



## 2014 NEWMARKET WATER DISTRIBUTION SYSTEM ANNUAL WATER QUALITY SUMMARY REPORT

*Report prepared by: the Town of Newmarket, Public Works Services – Development & Infrastructure Services Commission*

# 2014 ANNUAL WATER QUALITY SUMMARY REPORT

## Table of Contents

Executive Summary .....	2
Introduction.....	5
<i>Purpose</i> .....	5
<i>Scope</i> .....	5
<i>Figure 1: Quality Management Policy</i> .....	5
<i>Report Requirements of the Safe Drinking Water Act</i> .....	6
Newmarket Water Distribution System Overview .....	7
<i>Municipal Drinking Water Licence (MDWL)</i> .....	7
<i>Drinking Water Works Permit (DWWP)</i> .....	7
Major Expenses Incurred to Install, Repair, or Replace Required Equipment/Infrastructure and Contracted Services.....	9
<i>Infrastructure Repairs</i> .....	9
<i>Table 1: 2014 Excavation Details</i> .....	9
<i>Replacement and Reconstruction Projects</i> .....	12
<i>Contracted Services</i> .....	12
Water Quality .....	13
<i>Water Sampling Summary</i> .....	13
<i>Table 2: 2014 Microbiological Parameters</i> .....	13
<i>Table 3: 2014 Organic/Inorganic Parameters</i> .....	14
<i>Table 4: 2014 Disinfectant Residual Monitoring</i> .....	15
<i>Regulatory Lead Sampling Program</i> .....	15
<i>Table 5: Number of Sampling Points Required For Relief from Regulatory Requirements</i> .....	16
<i>2014 Water Quality Challenges</i> .....	16
<i>Adverse Water Quality Incidents (AWQI)</i> .....	17
<i>Table 6: 2014 AWQI</i> .....	17
2014 Water Consumption and Production Flows .....	31
<i>Table 7: 2014 Consumption Data</i> .....	31
<i>Table 8: 2014 Production Flow Data</i> .....	32
Keeping Newmarket's Drinking Water Safe.....	34
<i>Figure 2: Multiple Barrier Approach to Drinking Water Protection</i> .....	34
<i>Drinking Water Quality Management Standard</i> .....	35
Requirements Under the <i>Safe Drinking Water Act, 2002</i> .....	36
Part III: General Requirements (SDWA) .....	36
References.....	44
Contact Information.....	45

# 2014 ANNUAL WATER QUALITY SUMMARY REPORT

## Executive Summary

The Public Works Services of the Town of Newmarket's Development and Infrastructure and Services Commission (the Town of Newmarket or the Town) is devoted to delivering safe drinking water to the residents of the Town by complying with the Safe Drinking Water Act, 2002 (SDWA) and thoroughly monitoring and maintaining the water and the infrastructure within the Water Distribution System (WDS). The Corporation of the Town of Newmarket acts as the Operating Authority and owns/operates the Newmarket Distribution System, which is defined by the Drinking Water System number of 260003188.

Over the years, the Town of Newmarket has grown and with this growth has come the development of new infrastructure to maintain the quality of services to the residents within the Town. The WDS within the Town of Newmarket has especially needed to expand with the growing population, which is 79,978 (*Canada, Statistics Canada, 2011 – next census to be released 2016*). There is a maze of water towers, wells, water mains, water services, water valves, water meters, hydrants, and sample stations within the Town of Newmarket's WDS.

The Water Distribution System within the Town of Newmarket consists of three (3) Pressure Zones with pressures ranging from 40psi to 100psi. There is 307.97 km of water main delivering safe drinking water to the residents of the Town and 2302 hydrants supplying fire protection as well as a tool to aid in water quality. The Town of Newmarket also has 25,900 fully metered services, 2668 mainline valves, and 3 Pressure Reducing Valves (PRV).

The Town of Newmarket and York Region (the Region) are collectively responsible for supplying the residents within Newmarket with safe drinking water. Supply, treatment, storage and transmission of water are the duties belonging to York Region and distribution to the consumers of Newmarket is the responsibility of the Town of Newmarket. York Region uses SCADA which is an online monitoring system to continuously monitor the quality of water being supplied to the Town of Newmarket. All of the water supplied to the Town is tested and has passed all of the regulatory standards issued within the SDWA. There are six (6) Regionally-owned/operated/maintained storage tanks within Newmarket's WDS. These storage tanks offer the Town's distribution system fire protection, pressure, and additional storage. Nine (9) regional wells work in conjunction with the six (6) regional storage tanks to supply the Town of Newmarket with safe drinking water. There are five (5) wells located on the Yonge Street corridor which include Wells 13 & 16, 1 & 2, and 15, as well as four (4) wells situated within Queensville.

Originally, the Town of Newmarket was strictly supplied with ground water but due to the growing population, in 2008, there was a need to blend the ground water with surface water from Peel Region sourced by Lake Ontario. This water is delivered, by York Region, through four (4) connections at the southern boundary of Newmarket, adjacent to the Town of Aurora. These connections are on Leslie Street, Bayview Avenue, Yonge Street, and Bathurst Street. Five (5) connections have also been established to feed the Town of East Gwillimbury and the connections are situated at Harry Walker Parkway, Leslie Street, Yonge Street (east side), Yonge Street (west side), and Woodspring Avenue. Additionally, Newmarket's WDS supplies water to a Regional transmission water main, which in turn supplies water to Bales Road in East Gwillimbury via Davis Drive.

Treatment, as stated before, is conducted by York Region and this treatment for the Town of Newmarket involves the process of chloramination, which includes the addition of chlorine and ammonia to the water supply. Between August 2012 and May 2013, the Region converted the disinfectant from chloramination to chlorination, which does not involve the supplementation of ammonia. York Region and the Town of

# 2014 ANNUAL WATER QUALITY SUMMARY REPORT

Newmarket are working together, once again, to convert the treatment from chloramination to chlorination beginning February of 2015.

For any additional information about treatment, supply, storage, and transmission, go to [www.york.ca](http://www.york.ca) to see York Region's Annual Report.

In order to provide Newmarket's residents with safe potable drinking water, The Town of Newmarket must comply with the Safe Drinking Water Act, 2002 and associated regulations (i.e. *O. Reg. 170/03*) by law. The Ministry of the Environment (MOE) annually inspects Newmarket's WDS to ensure the Town of Newmarket is in compliance with the SDWA and *O. Reg. 170/03*.

There was an announced inspection completed on May 22, 2014 and the Town of Newmarket was given a 91.14% final inspection rating. The Town of Newmarket was given a non-compliance because it failed to collect the required number of microbiological samples from the distribution system in accordance with Section 6-1.1 Schedule 6 and Section 10-2 of Schedule 10. The number of microbiological samples required from the water distribution system each month is dependent on the size of the population. Ninety-one (91) microbiological samples were required each month. Only eighty-seven (87) microbiological samples were taken in January of 2014. In addition, at least one microbiological sample is required to be taken from the distribution system every week and the Town failed to meet this requirement. Samples were taken on December 30<sup>th</sup> 2013 and then fourteen (14) days later on January 13<sup>th</sup> 2014.

The Town of Newmarket failed to meet these requirements because the water and wastewater operators have to assist the roads department with snowplowing, snow removal, and sanding/salting operations. There were multiple snowfall events as well as frozen sample stations and water main breaks during this period of time, which made it difficult for the operators to complete their regular activities.

