



Annual Summary Report

For The

Aylmer Distribution System

2020

Prepared by: Connor Bailey
Manager of Operations
Town of Aylmer

Aylmer Distribution System – 2020 Summary Report

March 2021

Overview

This Summary Report for the Aylmer Distribution System is generated in accordance with Schedule 22 of Ontario's Drinking Water Systems Regulation for the reporting period of January 1st, 2020 to December 31st, 2020. The Aylmer Distribution System (waterworks number 260002136) is categorized as Large Municipal Residential Drinking Water System. It is operated under the Municipal Drinking Water License (MDWL) #044-101 and Drinking Water Works Permit (DWWP) #044-201.

The Town of Aylmer is supplied water by the Aylmer Secondary System which delivers water from the Elgin Middlesex Pumping Station to the town limits by means of a 450 mm water main.

Compliance

The annual audit of the Aylmer Distribution System's Drinking Water Quality Management Standard (DWQMS) was an on-site audit that was conducted off site due to Covid-19 restrictions, on September 25, 2020 by NSF auditor Rose Johnson. The most recent MECP system inspection was conducted on July 24, 2020. One non-compliance was identified resulting in an inspection rating of 92.76%.

Requirements

The 2020 Summary Report for the Aylmer Distribution System is submitted to satisfy Schedule 22 of Ontario Regulation 170/03. As described in O.Reg 170.03, the report must:

- a) List the requirements of the Act, the regulations, the system's approval, drinking water works permit, municipal drinking water license and any orders applicable to the system that were not met at any time during the reporting period and
- b) For each requirement not met in part a), specify the duration of the failure and the measures that were taken to correct the failures

The Summary Report must also include the following information to assist the owner in assessing the capability of the system to meet existing and future uses:

- 1) A summary of the quantities and flow rates of the water supplied during this period covered by the report, including monthly average and maximum daily flows
- 2) A comparison of the summary results to the rated capacity and flow rates approved in the system's approval, drinking water works permit or municipal drinking water license or if the system is receiving all of its water from another system under an agreement, to the flow rates specified in that agreement

Table 1 lists the requirements that the system failed to meet, and the measures taken to correct the failure

Table 1

Drinking Water Legislation	List of requirements the system failed to meet	Duration of the failure	Measures that were taken to correct problem	Status: (complete or incomplete)
Safe Drinking Water Act				
Ontario Regulations				
DWL #044-101. DWWP #044-201 Issue #2 (as of June 7/16)	On June 3, 2019 the Aylmer Standpipe was inspected utilizing a Remote Operated Vehicle (ROV) while the tower was in operation. AWWA Standard C652 – Disinfection of Water Storage Facilities Section 4.4.7 (Post-inspection chlorine residual, turbidity, and bacteriological testing) directs the system to collect samples and test as described in Section 5, Verification. If the storage tank was removed from service, satisfactory bacteriological and chlorine residual (if applicable) results are required before the facility can be placed back in service. A review of documentation indicated that the Owner/Operating authority failed to collect bacteriological samples as directed in the AWWA Standards after completion of the ROV inspection.	1 Day (failed to take a bacteriological sample immediately following an ROV inspection of the standpipe)	From herein, the Owner/Operating Authority shall ensure that that the procedures outlined in AWWA Standard C652 are correctly followed and activities are properly documented as stipulated by Drinking Water Works Permit #044-201 Issue #2, Section 2.3 of Schedule B. The Owner/Operating Authority shall provide training to the operators on the requirements of Drinking Water Works Permit #044-201 Issue #2 and shall submit documentation to ensure compliance with the aforementioned including an operator sign off sheet to the undersigned inspector no later than October 31, 2020.	Complete Operators completed a webinar on October 23/2020 titled “Safe Drinking Water act”. The webinar was able to be modified to cover Aylmer’s drinking water works permit and applicable AWWA standards. Certificates of completion were issued from WWOTC and submitted to the MECP. This satisfied the actions required.
Provincial Officer’s Order No.				
Works permit/ License				

Water Quantity Summary

Table 2 provides an overview of the quantity of water entering the Aylmer Distribution System at Chamber 16 as recorded by the SCADA system.

