

The Corporation of the Town of Mattawa

P.O. Box 390, 160 Water St.,
Mattawa, Ontario, P0H 1V0

2015 Summary Report for Municipalities— Mattawa Drinking Water System per O. Reg 170 / 03

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PLANT: **Mattawa Drinking Water System**

DWS NUMBER: 2100001905

PLANT TYPE: Municipal Drilled Wells

OPERATORS: Certified Municipal Staff

ADDRESS: Corporation of the Town of Mattawa
P.O. Box 390
160 Water Street
Mattawa, Ont., POH 1V0

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DESCRIPTION:

- Water Source is from two deep drilled wells. Well #1 – 26.67m & Well #2 – 23.77m.
- Storage by underground concrete reservoir w/ 690 Cubic Meter capacity.
- Distribution system is gravity fed from the reservoir.
- Average water pressure throughout distribution system is between 97 and 102 psi.
- Distribution system comprises of a mixture of PVC, ductile iron and cast iron.
- Pump # 1 is rated at 53.0 L/s and pump #2 is rated at 22.7 L/s.
- The only treatment required for this system is disinfection. Disinfection is presently achieved by U.V. exposure via Trojan Swift Reactors. Chlorination is being used to maintain residuals throughout the distribution system to meet our Drinking Water Works Permit, Municipal Drinking Water Licence and O.Reg 170/03 as amended.

REPORTS TO THE MINISTRY

Per Section 18 of the Safe Drinking Water Act:

- There were no reports submitted to the Ministry under Section 18 of the Act for this period.

COMPLIANCE WITH TERMS & CONDITIONS OF THE DRINKING WATER WORKS PERMIT:

- As far as we have been able to ascertain, with the exception of the items listed in the next section, in 2015 we operated the Town of Mattawa Waterworks in accordance with our Drinking Water Works Permit #195-201 and O.Reg 170/03 as amended.
- Chlorine readings in the distribution system are being taken using handheld chlorine meters.
- Chlorine at the plant is being monitored at the plant using an in-line analyzer.
- Water flows are measured in cubic meters. Our SCADA system records the meter readings and provides for an ongoing report of the water produced during each day period. As such, daily flows are easily found on the SCADA system.
- A detailed Operations Manual and Contingency Plan has been completed and implemented.
- As far as we can ascertain we have not exceeded the maximum flow rate of 6,540 m³/day.

NON - COMPLIANCE WITH TERMS & CONDITIONS OF THE DRINKING WATER WORKS PERMIT:

Non-Compliance	A Form 1 document as per Section 3 of Schedule B of the Drinking Water Works Permit that pre-approves Water Main Additions, Modifications, Replacements and Extensions was not completed and retained prior to undertaking alterations within the distribution system
Measures taken to comply	A Standard Operating Procedure (SOP) was developed that would: <ul style="list-style-type: none"> • Determine when a distribution system project will require the completion of a Form 1 document • Ensure a required Form 1 document is completed before the alteration takes place • Maintain a tracking and retention system for all Form 1 documents

SUMMARY & DISCUSSION OF WATER PRODUCTION:

- From January 1st, 2015 to December 31st, 2015 the waterworks produced and supplied 453,413.07 cubic meters of drinking water to the distribution system. This represents a 0.05% increase in production over 2014.
- The monthly average quantity of water supplied by this facility compared to the capacity of the wells is listed in table form below:

Summary of Water Production for 2015

	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec
Total Flow for month	34475.3	36887.2	51503	43748	36076	37829.6	40475.2	36763.2	38468.8	36805.7	30490.6	29890.2
Avg Day Flow - m ³	1112.11	1317.4	1661.4	1458.3	1163.7	1260.99	1305.65	1185.91	1282.29	1187.28	1016.35	964.2
Max. Day Flow - m ³ :	1421.17	1619.71	1902.6	2800.1	1499.2	1577.87	1608.24	1594.01	1541.04	1586.94	1302.79	1289.73
Rated Capacity - m ³ /Day	6546.38	6546.38	6546.4	6546.4	6546.4	6546.38	6546.38	6546.38	6546.38	6546.38	6546.38	6546.38
% (Avg Day / Rated):	17.0%	20.1%	25.4%	22.3%	17.8%	19.3%	19.9%	18.1%	19.6%	18.1%	15.5%	14.7%
% (Max Day / Rated):	21.7%	24.7%	29.1%	42.8%	22.9%	24.1%	24.6%	24.3%	23.5%	24.2%	19.9%	19.7%

SUMMARY OF FLOW RATE EXCEEDANCES & ANALYTICAL RESULTS:

Flow Rates

During this period there were **no** exceedances of the rated capacity flow rate. Over the course of the past 10 years the municipality has undertaken a comprehensive leak detection program. This program has been effective in reducing losses to the degree that our normal production range has dropped from 2,500 – 3,000 m³ per day down to within a normal production range of 1,300 to 1,600 m³ per day. In 2015 our average water consumption continued to be below 1,250 m³/day. This was likely a result of continued maintenance, improvements and modifications to our distribution system, and repair of long standing undiscovered leaks through our on-going leak detection efforts.

Our flow measuring devices were calibrated on April 17th, 2015.

Quarterly Sampling

All tests required from our Nitrates/Nitrites & THMs quarterly sampling program yielded results below Ontario Drinking Water Standards (ODWS) Maximum Acceptable Concentration (M.A.C.). THM's were taken at the near end of the distribution system, while the Nitrates, Nitrites were taken at the plant exit. THMs were far below the M.A.C., with a 4 quarter running average of 0.0030 mg/L. The current M.A.C. is 0.100 mg/L.

Schedule 23 of O. Reg. 170/03 - Inorganics

These parameters were tested for in July of 2015 & all results were well below the M.A.C. They are due to be sampled and tested next in 2018.

Schedule 24 of O. Reg. 170/03 – Organics

These parameters were tested for in July of 2015 & all results were well below the M.A.C. or below detectable limits. They are due to be sampled and tested next in 2018.

Bacteriological

There were three separate occurrences where a single coliform bacteria result was detected in the raw water supply. Regular testing did not indicate a negative trend forming. All treated water samples were clear of any adverse indicators, as were all distribution samples.

Free Chlorine Residual

During 2015, chlorine residual was conducted using an in-line analyzer in the water works station and handheld meters in the distribution system and for raw water. Chlorine residual tests in the distribution system were carried out at various locations and various times through the day every day of 2015. The free chlorine residual values in the distribution system generally ranged from 0.08 to 1.04 mg/L. Chlorine tests were conducted 365 times during this year.

There were no incidences to report where the maximum free chlorine residual exceeded 4.0 mg/L in either the distribution system or at the point where the water enters the distribution system.

There were no incidents to report where the free chlorine residual was less than 0.05 mg/L.

Turbidity

O. Reg 170/03 requires testing each production well on a monthly basis for turbidity. Turbidity levels of the raw water at the plant ranged between 0.08 and 0.27 NTU. Raw water turbidity is being tested with a portable turbidimeter.

TREATMENT CHEMICALS AND DOSAGE:

Sodium Hypochlorite is the only treatment/disinfection chemical used at this water production facility. The metering pumps were set to provide treated water free chlorine residuals between 0.50 mg/L and 0.70 mg/L. We monitor free chlorine residual values in the distribution system so as to work towards maintaining sufficient free chlorine levels in the distribution system to keep the water safe and aesthetically pleasing while on its way to end users.

At different times throughout the year we adjust dosage to reflect the needs of the system.

Prepared by:



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