



Ministry of the Environment and Climate Change

**MANITOUWADGE DRINKING WATER SYSTEM
Inspection Report**

Site Number:	220000219
Inspection Number:	1-BDON4
Date of Inspection:	Aug 21, 2014
Inspected By:	Stephen Hunsberger

OWNER INFORMATION:

Company Name: MANITOUWADGE, THE CORPORATION OF THE TOWNSHIP OF,
Street Number: 1 **Unit Identifier:**
Street Name: MISSISSAUGA Dr
City: MANITOUWADGE
Province: ON **Postal Code:** P0T 2C0

CONTACT INFORMATION

Type: Main Contact **Name:** Omer Collin
Phone: (807) 229-6057 **Fax:** (807) 826-4592
Email: ocollin@manitouwadge.ca
Title: Public Works Superintendent

Type: Operator **Name:** Kirk Tourout
Phone: (807) 826-4434 **Fax:** (807) 826-4434
Email: wtplant@manitouwadge.ca
Title: Operator

Type: Operator **Name:** Paul Richard
Phone: (807) 826-4434 **Fax:** (807) 826-4434
Email: wtplant@manitouwadge.ca
Title: Operator

INSPECTION DETAILS:

Site Name: MANITOUWADGE DRINKING WATER SYSTEM
Site Address: SHAWINIGAN PL MANITOUWADGE P0T 2C0
County/District: Manitouwadge
MOECC District/Area Office: Thunder Bay District
Health Unit: THUNDER BAY DISTRICT HEALTH UNIT
Conservation Authority: N/A
MNR Office: N/A
Category: Large Municipal Residential
Site Number: 220000219
Inspection Type: Unannounced
Inspection Number: 1-BDON4
Date of Inspection: Aug 21, 2014
Date of Previous Inspection: Jul 02, 2013

COMPONENTS DESCRIPTION

Site (Name): MOE DWS Mapping

Type: DWS Mapping Point

Sub Type:

Comments:

Not Applicable

Site (Name): DISTRIBUTION (WATER INSPECTION)

Type: Other

Sub Type:

Comments:

The Manitouwadge distribution system serves a population of approximately 2106 persons, according to the 2014 Annual Report. It is categorized, under legislation, as a large municipal residential drinking-water system. Four high lift pumps deliver finished water into the distribution system, with two additional fire pumps capable of supplementing that delivery. There are no storage facilities within the system other than the main reservoir.

The bulk of the water mains consist of 6" ductile iron, and are approximately 55 years old. There are approximately 126 fire hydrants located in Manitouwadge.

Service connections are fully metered.

Site (Name): TREATED WATER

Type: Treated Water POE

Sub Type:

Comments:

Wells #1 and #2 are located in the main water treatment plant. Wells #3 and #4 are separately located in a remote building, as is Well #5. Treatment is achieved by Ultraviolet irradiation (1 UV unit is located at each of the three wellhead sites), aeration and chlorination. Water from the wells is passed through induced draft aerators, with water from wells 1 and 2 passing through one aerator and water from wells 3, 4, and 5 passing through a second aerator. UV contact is provided at each of the three well sites as water leaves each well when in operation. Sodium Hypochlorite (12%) is injected into the water as it passes into a common reservoir. The chlorine feed system consists of two microprocessor-controlled metering pumps.

An underground reservoir is located at the pump house. It consists of two - 2,030 m³ cells, for a total capacity of 4,060,000 Litres. The reservoir is in an enclosed fenced area, with access by two shafts raised above grade, each having a locked access cover.

Water pressure is supplied by four high lift pumps, each rated at 40.5 L/s; in addition, there are two fire pumps also rated at 40.5 L/s.

Stand-by power for the water treatment plant is provided by a 400 kW generator located at the plant on Shawinigan Place. A 200 kW generator set, located at the pumphouse that houses wells 3 and 4 is, now out of service and the pumphouse will be provided back-up electricity through the use of a 300 kW generator set recently installed at the waste water treatment compound.

