

# Crysler & Finch Wastewater System

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Sewage Works #110002960

## Annual Report

Prepared for: Township of North Stormont

Reporting Period of January 1<sup>st</sup> – December 31<sup>st</sup> 2025

Issued: March 25, 2026

Revision: 0

Operating Authority:



This report has been prepared to meet the requirements set out in:

Document	Document #	Issue Date	Issue Number
Facility ECA	9170-9PXLXZ	November 19, 2014	n/a
ECA for Municipal Sewage Collection System	182-W601	August 1, 2025	2

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## 1 Revision History

Date	Rev#	Revisions
2026-03-25	0	Annual Report Issued

## 2 Operations and Compliance Reliability Indices

Compliance Event	# of Events
Environment Canada Inspections	0
Ministry of Environment Inspections	0
Ministry of Labour Inspections	0
Non-Compliance	0
Community Complaints	0
Spills/Bypasses/Overflows	0/0/0
Sewer Main Blockages	1

## 3 System Process Description

Crysler’s wastewater system consists of a gravity fed sanitary sewage collection system, two pumping stations and a wastewater treatment lagoon. The Queen St. pumping station handles most of the community’s flows, while the new Patterson St. pumping station, scheduled to be taken over by the township in early 2026, serves the Countryside Acres subdivision. The system also receives municipal wastewater from the Village of Finch. Finch has three small sewage pumping stations and one main pumping station (SPS #1) where ferrous chloride is injected before the wastewater is pumped to Chrysler. The sewage from Finch equates to 29 % of Chrysler’s total annual raw flow. Upgrades to Chrysler’s SPS were completed in 2014 to increase the pumping capacity of the station from 35 l/s to 46 l/s.

The combined sewage from Chrysler and Finch is pumped over a distance of 2.7 kilometers from Chrysler’s SPS to the sewage lagoon located on the north bank of the South Nation River. A chemical injection building is located on site housing a 20,000 litre alum storage tank and two chemical feed pumps (one duty and one standby). Aluminum sulphate is injected for phosphorus control as wastewater is pumped to the lagoon. The total capacity of the lagoon system is 297,600 m<sup>3</sup>. The west facultative cell (Cell #1) has an operating volume of 61,700 m<sup>3</sup>, and the east facultative cell (Cell #2) has an operating volume of 87,900 m<sup>3</sup>. The center cell (Cell #3) is equipped with aeration and has an operating volume of 148,000 m<sup>3</sup>. Effluent is discharged from the center cell through a 675 mm outfall to the South Nation River.

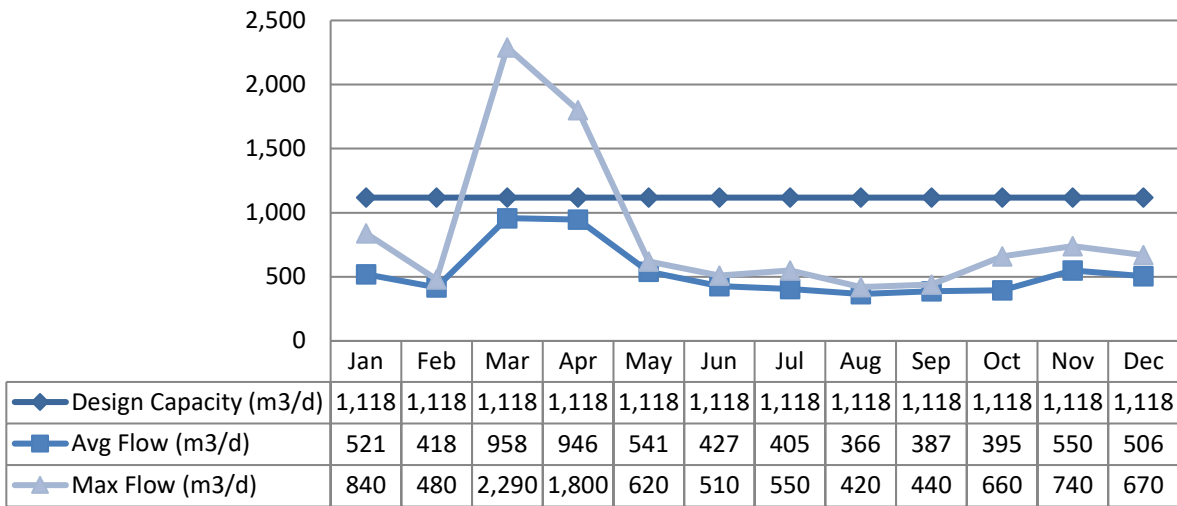
The lagoon can be operated on a semi-annual discharge basis in accordance with the ECA which allows effluent to be discharged in the spring and in the fall. Currently, only the spring discharge window is utilized.

