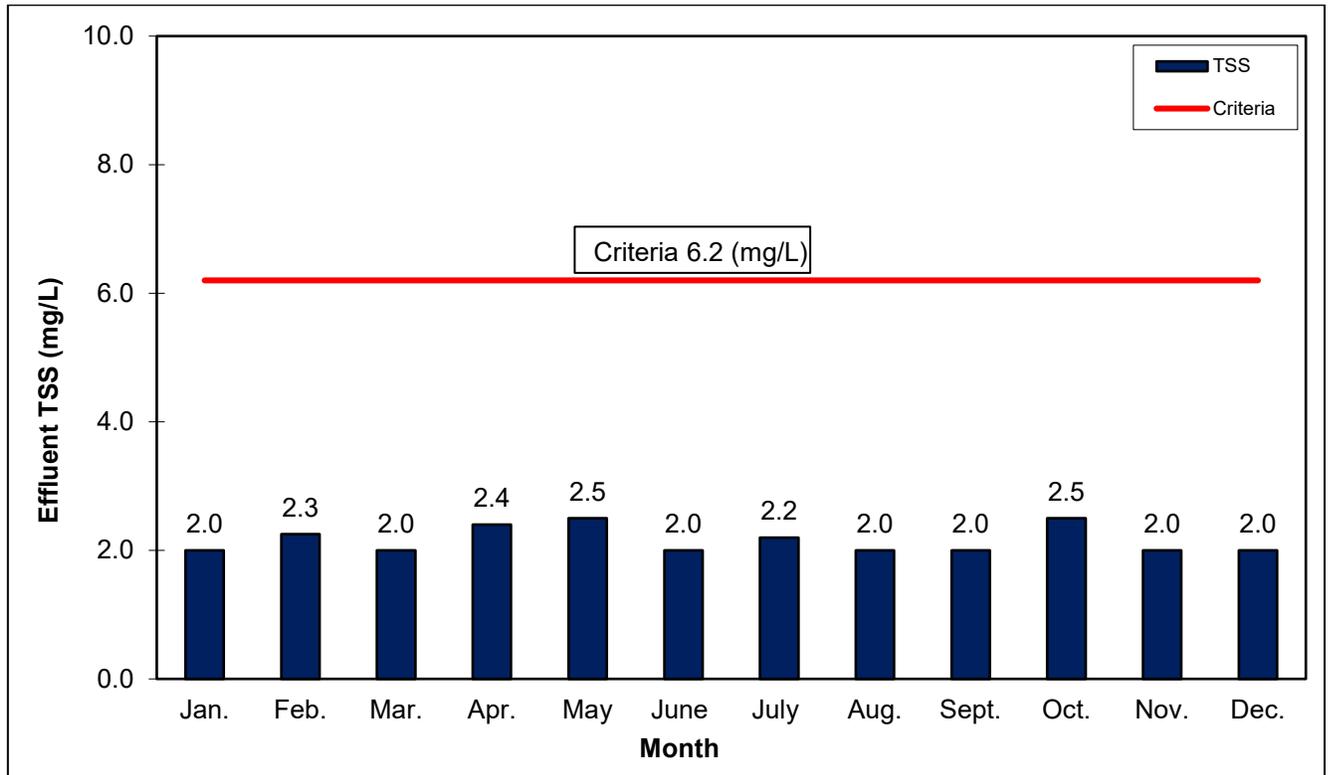
Drumbo WWTP Monthly Average Daily Flow in Cubic Meters per day, 2025



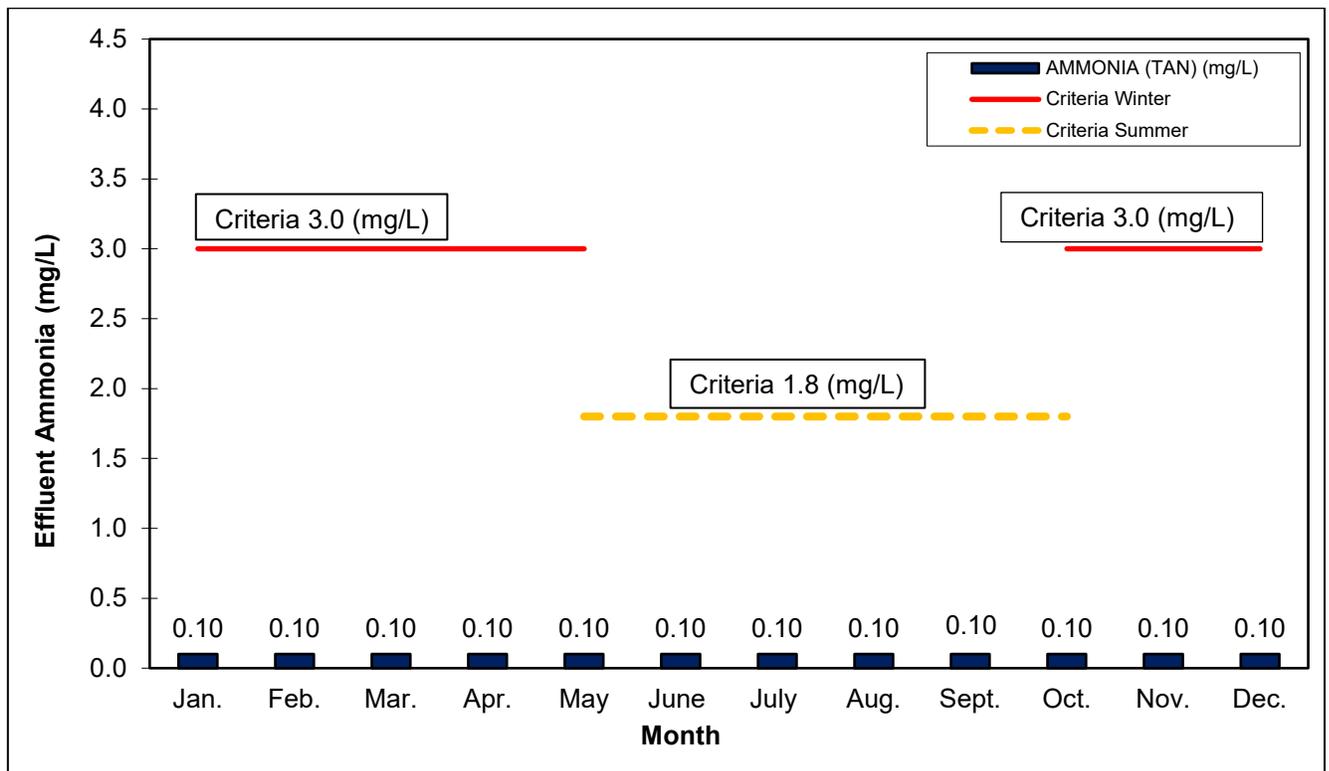
Drumbo WWTP Effluent, Monthly Average CBOD₅ (mg/L), 2025



