

# Hensall-Zurich Distribution System

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Waterworks #260091650  
System Category – Large Municipal Residential

## Annual Drinking Water Report

Prepared For: Municipality of Bluewater

Reporting Period of January 1 – December 31, 2024

Issued: February 11, 2025

Revision: 0

Operating Authority:

**OCWA**



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## 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, 2025 the report must be provided to members of municipal council.

## Report Availability

This system does not serve more than 10,000 residences and the annual reports 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 14 Mill Ave, Zurich, Ontario, N0M 2T0.

## System Process Description

The Hensall-Zurich Distribution System was deemed combined by the Ministry of the Environment, Conservation and Parks (MECP) in November, 2023. The system is a combination of the previous Hensall Distribution and Zurich Drinking Water Systems and serves a population of approximately 1990. The Hensall-Zurich Distribution System holds the previous Waterworks number from the Hensall Distribution System. A new Drinking Water Works Permit (DWWP), Municipal Drinking Water Licence (MDWL) and system classification certificate were issued. The distribution system is classified as a Water Distribution System Class Two.

The distribution system is fed from a trunk main from the Lake Huron Primary Water Supply System (LHPWSS) that provides primary and secondary disinfection. This 600 mm main runs east from Grand Bend along Huron Road towards Exeter. This main terminates at a reservoir and pumping station (EH1) located at the corner of Huron Road and Airport Line. This station serves Hensall, Zurich and Exeter and is operated by LHPWSS. A 400 mm main runs north along Airport Road to the intersection of County Road #84 (Zurich Hensall Road) and Airport Line to serve Hensall and Zurich. This main terminates in a meter chamber (EH3) which is equipped with a flow meter, a pressure reducing valve and an electrically controlled valve that controls the flow of the water into the Hensall-Zurich Distribution System. All the infrastructure supplying the Hensall-Zurich Distribution System is controlled by the LHPWSS. This includes the electrically controlled valve in the EH3 meter chamber which is controlled from the LHPWSS SCADA system based on the level of the water in the Hensall Tower. On exiting the EH3 meter chamber, the system becomes the responsibility of OCWA.

From EH3, the water flows into the Hensall-Zurich Distribution System. This system consists of a combination of cast iron, ductile iron and PVC water mains ranging in size from 100 mm to 400 mm. There is an elevated storage tank (Hensall Tower) located on 82 Mill Street that has a capacity of 1390 m<sup>3</sup>. The Hensall Tower replaced the previous elevated storage tank located on Richmond Street North. The previous elevated tank has since been decommissioned. The Hensall Tower maintains the system pressure when the system is isolated from the LHPWSS supply. There is no rechlorination on site, however, there is an online chlorine analyzer to monitor secondary disinfection.

The Babylon Monitoring Station is located at the corner of Zurich Hensall Road and Babylon Line. An online chlorine analyzer is installed and monitors the chlorine residual in the distribution system. The Zurich PRV Chamber consists of one 50 mm Pressure Reducing Valve (PRV) and one 200mm PRV which regulates the pressure from the Hensall Tower/EH3.

The Hensall-Zurich Distribution System also has one underground storage reservoir. The Zurich reservoir is located at 50 Main Street and has a capacity of 1149 m<sup>3</sup>. A diesel generator is supplied for back-up power. Chlorine residuals are monitored through a chlorine analyzer. This facility also houses the SCADA system for the Bluewater Water and Wastewater Systems.

## 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 MECP and corrective action taken. Refer to Table 1 below for a summary of AWQI incidents in 2024.

**Table 1:** *Adverse Water Quality Incidents*

Date	AWQI #	Problem	Details	Legislation	Corrective Action Taken
There were no AWQI's reported during this reporting period.					

### 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 2024.

**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.				

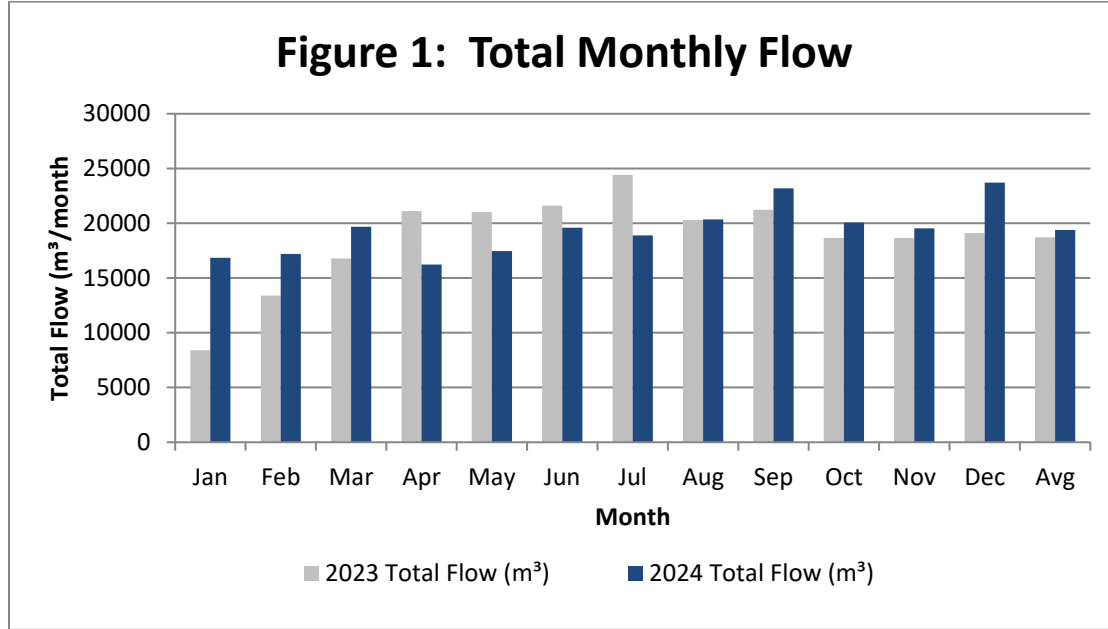
### Non-Compliance Identified in a Ministry Inspection