The Town was ordered to provide the undersigned Provincial Officer with a written action plan outlining how the Town shall ensure that all required microbiological samples are taken as required by *O. Reg 170/03*. Additionally, the Town of Newmarket was ordered to provide the undersigned Provincial Officer with a plan that outlining how the Town shall ensure that sufficient water operators are available to perform all of the activities that are required to comply with the SDWA and *O.Reg 170/03*.

In addition, to the inspection conducted by the Ministry of the Environment, there are inspections completed by SAI Global who is a third party auditor. SAI Global conducts an on-site and off-site audit to ensure the Town of Newmarket has conformed to the Operational Plan it has developed as per the Drinking Water Quality Management Standard (DWQMS). This plan has been completed and is available to view upon request from the Town of Newmarket Operations Centre.

The water operators of the Town of Newmarket are certified by the Province of Ontario through the Ministry of the Environment to maintain and operate Newmarket's Water Distribution System. Duties of the operators include but are not limited to:

- Water sampling for submission to accredited laboratories for analysis
- Monitoring the disinfectant residuals within the Town with grab samples taken in multiple locations
- Water main and service repairs
- Valve inspection and maintenance
- Hydrant inspection and maintenance
- Unidirectional and conventional flushing for water quality

# 2014 ANNUAL WATER QUALITY SUMMARY REPORT

Water quality monitoring programs have been devised within the Water Distribution System of Newmarket to ensure that there are no pathogenic organisms and that there are sufficient disinfectant residuals throughout the WDS, meeting regulatory requirements. Samples are taken from locations all over Newmarket which have been strategically placed to give an accurate representation of the water quality within Newmarket's WDS. Operators can sample for and analyze disinfectant residual, pH, and temperature but microbiological, chemical, and radiological samples must be submitted to an accredited lab. The York-Durham Environmental Laboratory, located in Pickering, Ontario, is the accredited laboratory under contract with the Town of Newmarket. This laboratory is registered with the Canadian Association for Laboratory Certification Inc. (CALA). Samples are submitted to the York-Durham Environmental Laboratory to analyze the water quality within Newmarket's WDS.

The Town of Newmarket has experienced difficulties due to rapid chlorine decay within the water distribution system. Between January 1, 2014 and December 31, 2014, the Town of Newmarket reported one-hundred forty-seven (147) Adverse Water Quality Incidents (AWQI). There were one-hundred forty-two (142) AWQIs with regards to disinfectant (chloramine) residuals dropping below the free chlorine level of 0.05mg/L and the combined chlorine level of 0.25mg/L, which are parameters issued within the SDWA. E. coli was not present in any samples accounting for zero (0) AWQIs and there were five (5) AWQIs involving Total Coliform. Adverse Water Quality Incidents involving a low disinfectant residual were resolved by conventional and unidirectional flushing. AWQIs involving Total Coliform were resampled and resolved.

Furthermore, the Town of Newmarket has hired Stantec Consulting to assist in resolving the water quality issues that have challenged the WDS. Stantec Consulting has developed a hydraulic model of Newmarket's Water Distribution System in order to analyze the disinfectant trends and to test new scenarios with regards to the operation of the Water Distribution System.

The Town has completed this summary report to satisfy the regulatory requirements of the *Safe Drinking Water Act, O. Reg. 170/03*. For more information, please visit [www.newmarket.ca](http://www.newmarket.ca) or call The Town of Newmarket at 905-895-5193.

Any questions related to the Newmarket Water System, this report, or any water quality issue may be directed to the Overall Responsible Operator, Jeff Ellis (Supervisor of Water/Wastewater Operations) at our Operations Centre 905-953-5300, ext. 2564, or via email at [jellis@newmarket.ca](mailto:jellis@newmarket.ca).

# 2014 ANNUAL WATER QUALITY SUMMARY REPORT

## Introduction

### Purpose

This report was devised in order to deliver information to our consumers and stakeholders. The completion of this report allows the Town of Newmarket to comply with the regulatory requirements of the *Safe Drinking Water Act, 2002* including the *Drinking Water Quality Management System (DWQMS)*, reports to Owner, and regulatory reporting required under *O. Reg. 170/03*. This report will assist in displaying the Town of Newmarket's continual effort in the delivery of safe drinking water to Newmarket's consumers.

### Scope

This Annual Water Quality Report includes information pertaining to the Town of Newmarket's WDS for the period of January 1, 2014 to December 31, 2014. This information is required by law to be reported to the following:

1. The Drinking Water System Owners (The Corporation of the Town of Newmarket – Mayor and Council)
2. Top Management (Director – Public Works Services)
3. The public

#### **NEWMARKET'S QUALITY MANAGEMENT POLICY**

The Town of Newmarket is committed to the consistent delivery of safe drinking water through compliance with legislative and regulatory requirements. We will strive to achieve this goal through the implementation and continuous improvement of the Quality Management System.

The Town of Newmarket also pledges to ensure open communication, both with public, as well as staff concerning all policies, procedures, and documentation pertaining to drinking water quality.

The Quality Management Policy applies to all municipal management and staff, and is posted at the municipal offices, operations centre and on the municipal website.

April 11, 2011

**Figure 1:** Newmarket WDS Quality Management Policy

# 2014 ANNUAL WATER QUALITY SUMMARY REPORT

## Report Requirements of the Safe Drinking Water Act

This report satisfies both the *Safe Drinking Water Act, 2002 (SDWA)* and *Ontario Regulation (O. Reg.) 170/03*:

- *Section 11, Annual Reports* which include:
  - A brief description of the Drinking Water System
  - A summary of the most recent water test results required under *O.Reg. 170/03*
  - A summary of adverse test results and other issues reported to the Ministry including corrective actions taken
  - A description of the major expenses incurred to install, repair, or replace required equipment/infrastructure
  - The locations where this report is available for inspection

And;

- *Schedule 22, Summary Report* which includes:
  - List the requirements of the *SDWA*, the regulations, the system's approval, *Drinking Water Works Permit (DWWP)*, *Municipal Drinking Water Licence (MDWL)*, and any orders applicable for the system that were not met at any time during the period covered by the report
  - For each requirement that was not met, the duration of the failure and the measures that were taken to correct the failure

This report satisfies the requirements for the Newmarket WDS.

A copy of the Annual Report is available for viewing at:

- Newmarket Operations Centre, 1275 Maple Hill Court
- Newmarket Municipal Offices, Customer Service Counter, 395 Mulock Drive
- Online at [www.newmarket.ca](http://www.newmarket.ca)

(Safe Drinking Water Act, 2002)

### NOTICE:

**Please note that every reasonable effort has been made to ensure the accuracy of this report. This report is published with the best available information at the time of publication.**

# 2014 ANNUAL WATER QUALITY SUMMARY REPORT

## Newmarket Water Distribution System Overview

Newmarket's WDS is a Class I Distribution Subsystem composed of an interconnected series of water mains, water services, fire hydrants, valves, sample stations as well as regionally owned water towers, storage tanks and wells. This maze of infrastructure has been developed to supply safe drinking water to approximately 79,978 people that reside in the Town of Newmarket (Canada, Statistics Canada, 2011 – next census to be released in 2016). All new components in Newmarket's Water Distribution System meet NSF 61 requirements or approved equivalents. Any new infrastructure is installed and maintained in accordance with approved industry standards.

