

## TOWNSHIP OF ENNISKILLEN

### SUMMARY REPORT

2015

Schedule 22 of O. Regulation 170/03 requires that a Summary Report be prepared for each year. It is to be prepared not later than March 31 and given to the members of the municipal council in the case of a drinking water system owned by a municipality. (section 22-2 (1))

The Summary Report must list the requirements of the Act, the regulations, the system's approval, and any order that the system failed to meet at any time during the period covered by the report and specify the duration of the failure. It must also, for each failure referred to above, describe the measures that were taken to correct the failure. (section 22-2 (2))

The Summary Report must also include the following:

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 and daily instantaneous peak flow rates.
2. A comparison of the summary referred to in paragraph 1 to the rated capacity and flow rates approved in the system's approval.

This will enable the system's owner to assess the capability of the system to meet existing and planned uses of the system. (section 22-2 (3))

If a report is prepared under subsection 1 for a system that supplies water to a municipality under the terms of a contract, the owner of the system shall give a copy of the report to the municipality by March 31. (section 22-2 (4))

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Mike Young, Water/Sewer O.R.O.  
Enniskillen Township

MOE: Certificate of Approval No. 7-1716-90-926

SUMMARY REPORT

The following is a summary performance report for the Township of Enniskillen Water Distribution System. This report is for 2015 and is based on Schedule 22 of the O. Reg. 170/03.

The following is a summary of the water supplied from the Water Reservoir and Pump Station during 2015.

Month	Maximum Flow (m3)	Average Flow (m3)	Total Monthly Flow (m3)
January	440.0	295.0	8,850.0
February	460.0	316.7	8,550.0
March	540.0	321.6	9,970.0
April	460.0	351.7	10,550.0
May	490.0	366.3	10,990.0
June	460.0	326.3	9,790.0
July	440.0	357.7	11,090.0
August	430.0	357.1	11,070.0
September	430.0	351.0	10,530.0
October	420.0	334.0	10,020.0
November	400.0	335.0	10,050.0
December	450.0	318.4	9,870.0
			<u>121,330.0</u>

The total volume of water treated through the reservoir in 2015 was 121,330 m<sup>3</sup>

The 20 year design for maximum flow rate is 4.23 m<sup>3</sup>/minute.

The design for peak hourly flow rate is 1.41 m<sup>3</sup>/minute.

The average daily flows were determined by the freshening cycle. The water in the reservoir is turned over once every 3.5 to 4 days.

**SUMMARY REPORT**

**Water purchased from Petrolia in 2015. (m3)**

Month	Churchill	Petrolia (west)	Howlet/ 2" Martha	Tank	Petrolia (east)	Discovery	Lasalle	Oil Heritage	First	Monthly Totals
January										
February	33,945	13,251	2,236	666	6,120	5,390	19,388	6,130	6,425	93,551
March										
April	34,750	12,767	2,659	1,449	5,690	5,210	20,729	5,350	5,845	94,449
May										
June	42,455	17,072	2,992	2,074	8,160	7,380	26,809	7,140	7,425	121,507
July										
August	47,085	16,877	3,421	3,805	8,010	7,330	28,416	7,280	6,970	129,194
September										
October	42,935	14,458	3,041	2,652	6,770	5,960	24,910	6,000	5,840	112,566
November										
December	34,150	9,579	2,417	1,890	6,080	4,010	17,612	5,550	6,550	87,838
<b>Total</b>	<b>235,320</b>	<b>84,004</b>	<b>16,766</b>	<b>12,536</b>	<b>40,830</b>	<b>35,280</b>	<b>137,864</b>	<b>37,450</b>	<b>39,055</b>	<b>639,105</b>

The annual amount of water (m3) purchased from Petrolia is as follows:

2021		2014 642,250	2007 724,568	2000
2020		2013 665,804	2006 673,979	1999
2019		2012 664,961	2005 752,041	1998
2018		2011 663,332	2004 687,342	1997
2017		2010 680,664	2003 693,617	1996
2016		2009 678,988	2002 673,811	1995
2015 <b>639,105</b>		2008 667,009	2001 637,039	1994

This total includes water sold to customers in the Enniskillen water distribution system (including customers in the Township of Brooke-Alvinston and the City of Sarnia), the Township of Dawn-Euphemia, the Village of Oil Springs, and other water uses including fire flow, flushing, etc.

The total amount of accountable water for 2015 was. 578770m3

The water loss % for 2015 was

2018		2014 12.40%	2010 9.61	2006
2017		2013 11.08	2009 8.61	2005
2016		2012 11.58	2008 10.64	2004
2015 9.44%		2011 8.91	2007 14.88	2003

The water agreement with the Town of Petrolia allows the Township of Enniskillen to purchase a daily volume of 2727 m3 or 993,355 m3 per year.

**HEALTH SAMPLES**

The health samples include tests for the presence of E. coli, total coliforms, and background count. Any presence of E.coli and total coliforms are considered adverse and must be reported.

Free chlorine samples were also analyzed at each site. Sample results less than 0.2 mg/l are of concern and sample results less than 0.05 mg/l are considered adverse and must be reported.

