Township of SEVERN

Wastewater Treatment and Collection System

Westshore

2025 Annual Report

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Introduction

Township of Severn prepared the 2025 annual summary report for the Westshore Wastewater Treatment Plant (WWTP).

This report summarizes notable operating events, repair and maintenance, non- compliance issues, effluent quality, sludge quantity and flow data for 2025. This report is based on operating data collected and compiled by the Township of Severn.

Summary of Monitoring Requirements

Table 6 lists the parameters that must be monitored, and the monitoring frequency as stated in the Certificate of Approval (C of A) No. 6791-62EJW5, issued by the Ministry of the Environment, Conservation and Parks (MECP) on June 29, 2004.

Raw Sewage Quality

Table 1 illustrates the monthly and annual average raw sewage quality results.

Table 1: 2025 Monthly Raw Influent Quality

Month	$CBOD_5$ (mg/L)	TSS (mg/L)	Total Phosphorus *(mg/L)*	TKN *(mg/L)*
January	141	153	3.59	35.1
February	206	216	4.8	45.4
March	86	376	4.97	42.2
April	162	418	2.20	24.0
May	172	202	4.27	42.4
June	202	183	4.08	40.1
July	261	621	9.40	64.0
August	225	463	9.00	76.0

September	278	251	6.29	30.0
October	115	241	3.67	31.7
November	115	222	5.43	43.7
December	131	181	5.51	52.2
Average	**175**	**294**	**5.27**	**43.9**

Effluent Quality

Tables 2 and 3 illustrate the monthly and annual average effluent quality results.

Table 2: 2025 Monthly Average Effluent Quality

Month	**TKN** (as Nitrogen) (mg/L)	**Alkalinity** (as CaCO3) (mg/L)	**Temperature** (°C)	**Unionized Ammonia** (as Nitrogen) (mg/L)	**Nitrite** (as Nitrogen) (mg/L)	**Nitrate** *(as Nitrogen) (mg/L)*
January	4.5	95	10.8	0.003	1.96	13.54
February	5.6	85	9.5	0.005	1.41	13.43
March	7.7	148	10.3	0.014	1.07	5.61
April	4.2	164	11.4	0.034	0.08	5.89
May	0.9	122	13.0	0.002	0.19	10.23
June	0.9	123	16.0	0.001	0.17	6.13
July	1.4	101	16.6	0.003	0.13	2.75
August	2.2	86	18.8	0.002	0.10	2.55
September	1.6	68	17.3	0.001	0.10	8.12
October	2.6	62	16.8	0.004	0.07	13.48
November	1.2	72	12.5	0.001	0.04	8.19

December	2.7	66	7.8	0.003	0.20	14.76
Average	**3.0**	**99**	**13.4**	**0.006**	**0.46**	**8.72**

Table 3: 2025 Monthly Average Effluent Quality

Month	Effluent ADF	CBOD		TSS		Total Phosphorus	
	m³/day	*mg/L*	*kg/d*	*mg/L*	*kg/d*	*mg/L*	*kg/d*
Effluent Objective	1390	5	6.95	5	6.95	0.12	0.17
Effluent Limit	1390	10	13.9	10	13.9	0.15	0.21
January	951	6.0	5.70	12.3	11.69	0.17	0.16
February	801	8.3	6.64	11.5	9.21	0.24	0.19
March	1552	4.5	6.98	10.3	15.98	0.16	0.24
April	1389	2.8	3.88	7.4	10.27	0.08	0.11
May	954	4.3	4.10	5.8	5.53	0.06	0.05
June	859	2.5	2.14	9.0	7.73	0.12	0.10
July	760	2.0	1.52	2.8	2.12	0.08	0.06
August	670	2.0	1.34	3.8	2.54	0.09	0.06
September	603	2.0	1.20	2.5	1.50	0.07	0.04
October	639	2.5	1.59	3.3	2.10	0.07	0.04
November	747	2.0	1.49	2.3	1.71	0.04	0.02
December	834	3.0	2.50	3.6	3.00	0.05	0.04

Table 3: 2025 Monthly Average Effluent Quality - Continued

Month	Total Ammonia (Nitrogen)				pH	E. Coli
	mg/L	*kg/d*	*mg/L*	*kg/d*		
	May 15 - Oct 15		Oct 16 - May14			
Effluent Objective	2.0	2.78	5.0	6.95		
Effluent Limit	3.0	4.17	7.0	9.73		
January			4.1	3.90	6.63	83
February			5.0	4.00	6.73	5
March			7.3	11.33	6.95	49
April			3.8	5.28	6.98	45
May	0.5	0.48			7.03	6
June	0.3	0.26			6.93	402
July	0.7	0.53			6.78	1
August	1.4	0.94			6.23	1
September	0.7	0.42			6.33	1
October	1.6	1.02			6.88	1
November			0.3	0.22	6.95	0
December			2.1	1.75	6.84	5

Influent Flows

The rated capacity of the Westshore WWTP is 1,390 m^3/day (ADF - average daily flow), with a peak flow rate of 4,768 m^3/day, as listed in the C of A.

