

February 2023

Mayor Harold McQuaker and Council  
The Corporation of the Township of Emo  
P.O. Box 520  
Emo, Ontario  
P0W 1E0

**Re: 2022 Annual Summary Report for the Emo Drinking-Water System**

Ontario's Drinking-Water Systems Regulation (O.Reg.170/03), made under the *Safe Drinking Water Act, 2002*, requires that the owner of a drinking water system prepare an annual summary for municipalities on the operation of the system and the quality of its water.

The annual summary must cover the period of January 1<sup>st</sup> to December 31<sup>st</sup> in a year and must *be prepared not later than March 31<sup>st</sup>* of the following year. Pursuant to the legislative requirements, enclosed for your records is the 2022 Annual Summary for the Emo Drinking-Water System.

Pursuant to the legislative requirements, *Schedule 22 Summary Reports for Municipalities*, the annual summary must:

- (a) list the requirements of the Act, the regulations, the system's approval, drinking water works permit, municipal drinking water licence, and any orders applicable to the system that were not met at any time during the period covered by the report; and,
- (b) for each requirement referred to in clause (a) that was not met, specify the duration of the failure and the measures that were taken to correct the failure."

- O. Reg. 170/03 s. 22 (2)

"The report must also include the following information for the purpose of enabling the owner of the system to assess the rated capability of their system to meet existing and planned uses of the system:

1. A summary of the quantities and flow rates of the water supplied during the period covered by the report, including monthly average and maximum daily flows.
2. A comparison of the summary referred to in paragraph 1 to the rated capacity and flow rates approved in the system's approval, drinking water works permit or municipal drinking water licence, or if the system is receiving all of its water from another system under an agreement pursuant to subsection 5 (4), to the flow rates specified in the written agreement."

-O. Reg. 170/03 s. 22 (3)

In addition, Section 12 (1) - 4 - gives the direction that a copy of the annual summary for the system is given, without charge, to every person who requests a copy and be made available for inspection by any member of the public during normal business hours. The reports should be made available at the office of the municipality, or at a location that is accessible to the users of the water system.

This report was prepared by the Ontario Clean Water Agency on behalf of the Township of Emo and is based on information kept on record by OCWA at the Emo Drinking-Water System. The report covers the period January 1<sup>st</sup> through to December 31<sup>st</sup> 2022.

Yours truly,



Ty Maurice  
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807-938-5067

Copy to: Crystal Gray – Interim CAO/Clerk-Treasurer  
Operations Staff – Emo Water Treatment

# 2022 Schedule 22 Annual Summary Report

## Emo Drinking-Water System

February 2023

Prepared by the



**Ontario Clean Water Agency**  
**Agence Ontarienne Des Eaux**

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## ***Section 1: Introduction***

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This report is a summary of water quality information for the Emo Drinking-Water System, published in accordance with Schedule 22 of Ontario's Drinking-Water Systems Regulation for the reporting period of January 1st to December 31st 2022. The Emo Drinking-Water System is categorized as a Large Municipal Residential Drinking Water System.

This report is prepared by The Ontario Clean Water Agency on behalf of the Corporation of the Township of Emo. A copy of the Summary Report is to be provided to the members of the municipal council by March 31st 2023.

## ***Section 2: What Does This Report Contain?***

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"The report must,

- (a) list the requirements of the Act, the regulations, the system's approval, drinking water works permit, municipal drinking water licence, and any orders applicable to the system that were not met at any time during the period covered by the report; and,
- (b) for each requirement referred to in clause (a) that was not met, specify the duration of the failure and the measures that were taken to correct the failure."

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"The report must also include the following information for the purpose of enabling the owner of the system to assess the rated capability of their system to meet existing and planned uses of the system:

1. A summary of the quantities and flow rates of the water supplied during the period covered by the report, including monthly average and maximum daily flows.
2. A comparison of the summary referred to in paragraph 1 to the rated capacity and flow rates approved in the system's approval, drinking water works permit or municipal drinking water licence, or if the system is receiving all of its water from another system under an agreement pursuant to subsection 5 (4), to the flow rates specified in the written agreement."

- O. Reg. 170/03 s. 22 (3)

### ***Section 3: Daily Flow Rates***

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In accordance with the *Municipal Drinking Water Licence 288-101 Schedule C: System – Specific Conditions 1.0 Performance Limits*, the Emo drinking-water system shall not be operated to exceed the rated capacity for maximum flow rate from the treatment subsystem to the distribution system of **950 m<sup>3</sup> / day**.

The drinking-water system may be operated temporarily at a rate above the rated capacity where necessary for:

- i) the purposes of fighting a large fire or,
- ii) the maintenance of the drinking-water system

The Emo Drinking-Water facility operated below the rated capacity of 950m<sup>3</sup>/day in 2022. The average monthly raw flow rate was 9007.17 m<sup>3</sup>; the average raw daily flow rate was 295.90 m<sup>3</sup>, with a maximum raw daily flow rate of 428.00 m<sup>3</sup>.

