



Meaford Wastewater Collection System Annual Report for the year 2023

Environmental Compliance Approval: 089-W601

1. Introduction and Executive Summary

1.1 Introduction

This report consists of a description of the works, a general summary of Monitoring Data, Operating Problems and Corrective Actions, Calibration, Maintenance and Repairs, Complaints, Alterations to the System, Overflows and/or Spills, and Efforts made to reduce Overflow, Spills and Bypass Events.

This report is a stated requirement of CLI-ECA 089-W601.

The Meaford Wastewater Collection System Consists of works for the collection and transmission of sewage, consisting of trunk sewers, separate sewers, partially separate sewers, sewage pumping stations, inverted syphon and force mains.

The Bighead Pump Station (SPS #1) located at 98 Denmark Street is a below grade station consisting of four (4) 85 horsepower Flygt Submersible Pumps, of which two are variable speed and two constant speeds, a two-compartment wet well, a 210-kilowatt standby diesel generator, flow measurement equipment, and station by-pass provisions to the Bighead River. The Pump Station has a rated capacity of 160 litres per second with any three pumps operating simultaneously for a flow equivalent of 13,824 m³ per day.

Sewage Pump Station #2 (SPS #2) is located onsite at the Wastewater Treatment Plant. It is a wet well type sewage station, equipped with two 65hP submersible chopper pumps, a 450mm diameter emergency overflow pipe that discharges from manhole 20041 to the Nottawasaga Bay. A bypass connection on forcemain, a 350mm diameter forcemain of raw sewage from the station that is located approximately 195m southeast of the Plant Influent works. There are two variable frequency drives (VFD's) that are set to be one duty and one standby. There is a 120kW standby generator to operate this

station in the event of power outages.

Pete's Creek Station (SPS #3) is located at 323 Sykes St. N, which consists of a control building and a wet well with a capacity of 10.5m³, with two submersible type pumps. One (1) 3 horsepower and one (1) 20 horsepower pumps rated at 72.5 l/s capacity against 9.5m total head. The station is connected to a discharging forcemain, that discharges to a collection system manhole. There is an overflow that would discharge to Pete's Creek, which then discharges to Nottawasaga Bay.

Harbour Station (SPS #5) is located at the Meaford Harbour (3 St. Vincent St.), it is a small station primarily below ground with two submersible type pumps. Both pumps are 3 horsepower and alternate on stop, with 86 US gal/min and 40ft total head. The station is connected to a 100mm diameter forcemain, that discharges into a collection system manhole.

1.2 Executive Summary

This Annual Report includes the following information:

- 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, if applicable.
- A summary of any operating problems encountered, and corrective actions taken.
- A summary of all calibration, maintenance and repairs carried out on any major structure, equipment, apparatus, mechanisms, or thing forming part of the Sewage Collection System.
- A summary of any complaints related to the Sewage Works received during the reporting period and any steps taken to address the complaint.
- A summary of all Alterations to the Authorized System within the reporting period that are authorized by the ECA including a list of Alterations that pose a Significant Drinking Water Threat.
- A summary of all Collection System Overflow(s) and Spill(s) of Sewage.
- A Summary of efforts made to reduce Collection System Overflow, Spills, STP Overflows and/or STP Bypasses.

2. Monitoring Data

The flow reporting consists of a full tabulation of recorded flows. This flow information provides daily flow, total monthly flow, and various flow trend calculations for the Municipal Sewage Pump Stations in the Meaford Wastewater System for the reporting period of January 1, 2023, to December 31, 2023. The summarized results are as follows:

| Flow | SPS #1 (m3) | Date (mm/dd) | SPS #2 (m3) | Date (mm/dd) | SPS #3 (m3) | Date (mm/dd) | SPS #5 (m3) | Date (mm/dd) |
|----------------------|----------------|-----------------|----------------|-----------------|----------------|-----------------|----------------|-----------------|
| Total Annual Flow | 708,372 | | 163,056 | | 117,662 | | 3,955 | |
| Average Daily Flow | 1,942 | | 448 | | 324 | | 11 | |
| Maximum Daily Flow | 6,367 | 04/05 | 7037 | 05/04 | 988 | 04/05 | 227 | 01/15 |
| Minimum Daily Flow | 1,057 | 09/29 | 225 | 10/04 | 184 | 09/29 | 0 | 01/10 |
| Maximum Monthly Flow | 80,763 | January | 22,975 | May | 13,538 | March | 482 | August |
| Minimum Monthly Flow | 38,062 | June | 8,268 | September | 6,890 | September | 182 | February |

The Bighead Pumping station operated with no major incidents or breakdowns in 2023. The over-designed capacity at the station continues to have operational challenges, including excessive solids build up which is a contributing factor to odour issues at the Meaford Water Pollution Control Plant. This results in additional operator maintenance at the station. Staff continue to manually rake the bar screen of debris and rags on an as needed basis. Overall, the Bighead Pumping Station continues to operate exceptionally well within its design capacity of 15,640 m³/day.