As shown in Table 4 and Figures 1 and 2, all flows were below the ADF-rated capacity and the peak flow capacity of the plant during 2025.

Table 4: Summary of Influent Flows

Month	Total Monthly Flow (m^3)	Average Daily Flow (m^3/day)	Average Daily Flow (% of Rated Capacity)	Peak Daily Flow (m^3/day)	Peak Daily Flow (% of Rated Capacity)	Peak Daily Flow (% of Rated Peak Flow)
January	24539	792	57%	1539	111%	32%
February	19004	679	49%	839	60%	18%
March	43199	1394	100%	2197	158%	46%
April	36865	1229	88%	2683	193%	56%
May	25811	833	60%	1142	82%	24%
June	20752	692	50%	852	61%	18%
July	18744	605	44%	767	55%	16%
August	17213	555	40%	630	45%	13%
September	15159	505	36%	630	45%	13%
October	16188	522	38%	654	47%	14%
November	19046	635	46%	909	65%	19%
December	20766	670	48%	813	58%	17%
Max		**1394**	**100%**	**2683**	**193%**	**56%**
Total	**277287**					

Charts

Figure 1: Westshore WWTP 2025 Average Daily Flow total values in cubic metres (m^3)

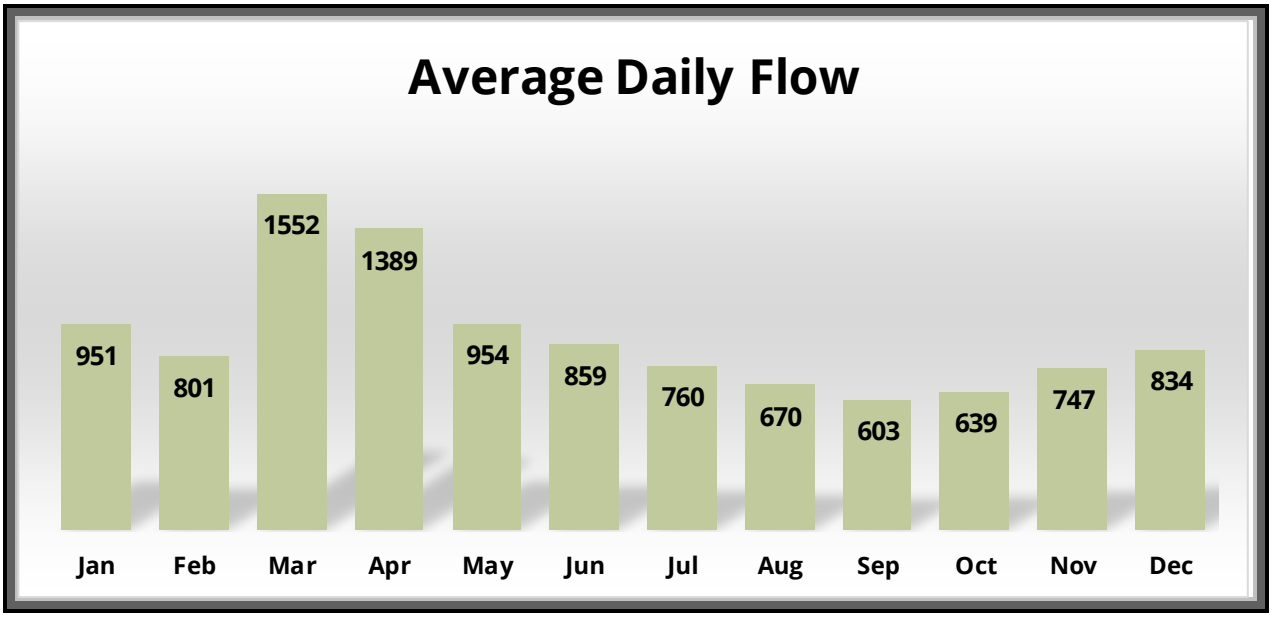
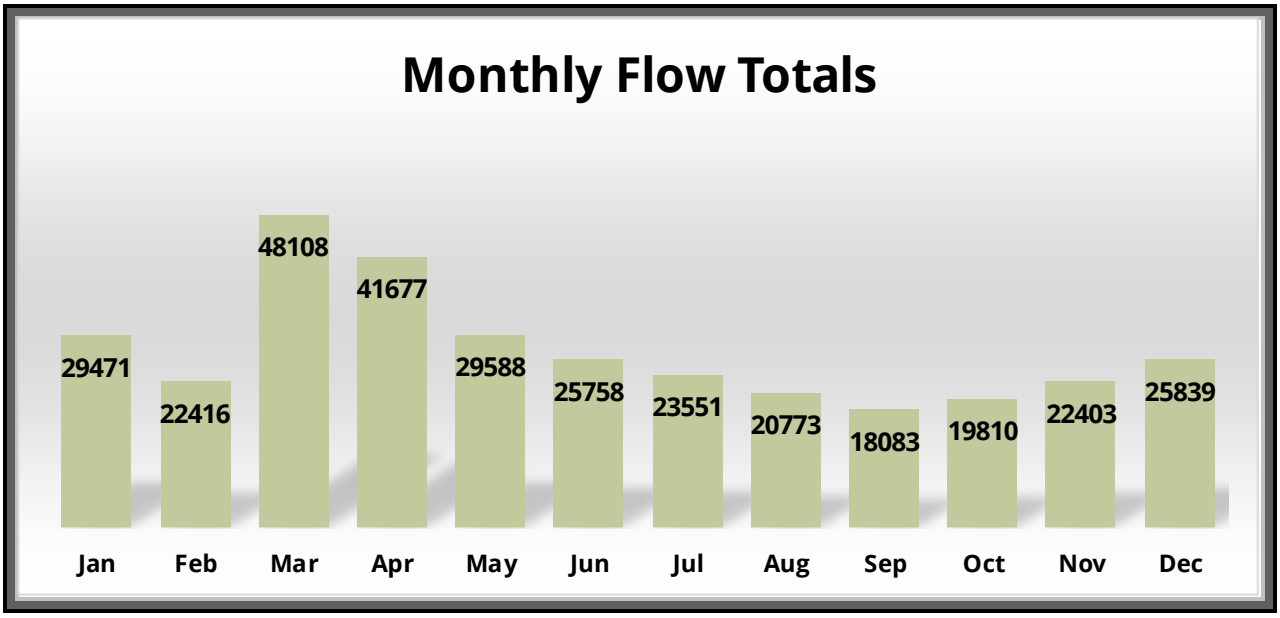