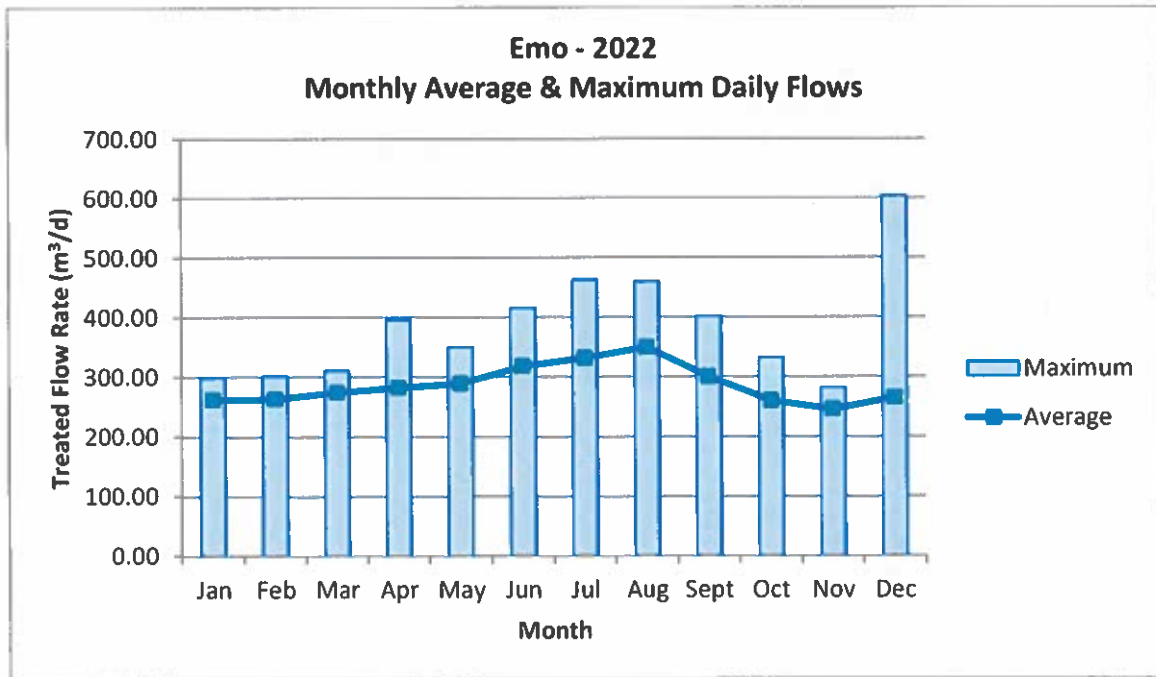
In 2022, the average monthly treated flow rate was 8731.00 m<sup>3</sup>; the average daily treated flow rate was 286.85 m<sup>3</sup>; and the maximum daily treated flow rate for the year was 604.00 m<sup>3</sup> representing 63.58% of the allowable daily volume.

A summary of raw and treated flows, including maximum raw flow into the treatment system as well as treated average, maximum and total flow rates are included in the tables below.

The quantity of raw water supplied during the reporting period did not exceed the terms and conditions of the *Permit to Take Water* while the maximum daily treated flow rate did exceed the rated capacity for this system.

### Monthly Raw & Treated Flow Rates for 2022

Month	Average Daily Raw Flow Rate (m <sup>3</sup> /d)	Maximum Daily Raw Flow Rate (m <sup>3</sup> /d)	Average Daily Treated Flow Rate (m <sup>3</sup> /d)	Maximum Daily Treated Flow Rate (m <sup>3</sup> /d)	Total Monthly Treated Flow Rate (m <sup>3</sup> /month)
January	291.03	368.00	262.26	299.00	8,130.00
February	271.89	343.00	263.25	302.00	7,371.00
March	283.26	344.00	274.65	311.00	8,514.00
April	285.47	337.00	282.20	396.00	8,466.00
May	287.94	355.00	288.90	350.00	8,956.00
June	324.17	412.00	317.87	416.00	9,536.00
July	343.23	428.00	331.87	463.00	10,288.00
August	361.26	422.00	349.74	460.00	10,842.00
September	311.23	408.00	300.33	402.00	9,010.00
October	267.58	357.00	260.19	332.00	8,066.00
November	253.23	303.00	245.57	282.00	7,367.00
December	270.55	384.00	265.35	604.00	8,226.00
<b>2022 Total Treated Flows (m<sup>3</sup>)</b>					<b>104,772.00</b>



## Section 4: System Failures and Correction

The Ministry of Environment conducted an *unannounced* inspection of the Emo Drinking Water System on February 17 2022. The 2022 final inspection report identified seven non-conformance as summarized in the table below.

The 2022 final inspection rating record for the Emo Drinking Water System was 94.46%.

