

The Corporation of the Town of Mattawa

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

2008 Summary Waterworks Report per O.Reg 170 / 03 & Certificate of Approval Condition #4

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February 26, 2009

PLANT: **Town of Mattawa Water Works**

WORKS 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

CONTACT PERSON: Marc Mathon, P.Eng
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DESCRIPTION:

- Water Source is from two deep drilled wells. Well #1 – 26.4m & Well #2 – 23.6m.
- Standby chlorination system installed in 1996, replaced with new system in October 2003.
- Storage by underground concrete reservoir w/ 175,000 Imp. Gal. capacity.
- Distribution system is gravity fed from the reservoir.
- Average water pressure throughout distribution system is 97 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 certificate of approval and O.Reg 170/03.

REPORTS TO THE MINISTRY

Per Section 18 of the ACT:

- During this period there was **NO** test results from our weekly Table “A” and Quarterly sampling program that showed indicators of adverse water quality.
- There were no reports submitted to the Ministry under Section 18 of the Act for this period.

COMPLIANCE WITH TERMS & CONDITIONS OF THE CERTIFICATE OF APPROVAL:

- As far as we have been able to ascertain, with the exception of the items listed in the next section, in 2008 we operated the Town of Mattawa Waterworks in accordance with our Certificate of Approval #2383-5MGKJ9 and O.Reg 170/03.
- Chlorine readings in the distribution system are being taken using handheld turbidity meters.
- Chlorine at the plant is being monitored at the plant using an in-line analyzer.
- Water flows are measured in Imperial Gallons. Each day the operator records the meter readings onto a Daily Readings form. That form provides for an ongoing subtraction of the previous day's readings to determine the water produced during each day period. As such, daily flows are easily found on the flow recording forms for the plant & each well, as practiced for that past 10+ years.
- We recently completed a Groundwater Study as part of a regional project led by the North Bay – Mattawa Conservation Authority. This study will form the basis for a Ground Water Protection Plan which is part of an upcoming project also involving the North Bay – Mattawa Conservation Authority. We expect to be able to implement a preliminary plan by end of 2009.
- A detailed Operations Manual and Contingency Plan has been completed and implemented. We will be including a section called “Standard Conditions” outlining the routine, standard or normal levels and readings that are observed during the normal operation of the plan. This will assist operators in identifying problem areas quicker.
- We are in the middle of developing our DWQMS Operational Plan and Risk Assessment and we are undertaking the complete full scope as a project and expect to have it in place and ready for our first audit prior to Christmas of 2009.

NON - COMPLIANCE WITH TERMS & CONDITIONS OF THE CERTIFICATE OF APPROVAL:

Non-Compliance	We did not ensure that the sampling requirements for lead as specified in O. Reg. 170/03 Schedule 15.1-4 (2) for the period of December 15, 2007 to April 15, 2008 were completed.
Measures taken to comply	Our sampling program was adjusted to ensure that the lead sampling took place in accordance with the appropriate schedule as amended.

Non-Compliance	The posted certificate for Marc Mathon's was expired.
Measures taken to comply	A replacement certificate was obtained and posted.

Non-Compliance	Drinking Water System Profile information for the Mattawa Well Supply has not been updated to include the UV disinfection system installed in 2004 and abandoned Well # 3 appears as a source for the system.
Measures taken to comply	The Drinking Water System Profile was updated shortly after learning that it was not up to date.

SUMMARY & DISCUSSION OF WATER PRODUCTION:

- From January 1st, 2008 to December 31st, 2008 the waterworks produced and supplied 114,241,000 Imp. Gallons of drinking water to the distribution system.
- 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

	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec
Avg Day Flow - I Gal:	326290	355138	369226	341767	337839	311033	356032	304000	282633	272871	234833	254194
Max. Day Flow - I Gal.:	372923	338250	412981	451592	405231	353684	446400	371321	466800	358286	309447	298065
Rated Capacity - IGPD:	1.44M	1.44M	1.44M	1.44M	1.44M	1.44M	1.44M	1.44M	1.44M	1.44M	1.44M	1.44M
% (Avg Day / Rated):	23%	25%	26%	24%	23%	22%	25%	21%	20%	19%	16%	18%
% (Max Day / Rated):	26%	23%	29%	31%	28%	25%	31%	26%	32%	25%	21%	21%

SUMMARY OF FLOW RATE EXCEEDANCES & ANALYTICAL RESULTS:

Flow Rates

During this period there were **no** exceedances of the rated capacity flow rate occurred. Over the course of the past 5 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 550,000 – 650,000 down to within a normal production range of 350,000 to 450,000.

Our flow measuring devices are calibrated at the beginning of each year.

Quarterly Sampling

All tests required from our Nitrates/Nitrites & THMs quarterly sampling program yielded results below ODWS 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.

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

These parameters were tested for in 2006 & all results were well below the M.A.C. Due next in 2009.

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

These parameters were tested for in 2006 & all results were well below the M.A.C. or below detectable limits. Due next in 2009.

Bacteriological

There were only the occasional presence (GBP) of bacteria in the raw water samples with no indicators of trends in a negative direction. There was one occasion in 2008 where coliform bacteria was present in the raw water samples with no negative trends forming. This may be an indication that the measures introduced during 2005, to ensure that the sampling procedure is kept sterile to avoid biological transfer to the sample, were successful.

Free Chlorine Residual

During 2008, chlorine residual and turbidity testing was conducted using in-line analyzers 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 2008. The free chlorine residual values in the distribution system generally ranged from 0.06 to 0.75 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

Turbidity levels of the raw water at the plant have been between 0.073 and 0.117 NTU. Since the upgrades were completed, turbidity of treated water has been monitored via the in-line analyzer, with the exception of raw water, being still tested with the hand held unit. Our in-line turbidity analyzer began to display an alarm in July of 2007. We began testing with handheld while the in-line unit was being tested and repaired. The in-line began to show an upward trend of results and upon suspicion that the handheld was not reading correctly, we purchased a new unit November 21, 2007. Since then the tested values have been more accurate and back in the normal range at or below 0.100 NTU. December 12th, 2007 we received our in-line analyzer back from servicing and installed it. Turbidity has remained approximately 0.100 NTU for the remainder of the year and throughout 2008.

TREATMENT CHEMICALS AND DOSAGE:

Sodium Hypochlorite is the only chemical used at this water production facility. The metering pumps were set to provide approximately 1 L/hr chlorine dosage. We were having trouble with our metering pumps at the beginning of the year where our consumption rose to 1 L/hr +/- . Upon repair the consumption returned to normal dosages.

Prepared by:

Marc Mathon – Public Works Superintendent