### The Newmarket Water Distribution System is comprised of:

- ❖ 307.97 Kilometers of Distribution System Water Main
- ❖ 2668 Mainline Valves
- ❖ 3 Pressure Regulating Valves
- ❖ 2302 Municipally Owned Fire Hydrants
- ❖ 25 Sample Stations
- ❖ 25,900 metered water services
- ❖ A normal operating pressure between 40 and 100psi

The Newmarket WDS is classified as a Large Municipal Residential system and operates under the provincially regulated requirements of the SDWA, which may be found at <http://www.e-laws.gov.on.ca>. The Drinking Water System operates under:

### **Municipal Drinking Water Licence (MDWL) 124-101 (Issue 2)**

### **Drinking Water Works Permit (DWWP) 124-201 (Issue 1).**

The MDWL and the DWWP describe system-specific requirements that are supplementary to provincial regulations and act as licenses for WDSs. These documents outline specific conditions and requirements regarding operation, maintenance and upgrades that are required by the system and considered regulatory in nature. These documents are available by request for viewing at the Newmarket Operations Centre, 1275 Maple Hill Court.

The Town of Newmarket had sixteen (16) water operators and staff that were certified to operate and maintain Newmarket's WDS between the period of January 1, 2014 and December 31, 2014. These sixteen (16) certified water operators and staff have an important task of regulating and maintaining the infrastructure and the water within, through daily duties. Certified operators and staff primarily work during the day from Monday to Friday but are required to take turns being on-call in order to provide a twenty-four (24) hours service. This twenty-four (24) hour service enables the Town of Newmarket to ensure that the delivery of safe drinking water is maintained at all times.

Newmarket is supplied with both surface and ground source waters. The purpose of blending is to decrease the demand on the underground aquifer and provide additional security by having a second supply source to supplement the needs of the rapidly growing community. The ground source is supplied through the Yonge Street aquifer. Five (5) wells are situated along the Yonge Street Corridor, numbered 13 & 16, 1 & 2, and 15 and four (4) wells are located in the community of Queensville. All nine (9) of these wells are owned and operated by York Region. In 2008, the Region began to supplement the ground water supply with surface



# 2014 ANNUAL WATER QUALITY SUMMARY REPORT

water from Peel Region using the source of Lake Ontario. This water is delivered through four (4) connections with the Town of Aurora located along the southern boundary. The Newmarket – Aurora connections are found at Bathurst Street, Yonge Street, Bayview Avenue, and Leslie Street. There are five (5) connections entering the Town of East Gwillimbury which have been established to provide water to their systems. The Newmarket – East Gwillimbury connections are situated at Harry Walker Parkway, Leslie Street, Yonge Street (east side), Yonge Street (west side), and Woodspring Avenue. In addition, Newmarket's WDS supplies water to a Regional transmission water main, which in turn supplies water to Bales Road in East Gwillimbury via Davis Drive.

Between January 1, 2014 and December 31, 2014, a total of 8,124,479m<sup>3</sup> of water was purchased from the Region for the Newmarket WDS. Of this total amount purchased, it was necessary to flush (through the use of fire hydrant flows) approximately 337,771 m<sup>3</sup> in order to maintain water quality throughout the WDS.

From January 1, 2014 to December 31, 2014, over 1000 regulatory microbiological and chemical quality samples were taken, by certified operators, from sample locations which have been well distributed throughout Newmarket. These samples were delivered to the York-Durham Regional Environmental Lab, which is an accredited, licenced laboratory, for analysis. In all cases, the drinking water supplied to all customers was confirmed safe.



**Photo:** Fire Hydrant in Newmarket, Ont.

# 2014 ANNUAL WATER QUALITY SUMMARY REPORT

## Major Expenses Incurred to Install, Repair, or Replace Required Equipment/Infrastructure and Contracted Services

In order to deliver safe drinking water to the residents of Newmarket, the Town of Newmarket had to incur various significant expenditures. The expenses that were made were for infrastructure repairs, replacement and reconstruction projects, and contracted services.



Photo: Broken Water Main

### Infrastructure Repairs

Table 1 below shows all of the excavations that were conducted with regards to Newmarket's Water Distribution System. There were thirty-six (36) water main breaks, two (2) valve repairs, one (1) hydrant repair, and eight (8) water service repairs.

### 2014 Excavation Details

EXCAVATION DATE	ADDRESS	TYPE OF REPAIR	PIPE MATERIAL	PIPE SIZE (mm)	BREAK TYPE	APPARENT CAUSE
05-Jan-14	155 Longford Drive	Water Main	Cast Iron	100mm	Circumference	Beam Failure
06-Jan-14	755 Botany Hill Crescent	Water Main	Cast Iron	250mm	Circumference	Beam Failure
16-Jan-14	724 Queen Street	Valve	Cast Iron	150mm	Valve Joint	Corrosion
31-Jan-14	332 Towercrest Drive	Water Main	Cast Iron	200mm	Circumference	Beam Failure
31-Jan-14	30 Charles Street	Water Service	Copper	25mm	Frozen Service	Frost at Storm
04-Feb-14	Plantation Gate	Water Main	Polyvinyl Chloride (PVC)	400mm	Saddle	Saddle Failure

# 2014 ANNUAL WATER QUALITY SUMMARY REPORT

EXCAVATION DATE	ADDRESS	TYPE OF REPAIR	PIPE MATERIAL	PIPE SIZE (mm)	BREAK TYPE	APPARENT CAUSE
05-Feb-14	774 Sunnypoint Drive	Water Main	Cast Iron	200mm	Circumference	Beam Failure
06-Feb-14	638 Gorham Street	Water Service	Copper	25mm	Frozen Service	Frost at Storm
14-Feb-14	151 Queen Street	Water Main	Cast Iron	150mm	Circumference	Beam Failure
18-Feb-14	117 Eagle Street	Water Service	Copper	25mm	Frozen Service	Frost at Storm
28-Feb-14	Adjacent 30 Davis Drive on Wilstead Drive	Water Main	Cast Iron	150mm	Circumference	Beam Failure
03-Mar-14	790 Best Circle	Water Service	Copper	25mm	Curbstop Rod	Corrosion
04-Mar-14	N/E Corner of Reading Place and London Road	Water Main	Ductile Iron	150mm	Circumference	Beam Failure
07-Mar-14	359 Crowder Boulevard	Water Main	Polyvinyl Chloride (PVC)	250mm	Longitude	Contractor
07-Mar-14	398 Roywood Crescent	Water Main	Cast Iron	150mm	Push-on	Blow-off
09-Mar-14	Kingston Road	Water Main	Ductile Iron	150mm	Blow Holes	Corrosion
11-Mar-14	314 Darlington Crescent	Water Service	Copper	19mm	Curbstop Rod	Corrosion
17-Mar-14	308 Roywood Crescent	Water Main	Cast Iron	150mm	Circumference	Beam Failure
19-Mar-14	Carol Avenue at Avenue Road	Water Main	Cast Iron	150mm	Circumference	Beam Failure
27-Mar-14	808 Arnold Crescent	Water Main	Cast Iron	150mm	Circumference	Beam Failure
07-Apr-14	1030 Srigley Street	Water Main	Cast Iron	150mm	Circumference	Beam Failure