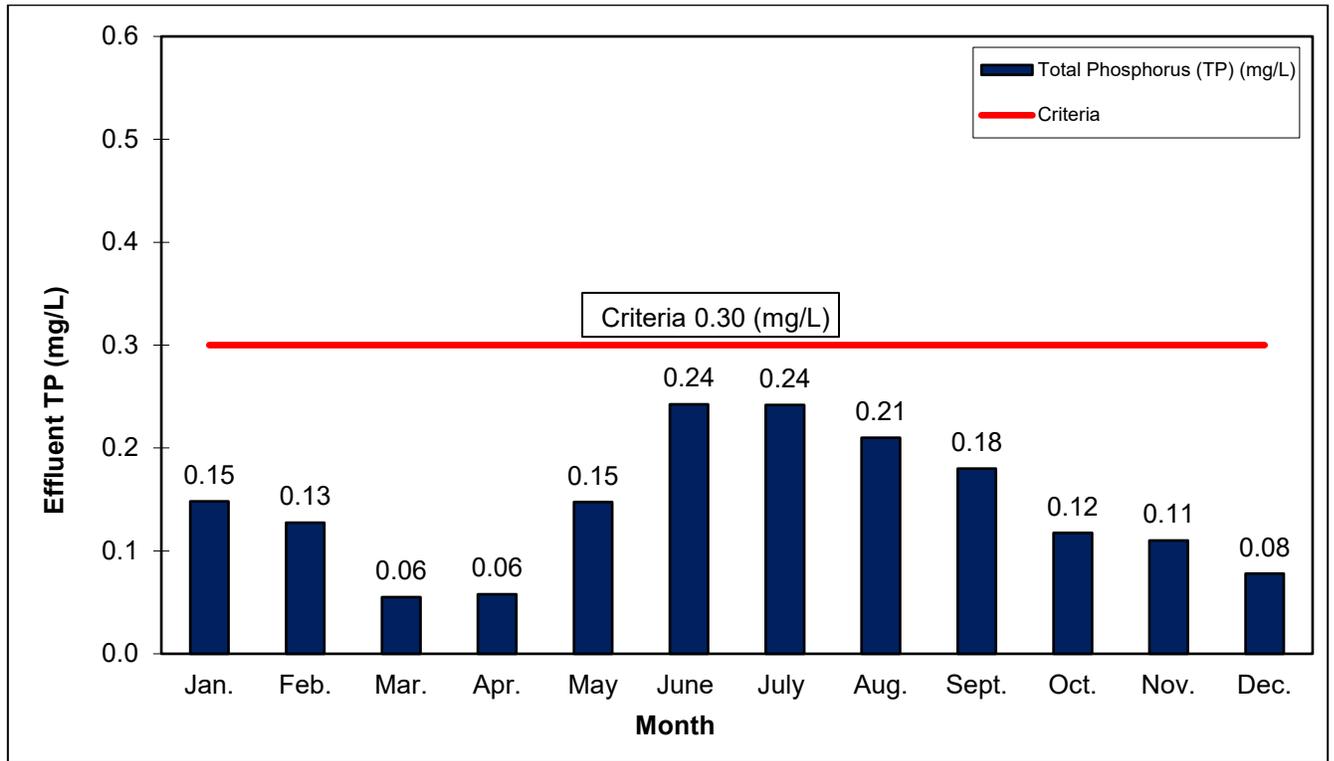
Drumbo WWTP Effluent, Monthly Average TSS (mg/L), 2025



Drumbo WWTP Effluent, Monthly Average TAN (mg/L), 2025



Drumbo WWTP Effluent, Monthly Average TP (mg/L), 2025



Drumbo WWTP Effluent, Monthly Geometric Mean Density E. coli (MPN/100 mL), 2025