Item	Non-Compliance Identified	Compliance Date	Action Being Taken to Address item	Status
1	The owner did not have up-to-date documents describing the distribution components as required. Drinking Water Works Permit #288-201, Schedule B, section 3.5 states that within 12 months of the addition, modification, replacement or extension of any watermain, the map described in Column 1 of Table 1 of Schedule A of this permit shall be updated. The map described in Table 1 is dated April 2016. Work has been completed in the distribution system since this date, that is older than 12 months, that has not been captured in the 2016 map i.e. 2019 watermain extension and looping	04/29/2022		Complete
2	A program for exercising valves did not exist. Most valves are exercised during watermain breaks and flushing, but there is no specific program in place for this practice.		OCWA will discuss these with the township	Complete
3	The owner was not able to maintain proper pressures in the distribution system and/or pressure was not monitored to alert the operator of conditions which may lead to loss of pressure below the value under which the system is designed to operate. Operators can determine if there is a loss of pressure in the distribution system if a second high lift pump kicks on. Aging distribution lines resulting in watermain breaks have made it challenging for operators to maintain adequate pressure in the distribution system at all times.			Complete
4	The operations and maintenance manuals did not contain plans, drawings and process descriptions sufficient for the safe and efficient operation of the system. O. Reg. 128/04, section 28, requires that operators and maintenance personnel have ready access to comprehensive operations and maintenance manuals that contain plans, drawings and process descriptions sufficient for the safe and efficient operation of the subsystem. During last year's inspection, it was identified that the current operations manual does not contain plans and drawings of the water treatment plant or the distribution system. The plans/drawings should depict treatment process		The O&M manual will be updated following the THM project	In Progress



Item	Non-Compliance Identified	Compliance Date	Action Being Taken to Address item	Status
	<p>units, chemical application points and process monitoring/sampling points for each subsystem. The plans/drawing for distribution subsystem should also include water mains, valves, hydrants, and other appurtenances associated with the distribution system. The plans/drawing may depict the entire system as a whole or individual treatment systems as separate drawings.</p>			
5	<p>The operations and maintenance manuals did not meet the requirements of the Drinking Water Works Permit and Municipal Drinking Water Licence issued under Part V of the SDWA.</p> <p>As a result of last years inspection, it was identified that the DWS's Operations Manual was outdated and did not describe newly used computer programming. At the time, the operating authority made some interim updates to their operations manual with the intention that the manual would be overhauled after the completion of the THM Project. On March 9, 2022, Emo's Town Council authorized approval for a consulting company to move forward on the THM Project. This includes designing and installing the new THM equipment and providing an updated version of the operations manual to meet the requirements of the facility's Drinking Water Works Permit and Municipal Drinking Water Licence.</p>		<p>The O&amp;M manual will be updated following the THM project</p>	<p>In Progress</p>
6	<ol style="list-style-type: none"> <li>1. The owner's manual for the continuous treated water chlorine analyzer requires that this instrument be calibrated every 6 to 12 months. Despite this requirement, operators compare bench top treated water chlorine residual readings to the on-line analyzer on an almost daily basis. If operators determine the on-line analyzer is starting to drift, they will span calibrate the on-line analyzer to reflect the residual obtained from the bench top instrument. On occasion, these checks would not be completed for up to 4 days. Sometimes after a longer period not completing these checks, the difference between the two readings would differ by 10 to 18%.</li> <li>2. During the review period, it was identified that there were several filter effluent turbidity alarms that were acknowledged remotely by operators (confirmed through computer generated alarm report), but alarms were not documented in the log book.</li> <li>3. The facility's dual media filters consist of sand and anthracite; however, the proportion/quantity of each layer in the filter is unknown.</li> </ol>		<ol style="list-style-type: none"> <li>2. Alarm Callouts are being logged in logbook and Call in reports are attached</li> </ol>	<ol style="list-style-type: none"> <li>1. In Progress</li> <li>2. Complete</li> <li>3. In Progress</li> </ol>
7	<p>All changes to the system registration information were not provided within ten (10) days of the change. O. Reg. 170/03, section 10.1 requires that system and</p>			<p>Complete</p>

Item	Non-Compliance Identified	Compliance Date	Action Being Taken to Address item	Status
	owner/operator contact information be provided to the Director. If there is a change to the information provided, the owner of the drinking water system shall give the Director written notice of the change within 10 days of the change. In November 2021, a new interim CAO was appointed in Emo. At the time of the inspection, the owner's contact information had not been updated to reflect this change.			

On July 21 2019 the gas chlorination system failed and leaked chlorine. The municipal fire department attended the water plant to contain the gas leak. The gas chlorination system was shut down and an alternate chlorination system established to maintain disinfection using sodium hypochlorite. The use of the gas chlorination system was re-implemented for disinfection in March of 2021 following necessary work to repair.

## Section 5: Conclusion

In the reporting year of 2022, there were two adverse water quality incident (AWQI) reports filed as summarized in the table below.

Incident Date	Parameter	Result	Unit of Measure	Corrective Action	Corrective Action Date
July 13 2022	Raw water sample mislabeled as Treated Water, TC 8 and EC 4 recorded.	TC 8 EC 4	mg/L	Resample	July 19 2022
Dec 3 2022	Main break, 40 residence and 7 commercial sites affected			Collect 2 bacti sample at three locations 24 hours apart: each end of main affected and one in the middle	Dec 9 2022

For the operating year of 2022, the Emo Drinking-Water System was able to meet the demand of water use within the town without exceeding the Permit to Take Water or the Municipal Drinking Water Licence and Permit.