Sodium hypochlorite is used as well as citric acid in UV cleaning. Monitoring equipment consists of the following:

1. five flow meters to measure the water coming from each of the wells and one flow meter to measure combined flow of all five wells;
 2. a turbidimeter that measures turbidity at the point of entrance to the distribution system;
 3. a free chlorine analyzer measuring the free chlorine residual at the point of entrance to the distribution system;
 4. a flow meter to measure treated water leaving the plant.
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INSPECTION SUMMARY

INTRODUCTION

- * The primary focus of this inspection is to confirm compliance with Ministry of the Environment legislation and authorizing documents such as Orders and Certificates of Approval, as well as evaluating conformance with Ministry drinking water related policies and guidelines during the inspection period.

The Ministry is implementing a rigorous and comprehensive approach in the inspection of drinking water systems that keys on the source, treatment and distribution components of the system as well as management practices.

This drinking water system is subject to the legislative requirements of the Safe Drinking Water Act, 2002 (SDWA) and regulations made therein, including Ontario Regulation 170/03, "Drinking Water Systems" (O.Reg.170/03). This inspection has been conducted pursuant to Section 81 of the SDWA.

This report is based on a "focused" inspection of your system. Although the inspection involved fewer activities than those normally undertaken by a detailed inspection, it contained most of the elements required to assess key compliance issues.

Your system was chosen for a focused inspection during this inspection cycle because inspection findings over the past three years were such that the number of violations were minimal or non-existent, there were few or no orders issued to you that were of significance in the maintenance of water potability and there were no deficiencies as defined in O. Reg. 172/03. The undertaking of a focused inspection at your drinking water system during this year's inspection cycle does not ensure that a similar type of inspection will be conducted at any point in the future.

SOURCE

- * The owner was maintaining the production well(s) in a manner sufficient to prevent entry into the well of surface water and other foreign materials.

The construction of the wells appears sufficient to prevent entry of surface contamination. Previous monitoring of raw water at each well, conducted to establish a chemical baseline, indicated elevated hydrocarbon levels in Well No. 4 (and to a minor extent in Well No. 2) in the F3 fraction (C16 - C36). This fraction is indicative of heavier end diesel / fuel oil and lighter end lubricating oils. In addition, this fraction of hydrocarbons could be petrogenic or biogenic in origin. It was suspected that this was the result of non-petrochemical-based oils used in the lubrication of the vertical turbine pump once associated with this well. Monitoring since recent maintenance activity occurred, indicates acceptable levels of the fraction. Since there is concern with respect to impacts of upstream soil contamination to groundwater, the owner may choose to continue with periodic monitoring of wells to test for the presence of hydrocarbons in the F1 to F4 range. To date, results of testing have all been below the minimum detectable level for selected parameters.

It is noted that well servicing was carried out on wells #1 and #5 in late 2013. Work, carried out by a private contractor, included the chemical rehabilitation of the Well #1 screen (to provide an

SOURCE

increase in recovery rate) and replacement the Well #1 pump. (The original pump has been rehabilitated and remains available for stand-by duty.) The screen associated with Well #5 was mechanically rehabilitated, to increase recovery rate, and the original oil line shaft pump was replaced with a submersible pump.

Wells 2, 3 and 4 have been recommended for future servicing, as outlined in the 2013 Annual Report recommendations.

- * **Measures were in place to protect the groundwater and/or GUDI source in accordance with a Permit and Licence or Approval issued under Part V of the SDWA.**

As reported in a previous inspection, Certificate of Approval No. 8910-6VEKD, "PART 8 - Studies and Upgrades Required" compelled the owner to:

- i) Provide treatment appropriate for groundwater supply that is under the direct influence of surface water and has effective "in-situ" filtration, in accordance with O. Reg. 170/03, Schedule 1, section 1;
- ii) Delineate all wellhead protection areas in accordance with the latest version of the Ministry protocol entitled "Delineation of Wellhead Protection Areas for Municipal Groundwater Supply Wells Under Direct Influence of Surface Water", and provide copies of the resulting reports to the Director; and
- iii) Submit a report to the Director prepared in accordance with the latest version of the Ministry document titled "Development of Microbial Contamination Control Plans for Municipal Groundwater Supply Wells under Direct Influence of Surface Water with Effective In-situ Filtration".