# 2014 ANNUAL WATER QUALITY SUMMARY REPORT

EXCAVATION DATE	ADDRESS	TYPE OF REPAIR	PIPE MATERIAL	PIPE SIZE (mm)	BREAK TYPE	APPARENT CAUSE
14-Apr-14	Opposite 320 Roywood Crescent	Water Main	Cast Iron	150mm	Circumference	Beam Failure
24-Apr-14	355 Kirby Crescent	Water Main	Polyvinyl Chloride (PVC)	150mm	Longitude Split	Bedding
28-Apr-14	306 Roywood Crescent	Water Main	Cast Iron	150mm	Circumference	Beam Failure
04-Jun-14	Mary Street at Srigley Street	Water Main	Polyvinyl Chloride (PVC)	150mm	Hole-Split	Contractor
04-Jun-14	D'Arcy Street at Church Street	Hydrant	Ductile Iron	150mm	Hydrant Replace	Lower Flange
24-Jun-14	Davis Drive at Carlson Drive	Water Main	Ductile Iron	300mm	Blow Holes	Corrosion
03-Jul-14	Davis Drive Opposite Howard Road	Valve	Ductile Iron	200mm	Valve	Packing Seal
01-Aug-14	933 Jacarandah Drive	Water Main	Ductile Iron	150mm	Blow Holes	Corrosion
02-Aug-14	80 George Street	Water Main	Ductile Iron	150mm	Blow Holes	Corrosion
20-Aug-14	80 George Street	Water Main	Ductile Iron	150mm	Blow Holes	Corrosion
15-Oct-14	397 Borden Avenue	Water Main	Ductile Iron	150mm	Blow Holes	Corrosion
23-Oct-14	109 Park Avenue	Water Service	Copper	19mm	Frozen Service	Storm Sewer
10-Nov-14	381 Eagle Street	Water Main	Ductile Iron	300mm	Circumference	Corrosion
17-Nov-14	Srigley Street at Leslie Street	Water Main	Ductile Iron	200mm	Circumference	Corrosion
18-Nov-14	763 Gorham Street	Water Main	Ductile Iron	300mm	Blow Holes	Corrosion
21-Nov-14	797 Magnolia Avenue	Water Main	Cast Iron	150mm	Circumference	Frost

# 2014 ANNUAL WATER QUALITY SUMMARY REPORT

EXCAVATION DATE	ADDRESS	TYPE OF REPAIR	PIPE MATERIAL	PIPE SIZE (mm)	BREAK TYPE	APPARENT CAUSE
30-Nov-14	147 Patterson Street	Water Main	Ductile Iron	250mm	Blow Holes	Corrosion
02-Dec-14	796 Botany Hill Crescent	Water Main	Cast Iron	200mm	Circumference	Beam Failure
10-Dec-14	30 Charles Street	Water Service	Copper	25mm	Frozen Service	Storm Sewer
12-Dec-14	421 Roywood Crescent	Water Main	Cast Iron	150mm	Circumference	Beam Failure
18-Dec-14	35 Patterson Street	Water Service	Ductile Iron	300mm	Blow Holes	Corrosion
20-Dec-14	421 Roywood Crescent	Water Main	Cast Iron	150mm	Clamp	Poor install
22-Dec-14	751 Elgin Street	Water Main	Cast Iron	150mm	Circumference	Beam Failure
24-Dec-14	423 Keith Avenue	Water Main	Polyvinyl Chloride (PVC)	300mm	Split	Poor Bedding
27-Dec-14	21 Charles Street	Water Main	Cast Iron	150mm	Circumference	Beam Failure
31-Dec-14	842 Arnold Crescent	Water Main	Cast Iron	200mm	Circumference	Beam Failure

**Table 1:** 2014 Excavation Details

## Replacement and Reconstruction Projects

In conjunction with infrastructure repairs, there are also substantial expenditures that need to be made in relation to replacement of infrastructure and reconstruction projects. These replacement and reconstruction projects are an important measure to having a sustainable drinking water system. It can be more costly if replacement and reconstruction projects are neglected because this can lead to more repairs and can increase the potential issues of infiltration and microbial growth.

There were three (3) major replacement and reconstruction projects that were conducted between January 1, 2014 and December 31, 2014. A full replacement and reconstruction project was completed on Kingston Road and Jackson Court, where the water main, water services, water valves and hydrants were replaced. Furthermore, the ongoing Viva Project also included the replacement of water mains, water services, water valves and hydrants.

## Contracted Services

There were also expenses made for contracted services, which were used towards water quality and maintenance.

Corix Water Services was hired by the Town of Newmarket to assist with water quality. They were involved in flushing, swabbing and testing.

# 2014 ANNUAL WATER QUALITY SUMMARY REPORT

Moreover, Stantec Consulting was employed by the Town of Newmarket, in 2014, to support the ongoing battle against chlorine decay within Newmarket. Stantec Consulting developed a Water Quality Hydraulic Zoning Model for Newmarket's WDS. With this model, one can analyze the water quality trends when conducting activities such as closing one or more valves, or flushing a hydrant. It has become an important tool in regards to water quality.

Canadian Hydrant Technologies was also contracted by the Town of Newmarket within 2014 to operate and perform maintenance on every fire hydrant belonging to the municipality. By operating and maintaining every hydrant, the lifespan of this infrastructure is increased, thus, decreasing the expenses towards immediate replacement.

Rapid Plumbing Inc. was contracted by the Town of Newmarket within 2014 to be our emergency repair service. They were responsible for repairing broken water mains, water services, hydrants, valves and some wastewater repairs.

At the end of 2014, Trisan Construction took over the contract to become the Town of Newmarket's emergency repair service. Trisan is responsible for repairing broken water mains, water services, hydrants, valves and any repairs needed for waste water infrastructure.

## Water Quality

Ultimately, the goal of the Town of Newmarket is to provide safe drinking water to its consumers. Certified operators and staff within the Water/Waste Water Department of the Town of Newmarket work in accordance with the Safe Drinking Water Act, 2002 and associated regulations (i.e. O. Reg. 170/03).

### Water Sampling Summary

In order to monitor and maintain that the water within Newmarket's Water Distribution System is safe to deliver to all of its consumers, the *Safe Drinking Water Act, 2002, O. Reg. 170/03* gives guidelines to be followed with respect to what samples need to be taken and the frequency that they should be taken. The following tables display the microbiological, organic/inorganic, and disinfectant residual parameters that were tested, along with the results of those tests. Tables 2 and 3 show parameters that are analyzed by the York-Durham Environmental Laboratory and Table 4 displays the parameters that are sampled and analyzed by certified operators employed by the Town of Newmarket.

#### Microbiological Parameters

PARAMETER	REGULATED LIMIT	TOTAL NO. OF SAMPLES TESTED	NO. OF DETECT-ABLE RESULTS	SAMPLES EXCEEDING LIMIT	REPORTED EXCEED-ANCES	RANGE OF RESULTS
Heterotrophic Plate Count (HPC)	*no current standards	557	164	0	0	<1CFU/mL – 2,500 CFU/mL
Total Coliforms (MPN/PA)	0 MAC	1197	5	5	5	A MPN/100mL – P MPN/100mL
Escherichia E. Coli/E. (MPN/PA)	0 MAC	1197	0	0	0	A MPN/100mL – P MPN/100mL