Figure 2: Westshore WWTP 2025 monthly flow total values in cubic metres (m^3).



Sludge Analysis

The results of the sludge analysis are summarized in Table 5.

Table 5: Sludge Analysis

Parameter	Limits	Annual Average	
Units	**Metal Concentration** (mg/kg)	**Sludge Concentration** (mg/L)	**Metal Concentration** *(mg/kg)*
Total Solids	-	14320	-
Ammonia +	-	8.0	-
TKN	-	607	-
Nitrate + Nitrite	-	77	-
Phosphorus	-	313	-
Arsenic	170	0.10	7.78
Cadmium	34	0.006	.450
Cobalt	340	0.03	1.79
Chromium	2800	0.13	9.55
Copper	1700	3.01	215
Mercury	11	0.002	.149
Potassium	-	40.71	3117
Molybdenum	94	0.05	4.17
Nickel	420	0.15	10.62
Lead	1100	0.10	7.78
Selenium	34	0.10	7.78
Zinc	4,200	4.88	354
E.Coli (cfu/1g)	< 2,000,000	525814	

Limits for metal concentration in sludge are listed in MECP publication Guideline for

the Utilization of Biosolids and other wastes on Agricultural Lands, as referenced in the Certificate of Approval No. 7383-4LAHXD.

Operational Issues and Corrective Actions

There were 13 operational issues in 2025. All issues outlined in Efforts and Results in Meeting Effluent Objectives of Certificate of Approval. All maintenance completed in 2025 on major structures, apparatus and/or mechanical equipment is summarized below.