Health samples are taken at the Water Reservoir and Pumping Station (inlet and outlet) and in the water distribution system on a weekly basis in 4 locations within the Township of Enniskillen, in 3 locations in the Village of Oil Springs, and in 4 locations in the Township of Dawn-Euphemia as follows:

**Water Reservoir**

Chlorine residuals ranged from 1.17mg/L -1.68 mg/L. All health samples indicated no presence of E.coli or Total coliforms. All health samples for background count were 0cfu/100mL. The HPC> ranged from 0-70cfu/mL. with the exemption of a spill of >2000 cfu/mL after the reservoir inspection and cleaning July 15/15.

**Township of Enniskillen**

McGregor's Plymouth Chrysler-Petrolia line  
Podolinsky Farm Equipment - Petrolia Line at Forest Road  
Township Office - Rokeby Line at Oil Heritage Road  
Brooke Telecom-Hamlet of Inwood in the Township of Brooke Alvinston

Chlorine residuals ranged from 0.66mg/L -1.66 mg/L  
All health samples for Background count ranged from 0 cfu/ 100 mL. The HPC. ranged 0-<10 cfu/mL.

**Village of Oil Springs**

Oil Springs/Oil City Water Reservoir and Pump Station  
Oil Springs Service Centre  
Oil Springs Municipal Office

All health samples indicated no presence of E.coli or Total coliforms.

**Township of Dawn-Euphemia**

Township Office - Hamlet of Rutherford  
Restaurant/Store - Hamlet of Florence  
Cargill - Hamlet of Shetland  
Union Gas - Dawn Plant

All health samples indicated no presence of E.coli or total coliforms.

**OTHER SAMPLING**

Quarterly trihalomethane samples are required to be taken in the water distribution system. The ODWQS for Trihalomethanes (THM) is 0.100 mg/l. Trihalomethanes are formed by the reaction of chlorine with organic matter in the water. Samples are usually taken in the remote part of the water system where they are most likely to develop.

All samples taken in the water distribution system were within the required limits.

**LEAD SAMPLING**

Lead samples were taken on April 14 and September 11 2015 with no adverse results. (attached)

Only distribution lead samples are required. (samples from 2 hydrants, winter and summer)

**EMERGENCY OR UPSET CONDITIONS**

An emergency or upset condition would be a circumstance where the quality of the water was threatened.

There were no emergency conditions in 2015.

**Treatment Process**

The Enniskillen Water Distribution System receives its water supply from the Petrolia Water Distribution System. At the Township of Enniskillen Reservoir and Pump Station, a 12% solution of sodium hypochlorite is injected when water enters the reservoir and when it leaves the reservoir. In 2015, 121330 m<sup>3</sup> of water was treated at the reservoir. An average of 10110.8 m<sup>3</sup>/mo. And an average of 332 m<sup>3</sup>/day. The average free chlorine residual of 1.48mg/L was maintained at the reservoir.

**REVIEW OF WATER DISTRIBUTION SYSTEM**

There were seven(7) water main breaks in 2015.

Two (2) watermain repairs on Old Walnut Road  
Fairweather Road  
Petrolia Line  
Forest Road  
Marthaville Road  
Plowingmatch Road

Approximately 800 m. of 2" watermain was replaced on Plowing Match Road.  
Approximately 1000m. of 4" watermain was abandoned on Old Walnut Road

Four (4) new water services were installed  
Replaced four (4) curb stops  
Repaired five (5) water services

**Water Reservoir and Pump Station**

General repairs(generator maintenance,heater maintenance,usual operations)

New overhead gas heaters were installed

As per section 22-2 (2) of O. Regulation 170/03, the list of requirements of the Act, the regulations, the system's approval, and any orders that system failed to meet at any time during 2015 including the duration of the failure, must be included in the Summary Report.

An inspection of the water distribution system was carried out by by the M.O.E.C.C. December 11 2015

The following non compliance issues were identified .1.Chloine alarm failed to alarm at the time of the inspection.

2. Chlorine grab samples were not taken on an hourly basis (24/7) when data was lost due to computer failure (froze)

3 The .chlorine analyzer was not being maintained in accordance with the manufacturers specification. eg. Checked with handheld unit daily, membranes not replaced every three (3) years.

4.The inspection and cleaning of the reservoir was not completed correctly in accordance with the AWWA C652 Standard for disinfection of Water Storage Facilities

**The Township of Enniskillen Water Distribution System received a 76.95 % compliance with the M.O.E.C.C. for the 2015 inspection. (attached)**

Follow-up on the non-compliance issues. All non-compliance issues have been identified and corrractive actions have been completed and returned to M.O.E.C.C. for review.

Summary of best practices and recommendations: 1. A risk survey and a backflow prevention program be implemented.

**RECOMMENDED WORK**

1. It is recommended that the Township work with the Oil Springs Water System and the Dawn-Euphemia Water System to replace the flow meters in the meter chambers connecting to each water system with more accurate flow meters as required
2. **Immediate** upgrades on Enniskillen Reservoir. (pumps, piping ,S.C.A.D.A. system)
3. Operators should hold licences at the level of the system being operated.

**Other priorities**

1. Electric sewer eel (Oil City)
2. Video equipment (Oil City)
3. Propane steam jeanne ( thaw hydrants and culverts) (roads, water)
4. A locator capable of tracing underground water and sewer lines