It is noted that the owner has put UV treatment in place and has, therefore, implemented the requirements of item i) of Upgrade List A. A report entitled "Township of Manitowadge Groundwater Study - Final Report, KGS Group"(Groundwater Study) was submitted. This report included modeling to determine groundwater drawdown zones for each well at typical pump rates and establish the 50-day time of travel zone for each well. In addition the 2, 10 and 25-year zones were estimated using the model. From the modeling results, wellhead protection area mapping was produced, satisfying the requirements of item ii), referenced above. With respect to item iii), above, as noted during a previous inspection, a completed Microbial Contamination Control Plan was not in evidence, although a preliminary assessment was done as part of the Groundwater Study. It is understood that, based on the findings of a previous inspection, the owner has undertaken action to complete and submit the report as required by Part 8, item iii) of the Certificate of Approval. The preparation of this report was to be undertaken using the conclusions and recommendations of the Groundwater Study and was to be completed in consideration of other on-going source protection planning activity. With the issuance of Drinking Water Works Permit 229-201 and Municipal Drinking Water Licence 229-101, the aforementioned requirements were not reiterated. Since the issuance of a Municipal Drinking Water Licence effectively replaces a Certificate of Approval, in accordance with Subsection 36(4) of the Safe Drinking Water Act, the Certificate of Approval requirements outlined above are no longer in force, including item iii), as described.

CAPACITY ASSESSMENT

- * **There was sufficient monitoring of flow as required by the Permit and Licence or Approval issued under Part V of the SDWA**

CAPACITY ASSESSMENT

- * **The owner was in compliance with the conditions associated with maximum flow rate or the rated capacity conditions in the Permit and Licence or Approval issued under Part V of the SDWA.**

The maximum rated capacity specified in Manitowadge Drinking Water System Licence 229-101 is 10,472 cubic metres per day.

There were occasions when peak instantaneous rates were excessive during maintenance events, however flow records reviewed during this inspection show daily maximum rates well below the allowable level for the period since the time of the last inspection. The peak events occurring in 2013 were described in the Annual Report prepared for that year and indicate that they were related to swabbing and flushing events as well as one erroneous reading taken during flow meter calibration activity.

TREATMENT PROCESSES

- * **The owner had ensured that all equipment was installed in accordance with Schedule A and Schedule C of the Drinking Water Works Permit.**

A review of Drinking Water Works Permit Number 229-201 was conducted as part of the physical inspection of the facilities. It was noted during a previous review that all five wells had the same equipment description - "vertical turbine deep well pump rated at 30.3 L/s". Information obtained subsequently indicates that some wells were re-equipped with submersible pumps and that rated flow capacity rates may have changed for one or more of the well pumps. The Ministry advised the owner to ensure that the minor changes were reflected in Form 2 documentation. No further action was required with respect to this item. Plans include the replacement of the final well pump and clean out of non-mineral based lubricant that has accumulated in the well bore. This was accomplished with the activity recorded on a Form 2 document.

As part of this inspection, it was noted that the generator set that provided emergency power to Wells 3 and 4 as well as the sewage lift station failed in the latter part of 2013. The generator set was deemed un-repairable due to its age and a 300 kW mobile unit was brought on site. It was determined that the current pumphouse was not suitable for the new generator set and a separate building has been constructed in the lift station compound to house the unit. It will be used for the original purpose of providing emergency power to the pumphouse and lift station.

Although the original 200 kW generator set remains in the pumphouse, it is unserviceable. The owner is advised to ensure that the physical removal of the 200 kW generator set is appropriately documented and the installation of the new generator set is documented as required by the conditions of section 5.0 of the DWWP.

- * **Records indicated that the treatment equipment was operated in a manner that achieved the design capabilities required under Ontario Regulation 170/03 or a Permit, Licence or Approval issued under Part V of the SDWA at all times that water was being supplied to consumers.**

In the past there was evidence of incidents when low level chlorine alarms have been triggered and/or chlorinator dosing pumping has ceased operation. During these events, there was a possibility that water could continue to be processed after irradiation by UV, reaching the clearwell without receiving appropriate chlorination. The source of water is groundwater under the direct influence of surface water, according to the KGS Group Groundwater Study, 2003 report. The water treatment system is, therefore, designed such that UV disinfection and chlorination act in concert to provide primary disinfection (the chlorination also provides secondary disinfection). This is reflected in Drinking Water Works Permit Number 229-201. The UV units are appropriately equipped with alarms and shut-off mechanisms, however there were two chlorinator dosing pumps, one duty and one stand-by, that were available for use that were not equipped with automatic switchover or with a mechanism to shut-off water flow to the clearwell in the event of failure. The original configuration of the stand-by unit was activated manually after an alarm, allowing the possibility of un-chlorinated water reaching the clearwell during the operator response time. This condition was detailed in a previous inspection report and the owner was advised to re-configure