## 4 Wastewater System Flows

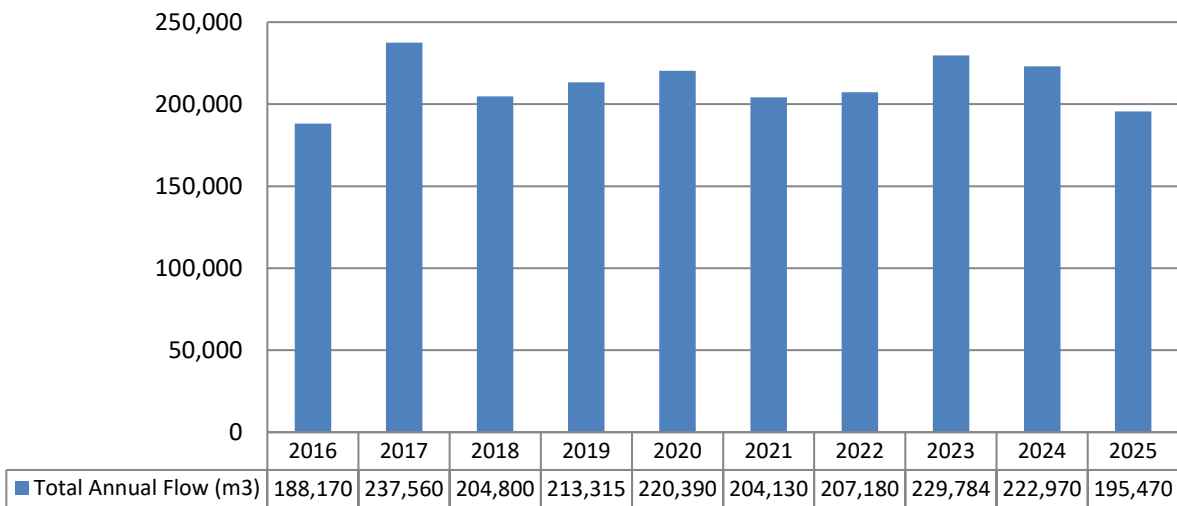
The hydraulic flows reaching the sewage lagoons in 2025 averaged 535 m<sup>3</sup>/day which represents 47.9% of the 1,118 m<sup>3</sup>/day design capacity.

### 4.1 Raw Flows

2025 Raw Flows (m<sup>3</sup>/d):



Annual Raw Flow Comparison (m<sup>3</sup>):



NOTE: 56,460 m3 flow from Finch in 2025

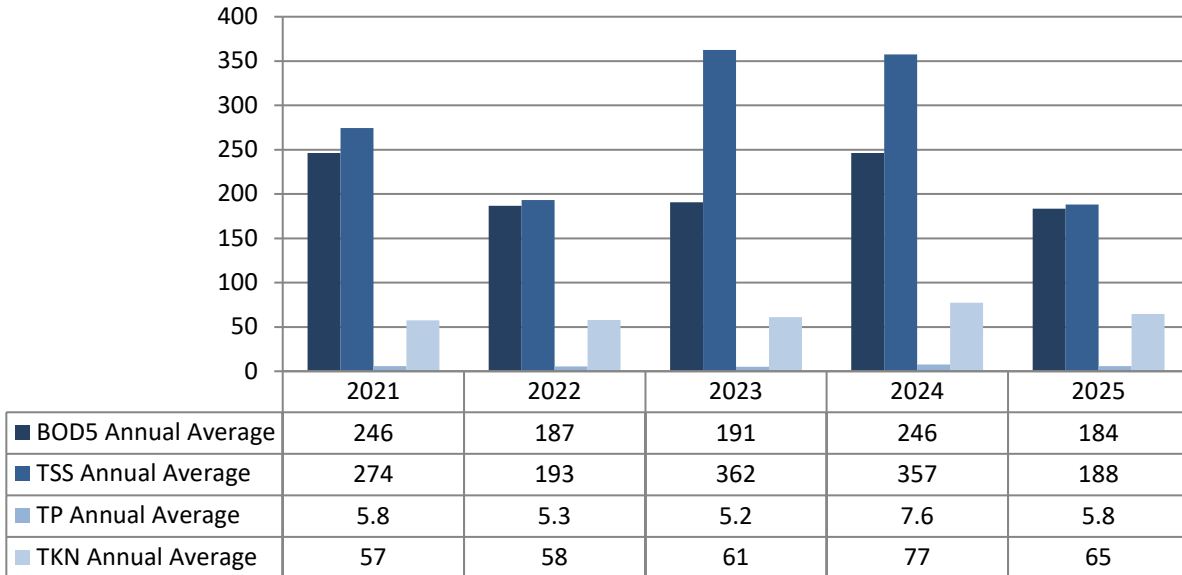
### 4.2 Effluent Flow

Discharge Period	Start Date	End Date	Volume Discharged (m <sup>3</sup> )
Spring Discharge	April 7, 2025	April 28, 2025	237,179
Fall Discharge	n/a	n/a	n/a
<b>Total Flow Discharged</b>			<b>237,179</b>

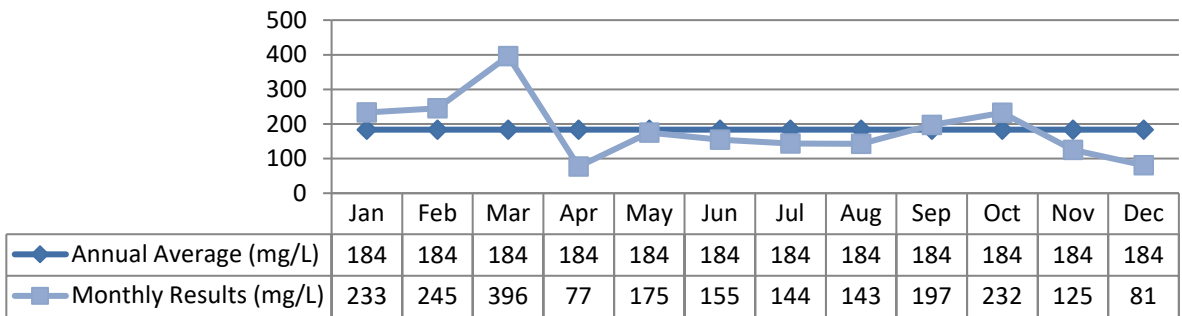
## 5 Raw Sewage Quality

2025 monthly results are available in Appendix A – Performance Assessment Reports.

