Newmarket Drinking Water System (DWS)

Prepared by: Luigi Colangelo – Manager, Water/Wastewater
Department: Public Works Services
Date: March 18, 2019
Report Requirements
(Safe Drinking Water Act, 2002)

Annual Water Quality Summary Report contains information about the Town’s drinking water system (DWS) for the period of January 1, 2018 to December 31, 2018

Provincial regulations require we report this information to the following:

- The Drinking Water System Owners (Mayor and Council)
- Owner and Operating Authority Top Management (Commissioner, Development & Infrastructure Services; Director, Public Works Services; and Manager, Water/Wastewater Services)
- The Public
The Annual Water Quality Summary Report must include...

- A brief description of the Town’s drinking water system
- A summary of water sampling results required by Provincial regulations
- A summary of all adverse test results and corrective actions
- A description of major expenses incurred
- Where this report can be found
- Town requirements under the Safe Drinking Water Act, 2002 regulations, approvals, licences, and permits
- MECP Inspection results. MECP Inspectors inspect the Town’s Drinking Water System annually to ensure compliance with regulatory requirements
Copies of Newmarket’s 2018 Annual Water Quality Summary Report are available for viewing at

Newmarket Operations Centre, 1275 Maple Hill Court

Newmarket Municipal Offices, Customer Service Counter, 395 Mulock Drive

Online at newmarket.ca/waterwastewater
Statutory Standard of Care

Section 19 of the *Safe Drinking Water Act, 2002* (SDWA) describes the legal responsibilities of owners and operating authorities of municipal drinking water systems and every person who oversees the operating authority or makes decisions concerning the system.

Council, owner and staff decisions play a key role in providing safe drinking water and managing risk.

It is expected that those with operating and decision making authority exercise a level of care, diligence and skill that a reasonably prudent person would be expected to do and act competently.
Town’s Drinking Water System

• Two-tiered water supply partnership with York Region
• York Region responsible for source water, wells, supply agreements with Toronto and Peel, treatment, transmission, storage
• Town responsible for the local distribution system operations, maintenance and monitoring
• “Source to Tap” approach using industry best practices, collaboration and communication
• System is monitored continuously by York Region SCADA and by the Town’s enhanced sample plan
• Newmarket is at the top end of the York Water System that starts at Lake Ontario and ends at Green Lane
The Town’s Distribution System Infrastructure (including watermains, valves, hydrants, water services, and meters) services approximately 85,000 people within the Town of Newmarket.

The Newmarket DWS is comprised of approximately:

- 318 kilometers of distribution system watermain
- 4,035 mainline valves
- 2,358 municipally owned fire hydrants
- 26,407 metered water services

Trained and certified operators respond immediately to system emergencies such as watermain breaks.
Certified Operator Training and Development

Town provides training to all certified operators working in the Town’s DWS.

Training is provided internally and by external training vendors.

Training is tracked and records are available for MECP inspection.

Training is a regulatory requirement for operators to maintain their Provincial certification.
Drinking Water Sampling Results

- 1363 samples submitted to third-party lab for bacteriological analysis
- 6064 samples collected by certified operators and analyzed for chlorine residuals
- 25 samples submitted to third-party lab for analysis of lead to meet regulatory requirements
- York Region also submitted 529 samples to third-party lab for bacteriological analysis for water entering the Newmarket DWS
- York Region has 48 analyzers continuously monitoring drinking water for chlorine residuals. Approximately 5 million chlorine residual samples taken by analyzers in 2018.

Drinking water quality is closely monitored by samples collected by Town and Region certified operators

98.3% of Town’s microbiological drinking water samples met the Ontario drinking water standards.

98% of the 6064 chlorine residual samples taken by certified Town operators met regulatory requirements.
Adverse Water Quality Incidents (AWQIs)

147 AWQIs were reported in 2018

- 124 were due to low combined chlorine residual
- 22 for Total Coliform
- 1 E.coli

Operators initiated corrective actions and reporting for all of the AWQIs as required under O. Reg. 170/03.

In all cases, the drinking water supplied to the public was confirmed safe.