TREATMENT PROCESSES

the system so that the stand-by unit is started automatically in the event of failure of the primary chlorinator pump or provide an automatic shut-off feature to prevent un-chlorinated water from entering the clearwell. It is understood that this re-configuration to automatic switch-over has been completed and now satisfies the requirement of O. Reg. 170/03, Schedule 1.2 (2) ensuring that all primary treatment equipment is in operation whenever water is being supplied. Schedule 1.2. (2) is reiterated as follows:

"The owner of a drinking water system and the operating authority for the system shall ensure the following:

1. The water treatment equipment is in operation whenever water is being supplied.
2. The water treatment equipment is operated in accordance with the Ministry's Procedure for Disinfection of Drinking Water in Ontario.
3. The water treatment equipment required by section 1-3 or 1-4 is operated in a manner that achieves the design capabilities it is required to have under that section."

- * **Records confirmed that the water treatment equipment which provides chlorination or chloramination for secondary disinfection purposes was operated so that at all times and all locations in the distribution system the chlorine residual was never less than 0.05 mg/l free or 0.25 mg/l combined.**
- * **The primary disinfection equipment was equipped with alarms or shut-off mechanisms that satisfied the standards described in Section 1-6 (1) of Schedule 1 of Ontario Regulation 170/03.**

The source of water is groundwater under the direct influence of surface water, according to the KGS Group Groundwater Study, 2003 report. The water treatment system is, therefore, designed such that UV disinfection and chlorination act in concert to provide primary disinfection (the chlorination also provides secondary disinfection). This is reflected in Drinking Water Works Permit Number 229-201. The UV units are appropriately equipped with alarms and shut-off mechanisms. The configuration and operation of the chlorinator dosing pumps is dealt with elsewhere in this report.

- * **The Operator-in-Charge had ensured that all equipment used in the processes was monitored, inspected, and evaluated.**

TREATMENT PROCESS MONITORING

- * **Primary disinfection chlorine monitoring was being conducted at a location approved by Permit, Licence or Approval issued under Part V of the SDWA, or at/near a location where the intended CT had just been achieved.**
- * **The secondary disinfectant residual was measured as required for the distribution system.**

Distribution subsystem free chlorine testing is required to be performed at least seven times each week with a minimum number of four in one day and three on second day, at least 48 hours from any previous sample, all at different locations each day. Records indicate that this requirement was satisfied and that free chlorine residual is monitored at numerous locations each day throughout the distribution subsystem. There were very few days noted when free chlorine was not measured in the distribution subsystem.

- * **Operators were examining continuous monitoring test results and they were examining the results within 72 hours of the test.**

TREATMENT PROCESS MONITORING

- * All continuous monitoring equipment utilized for sampling and testing required by O. Reg. 170/03, or approval or order, were equipped with alarms or shut-off mechanisms that satisfied the standards described in Schedule 6.

- * Continuous monitoring equipment that was being utilized to fulfill O. Reg. 170/03 requirements was performing tests for the parameters with at least the minimum frequency specified in the Table in Schedule 6 of O. Reg. 170/03 and recording data with the prescribed format.

- * All continuous analysers were calibrated, maintained, and operated, in accordance with the manufacturer's instructions or the regulation.

OPERATIONS MANUALS

- * The operations and maintenance manuals contained plans, drawings and process descriptions sufficient for the safe and efficient operation of the system.

- * The operations and maintenance manuals did meet the requirements of the Permit and Licence or Approval issued under Part V of the SDWA.

LOGBOOKS

- * Records or other record keeping mechanisms confirmed that operational testing not performed by continuous monitoring equipment was being done by a certified operator, water quality analyst, or person who suffices the requirements of O. Reg. 170/03 7-5.

SECURITY

- * The owner had provided security measures to protect components of the drinking-water system.

This is a best management practice item.

CERTIFICATION AND TRAINING

- * The overall responsible operator had been designated for each subsystem.

- * Operators in charge had been designated for all subsystems which comprised the drinking-water system.