Table 2: 2014 Microbiological Parameters

# 2014 ANNUAL WATER QUALITY SUMMARY REPORT

## Organic/Inorganic Parameters

PARAMETER	REGULATED LIMIT	TOTAL NO. OF SAMPLES TESTED	NO. OF DETECT-ABLE RESULTS	SAMPLES EXCEEDING LIMIT	REPORTED EXCEED-ANCES	RANGE OF RESULTS
<b>Alkalinity (total as CaCO<sub>3</sub>)</b>	Operational Guideline: 30-500mg/L	16	16	0	0	92.5mg/L – 186mg/L
<b>Ammonia (total, as N)</b>	*no current standards	21	21	0	0	0.225mg/L – 0.396mg/L
<b>Bromide</b>	*no current standards	16	0	0	0	<0.02mg/L - <0.02mg/L
<b>Bromodichloromethane</b>	*no current standards	9	9	0	0	0.0027mg/L – 0.0072mg/L
<b>Bromoform</b>	(one of the 4 THMs that make up Total THMs)	9	7	0	0	<0.0002mg/L - 0.0006mg/L
<b>Calcium</b>	*no current standards	21	21	0	0	38.0mg/L – 47.7mg/L
<b>Chloride</b>	Aesthetic Object (AO) 250 mg/L	21	21	0	0	11.3mg/L – 47.3mg/L
<b>Chloroform</b>	(one of the 4 THMs that make up Total THMs)	9	9	0	0	0.0058mg/L – 0.0153mg/L
<b>Dibromochloromethane</b>	(one of the 4 THMs that make up Total THMs)	9	9	0	0	0.0008mg/L – 0.0033mg/L
<b>Fluoride</b>	1.5 mg/L	21	21	0	0	0.15mg/L – 0.55mg/L
<b>Hardness (total, as CaCO<sub>3</sub>)</b>	Operational Guideline 80-100mg/L	21	21	21	0	136mg/L – 195mg/L
<b>Lead (total)</b>	0.01 mg/L	16	16	0	0	0.0001mg/L – 0.0006mg/L
<b>Magnesium (total)</b>	*no current standards	21	21	0	0	9.9mg/L – 19.9mg/L
<b>Nitrate (as N)</b>	10 mg/L (as Nitrogen)	21	16	0	0	0.035mg/L – 0.614mg/L
<b>Nitrate + Nitrite (as N)</b>	10 mg/L (as Nitrogen)	21	16	0	0	0.045mg/L – 0.614mg/L
<b>Nitrite (as N)</b>	1 mg/L (as Nitrogen)	21	5	0	0	<0.006mg/L – 0.029mg/L
<b>o-Phosphate (as P)</b>	*no current standards	16	1	0	0	<0.004mg/L – 0.013mg/L
<b>pH</b>	Operational Guideline 6.5 – 8.5	743	743	42	0	5.0mg/L – 8.91 mg/L
<b>Potassium (total)</b>	*no current standards	21	21	0	0	0.98mg/L – 1.8mg/L

# 2014 ANNUAL WATER QUALITY SUMMARY REPORT

PARAMETER	REGULATED LIMIT	TOTAL NO. OF SAMPLES TESTED	NO. OF DETECT-ABLE RESULTS	SAMPLES EXCEEDING LIMIT	REPORTED EXCEED-ANCES	RANGE OF RESULTS
<b>Sodium (total)**</b>	Aesthetic Objective (AO) 200 mg/L Indicator of adverse quality 20 mg/L	21	21	4	0	14.6mg/L – 27.6mg/L
<b>Sulphate</b>	Aesthetic Objective (AO) 500 mg/L	21	21	0	0	1.92mg/L – 30.0mg/L
<b>Total Trihalomethanes (TTHMs)</b>	0.100 mg/L	9	9	0	0	0.0106mg/L – 0.0209mg/L

Table 3: 2014 Organic/Inorganic Parameters

## Disinfectant Residual Monitoring

PARAMETER	MINIMUM REGULATED LIMIT	TOTAL NO. OF SAMPLES	RANGE	SAMPLES EXCEEDING LIMIT	REPORTED EXCEEDANCES (AWQIs)
<b>Chlorine (Combined Chlorine/Free Chlorine)</b>	0.25 mg/L (combined)	7710	0.00mg/L – 2.87mg/L	142	142
<b>- routine sampling/daily residuals/ extra sampling</b>	0.05 mg/L (free)				

Table 4: 2014 Disinfectant Residual Monitoring

## Regulatory Lead Sampling Program

In 2014, lead sampling programs were conducted in compliance with Schedule 15.1 of *O. Reg. 170/03* of the Safe Drinking Water Act. Sixteen (16) samples were taken and submitted to the York-Durham Regional Environmental Laboratory for analysis. Sample results ranged from between 0.0001mg/L-0.0006mg/L for distribution system samples. Due to sufficient evidence indicating that lead is not leaching from infrastructure in Newmarket's WDS, combined with a substantial decline in volunteers for residential samples, the Corporation of the Town of Newmarket, on April 20, 2012, submitted a request for Regulatory Relief from Lead Sampling Requirements.

*“Amendments to Ontario Regulation 170/03 (Drinking Water Systems) to reduce the potential for elevated levels of lead in drinking water at the tap came into effect on July 26, 2007. These amendments include mandatory community-wide testing for lead, notification of results from the community testing program, and the development and implementation of corrosion control measures for lead reduction... Under Part V (municipal systems) and Part VI (regulated non-municipal systems) of the Safe Drinking Water Act, 2002, the Director, through conditions of an approval, may provide relief for a drinking water system from a regulatory requirement related to the treatment of water, the sampling, testing or monitoring of water quality, or the reporting of the results. As outlined in the December 17, 2007 letter to municipal and non-municipal residential drinking water system owners, the ministry will consider granting regulatory relief to owners who, despite best efforts, are not able to secure the required number of sampling locations.”*

(Ontario, Service Ontario, Safe Drinking Water Act, Part V: Municipal Drinking Water Systems, 2002)



# 2014 ANNUAL WATER QUALITY SUMMARY REPORT

The application for relief was approved by the Ontario Ministry of the Environment, with the below table updated to illustrate the Newmarket WDS's new regulatory requirements (effective until October 15, 2016). See Table 5 for the number of sampling points required for relief from regulatory requirements.

## Number of Sampling Points Required for Relief from Regulatory Requirements

Column 1 Drinking Water System or Drinking Water Subsystem Name	Column 2 DWS Number	Column 3 Number of Sampling Points in Plumbing that Serves Private Residences	Column 4 Number of Sampling Points in Plumbing that Does Not Serve Private Residences	Column 5 Number of Sampling Points in Distribution System
Newmarket Distribution System	260003188	0	0	8

**Table 5:** Number of Sampling Points Required for Relief from Regulatory Requirements

(Ontario. Service Ontario, 2012)

## 2014 Water Quality Challenges

Through 2014, the Town of Newmarket battled against the ongoing issues of disinfectant decay within sections of Newmarket's Water Distribution System. Chloramines, which result from the mixture of chlorine and ammonia, are utilized to disinfect the water within the Newmarket WDS. The disinfectant in various parts of Newmarket's WDS has been decaying at a rapid rate, especially in the summer months when the water temperatures are warmer. As a result, the Town of Newmarket has been working closely with York Region, as well as the Ministry of the Environment (MOE) Spills Action Centre (SAC) and the Medical Officer of Health (MOH) to resolve this issue. Table 6 displays all of the Adverse Water Quality Incidents (AWQIs) that were reported to the Ministry of the Environment (SAC) and the Medical Officer of Health. The Adverse Water Quality Incident Table shows information with regards to the date, time, location, parameter, standard, result, and the resolution.

There were one-hundred forty-two (142) AWQIs involving the parameter of combined chlorine and five (5) AWQIs in relation to Total Coliform. Between January 1, 2014 and December 31, 2014, there were no samples tested by the York-Durham Regional Environmental Laboratory that had E. coli present.