MECP inspections occur within an April 1 to March 31 fiscal year. The last inspection occurred in 2023 and there were no MECP inspections in 2024, therefore no non-compliances identified.

## Flows

The total flow to the Hensall-Zurich Distribution System from LHPWSS was 232 739 m<sup>3</sup>. This is a 4% increase from the total flow in 2023 which was 224 695 m<sup>3</sup>. See Figure 1 below for monthly average flows to the Hensall-Zurich Distribution System.

Figure 1: Monthly Flows to the Hensall-Zurich Distribution System



The Hensall-Zurich Distribution System is operated under the MDWL (License Number: 045-101). This license does not identify a system rated capacity. The agreement between the Municipality of Bluewater and the LHPWSS Board of Management (Regional Water Supply) does not specify a maximum water taking volume.

The total flows and average daily flows per month in 2024 are listed in Table 5 below. The maximum total and average daily flow are also listed.

Table 5: Hensall-Zurich Distribution System Flows

Month	Total Flow (m <sup>3</sup> )	Average Daily Flow (m <sup>3</sup> )
January	16 836	543.10
February	17 184	592.55
March	19 687	635.06
April	16 245	541.50
May	17 445	562.74
June	19 581	652.70
July	18 902	609.74
August	20 345	656.29
September	23 202	773.40
October	20 046	646.65
November	19 545	651.50
December	23 721	765.19
<b>TOTAL</b>	<b>232 739</b>	<b>-</b>
<b>MAXIMUM</b>	<b>23 721</b>	<b>773.40</b>
<b>AVERAGE</b>	<b>19 395</b>	<b>635.87</b>

## Regulatory Sample Results Summary

### Microbiological Testing

To meet regulatory requirements, the distribution system is sampled on a weekly basis at various locations for E. coli, Total Coliforms and Heterotrophic Plate Count (HPC). The regulatory limit for Total Coliform and E. coli is zero, HPC doesn't have a limit. Refer to Table 6 below for a summary of testing results.

Table 6: 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	212	0	0	0	0	53	10	340

### 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 7 below for free chlorine residual results.

Table 7: Free Chlorine Residuals

Parameter	No. of Samples Collected	Range of Results	
		Minimum	Maximum
Free Chlorine Residual, grab (mg/L)	368	0.30	1.27

### Inorganic Parameters

#### Schedule 15.1 Sampling:

The Schedule 15.1 Sampling is required under O. Reg 170/03. This includes sampling for lead, alkalinity and pH. The Hensall-Zurich Distribution System is under reduced sampling. As such, no residential plumbing samples were 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 8 below for Schedule 15.1 sampling results.

Table 8: Schedule 15.1 Sample Results

Distribution System	Number of Samples	Range of Results		MAC (ug/L)	Number of Exceedances
		Minimum	Maximum		
Alkalinity (mg/L)	4	80	93	n/a	n/a
pH	4	7.51	7.67	n/a	n/a
Lead (ug/l)	4	0.03	0.44	10	0

## Organic Parameters

Organic parameters are tested quarterly as a requirement under O. Reg 170/03. This includes testing for chlorine byproducts including Trihalomethane and Haloacetic Acid. Refer to Table 9 below for organic parameter testing results.

*Table 9: Organic Parameter Testing*

Distribution Water	Annual Running Average	MAC	Number of Exceedances
Trihalomethane: Total (ug/L)	39.8	100	0
Haloacetic Acids: Total (ug/L)	13.8	80	0

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

## Additional Legislated Samples

There are no additional sampling requirements within the Hensall-Zurich Distribution System.

## Major Maintenance and Capital Summary

The Hensall-Zurich Distribution System completed several repairs, installations, replacements and projects as listed below. These represent the major expenses incurred in 2024.

*Table 10: Major Maintenance*

Item	Description
1	Watermain and Appurtenance Repairs
2	Commissioning of new Hensall Water Tower, decommissioning of old tower
3	Decommissioning of Hensall Reservoir
4	PRV Installation – Zurich Reservoir
5	Watermain Commissioning – Richmond Street North
6	Hydrant Installation at Arena

## Revision History

Date	Revision #	Revision Notes
February 11, 2025	0	Issued Report