- * Only certified operators made adjustments to the treatment equipment.

WATER QUALITY MONITORING

WATER QUALITY MONITORING

- * **All microbiological water quality monitoring requirements for distribution samples were being met.**

For Large Municipal Residential drinking water systems the microbiological sampling legislative specification requires that a minimum number of monthly distribution samples, for populations less than 100,000, be collected based on a total of eight plus one per 1,000 population. Twenty-five percent of these are to be analyzed for general bacterial population expressed as colony counts on a heterotrophic plate count (HPC), while all others are to be analyzed for Escherichia Coli (EC) as well as total coliform (TC) bacteria. Based on a population of approximately 2106, therefore, a minimum number of 10 distribution samples are required to be collected each month, with HPC to be performed on a minimum of 25% of these on a monthly basis. In addition, at least one sample from the distribution system must be collected per week. Information reviewed from the time of the last inspection indicates that the owner has complied with these microbiological monitoring parameter and frequency requirements and, in fact, has conducted sampling and testing in excess of that required.

- * **All microbiological water quality monitoring requirements for treated samples were being met.**

For Large Municipal Residential drinking water systems the microbiological sampling legislative specifications require that treated water samples must be collected at least once every week and tested for E. Coli, total coliform bacteria and HPC. Information reviewed from the time of the last inspection indicates that the owner has complied with these microbiological monitoring parameter and frequency requirements.

- * **All inorganic water quality monitoring requirements prescribed by legislation were conducted within the required frequency.**

Inorganic parameters are listed in Schedule 23 of O. Reg. 170/03. In accordance with Subsection 2(1) of O. Reg. 170/03, a drinking water system that obtains water from a raw water supply that is ground water under the direct influence of surface water is deemed, for the purposes of the Regulation, to be a drinking water system that obtains water from a raw water supply that is surface water. For large municipal systems with a surface water source, sampling frequencies are once each 12 months, provided previous sample results have not exceeded one-half MAC for any parameter listed in Schedule 23. Information reviewed from the time of the last inspection indicates that the owner carried out sampling in January of 2014 and has complied with the inorganic monitoring parameter and frequency requirement. It is noted that the Township carries out Schedule 23 sampling and testing on an annual basis.

- * **All organic water quality monitoring requirements prescribed by legislation were conducted within the required frequency.**

Organic parameters are listed in Schedule 24 of O. Reg. 170/03. In accordance with Subsection 2(1) of O. Reg. 170/03, a drinking water system that obtains water from a raw water supply that is ground water under the direct influence of surface water is deemed, for the purposes of the Regulation, to be a drinking water system that obtains water from a raw water supply that is surface water. For large municipal systems with a surface water source, sampling frequencies are once each 12 months, provided previous sample results have not exceeded one-half MAC for any parameter listed in Schedule 24. Information reviewed from the time of the last inspection indicates that the owner carried out sampling in January of 2014 and has complied with the inorganic monitoring parameter and frequency requirement. It is noted that the Township carries out Schedule 24 sampling and testing on an annual basis.

- * **All trihalomethanes water quality monitoring requirements prescribed by legislation were not conducted within the required frequency.**

As part of the requirements of Schedule 13, treated water trihalomethane sampling and testing is to be performed every three months. Four samples were collected and analyzed during 2013 and three to date during 2014. The results for the four most recent samples tested prior to this inspection were 36.4 µg/L, 29.6 µg/L, 24.8 µg/L and 30.2 µg/L, as recorded in the Ministry's database.

WATER QUALITY MONITORING

It is noted that, based on records reviewed, the sampling frequency was not carried out each three months. Despite there being the requisite number of samples collected during 2013, for example, the last sample was collected September 23, 2013, approximately a week prior to the last three month period. In addition it is apparent that two samples have been collected in in the first three months of 2014 thus far (January 7 and March 24).

Although it was observed that the results of trihalomethane testing to date demonstrates consistency in that all were well below the maximum acceptable concentration, care must be taken on the part of the Township to ensure that at least one distribution sample is taken and tested every three months.

- * **All nitrate/nitrite water quality monitoring requirements prescribed by legislation were not conducted within the required frequency for the DWS.**

As part of the requirements of Schedule 13, treated water nitrates and nitrites are required to be evaluated every three months. Four samples were collected and analyzed during 2013 and three to date during 2014. The nitrate results for the four most recent samples tested prior to this inspection were 1.43 mg/L, 1.44 mg/L, 1.47 mg/L and 1.44 mg/L. (In all cases, nitrite results were below the detectable limit).