As a result of the issues regarding disinfectant decay, the certified water operators and water staff within the Town of Newmarket have been working diligently to maintain the delivery of safe drinking water to its consumers. Many hours have gone in to flushing hydrants and the number of disinfectant residual samples taken has far exceeded the amount needed to comply with the *Safe Drinking Water Act, 2002, O. Reg. 170/03*.

To assist in the resolution to the challenges of disinfectant decay, the Town of Newmarket has contracted Corix Water Services and Stantec Consulting. Corix Water Services has aided the Town of Newmarket by conducting maintenance on the water distribution system by means of flushing and swabbing. Corix Water Services has also been involved in testing the disinfectant residuals within Newmarket's WDS. All Corix Water Services staff are certified.

Stantec Consulting was also hired to create a hydraulic model of Newmarket's Water Distribution System, which has been important to analyzing trends within the WDS. Through the analysis, the Town of Newmarket is able to recognize and address areas experiencing disinfectant decay.

# 2014 ANNUAL WATER QUALITY SUMMARY REPORT

## Adverse Water Quality Incidents (AWQIs)

Date	Time	AWQI #	Parameter	Standard	Result	Location	Resolution
16-Jan-14	09:40	115762	Combined Chlorine	0.25 mg/L	0.17mg/L	Hydrant Fronting 573 Roeder Court	<ul style="list-style-type: none"> <li>Flushed system &amp; restored residual</li> <li>16-Jan-14 11:10</li> <li>0.31mg/L</li> </ul>
23-Jan-14	10:30	115832	Combined Chlorine	0.25 mg/L	0.08mg/L	Hydrant at the rear of 395 Mulock Drive	<ul style="list-style-type: none"> <li>Flushed system &amp; restored residual</li> <li>23-Jan-14 10:50</li> <li>0.30mg/L</li> </ul>
11-Feb-14	10:30	116012	Combined Chlorine	0.25 mg/L	0.22mg/L	Hydrant Fronting 18100 Yonge Street	<ul style="list-style-type: none"> <li>Flushed system &amp; restored residual</li> <li>11-Feb-14 10:45</li> <li>1.11mg/L</li> </ul>
03-Mar-14	14:45	116301	Total Coliform	0 MAC	PRESENT	Hydrant at 56 Charles Street – Youth Centre	<ul style="list-style-type: none"> <li>Flushed system &amp; resampled</li> <li>ABSENT 06-Mar-14</li> </ul>
28-Mar-14	10:10	116531	Combined Chlorine	0.25 mg/L	0.18mg/L	Hydrant at the west corner of 471 Eagle Street	<ul style="list-style-type: none"> <li>Flushed system &amp; restored residual</li> <li>28-Mar-14 11:10</li> <li>0.39mg/L</li> </ul>
02-Apr-14	09:30	116570	Combined Chlorine	0.25 mg/L	0.21mg/L	SS-Lindsay Avenue	<ul style="list-style-type: none"> <li>Flushed system &amp; restored residual</li> <li>02-Apr-14 10:00</li> <li>0.39mg/L</li> </ul>
24-Apr-14	11:05	117090	Combined Chlorine	0.25 mg/L	0.09mg/L	SS-11 Cedarwood Avenue	<ul style="list-style-type: none"> <li>Flushed system &amp; restored residual</li> <li>24-Apr-14 11:50</li> <li>0.27mg/L</li> </ul>
29-Apr-14	08:30	117139	Combined Chlorine	0.25 mg/L	0.10mg/L	Hydrant Fronting 443 Herridge Circle	<ul style="list-style-type: none"> <li>Flushed system &amp; restored residual</li> <li>29-Apr-14 08:50</li> <li>0.34mg/L</li> </ul>
02-May-14	09:30	117240	Combined Chlorine	0.25 mg/L	0.20mg/L	Hydrant Fronting 661 Mountview Place	<ul style="list-style-type: none"> <li>Flushed system &amp; restored residual</li> <li>02-May-14 09:55</li> <li>0.65mg/L</li> </ul>
02-May-14	14:10	117245	Combined Chlorine	0.25 mg/L	0.22mg/L	Hydrant Fronting 398 Simcoe Street	<ul style="list-style-type: none"> <li>Flushed system &amp; restored residual</li> <li>02-May-14 14:40</li> <li>0.27mg/L</li> </ul>

## 2014 ANNUAL WATER QUALITY SUMMARY REPORT

Date	Time	AWQI #	Parameter	Standard	Result	Location	Resolution
06-May-14	08:15	117269	Combined Chlorine	0.25 mg/L	0.13mg/L	SS-06 Simcoe Street	<ul style="list-style-type: none"> <li>• Flushed system &amp; restored residual</li> <li>• 06-May-14 09:55</li> <li>• 0.26mg/L</li> </ul>
07-May-14	08:30	117283	Combined Chlorine	0.25 mg/L	0.01mg/L	Hydrant Fronting 17175 Yonge Street	<ul style="list-style-type: none"> <li>• Flushed system &amp; restored residual</li> <li>• 07-May-14 09:20</li> <li>• 1.20mg/L</li> </ul>
09-May-14	09:20	117310	Combined Chlorine	0.25 mg/L	0.23mg/L	Hydrant Fronting 188 Deerfield Road	<ul style="list-style-type: none"> <li>• Flushed system &amp; restored residual</li> <li>• 09-May-14 09:50</li> <li>• 1.06mg/L</li> </ul>
13-May-14	12:55	117380	Combined Chlorine	0.25 mg/L	0.22mg/L	Hydrant Fronting 458 Simcoe Street	<ul style="list-style-type: none"> <li>• Flushed system &amp; restored residual</li> <li>• 13-May-14 13:30</li> <li>• 0.41mg/L</li> </ul>
14-May-14	09:00	117403	Combined Chlorine	0.25 mg/L	0.16mg/L	Hydrant Fronting 398 Simcoe Street	<ul style="list-style-type: none"> <li>• Flushed system &amp; restored residual</li> <li>• 14-May-14 10:30</li> <li>• 0.37mg/L</li> </ul>
16-May-14	09:00	117507	Combined Chlorine	0.25 mg/L	0.23mg/L	Hydrant Fronting 626 Mountview Place	<ul style="list-style-type: none"> <li>• Flushed system &amp; restored residual</li> <li>• 16-May-14 12:00</li> <li>• 0.31mg/L</li> </ul>
17-May-14	15:10	117527	Combined Chlorine	0.25 mg/L	0.10mg/L	Hydrant Fronting 731 Mountview Place	<ul style="list-style-type: none"> <li>• Flushed system &amp; restored residual</li> <li>• 17-May-14 08:30</li> <li>• 0.32mg/L</li> </ul>
20-May-14	10:40	117540	Combined Chlorine	0.25 mg/L	0.12mg/L	Hydrant Fronting 683 Sandford Street	<ul style="list-style-type: none"> <li>• Flushed system &amp; restored residual</li> <li>• 20-May-14 11:20</li> <li>• 1.56mg/L</li> </ul>
26-May-14	14:15	117677	Total Coliform	0 MAC	PRESENT	SS-24 18100 Yonge Street	<ul style="list-style-type: none"> <li>• Flushed system &amp; resampled</li> <li>• ABSENT 28-May-14</li> </ul>
26-May-14	09:50	117619	Combined Chlorine	0.25 mg/L	0.03mg/L	Hydrant Fronting 99 Woodpark Place	<ul style="list-style-type: none"> <li>• Flushed system &amp; restored residual</li> <li>• 26-May-14 10:05</li> <li>• 0.98mg/L</li> </ul>
28-May-14	09:40	117647	Combined Chlorine	0.25 mg/L	0.06mg/L	Hydrant Fronting 95 Forhan Avenue	<ul style="list-style-type: none"> <li>• Flushed system &amp; restored residual</li> <li>• 28-May-14 10:10</li> <li>• 1.73mg/L</li> </ul>