Table 2

	Total Flow (m3)	Average Daily Flow (m3/day)	Max Daily Flow (m3/day)	Min Daily Flow (m3/day)	Total Reverse Flow (m3)
January	128631	4149	4609	3682	2913
February	121085	4175	4401	3631	2656
March	126997	4097	4523	3313	2816
April	97504	3250	3831	2889	2915
May	126238	4072	5499	2768	2477
June	164555	5485	6504	4506	2030
July	174311	5623	6603	4926	2060
August	162851	5253	5822	4491	2400
September	131657	4389	5235	2533	2673
October	138690	4953	4540	3257	2903
November	132129	4404	4816	3824	2728
December	126607	4084	4707	3697	2870
Total	1505813	4495			31441

Flow data for the period Jan 1, 2020 to Dec 31, 2020

The maximum daily flow to the system occurred on July 7, 2020 with a daily total of 6603 m3. The total flow from the EMPS to Aylmer averaged 4495 m3/day. The numbers change when one considers the reverse flow through the meter at Chamber 16. When the reverse flow is subtracted from the total flow, the annual flow drops to 1474372 m3 for the year 2020. This also changes the average daily flow from 4495 to 4039 m3/day for 2020. Using the figure 130 l/sec as the EMPS pump capacity, the total daily flow for the Aylmer Secondary line is 11232 m3/day. The current average daily flow (4495 m3/day) uses 40% of the system's capacity. This number has stayed the same as the previous year's total of 40% capacity. The months of March, April and May were notable in 2020 as having lower average flows from 2019, most likely due to Covid-19 related lockdowns.

Table 3 compares the flows from 2020 to those of 2019. There were considerable variations in water usage on a month to month basis. High water consumption in the months of June, July and August is a common trend as people complete more outdoor tasks that require water usage. Irrigation and exterior cleaning of property always increase the total volume of water used. The Months of March, April and May saw a sharp decrease in water consumption. Lockdowns due to Covid-19 coincide with this decrease in usage.

Table 3

Month	Total Flow 2020 (m3)	Total Flow 2019 (m3)	Average Daily Flow 2020 (m3/day)	Average Daily Flow 2019 (m3/day)	Difference between 2020 and 2019 (%)
January	128631	125003	4149	4032	+2.9%
February	121085	115901	4175	4139	+0.9%
March	126997	130031	4097	4191	-2.2%
April	97504	133901	3250	4463	-27.2%
May	126238	149452	4072	4821	-15.5%
June	164555	156190	5485	5206	+5.4%
July	174311	159200	5623	5135	+9.5%
August	162851	159970	5253	5160	+1.8%
September	131657	120078	4389	4002	+9.7%
October	138690	145556	4953	4695	+5.5%
November	132129	129512	4404	4317	+2.0%
December	126607	127872	4084	4124	-1.0%
total flow (m3)	1505813	1652666			-8.9%
Average (m3/day)			4495	4528	-0.7%

Table 4 shows the various flow parameters for 2020 and compares the daily average flow rates for 2020 to those of 2019

Table 4: Flow Rates

Month	2020 Daily Average Flow Rate (L/s)	Max Flow Rate/Day (L/s)	Min. Flow Rate/Day (L/s)	Highest Hourly Average	2019 Daily Average Flow Rate (L/s)
January	48.01	53.54	42.46	129.9	46.7
February	48.33	50.76	42.16	129.9	48.3
March	47.51	52.83	38.35	130.4	48.7
April	37.62	44.36	33.5	131.0	51.6
May	47.07	63.93	31.97	131.6	55.8
June	63.42	75.28	52.54	136.6	60.2
July	65.11	76.43	57.23	132.2	59.5
August	60.76	67.52	51.81	132.8	59.7
September	50.84	60.27	29.1	133.0	46.3
October	51.80	56.45	38.1	132.0	54.4
November	50.81	55.60	44.59	132.6	49.9
December	47.29	54.85	42.92	130.4	47.8

This information is collected in order to assist the owner in assessing the present capacity of the water system. A copy of this report shall be submitted to Council no later than March 31, 2021.