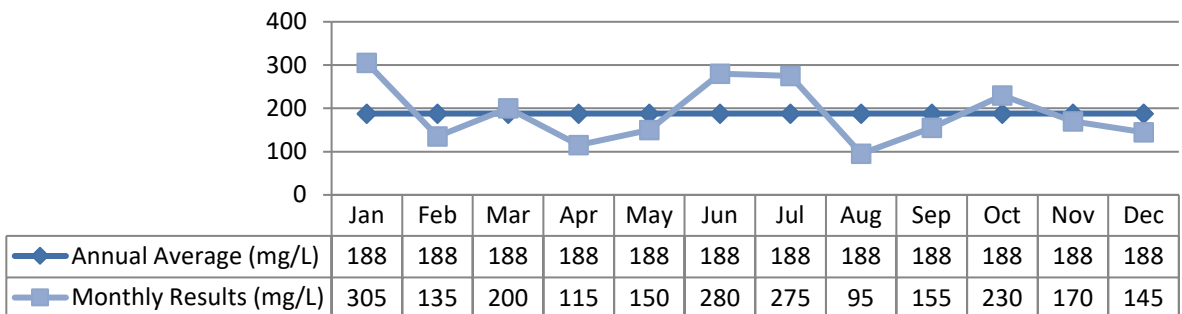
### Annual Comparison (mg/L):



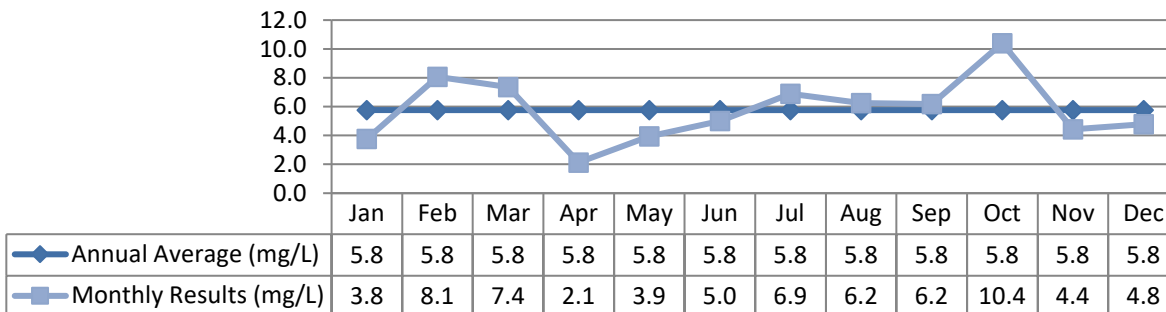
### 5.1 Biochemical Oxygen Demand (5-Day)



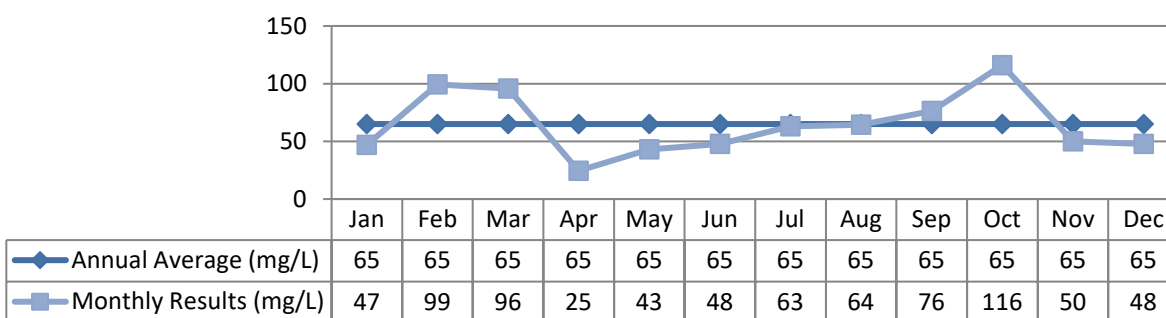
### 5.2 Total Suspended Solids



### 5.3 Total Phosphorus



### 5.4 Total Kjeldahl Nitrogen



## 6 Effluent Quality

There were no exceedances of the seasonal average concentration limits outlined in the ECA during the 2025 discharge period; however, Total Suspended Solids slightly exceeded the objective due to a single sample with an unusually high result. None of the seasonal waste loadings were exceeded.

The results from the spring discharge are tabulated below. Please refer to the Performance Assessment Reports in Appendix A for details.

### 6.1 Effluent Quality Assurance or Control Measures

This system is part of the Ontario Clean Water Agency’s Nation Valley Cluster. The Eastern Regional Hub and corporate resources support the cluster. OCWA staff that work in the community provide operational Services. The systems are operated to meet compliance with applicable regulations. The system has comprehensive manuals detailing operations, maintenance, instrumentation, and emergency procedures. All procedures are treated as active documents and updated as required. These documents are also part of OCWA’s Quality & Environmental Management System.

Effluent control measures include pre-discharge sampling and testing of lagoon cell contents prior to discharge. The samples are collected by the Ontario Clean Water Agency’s competent and licensed staff using approved methods and protocols for sampling including those specified in the Ministry’s Procedure F-10-1 “Procedures for Sampling and Analysis Requirements for Municipal and Private Sewage Treatment Works”, the Ministry’s publication “Protocol for the Sampling and Analysis of Industrial/Municipal Wastewater” and the publication “Standard Methods for the Examination of Water and Wastewater”.

All effluent samples collected during the reporting period to meet legislated sampling requirements were submitted to Caduceon Environmental Laboratories in Ottawa for analysis, with the exception of pH and temperature. Caduceon Environmental is accredited by the Canadian Association for Laboratory Accreditation (CALA). Accredited labs must meet strict provincial guidelines including an extensive quality assurance/quality control program. By choosing this laboratory, OCWA is ensuring appropriate control measures are undertaken during laboratory testing. Certified operators analyze the pH and temperature of samples in the field at the time of sample collection. This ensures accuracy and precision of the results obtained.

