



February 26, 2026

Samuel Shannon
Corporation of the Municipality of North Middlesex
229 Main Street, P.O. Box 9
Parkhill, ON NOM 2K0

Re: Requirement under the Safe Drinking Water Act for a Summary Report

Dear Samuel Shannon,

Attached is the 2025 Summary Report for the North Middlesex Distribution System for January 1st to December 31st, 2025. This report is completed in accordance with Section 11 and Schedule 22 of O. Reg. 170/03, under the Safe Drinking Water Act.

This Summary Report is to be provided to the members of council by March 31st, 2026.

Section 12 of O. Reg. 170/03, requires the Annual Report required under Section 11 of O. Reg. 170/03 to be made available for inspection by any member of the public during normal business hours, without charge. The reports should be made available for inspection at the office of the Municipality, or at a location that is reasonably convenient to the users of the water system.

Please feel free to contact me should you require any additional information regarding these reports. I can be reached at 519-274-5695.

Sincerely,

A handwritten signature in black ink, appearing to read "H Wharram", is positioned above the typed name.

Heather Wharram
Process and Compliance Technician
Midwest Region
Ontario Clean Water Agency

cc. Sam Smith, OCWA Regional Hub Manager
Rod Dupuis, OCWA Senior Operations Manager
Maegan Garber, OCWA Safety, Process and Compliance Manager

North Middlesex Distribution System

Waterworks #260006529
System Category – Large Municipal Residential

Annual Drinking Water Report

Prepared For: Municipality of North Middlesex

Reporting Period of January 1 – December 31, 2025

Issued: February 26, 2026

Revision: 0

Operating Authority:



This report has been prepared to satisfy the annual reporting requirements in O.Reg 170/03 Section 11 and Schedule 22.

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Revision History

Date	Revision #	Revision Notes
2026-02-26	0	Report Issued

Overview

This report fulfills requirements of Ontario Regulation 170/03 Section 11 and Schedule 22. The report must be made available to anyone that requests a copy of the report. By March 31, 2026 the report must be provided to members of municipal council.

Report Availability

This system does not serve more than 10 000 residences. The annual report will be available to residents at the Municipal Office as well as on the municipal website. Notification will be at the Municipal Office and copies provided free of charge, if requested. The Municipal Office is located at 229 Main Street, Parkhill, Ontario, N0M 2K0.

Compliance Report Card

Compliance Event	# of Events
Ministry of Environment Inspections	1
Ministry of Labour Inspections	0
QEMS External Audit	1
AWQI's/BWA	1
Non-Compliance	0
Community Complaints	2
Spills	0
Watermain Breaks	6

System Process Description

The North Middlesex Distribution System (DWS# 260006529) provides drinking water to consumers within the Municipality of North Middlesex. The North Middlesex Distribution System purchases potable water from the Lake Huron Primary Water Supply System (LHPWSS). Water can enter the North Middlesex Distribution System from five points along the LHPWSS main transmission line. Primary and secondary disinfection is supplied from

the LHPWSS. There are no treatment chemicals used within the North Middlesex Distribution System.

The North Middlesex Distribution System is comprised of:

- one water tower;
- two underground water reservoirs;
- two booster pump stations;
- two booster pumps located in the LHPWSS McGillivray Booster Station; and,
- watermains and appurtenances such as hydrants, air release, pressure relief, isolation and sustaining valves.

The North Middlesex Distribution System is connected to the East Lambton Shores Distribution System (DWS# 260006568) and the Lucan Biddulph Distribution System (DWS# 260003071). The East Lambton Shores Distribution System connection can supply water to a section of the North Middlesex Distribution System if necessary or in an emergency situation. The East Lambton Shores Distribution System (Thedford) is located in the Municipality of Lambton Shores and is operated by Jacobs. The Lucan Biddulph Distribution System (Lucan) is operated by Jacobs and supplies water to the hamlet of Clandeboye located in the Municipality of North Middlesex.

Summary of Non-Compliance

Adverse Water Quality Incidents

Under the Safe Drinking Water Act, O. Reg 170/03, any adverse water quality incidents (AWQI) are required to be reported to the Ministry of the Environment, Conservation and Parks (MECP) and corrective action taken. Refer to Table 1 below for a summary of AWQI incidents in 2025.

