Annual Summary Report

For The

Aylmer Distribution System

2016

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Aylmer Distribution System – 2016 Summary Report January 2017

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, 2016 to December 31st, 2016. 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 System (DWQMS) was conducted on October 20, 2016 by NSF auditor Rose Johnson. Two opportunities for improvement were identified at that time:

(DWQMS)-01 Consideration could be given to clarifying applicability of NSF 60/NSF 61 to essential supplies.

(DWQMS)-02 Consideration could be given to including "as found" readings on Hach calibration reports.

The most recent **MOECC** system inspection was conducted on December 14, 2016. One situation was identified. On one occasion when an alarm didn't alarm, there was no documentation of the action taken when the continuous analyzer that is used to measure distribution system free available chlorine registered a 0 mg/L reading. Compliance with this requirement will be assessed during the next inspection

Requirements

The 2016 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 (as of Aug. 4/11)				
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	96129	3100	3421	2738	2790
February	92800	3200	3613	2738	2714
March	99725	3216	3483	2852	2912
April	100227	3340	3743	2852	2706
May	118846	3833	4902	2844	2741
June	126686	4222	5183	3061	2369
July	109508	3911	4718	1843	2200
August	118562	3824	4469	3383	2708
September	105713	3523	4603	2403	2667
October	104318	3365	3883	2734	2822
November	98986	3299	3588	2911	3075
December	99635	3214	3485	2792	2935
Total	1271135	3482			32639

Flow data for the period Jan 1, 2016 to Dec 31, 2016

The maximum daily flow to the system occurred on June 25, 2016 with a daily total of 5183 m3. The total flow from the EMPS to Aylmer averaged 3482 m3/day. The numbers change when one takes into account the reverse flow through the meter at Chamber 16. When the reverse flow is subtracted from the total flow, the annual flow drops to 1238496 m3 for the year 2016. This also changes the average daily flow from 3481 to 3393 m3/day for 2016.
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 (3482 m3/day) uses only 31 % of the system's capacity. This number is slightly lower than the previous year's total of 31.1% capacity.

Table 3 compares the flows from 2016 to those of 2015. Although there were considerable variations on a month to month basis, the overall variation between 2016 and 2015 was quite small. Unfortunately metering issues at Chamber 16 from July 22 to 24 prevented the measurement of daily flow totals on those days

Table 3

Month	Total Flow 2016 (m3)	Total Flow 2015 (m3)	Average Daily Flow 2016 (m3/day)	Average Daily Flow 2015 (m3/day)	Difference between 2016 and 2015 (%)
January	96129	100241	3100	3223	-4.2
February	92800	95355	3200	3405	-6.1
March	99725	111310	3216	3590	-11.5
April	100227	101828	3340	3394	-1.6
May	118846	106272	3833	3428	+11.8
June	126686	112435	4222	3747	+12.6
July	109508*	121067	3911	3905	+0.01
August	118562	119235	3824	3846	-0.6
September	105713	115201	3523	3840	-8.3
October	104318	97681	3365	3151	+6.8
November	98986	96029	3299	3201	+3.1
December	99635	96970	3214	3128	+2.7
total flow (m3)	1271135**	1273624			
Average (m3/day)			3481	3497	

* 28 day total due to metering issue in Chamber 16
** 3 days in July not included in total due to metering issue at Chamber 16. Total for 2016 would have exceeded 2015 total with those three days included in total

Table 4 shows the various flow parameters for 2016 and compares the daily average flow rates for 2016 to those of 2015

Table 4: Flow Rates

Month	Daily Average Flow Rate (L/s)	Max Flow Rate/Day (L/s)	Min. Flow Rate/Day (L/s)	Highest Hourly Average	2015 Daily Average Flow Rate (L/s)
January	35.86	39.86	31.44	136	37.45
February	36.93	41.85	31.26	134.7	39.48
March	37.28	40.55	25.95	136.4	41.62
April	38.74	40.55	32.94	135.8	39.29
May	44.31	57.15	32.76	149.4	39.67
June	48.88	59.62	35.47	137.5	43.32
July	46.73	54.51	40.07	137.9	45.25
August	44.28	51.8	39.01	136.0	44.46
September	40.79	53.07	27.54	138.0	44.49
October	38.92	44.87	31.87	137.8	36.37
November	38.12	41.44	33.76	134.8	36.99
December	37.21	40.24	32.47	131.8	36.16
	40.67	48.88	37.21	149.4	40.38

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, 2017.