SPS #2 requires replacement of the isolation valves within the Wetwell portion of the station, this is scheduled to be completed during the 2024 reporting period. SPS #3 continues to operate within its capacity, lifting sewage from the most northern part of the system flowing by gravity southerly to the Bighead pump Station (SPS #1). SPS #5 is to undergo pump and electrical panel replacement during the 2024 reporting period.

3. Operating Problems and Corrective Actions

There were no major operating problems or Corrective Actions during the reporting period for the collection system piping.

SPS #1

- 2023-06-30 – Pump Fail due to power outage. The issue was resolved when pump was reset, and power was restored.

SPS #2

- 2023-11-06 – Pumping station failure, duty pumps were rotated, and the issue was resolved.

SPS #3 – There were no operating problems or corrective actions during the reporting period for this pumping station.

SPS #5

- 2023-01-15 – Station high level. Float operation investigated and pumps running again. The issue was resolved.

4. Calibration, Maintenance and Repairs**4.1 Calibration**

Tower Electronics Canada Inc. completed Calibrations on all flow meters at the sewage pump stations. Detailed calibration reports are available upon request from the Environmental Services Department.

| Location | Equipment Calibrated | Date Calibrated |
|-----------------|--|------------------------|
| SPS #1 | Flow Meter Endress Hauser Prosonic 91W | 05-31-2023 |
| SPS #2 | Flow Meter Endress Hauser Prosonic 91W | 05-31-2023 |
| SPS #3 | Flow Meter Badger M2000 | 05-31-2023 |

SPS #5 does not have a flow meter that requires calibration, flow is manually calculated using pump runtimes at the station.

4.2 Maintenance

Operators completed regular maintenance at the Sewage Pump Stations within the collection system, ensuring proper operations. Operators raked the bar screens clear of debris and cleaned them regularly, along with annual wet well cleanings where applicable.

4.3 Repairs

There were repairs conducted on one of the pumps at SPS #1, the remaining 3 pumps were used for regular operations while that pump was being repaired.

5. Complaints

There were no complaints during the reporting period.

6. Alterations to the Authorized System

The Collection System had no major alterations during the reporting period, however there were approximately 365m of sanitary collection pipe that was relined by a qualified contractor to help with infiltration in the system.

7. Collection System Overflow, Spills and Bypass Summary

There were no Collection System bypass events during the 2023 reporting period. There were no Collection System Overflow events during the 2023 reporting period, there was one event at the sewage treatment plant that was reported by the on-call operator as per ECA #9036-AZFPV6.

There were no Spills in the Collection System during the 2023 reporting period.

8. Summary of Efforts to reduce Collection System Overflow, Spills, STP Overflows, and/or STP Bypasses

8.1 Description of Projects undertaken and completed in the Authorized System that result in overall overflow reduction or elimination.

A qualified contractor completed Sewer Main Relining to help with infiltration into the Collection System. This should eventually help with overflow reduction at the Sewage Treatment Plant (STP). The table below outlines the areas that the contractor completed, and the expenditures associated with each action.

| Location | Main Length (m) | Pipe Diameter (mm) | Expenditure |
|-----------------|-----------------|--------------------|-------------|
| Collingwood St. | 65.9 | 200 | \$18,122.50 |
| Margaret St. | 86 | 200 | \$23,650.00 |
| Margaret St. | 41.4 | 200 | \$11,385.00 |
| Noble St. | 122.4 | 200 | \$33,660.00 |
| Nelson St. | 52 | 350 | \$30,680.00 |

There was one spot repair completed on Marshall St. E that cost \$8,500, that should also help eliminate infiltration.

The following table outlines proposed projects and the estimated budget allotment.

| Proposed Project | Estimated Budget |
|-----------------------------------|------------------|
| Stormwater Disconnection | \$120,000 |
| Sanitary Relining | \$220,000 |
| Downtown Roof Drain Disconnection | \$441,140 |

8.2 Pollution Prevention and Control Plan

The Sanitary Collection System does not contain combined or partially separated sewers; therefore, no Pollution Prevention and Control Plans (PPCP) are under

development.

8.3 Assessment of Effectiveness

There was no assessment of effectiveness completed during the reporting period for the actions completed in 2023.

8.4 Assessment to meet Procedure F-5-1

The Municipality currently does not meet the requirements of Section 8 of Schedule E in the ECA to assess conformance. The Wet-weather vs. Dry-Weather assessment is a requirement to be completed and sent to the Director by July 31, 2025.