## 2014 ANNUAL WATER QUALITY SUMMARY REPORT

Date	Time	AWQI #	Parameter	Standard	Result	Location	Resolution
29-May-14	10:20	117690	Combined Chlorine	0.25 mg/L	0.16mg/L	SS-28 Main Street N at Max Stiles Park	<ul style="list-style-type: none"> <li>• Flushed system &amp; restored residual</li> <li>• 29-May-14 10:55</li> <li>• 0.31mg/L</li> </ul>
29-May-14	14:30	117697	Combined Chlorine	0.25 mg/L	0.14mg/L	Hydrant Fronting 116 Hillview Drive	<ul style="list-style-type: none"> <li>• Flushed system &amp; restored residual</li> <li>• 29-May-14 15:15</li> <li>• Free of 0.05mg/L</li> </ul>
02-Jun-14	15:00	117757	Combined Chlorine	0.25 mg/L	0.05mg/L	Hydrant Fronting 103 Avenue Road	<ul style="list-style-type: none"> <li>• Flushed system &amp; restored residual</li> <li>• 02-Jun-14 17:30</li> <li>• 0.28mg/L</li> </ul>
03-Jun-14	08:50	117788	Combined Chlorine	0.25 mg/L	0.05mg/L	Hydrant Fronting 103 Avenue Road	<ul style="list-style-type: none"> <li>• Flushed system &amp; restored residual</li> <li>• 03-Jun-14 09:20</li> <li>• 0.56mg/L</li> </ul>
04-Jun-14	08:35	117815	Combined Chlorine	0.25 mg/L	0.06mg/L	Hydrant Fronting 17175 Yonge Street	<ul style="list-style-type: none"> <li>• Flushed system &amp; restored residual</li> <li>• 04-Jun-14 09:20</li> <li>• 1.37mg/L</li> </ul>
06-Jun-14	08:15	117860	Combined Chlorine	0.25 mg/L	0.17mg/L	Hydrant Fronting 103 Avenue Road.	<ul style="list-style-type: none"> <li>• Flushed system &amp; restored residual</li> <li>• 06-Jun-14 09:25</li> <li>• 0.34mg/L</li> </ul>
10-Jun-14	10:55	117898	Combined Chlorine	0.25 mg/L	0.16mg/L	Hydrant Fronting 318 Avenue Road	<ul style="list-style-type: none"> <li>• Flushed system &amp; restored residual</li> <li>• 10-Jun-14 12:15</li> <li>• 0.46mg/L</li> </ul>
11-Jun-14	08:45	117910	Combined Chlorine	0.25 mg/L	0.13mg/L	SS-08 on Avenue Road adjacent to 238 Lorne Ave	<ul style="list-style-type: none"> <li>• Flushed system &amp; restored residual</li> <li>• 11-Jun-14 10:05</li> <li>• 0.36mg/L</li> </ul>
13-Jun-14	10:10	117995	Combined Chlorine	0.25 mg/L	0.14mg/L	Last Hydrant on Bayview Avenue at Davis Drive	<ul style="list-style-type: none"> <li>• Flushed system &amp; restored residual</li> <li>• 13-Jun-14 10:40</li> <li>• 0.35mg/L</li> </ul>
16-Jun-14	09:00	118021	Combined Chlorine	0.25 mg/L	0.14mg/L	SS-04 at 531 Davis Drive	<ul style="list-style-type: none"> <li>• Flushed system &amp; restored residual</li> <li>• 16-Jun-14 10:00</li> <li>• 0.37mg/L</li> </ul>
18-Jun-14	13:15	118118	Combined Chlorine	0.25 mg/L	0.04mg/L	Hydrant Fronting 27 Main Street	<ul style="list-style-type: none"> <li>• Flushed system &amp; restored residual</li> <li>• 18-Jun-14 13:15</li> <li>• 0.37mg/L</li> </ul>

## 2014 ANNUAL WATER QUALITY SUMMARY REPORT

Date	Time	AWQI #	Parameter	Standard	Result	Location	Resolution
19-Jun-14	14:30	118150	Combined Chlorine	0.25 mg/L	0.14mg/L	Hydrant Fronting 16 Vincent Street	<ul style="list-style-type: none"> <li>• Flushed system &amp; restored residual</li> <li>• 19-Jun-14 15:30</li> <li>• 0.25mg/L</li> </ul>
20-Jun-14	09:40	118164	Combined Chlorine	0.25 mg/L	0.07mg/L	Hydrant Fronting 131 Avenue Road	<ul style="list-style-type: none"> <li>• Flushed system &amp; restored residual</li> <li>• 20-Jun-14 11:00</li> <li>• 0.46mg/L</li> </ul>
26-Jun-14	10:55	118327	Combined Chlorine	0.25 mg/L	0.10mg/L	SS-08 Avenue Road	<ul style="list-style-type: none"> <li>• Flushed system &amp; restored residual</li> <li>• 26-Jun-14 10:55</li> <li>• 0.32mg/L</li> </ul>
28-Jun-14	12:20	118380	Combined Chlorine	0.25 mg/L	0.15mg/L	SS-10 Lindsay Avenue (adjacent. 175 Penn Avenue)	<ul style="list-style-type: none"> <li>• Flushed system &amp; restored residual</li> <li>• 28-Jun-14 10:50</li> <li>• Free of 0.08mg/L</li> </ul>
02-Jul-14	08:35	118433	Combined Chlorine	0.25 mg/L	0.09mg/L	Hydrant Fronting 318 Avenue Road.	<ul style="list-style-type: none"> <li>• Flushed system &amp; restored residual</li> <li>• 02-Jul-14 10:35</li> <li>• 0.40mg/L</li> </ul>
03-Jul-14	09:25	118487	Combined Chlorine	0.25 mg/L	0.02mg/L	SS-28 Main Street N at Max Stiles Park	<ul style="list-style-type: none"> <li>• Flushed system &amp; restored residual</li> <li>• 03-Jul-14 13:10</li> <li>• 0.41mg/L</li> </ul>
04-Jul-14	08:55	118516	Combined Chlorine	0.25 mg/L	0.07mg/L	SS-08 Avenue Road	<ul style="list-style-type: none"> <li>• Flushed system &amp; restored residual</li> <li>• 04-Jul-14 10:55</li> <li>• 0.54mg/L</li> </ul>
04-Jul-14	13:15	118524	Combined Chlorine	0.25 mg/L	0.09mg/L	Hydrant Fronting 40 Franklin Street	<ul style="list-style-type: none"> <li>• Flushed system &amp; restored residual</li> <li>• 04-Jul-14 14:45</li> <li>• 0.27mg/L</li> </ul>
06-Jul-14	09:10	118554	Combined Chlorine	0.25 mg/L	0.08mg/L	SS-10 Lindsay Avenue (adjacent 175 Penn Avenue)	<ul style="list-style-type: none"> <li>• Flushed system &amp; restored residual</li> <li>• 06-Jul-14 10:05</li> <li>• 0.40mg/L</li> </ul>
07-Jul-14	08:55	118593	Combined Chlorine	0.25 mg/L	0.08mg/L	1 <sup>st</sup> Hydrant N of London Road. On Main Street N.	<ul style="list-style-type: none"> <li>• Flushed system &amp; restored residual</li> <li>• 07-Jul-14 17:30</li> <li>• 0.26mg/L</li> </ul>
08-Jul-14	08:20	118621	Combined Chlorine	0.25 mg/L	0.15mg/L	SS-08 Avenue Road	<ul style="list-style-type: none"> <li>• Flushed system &amp; restored residual</li> <li>• 08-Jul-14 09:45</li> <li>• 0.29mg/L</li> </ul>