OCWA uses several computer systems which include:

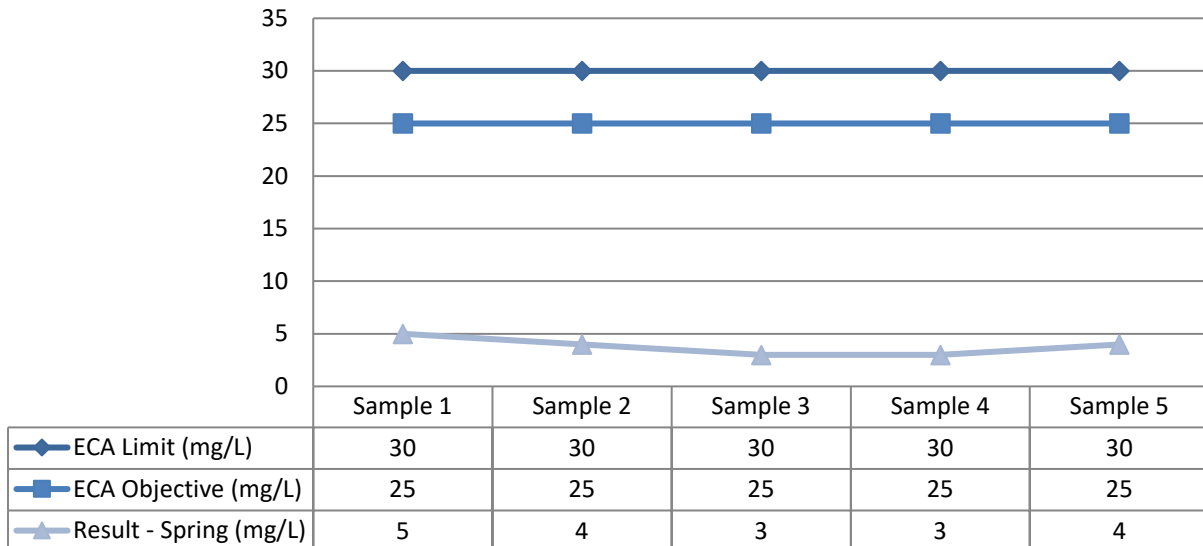
- Process Data Management (PDM)
  - This database consolidates all operational data from a variety of sources including field data, online instrumentation, and electronically uploaded lab test results for reporting, tracking and analysis.
- Maximo – OCWA’s Work Management System (WMS)
  - This program is used to track and schedule maintenance activities for all equipment in the system. It is also used to assign specific operational tasks to staff.
- Wonderware (OUTPOST5)/SCADA
  - OCWA’s SCADA system allows for process automation, process adjustments, data logging, trending review and remote alarming.

The operations team also has access to a network of compliance and process specialists to assist with process issues.

## 6.2 Carbonaceous Biochemical Oxygen Demand (5-Day)

Discharge Period	Seasonal Average (mg/L)	Objective (mg/L)	Objective Exceedance (Y/N)	Limit (mg/L)	Limit Exceedance (Y/N)
Spring	3.8	25	N	30	N

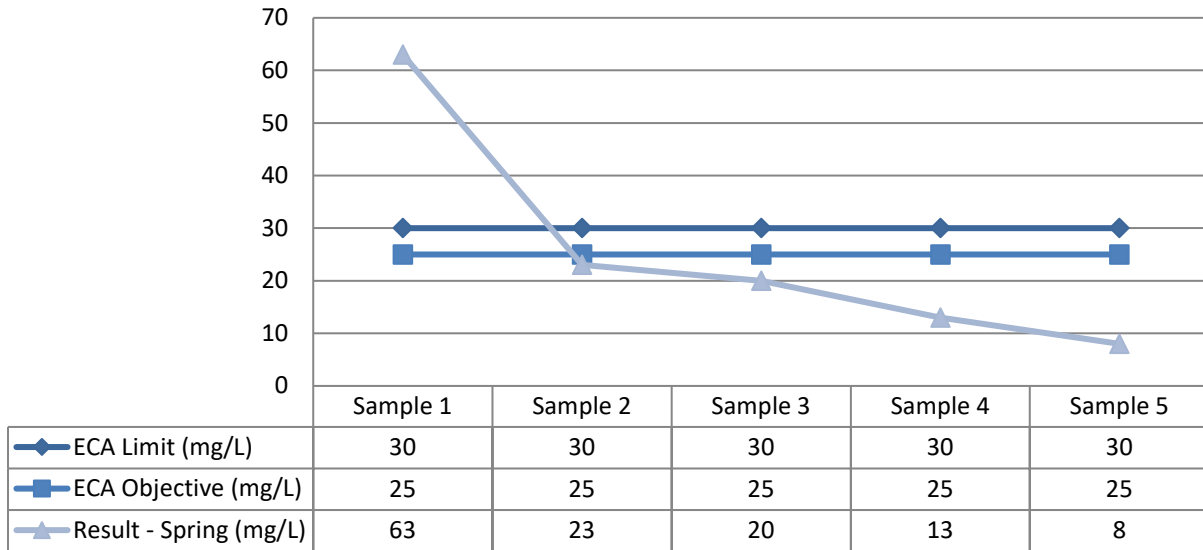
Effluent CBOD<sub>5</sub> Results:



### 6.3 Total Suspended Solids

Discharge Period	Seasonal Average (mg/L)	Objective (mg/L)	Objective Exceedance (Y/N)	Limit (mg/L)	Limit Exceedance (Y/N)
Spring	25.4	25	Y	30	N