Wastewater Treatment Plant

The following is a list of preventative and emergency maintenance completed at the WWTP in 2025:

- all critical alarms were tested monthly
- all floats were inspected and cleaned monthly
- the backup generator was tested monthly under load
- the blowers and air compressors were serviced yearly to check belts, alignment, motor function and lubrication; the standby blower was run once a week
- equalization and reject tanks were drawn down and cleaned as needed
- plant headworks and Parkson filter headworks were drawn down and cleaned as needed
- replaced Parkson filter air feed tubes
- maintained filter media
- SBR 2 mixture pump replaced
- reject pump replacement

Summary of Effluent Quality Assurance or Control Measures

Tables 6 and 7 summarize which parameters are analyzed by the accredited laboratory, SGS Lakefield Research, Aquatic Laboratories or

Caduceon Laboratories, and which parameters are analyzed in-house.

In-house tests are conducted by licensed operators for monitoring purposes. Standard Methods are used by the operators, and the test results are utilized for process control. All in-house monitoring equipment is calibrated based on the manufacturer's recommendations.

Table 6: Summary of Raw Influent Monitoring Requirements

Source	Parameter	Required	Method
Raw Influent	CBOD5	Monthly	SGS Lakefield or Caduceon
	Total Suspended Solids	Monthly	SGS Lakefield or Caduceon
	Total Phosphorus	Monthly	SGS Lakefield or Caduceon
	Total Kjeldahl	Monthly	SGS Lakefield or Caduceon

Note: SGS Lakefield and Caduceon are both MECP-approved accredited laboratories

Table 7: Summary of Effluent Monitoring Requirements

Source	Parameter	Required	Method
Final Effluent	Flow	Daily	SGS Lakefield or Caduceon
	$CBOD_5$	Weekly	SGS Lakefield or Caduceon
	Total Suspended Solids	Weekly	SGS Lakefield or Caduceon
	Total Phosphorus	Weekly	SGS Lakefield or Caduceon
	Total Ammonia	Weekly	SGS Lakefield or Caduceon
	Nitrate	Weekly	SGS Lakefield or Caduceon
	E. Coli	Weekly	SGS Lakefield or Caduceon,
	Total Chlorine Residual	Weekly	N/A (UV disinfection)
	pH	Weekly	In House Grab Sample
	Temperature	Weekly	In House Grab Sample
	Alkalinity	Weekly	SGS Lakefield or Caduceon
	Unionized Ammonia	Weekly	SGS Lakefield or Caduceon

Note: SGS Lakefield and Caduceon are both MECP-approved accredited laboratories

Efforts and Results in Meeting Effluent Objectives of Certificate of Approval

There were 13 operational issues in 2025. Listed below are operational objectives and limit exceedances.

- In January, February, and March, CBOD exceeded the objective of 5mg/L / 6.95Kg/d.
    - Results for CBOD were:
        - January 6.0mg/L
        - February 8.3mg/L
        - March 6.98Kg/d
- In January, February and March TSS exceeded the Limit of 10mg/l
    - Results for TSS were:
        - January 12.3mg/L
        - February 11.5mg/L
        - March 10.3mg/L
- In April, May and June TSS exceeded the objective of 5mg/L
    - Results for TSS were:
        - April 7.4mg/L
        - May 5.8mg/L
        - June 9.0mg/L
- In January, February and March Total Phosphorus exceeded the limit of 0.15mg/L.
    - Results for TP were:
        - January 0.17mg/L
        - February 0.24mg/L

- March 0.16mg/L

- In March Total Ammonia exceeded the limit of 7.0mg/L. March result was 7.3mg/L
- In June E. Coli exceeded the limit of <200. June result was 402.
- April 1, 2025, the plant had a generator failure.

All operational issues were corrected through operational changes and equipment repair.

Sludge Volume and Disposal

Table 8 below summarizes the sludge volume generated in 2025, the anticipated volume to be generated next year, and the sludge disposal.

Table 8: Sludge Generated and Disposal

Sludge Generated in 2025 *(m^3)*	**Anticipated Volume for 2026** *(m^3)*	**Sludge Disposal Location**
1496.40		July 28, 2025, to August 6, 2025 Farm-Newcombe Con.-7 Lot-8/9 Township-Clearview
2526.20		March 3, 2025, to November 11, 2025 Rohes Lagoon
Total-4022.60	5000	

Summary of Complaints

There were ten complaints in 2025 related to Municipal infrastructure.

- two residential sewage back-ups.
- eight odour complaints.

Summary of Calibration and Maintenance on Effluent Monitoring Equipment

Magnetic flow meters were calibrated by a certified technician on February 26, 2025.

All in-house monitoring equipment is calibrated based on manufacturer's recommendations.

Summary of By-Pass, Spills or Abnormal Discharge Events

There were no bypasses, spills, or abnormal discharge events in 2025.