It is noted that, based on records reviewed, the sampling frequency was not carried out each three months. Despite there being the requisite number of samples collected during 2013, for example, the last sample was collected September 23, 2013, approximately a week prior to the last three month period. In addition it is apparent that two samples have been collected in in the first three months of 2014 thus far (January 7 and March 24).

Although it was observed that the results of nitrate and nitrite testing to date demonstrated consistency in that they were all well below the maximum acceptable concentration for both parameters, care should be taken on the part of the Township to ensure that at least one distribution sample is taken and tested every three months.

- * **All sodium water quality monitoring requirements prescribed by legislation were conducted within the required frequency.**

Based on records reviewed, a sample was last collected January 13, 2010 and tested for sodium with a result of 50.1 mg/L. This result exceeded the standard of 20 mg/L, was reported as an adverse water quality incident and appropriate corrective action was carried out. Sodium is required to be evaluated every 60 months.

- * **All fluoride water quality monitoring requirements prescribed by legislation were conducted within the required frequency.**

Based on records reviewed, a sample was last collected January 13, 2010 and tested for fluoride with a result of 0.088 mg/L, well below the standard of 1.5 mg/L. Fluoride is required to be evaluated every 60 months.

- * **All sampling requirements for lead prescribed by schedule 15.1 of O. Reg. 170/03 were being met.**

Lead sampling results reviewed as part of this inspection indicate that the full complement of samples, based on a population of approximately 2300, as required by legislation (at least 20 residential plumbing, 2 non-residential plumbing and 4 distribution samples), were tested for the December 15, 2009 to April 15, 2010 sampling period. Results showed that none of the plumbing results were greater than ½ MAC (maximum acceptable concentration) and no plumbing sample was greater than the MAC for lead in drinking water (10 µg/L). Furthermore, a second full complement of lead sampling and testing (again, at least 20 residential plumbing, 2 non-residential plumbing and 4 distribution samples), for the subsequent sampling period (June 15, 2010 to October 15, 2010) was undertaken. Results of this round of sampling showed that none of the plumbing results were greater than ½ MAC and no plumbing sample was greater than the MAC for lead in drinking water. Based on these results, reduced sampling was allowed to occur every third 12-month period at a rate of 10 residential plumbing, 1 non-residential plumbing and 2 distribution samples (reference: Schedule 15.1-5). It is noted that the owner decided to commence the "third

WATER QUALITY MONITORING

year” cycle immediately, as is the owner's option, and conducted sampling for the periods of December 15, 2010 to April 15, 2011 sampling period. One of the plumbing sample results slightly exceeded the standard for lead (the result was 10.3 µg/L) requiring the owner to continue to test to obtain two consecutive sample period where the results do not exceed the specifications outlined in Schedule 15.1-5 1(a). In response, the owner sampled during the June 15, 2011 to October 15, 2011 period and again in the December 15, 2011 to April 15, 2012 period. Since, during these two latter, consecutive rounds of testing, there was no plumbing sample test result that exceeded the standard for lead and fewer than 10 per cent of the plumbing sample test results exceeded ½ the standard for lead, sampling and testing for lead in plumbing locations ceased per regulatory provision and the owner is now required to test in accordance with the requirements of subsection 15.1-5 (10) of O. Reg. 170/03, reiterated below:

“(10) When the requirements for taking samples set out in clauses (3) (a) and (b) and subsection (8) cease to apply under subsection (9) to a drinking water system, the owner of the drinking water system and the operating authority for the system shall ensure that samples are taken as described in clause (3) (c), in accordance with subsection 15.1-7 (2), (a) to test for total alkalinity and for pH during each of the periods described in subsection (5) in every 12- month period; and (b) to test for lead during each of the periods described in subsection (5) in every third 12-month period.”

Based on Ministry records, therefore, the next "reduced" sampling period should begin with the June 15, 2015 to October 15, 2015 sample period. The owner must conduct an independent review of lead sampling records to confirm this information. Testing for total alkalinity and pH is to be conducted twice annually as described in the regulation.