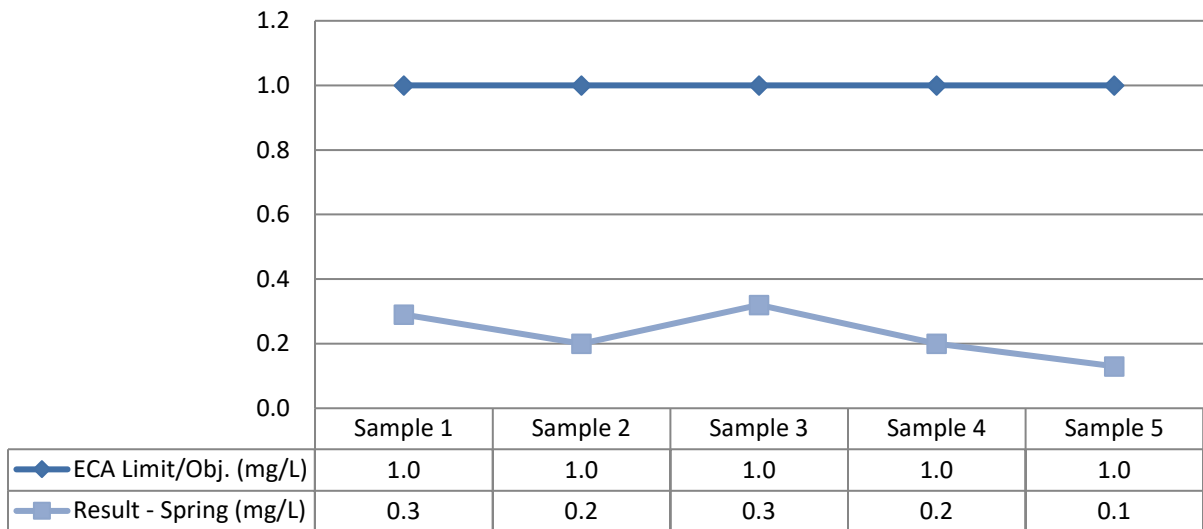
Effluent TSS Results:



### 6.4 Total Phosphorus

Discharge Period	Seasonal Average (mg/L)	Objective (mg/L)	Objective Exceedance (Y/N)	Limit (mg/L)	Limit Exceedance (Y/N)
Spring	0.23	1.0	N	1.0	N

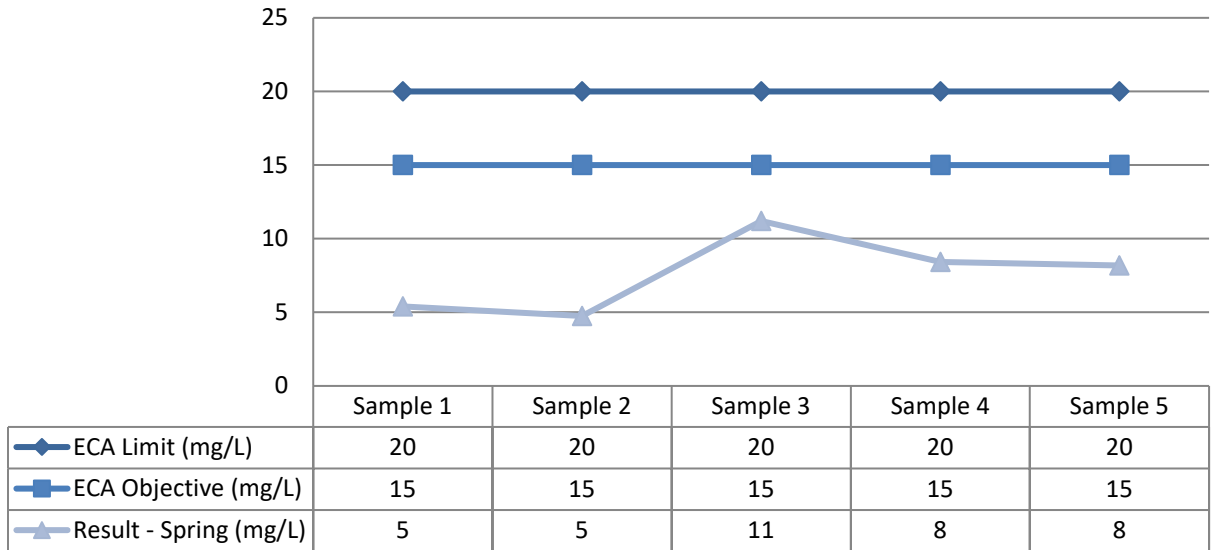
Effluent TP Results:



### 6.5 Total Ammonia Nitrogen

Discharge Period	Seasonal Average (mg/L)	Objective (mg/L)	Objective Exceedance (Y/N)	Limit (mg/L)	Limit Exceedance (Y/N)
Spring	7.6	15	N	20	N

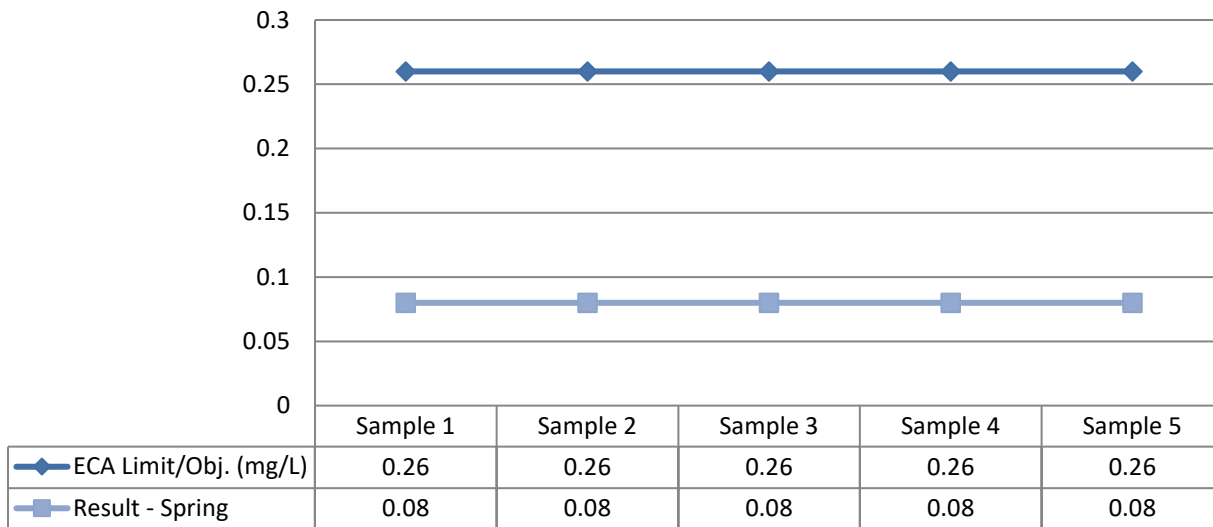
Effluent TAN Results:



### 6.6 Hydrogen Sulphide

Discharge Period	Seasonal Average (mg/L)	Objective (mg/L)	Objective Exceedance (Y/N)	Limit (mg/L)	Limit Exceedance (Y/N)
Spring	0.08	< 0.26	N	0.26	N

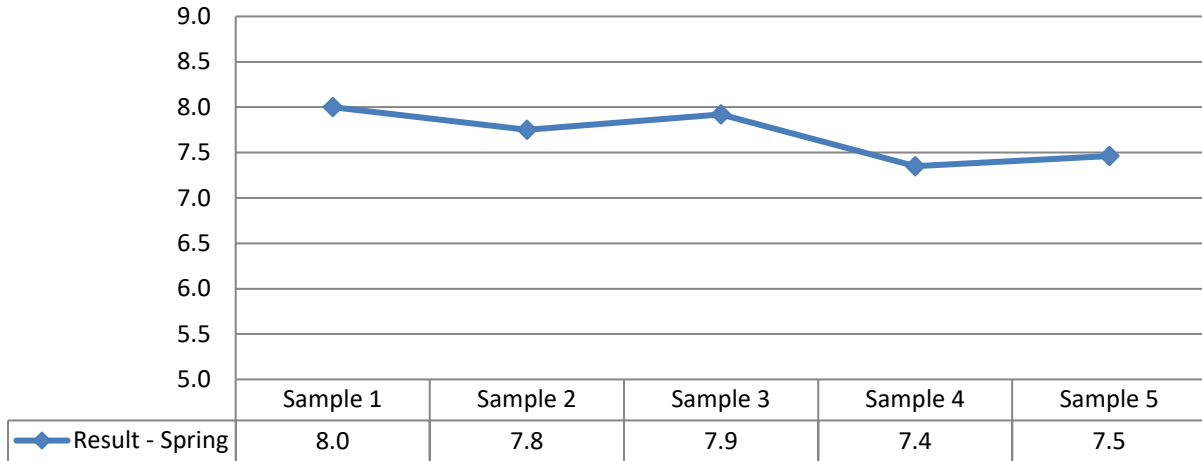
Effluent H<sub>2</sub>S Results:



## 6.7 pH

There are no ECA limits or objectives specified for pH.

### Effluent pH Results:



## 7 Operating Issues

### 7.1 Effluent Quality Non-Compliance Summary

Date	Exceedance of	Limit	Value	Corrective Action
None to report				

### 7.2 Summary of Abnormal Sewage Discharge Events

Abnormal discharge events include bypasses, overflows, and spills of sewage. No bypasses or overflows occurred during the 2025 reporting period.

### 7.3 Spills (Other than Sewage)

Date	Location	Details	Volume (m <sup>3</sup> )	Start Date and Time	End Date and Time
None to report					

## 8 Maintenance

OCWA uses a risk-based preventative maintenance framework that ensures assets are maintained to manufacturer’s and/or industry standards. Maintenance is completed using various tools and operational supports.

OCWA uses a Workplace Management System (WMS). WMS is a maintenance tracking system that can generate work orders as well as provide summaries of completed and scheduled work. During the year, the operating authority generates scheduled work orders on a planned frequency. This ensures routine

and preventive maintenance is carried out. Emergency and capital repair maintenance is added to the system and completed as required.

Routine planned maintenance activities scheduled in WMS include:

- Inspecting, adjusting and calibrating process control equipment to ensure proper operation of sewage collection systems, pumps, chemical feeders, and all other equipment installed at the facilities.
- Carrying out a routine maintenance program including greasing and oiling as specified in the lubrication schedule.

Planned maintenance activities are communicated to the individuals responsible for completing the task through the issuance of WMS work orders. Work orders are generated automatically on a schedule based on the manufacturer’s recommendations and/or site specific operational and maintenance needs, and are assigned directly to the appropriate operations personnel. Work orders are electronically completed in WMS by the person responsible for completing the task. Unplanned maintenance is carried out as needed.

Suggested capital projects and major maintenance recommendations are provided to the Municipality of North Stormont annually by OCWA. This list is developed by the operations team and provides recommendations for facility components requiring upgrading or improvement.

## 8.1 Maintenance and Repair Summary

### 8.1.1 Chrysler

Description
<ul style="list-style-type: none"> <li>- Completed annual inspection of lifting devices</li> <li>- Completed routine sewer flushing &amp; wet well cleaning</li> <li>- Replaced alum chemical pump #1 dosing head</li> <li>- Performed maintenance on both blowers – changed belts and oil</li> <li>- Replaced VFD for pump #1 at SPS</li> <li>- Replaced pump #1 at SPS</li> <li>- Repaired water line (inside plumbing) to distribution chlorine analyzer at SPS</li> <li>- Replaced sump pump at SPS</li> <li>- Gas furnace out of service – electric heating only at SPS</li> </ul>