Table 1: Adverse Water Quality Incidents

Date	AWQI #	Location	Problem	Details	Legislation	Corrective Action Taken
October 18 th , 2025	170432	Water Hauler Sample	6 Total Coliform	A water hauler sample was taken during a LHPWSS shutdown and came back positive with 6 Total Coliform.	O.Reg.170/03	On October 18 th samples were taken upstream at the Mt. Carmel Reservoir, at the source (Parkhill Reservoir Inlet), and downstream at the Parkhill Reservoir Outlet. All samples returned showing 0 Total Coliform and 0 E.coli.

Non-Compliance

Under the Safe Drinking Water Act, O. Reg 170/03, any events where legislative requirements were not met are required to be reported to the MECP and corrective actions taken. Refer to Table 2 below for a summary of non-compliance incidents in 2025.

Table 2: Summary of Non-Compliance Incidents

Legislation	Requirement(s) system failed to meet	Duration of the failure (i.e. date(s))	Corrective Action	Status
There were no non-compliance issues reported during the reporting period.				

Non-Compliance Identified in a Ministry Inspection:

The routine MECP Inspections have an Inspection Rating Record. This record evaluates the system to provide information for the owner/operator on areas that need to be improved. The particular areas that were evaluated for the North Middlesex Distribution System were: Certification and Training, Logbooks, Operations Manuals, Treatment Processes, and Water Quality Monitoring.

The North Middlesex Distribution System inspection was conducted on August 7th, 2025 by Andrew Winkler of the Ministry of the Environment, Conservation and Parks (MECP). The inspection review period was July 23, 2024 to August 7, 2025. An inspection rating of 100% was received.

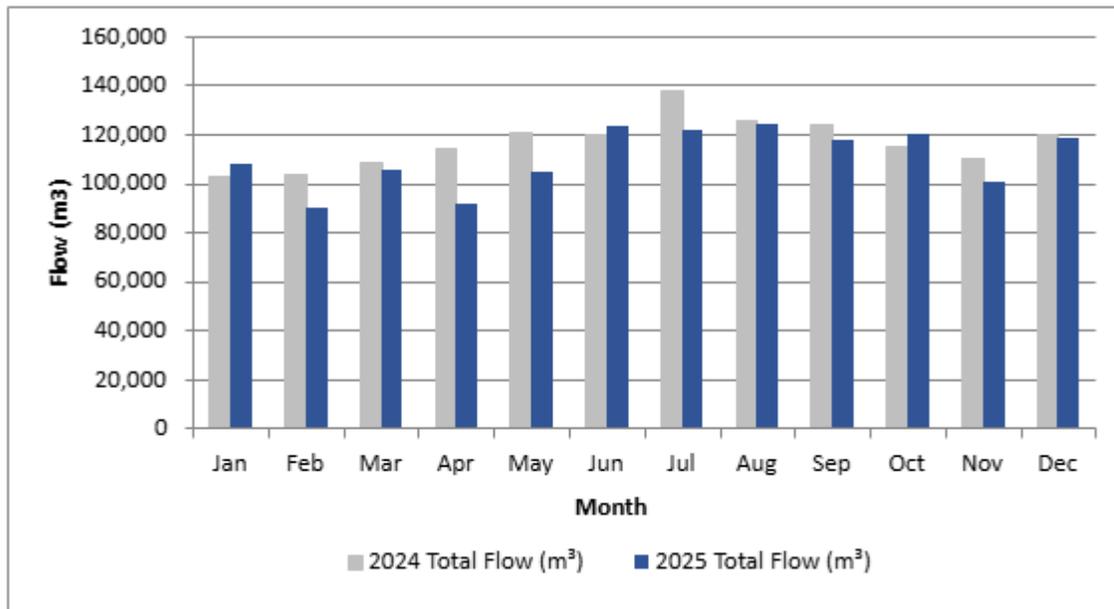
Table 3: Non-Compliances Identified in a Ministry Inspection

Legislation	Requirement(s) system failed to meet	Duration of the failure (i.e. date(s))	Corrective Action	Status
There were no non-compliances identified in the Inspection Report.				

Flows

The total flow to the North Middlesex Distribution System from LHPWSS was 1 323 708 m³. This is a 5.7% decrease from 2024. See Figure 1 below for monthly flows to the North Middlesex Distribution System.

Figure 1: Monthly Flows to the North Middlesex Distribution System



The North Middlesex Distribution System Municipal Drinking Water License (License Number: 002-101) does not identify a system rated capacity. The agreement between the Municipality of North Middlesex and the LHPWSS Board of Management (Regional Water Supply) does not specify a maximum water taking volume.