At no time did the Medical Officer of Health (MOH) or MECP require further actions to be taken by the Town.
The Town Received a 90.95% Result for the 2017 - 2018 MECP DWS Inspection

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<tr>
<th>Inspection Non Compliance Identified by MECP</th>
<th>Town’s Response</th>
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<tbody>
<tr>
<td>All required notifications of adverse water quality incidents were not immediately provided as per O. Reg. 170/03 16-6</td>
<td>The Town conducted a comprehensive review of its standard operating procedures for AWQI reporting. The Town provided training to operations staff and contractors working in the Town’s DWS using internal staff and external training providers</td>
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<tr>
<td>For one adverse water quality incident a written notice of resolution was provided to the Ministry a day later than the prescribed seven (7) days.</td>
<td>The Town conducted a comprehensive review of its standard operating procedures for AWQI reporting. The Town provided training to operations staff and contractors working in the Town’s DWS using internal staff and external training providers</td>
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<td>Review and update the &quot;Measurement and Recording Equipment Calibration&quot; procedure</td>
<td>The standard operating procedure for &quot;Measurement and Recording Equipment Calibration&quot; was reviewed by the Town and includes industry best practices and recommendations provided by the MECP. Training was provided to staff on the revised procedure</td>
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<td>Watermain break/repair records were not clear on which of the listed certified operators took chlorine residuals and at what time the residuals were taken</td>
<td>The Town's &quot;Watermain Break Repair Report Form&quot; was reviewed and updated using industry best practices and includes all information as outlined in the Watermain Disinfection Procedure and recommendations made by the MECP. Training was provided to staff on the revised procedure</td>
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The annual inspection ensures the Town complies with all applicable regulatory requirements related to the delivery of safe drinking water.
MECP issues the Town the following licence and permit to operate the DWS

Municipal Drinking Water Licence (MDWL) number: 124-101

Drinking Water Works Permit (DWWP) number: 124-201

These documents outline detailed conditions and regulatory requirements in regard to the operation, maintenance and monitoring of the drinking water system.

In 2018, the Town complied with all conditions of it’s Municipal Drinking Water Licence (MDWL) and Drinking Water Works Permit (DWWP).
Drinking Water Quality Management Standard (DWQMS)

The MECP mandates the implementation of an Operational Plan under the Drinking Water Quality Management Standard (DWQMS) for all DWS in the Province of Ontario.

For 2018, the Town was audited externally by AET Consultants (September) and SAI Global (January, 2019)

Two internal audits were conducted by Town staff (June, September)

Non-conformances to the standard included the requirement for the Town to;

• Improve document and record controls
• Improve the process for addressing preventive and corrective actions identified through audits and inspections
• Review the Operational Plan with staff on a more frequent basis
• Review water infrastructure needs annually with Engineering to inform the 5 year capital plan

All Non-conformances are being addressed to the satisfaction of the auditor and Town continues to meet the requirements of the DWQMS
2018 Water Consumption Data

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<tr>
<th>Description</th>
<th>Amount</th>
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<tr>
<td>Total water billed to the Town of Newmarket by York Region (m³)</td>
<td>8,768,108</td>
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<tr>
<td>Total water sold to the consumers of the Town of Newmarket (m³)</td>
<td>6,885,791</td>
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<tr>
<td>Total unbilled water (m³)</td>
<td>1,882,317</td>
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<tr>
<td>Percentage water loss*</td>
<td>21.47%</td>
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*The 21.47 percentage water loss includes the following:*

- Water used for flushing to maintain water quality (approximately 750,840 m³, 8.56%)
- Routine maintenance activities (approximately 29,060 m³, 0.33%)
- Watermain breaks (approximately 26,060 m³, 0.30%)
- Other Water Loss including water meter inaccuracies, aging infrastructure and system leakage, firefighting, theft, new watermain commissioning/testing (1,076,357 m³, 12.28%)

Town staff will be reporting to Council in Q2, 2019 to provide details on system water loss including current challenges, planned activities and opportunities to manage water loss and non-revenue water within the Town’s drinking water system.
In 2018, The Town of Newmarket spent approximately $3,133,499 installing, repairing, replacing and maintaining infrastructure used to deliver safe drinking water.

Drinking Water System Capital Improvements: $2,229,924

Watermain Maintenance: $337,340

Hydrant Maintenance: $90,000

Watermain Flushing/Swabbing Program: $476,235
Questions

If you have any questions or would like any additional information, please contact

Luigi Colangelo, Manager, Water/Wastewater

lcolangelo@newmarket.ca

References:

2018 Annual Water Quality Summary Report for the Newmarket Water Distribution System

Walkerton Clean Water Centre: Statutory Standard of Care - Safe Drinking Water Act, 2002 Training for Municipal Drinking Water System Owners and Decision Makers

2018 MECP Newmarket Distribution System Drinking Water Inspection Report