### 8.1.2 Finch

Description
<ul style="list-style-type: none"> <li>- Completed annual inspection of lifting devices</li> <li>- Completed routine sewer flushing &amp; wet well cleaning</li> <li>- Completed additional wet well cleaning on SPS #1 due to grease build-up</li> <li>- Generator maintenance and repair</li> <li>- Repaired pipe inside SPS #1 wet well</li> <li>- Replaced pump A &amp; B, installed new retrieval line, installed new cutter and replaced check valve at SPS #4</li> <li>- Repaired water line in basement of SPS #1</li> <li>- Replaced pressure level sensor and repaired electrical wire on side B at SPS #3</li> </ul>

Description
- Vacuum pumping truck onsite twice in March during high rain / melting event to keep up with incoming flows - Cleared sewer blockage on side A at SPS #3 – incoming to station

## 8.2 Flow Meter Calibration and Maintenance

Location	Date of Calibration	Additional Maintenance
Lagoon Effluent Flow Meter	April 16, 2025	N/A
Chrysler Queen St. SPS Raw Flow Meter	April 16, 2025	N/A
Finch SPS #1 Raw Flow Meter	April 16, 2025	N/A

## 8.3 Authorized Alterations in Collection System

Work Order	Details	Significant Drinking Water Threat (Y/N)
4553519	Finalized construction of a new pumping station with an overflow on Patterson Street in Chrysler, which serves the Countryside Acres subdivision. The Township is scheduled to assume ownership and operation of the new station in early 2026.	N
4553519	Installed wastewater collection infrastructure for the new Countryside Acres subdivision in Chrysler.	N
n/a	Installed wastewater collection infrastructure for the new Heritage Trail subdivision in Finch.	N

## 8.4 Notice of Modifications

Date	Process	Modification	Status
None to report			

# 9 Sludge Generation

Sludge depth is monitored periodically, and plans for sludge removal are made as required for optimal operation of the lagoon system. Sludge levels in all ponds were last measured in 2014. The measurements were as follows:

Lagoon Cell	Sludge Depth
East Cell	4" – 6"
Center Cell	1" – 2"
West Cell	2" – 3 "

## 9.1 Sludge Disposal Summary

No sludge was removed from site or land applied in 2025. The East Cell was cleaned in 2025, with most of the organic material consisting of overgrown vegetation. That material was placed inside the cell along the berms so it could naturally break down before being transported offsite.

## 10 Summary of Complaints

Location	Date	Nature of Complaint	Actions Taken
There were no complaints received in 2025			

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## **Appendix A - Performance Assessment Reports**

**Crysler Wastewater Treatment Lagoons – Performance Assessment Report 2025**

MONTH	FLOWS				DISCHARGE DURATION	ALUM AVG DOSE	BIOCHEMICAL O <sub>2</sub> DEMAND			TOTAL SUSPENDED SOLIDS			PHOSPHORUS			TKN
	RAW TOTAL	RAW AVG DAY	RAW MAX DAY	EFFLUENT TOTAL			AVG RAW BOD <sub>5</sub>	AVG EFF CBOD <sub>5</sub>	PERCENT REMOVAL	AVG RAW TSS	AVG EFF TSS	PERCENT REMOVAL	AVG RAW PHOS.	AVG EFF PHOS.	PERCENT REMOVAL	AVG RAW TKN
	(m <sup>3</sup> )	(m <sup>3</sup> )	(m <sup>3</sup> )	(m <sup>3</sup> )			(days)	(mg/L)	(mg/L)	(%)	(mg/L)	(mg/L)	(%)	(mg/L)	(mg/L)	(%)
JAN	16,150	521	840			86.5	233			305			3.76			46.8
FEB	11,700	418	480			98.6	245			135			8.07			99.3
MAR	29,700	958	2,290			86.0	396			200			7.36			95.7
APR	28,390	946	1,800	237,179	22	54.1	77	3.8		115	25.4		2.13	0.23		24.5
MAY	16,770	541	620			19.7	175			150			3.93			43.1
JUN	12,810	427	510			68.9	155			280			5.00			47.8
JUL	12,550	405	550			80.9	144			275			6.90			63.1
AUG	11,350	366	420			95.8	143			95			6.24			64.3
SEPT	11,610	387	440			92.0	197			155			6.18			76.2
OCT	12,250	395	660			92.8	232			230			10.40			116.0
NOV	16,500	550	740			80.9	125			170			4.4			49.9
DEC	15,690	506	670			92.8	81			145			4.8			47.7
TOTAL	195,470		SPRING	237,179	22											
TOTAL			FALL	0	0											
AVG		535				79.1	184	3.8	97.9	188	25.4	86.5	5.8	0.23	96.0	64.5
MAX			2,290				396			305			10.4			
CRITERIA		<b>1,118</b>	SPRING	<b>295,650</b>				<b>30</b>			<b>30</b>			<b>1.0</b>		
CRITERIA			FALL	<b>112,420</b>				<b>15</b>			<b>25</b>			<b>0.5</b>		
COMPLIANCE		YES	SPRING	YES				YES			YES			YES		
COMPLIANCE			FALL	N/A				N/A			N/A			N/A		

Comment – Percent removal based on 12 months of raw composite samples

	SPRING			FALL		
	ACTUAL	CRITERIA	COMPLIANCE	ACTUAL	CRITERIA	COMPLIANCE
DISCHARGE START DATE	07-Apr	Mar. 15	YES	N/A	Nov. 4	N/A
DISCHARGE END DATE	28-Apr	Apr. 30	YES	N/A	Dec.17	N/A