The 2025 total flow and average daily flows by month are listed in Table 4 below.

Table 4: North Middlesex Distribution System Flows

Month	Total Flow (m ³)	Average Daily Flow (m ³)
January	107 871	3479.7
February	90 234	3222.6
March	105 099	3390.3
April	91 226	3040.9
May	104 478	3370.3
June	123 278	4109.3
July	121 655	3924.4
August	123 678	3989.6
September	117 447	3915.0
October	120 255	3879.1
November	100 231	3341.0
December	118 256	3814.7
TOTAL	1 323 708	-
MAXIMUM	123 678	4109.3
AVERAGE	110 309	3623.07

Regulatory Sample Results Summary

Microbiological Testing

The North Middlesex Distribution System was operated and maintained in such a manner that the treated water supplied to the consumers serviced by the system satisfied the Ontario Drinking Water Quality Standards with the exception of the adverse reported in October, 2025. Refer to Table 5 below.

Table 5: Microbiological Testing Summary

	No. of Samples Collected	Range of E.Coli Results (cfu/100mL)		Range of Total Coliform Results (cfu/100mL)		No. of HPC Samples Collected	Range of HPC Results (cfu/mL)	
		Min	Max	Min	Max		Min	Max
Distribution Water	270	0	0	0	6	56	<10	10

Operational Testing

Free chlorine residuals are monitored throughout the distribution system to meet regulatory requirements and ensure adequate secondary disinfection is provided. The regulatory requirement for free chlorine residual is a minimum of 0.05 mg/L with an objective of 0.20 mg/L throughout the distribution system. Refer to Table 6 below.

Table 6: Free Chlorine Residuals

Parameter	No. of Samples Collected	Range of Results	
		Minimum	Maximum
Free Chlorine Residual, grab (mg/L)	780	0.62	1.30

Inorganic Parameters

Schedule 15.1 Sampling:

Schedule 15.1 Sampling is required under O. Reg 170/03. This includes sampling for lead, alkalinity and pH. The

North Middlesex Distribution system is under reduced sampling. As such, no residential plumbing samples are required to be collected. Monitoring the pH and alkalinity in the distribution system is essential to ensure adequate buffering for corrosion control and to minimize exposure to metals such as lead. Refer to Table 7 below.

Table 7: Schedule 15.1 Sample Results

Distribution System	Number of Samples	Range of Results		MAC (ug/L)	Number of Exceedances
		Minimum	Maximum		
Alkalinity (mg/L)	6	74	85	n/a	n/a
pH	6	8.13	8.54	n/a	n/a
Lead (ug/l)	6	0.02	0.05	10	0

Organic Parameters

Organic parameters are tested quarterly as a requirement under O. Reg 170/03. This includes testing for disinfection byproducts including Trihalomethane and Haloacetic Acids. Refer to Table 8 below.

Table 8: Organic Parameter Testing

	Annual Running Average	MAC (ug/L)	Number of Exceedances
Distribution Water			
Trihalomethane: Total (ug/L) Annual Average	29.0	100	0
Haloacetic Acids: Total (ug/L) Annual Average	6.25	80	0

MAC = Maximum Allowable Concentration as per O. Reg 169/03

Additional Legislated Samples

There are no additional sampling requirements within the North Middlesex Distribution System.

Major Maintenance and Capital Summary

The North Middlesex Distribution System completed a number of repairs, installations, replacements and projects as listed below in Table 9. These represent the major expenses incurred in 2025.

Table 9: Major Maintenance

Item	Description
1	Watermain Repairs, Appurtenance Repairs
2	ROV Inspection – Mt. Carmel Reservoir
3	Watermain Commissioning – Queen and Main Street, Ailsa Craig; McGillivray Drive, Parkhill
4	Fire Flow Testing – Ailsa Craig, Carlisle
5	Hydrant Installation
6	TSSA Inspections – Parkhill Reservoir and West Williams Booster Station Generators
7	Mt. Carmel Reservoir Site Review/Upgrades Proposal – Dillon’s Engineering

8	Reservoir Inspection – Mt. Carmel Reservoir
9	UPS Replacement – West Williams Booster Station
10	Pressure Reducing Valve Repair – Chamber 36
11	Designated Substance Inspection – Mt. Carmel Reservoir
12	Gate Valve Replacements – Distribution System
13	PRV Rebuilds/Gate Valve Replacement – Mt. Carmel Reservoir
14	Purchase of Distribution Pit Meter Parts
15	LHPWSS Shutdown Tankers