It is noted that in the 2013 Annual Report, the owner intends to recommence lead sampling in 2016.

- * **Records confirmed that chlorine residual tests were being conducted at the same time and at the same location that microbiological samples were obtained.**

WATER QUALITY ASSESSMENT

- * **Records show that all water sample results taken during the review period met the Ontario Drinking Water Quality Standards (O. Reg. 169/03).**

REPORTING & CORRECTIVE ACTIONS

- * **All required notifications of adverse water quality incidents were immediately provided as per O. Reg. 170/03 16-6.**
- * **Where required continuous monitoring equipment used for the monitoring of chlorine residual and/or turbidity triggered an alarm or an automatic shut-off, a qualified person responded in a timely manner and took appropriate actions.**
- * **When the primary disinfection equipment, other than that used for chlorination or chloramination, has failed causing an alarm to sound or an automatic shut-off to occur, a certified operator responded in a timely manner and took appropriate actions.**

NON-COMPLIANCE WITH REGULATORY REQUIREMENTS AND ACTIONS REQUIRED

This section provides a summary of all non-compliance with regulatory requirements identified during the inspection period, as well as actions required to address these issues. Further details pertaining to these items can be found in the body of the inspection report.

1. All trihalomethanes water quality monitoring requirements prescribed by legislation were not conducted within the required frequency.

As part of the requirements of Schedule 13, treated water trihalomethane sampling and testing is to be performed every three months. Four samples were collected and analyzed during 2013 and three to date during 2014. The results for the four most recent samples tested prior to this inspection were 36.4 µg/L, 29.6 µg/L, 24.8 µg/L and 30.2 µg/L, as recorded in the Ministry's database.

It is noted that, based on records reviewed, the sampling frequency was not carried out each three months. Despite there being the requisite number of samples collected during 2013, for example, the last sample was collected September 23, 2013, approximately a week prior to the last three month period. In addition it is apparent that two samples have been collected in in the first three months of 2014 thus far (January 7 and March 24).

Although it was observed that the results of trihalomethane testing to date demonstrates consistency in that all were well below the maximum acceptable concentration, care must be taken on the part of the Township to ensure that at least one distribution sample is taken and tested every three months.

Action(s) Required:

The Township must exercise care to ensure that at least one distribution sample is taken and tested for trihalomethanes every three months.

2. All nitrate/nitrite water quality monitoring requirements prescribed by legislation were not conducted within the required frequency for the DWS.

As part of the requirements of Schedule 13, treated water nitrates and nitrites are required to be evaluated every three months. Four samples were collected and analyzed during 2013 and three to date during 2014. The nitrate results for the four most recent samples tested prior to this inspection were 1.43 mg/L, 1.44 mg/L, 1.47 mg/L and 1.44 mg/L. (In all cases, nitrite results were below the detectable limit).

It is noted that, based on records reviewed, the sampling frequency was not carried out each three months. Despite there being the requisite number of samples collected during 2013, for example, the last sample was collected September 23, 2013, approximately a week prior to the last three month period. In addition it is apparent that two samples have been collected in in the first three months of 2014 thus far (January 7 and March 24).

Although it was observed that the results of nitrate and nitrite testing to date demonstrated consistency in that they were all well below the maximum acceptable concentration for both parameters, care must be taken on the part of the Township to ensure that at least one distribution sample is taken and tested every three months.

Action(s) Required:

The Township must exercise care to ensure that at least one water sample is taken and tested for nitrates and nitrites every three months.

SUMMARY OF RECOMMENDATIONS AND BEST PRACTICE ISSUES

This section provides a summary of all recommendations and best practice issues identified during the inspection period. Details pertaining to these items can be found in the body of the inspection report. In the interest of continuous improvement in the interim, it is recommended that owners and operators develop an awareness of the following issues and consider measures to address them.

Not Applicable

SIGNATURES

Inspected By:

Stephen Hunsberger

Signature: (Provincial Officer):

Reviewed & Approved By:

Arnold Laine

Signature: (Supervisor):

Review & Approval Date: 21/10/2014 (dd/mm/yyyy)

Note: This inspection does not in any way suggest that there is or has been compliance with applicable legislation and regulations as they apply or may apply to this facility. It is, and remains, the responsibility of the owner and/or operating authority to ensure compliance with all applicable legislative and regulatory requirements.