	SAMPLE RESULTS	SPRING						237,179 m <sup>3</sup>	
		DATE	07-Apr	11-Apr	17-Apr	23-Apr	28-Apr	Average	ECA OBJECTIVE
SAMPLES COLLECTED AT START, 25%, 50%, 75% AND END OF THE DISCHARGE PERIOD.	CBOD (mg/L)	5	4	3	<3	4	3.8	25	30
	TSS (mg/L)	63	23	20	13	8	25.4	25	30
	TP (mg/L)	0.29	0.20	0.32	0.20	0.13	0.23	1.0	1.0
	NH <sub>3</sub> (mg/L)	5.39	4.75	11.2	8.43	8.18	7.59	15	20
	S <sub>2</sub> - (mg/L)	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.26	0.26
	TKN (mg/L)	8.8	7.3	13.2	10.1	12.3			
	NO <sub>2</sub> (mg/L)	<0.05	<0.05	<0.05	<0.05	0.1			
	NO <sub>3</sub> (mg/L)	1.35	1.56	2.18	3.53	2.27			
	pH (on site)	8.00	7.75	7.92	7.35	7.46			
	Temp (on site)	9.8	7.6	9.3	9.4	9.8			
<i>E.coli</i> (cfu/100mL)	300	500	2400	210	10				

	TOTAL LOADING	ECA LIMIT
CBOD (kg)	901	8870
SS (kg)	6024	8870
TP (kg)	54	296
NH <sub>3</sub> (kg)	1800	5930
H <sub>2</sub> S (kg)	19	77

Effluent Flow	DATE	07-Apr	08-Apr	09-Apr	10-Apr	11-Apr	12-Apr	13-Apr	14-Apr	15-Apr	16-Apr	17-Apr	18-Apr
	Flow (m3/d)	8,289	16,560	16,560	16,560	13,942	13,942	13,942	13,076	12,694	12,694	11,313	11,313
	DATE	19-Apr	20-Apr	21-Apr	22-Apr	23-Apr	24-Apr	25-Apr	26-Apr	27-Apr	28-Apr		
	Flow (m3/d)	11,313	11,313	11,313	7,356	10,692	10,692	3,873	3,873	3,873	1,996		

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## **Appendix B – Details of Abnormal Sewage Discharge Events**

### Event Details Summary

#### Facility Bypass

Date	Location	Details	Volume (m <sup>3</sup> )	Start Time	End Time	Duration (h)	Discharge Receiver	Disinfection Provided
None to report.								

#### Facility Overflow

Date	Location	Details	Volume (m <sup>3</sup> )	Start Time	End Time	Duration (h)	Discharge Receiver	Disinfection Provided
None to report.								

#### Collection Overflow

Date	Location	Details	Volume (m <sup>3</sup> )	Start Time	End Time	Duration (h)	Discharge Receiver	Disinfection Provided
None to report.								

#### Spills of Sewage

Date	Location	Details	Volume (m <sup>3</sup> )	Start Time	End Time	Duration (h)	Discharge Receiver	Disinfection Provided
None to Report								

### Collection System Monitoring Data

Event Date	Event Location	Volume (m <sup>3</sup> )	Parameter	mg/L	Source Loading (kg)	Any Adverse Impacts & Corrective Actions
There were no event No samples collected			BOD5			
			Total Suspended Solids			
			Total Phosphorus			
			Total Kjeldahl Nitrogen (TKN)			
			E.Coli			

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## **Appendix C – ECA Annual Report Requirements**

<b>Facility ECA #9170-9PXLXZ, Section 10(5)</b>	<b>Section in Report</b>
6(a) A summary and interpretation of all monitoring data and a comparison to the effluent limits outlined in Condition 6, including an overview of the success and adequacy of the Works;	Wastewater System Flows Raw Sewage Quality Effluent Quality Appendix A
6(b) A description of any operating problems encountered and corrective actions taken;	Operating Issues
4(c) A summary of all maintenance carried out on any major structure, equipment, apparatus, mechanism or thing forming part of the Works;	Maintenance
4(d) A summary of any effluent quality assurance or control measures undertaken in the reporting period;	Effluent Quality
4(e) A summary of the calibration and maintenance carried out on all effluent monitoring equipment;	Maintenance
4(f) A description of efforts made and results achieved in meeting the Effluent Objectives of Condition 5;	Effluent Quality Operating Issues
4(g) A tabulation of the volume of sludge generated in the reporting period, 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;	Sludge Generation
4(h) A summary of any complaints received during the reporting period and any steps taken to address the complaints;	Summary of Complaints
4(i) A summary of all By-pass, spill or abnormal discharge events;	Operating Issues Appendix B
4(j) A copy of all Notice of Modifications submitted to the Water Supervisor as a result of Schedule 'A', Section 1, with a status report on the implementation of each modification;	Maintenance
4(k) A report summarizing all modifications completed as a result of Schedule 'A', Section 3; and	Maintenance
4(l) Any other information the Water Supervisor may require from time to time.	n/a

<b>Collection ECA #182-W601, Schedule E</b>	
4.6.3 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.	Operating Issues
4.6.4 Includes a summary of any operating problems encountered and corrective actions taken.	Operating Issues
4.6.5 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.	Maintenance
4.6.6 Includes a summary of any complaints related to the Sewage Works received during the reporting period and any steps taken to address the complaints.	Summary of Complaints
4.6.7 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.	Maintenance
4.6.8 Includes a summary of all Collection System Overflow(s) and Spill(s) of Sewage, including: a) Dates;	Operating Issues Appendix B

<b>Collection ECA #182-W601, Schedule E</b>	
<p>b) Volumes and durations;                      c) If applicable, loadings for total suspended solids, BOD, total phosphorus, and total Kjeldahl nitrogen, and sampling results for E.coli;                      d) Disinfection, if any; and                      e) Any adverse impact(s) and any corrective actions, if applicable.</p>	
<p>4.6.9 Includes a summary of efforts made to reduce Collection System Overflows, Spills, STP Overflows, and/or STP Bypasses, including the following items, as applicable:                      a) 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.                      b) Details of the establishment and maintenance of a PPCP, including a summary of project progresses compared to the PPCP’s timelines.                      c) An assessment of the effectiveness of each action taken.                      d) 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.                      e) Public reporting approach including proactive efforts.</p>	<p>Maintenance                      Operating Issues</p>