## 2014 ANNUAL WATER QUALITY SUMMARY REPORT

Date	Time	AWQI #	Parameter	Standard	Result	Location	Resolution
09-Jul-14	08:15	118723	Combined Chlorine	0.25 mg/L	0.07mg/L	SS-11 adjacent 738 Cedarwood Avenue	<ul style="list-style-type: none"> <li>• Flushed system &amp; restored residual</li> <li>• 09-Jul-14 11:45</li> <li>• 0.29mg/L</li> </ul>
10-Jul-14	09:40	118774	Combined Chlorine	0.25 mg/L	0.20mg/L	Hydrant Fronting 482 Ontario Street	<ul style="list-style-type: none"> <li>• Flushed system &amp; restored residual</li> <li>• 10-Jul-14 10:10</li> <li>• 0.34mg/L</li> </ul>
11-Jul-14	08:50	118820	Combined Chlorine	0.25 mg/L	0.13mg/L	Hydrant Fronting 602 Haines Road.	<ul style="list-style-type: none"> <li>• Flushed system &amp; restored residual</li> <li>• 11-Jul-14 09:20</li> <li>• 0.51mg/L</li> </ul>
12-Jul-14	11:10	118843	Combined Chlorine	0.25 mg/L	0.29mg/L	Dead End of Mary Street	<ul style="list-style-type: none"> <li>• Flushed system &amp; restored residual</li> <li>• 12-Jul-14 13:45</li> <li>• 0.29mg/L</li> </ul>
13-Jul-14	10:15	118849	Combined Chlorine	0.25 mg/L	0.11mg/L	SS-11 adjacent 738 Cedarwood Avenue	<ul style="list-style-type: none"> <li>• Flushed system &amp; restored residual</li> <li>• 13-Jul-14 12:20</li> <li>• 0.29mg/L</li> </ul>
14-Jul-14	10:45	118858	Combined Chlorine	0.25 mg/L	0.03mg/L	Hydrant Fronting 658 Park Court	<ul style="list-style-type: none"> <li>• Flushed system &amp; restored residual</li> <li>• 14-Jul-14 11:45</li> <li>• 0.48mg/L</li> </ul>
15-Jul-14	08:35	118876	Combined Chlorine	0.25 mg/L	0.04mg/L	Hydrant Fronting 602 Haines Road	<ul style="list-style-type: none"> <li>• Flushed system &amp; restored residual</li> <li>• 15-Jul-14 10:35</li> <li>• 0.35mg/L</li> </ul>
16-Jul-14	08:30	118913	Combined Chlorine	0.25 mg/L	0.12mg/L	Hydrant Fronting 115 Roxborough Road	<ul style="list-style-type: none"> <li>• Flushed system &amp; restored residual</li> <li>• 16-Jul-14 15:00</li> <li>• 0.38mg/L</li> </ul>
17-Jul-14	08:25	118951	Combined Chlorine	0.25 mg/L	0.06mg/L	SS-04 at 531 Davis Drive	<ul style="list-style-type: none"> <li>• Flushed system &amp; restored residual</li> <li>• 17-Jul-14 10:00</li> <li>• 0.26mg/L</li> </ul>
18-Jul-14	09:10	118994	Combined Chlorine	0.25 mg/L	0.11mg/L	Hydrant Fronting 32 Bolton Avenue	<ul style="list-style-type: none"> <li>• Flushed system &amp; restored residual</li> <li>• 18-Jul-14 10:30</li> <li>• 0.53mg/L</li> </ul>
19-Jul-14	08:35	119034	Combined Chlorine	0.25 mg/L	0.11mg/L	Hydrant opposite 161 Charlotte Street S.	<ul style="list-style-type: none"> <li>• Flushed system &amp; restored residual</li> <li>• 19-Jul-14 10:05</li> <li>• 0.26mg/L</li> </ul>

## 2014 ANNUAL WATER QUALITY SUMMARY REPORT

Date	Time	AWQI #	Parameter	Standard	Result	Location	Resolution
21-Jul-14	09:15	119049	Combined Chlorine	0.25 mg/L	0.14mg/L	Hydrant at N/E corner of Srigley Street & Prospect Street	<ul style="list-style-type: none"> <li>• Flushed system &amp; restored residual</li> <li>• 21-Jul-14 11:15</li> <li>• 0.26mg/L</li> </ul>
22-Jul-14	07:55	119074	Combined Chlorine	0.25 mg/L	0.09mg/L	SS-11 adjacent 738 Cedarwood Avenue	<ul style="list-style-type: none"> <li>• Flushed system &amp; restored residual</li> <li>• 22-Jul-14 08:30</li> <li>• 0.31mg/L</li> </ul>
23-Jul-14	09:00	119113	Combined Chlorine	0.25 mg/L	0.19mg/L	Hydrant at N/E Corner of Srigley Street & Prospect Street	<ul style="list-style-type: none"> <li>• Flushed system &amp; restored residual</li> <li>• 23-Jul-14 11:00</li> <li>• 0.27mg/L</li> </ul>
24-Jul-14	11:10	119143	Combined Chlorine	0.25 mg/L	0.02mg/L	SS-28 Main Street N at Max Stiles Park	<ul style="list-style-type: none"> <li>• Flushed system &amp; restored residual</li> <li>• 24-Jul-14 13:00</li> <li>• 0.43mg/L</li> </ul>
25-Jul-14	08:25	119162	Combined Chlorine	0.25 mg/L	0.15mg/L	Hydrant Fronting 756 Cedarwood Avenue	<ul style="list-style-type: none"> <li>• Flushed system &amp; restored residual</li> <li>• 25-Jul-14 11:30</li> <li>• Free of 0.05mg/L</li> </ul>
28-Jul-14	09:15	119244	Combined Chlorine	0.25 mg/L	0.22mg/L	Hydrant opposite 752 Cedarwood Avenue	<ul style="list-style-type: none"> <li>• Flushed system &amp; restored residual</li> <li>• 28-Jul-14 10:15</li> <li>• 0.26mg/L</li> </ul>
29-Jul-14	09:20	119276	Combined Chlorine	0.25 mg/L	0.16mg/L	SS-10 Lindsay Avenue (adjacent 175 Penn Avenue)	<ul style="list-style-type: none"> <li>• Flushed system &amp; restored residual</li> <li>• 29-Jul-14 10:10</li> <li>• 0.35mg/L</li> </ul>
30-Jul-14	13:15	119312	Combined Chlorine	0.25 mg/L	0.02mg/L	Hydrant Fronting 391 Harewood Boulevard.	<ul style="list-style-type: none"> <li>• Flushed system &amp; restored residual</li> <li>• 30-Jul-14 14:20</li> <li>• Free of 0.05mg/L</li> </ul>
30-Jul-14	09:40	119351	Combined Chlorine	0.25 mg/L	0.22mg/L	Hydrant on Eagle Street at Dixon Boulevard	<ul style="list-style-type: none"> <li>• Flushed system &amp; restored residual</li> <li>• 30-Jul-14 10:40</li> <li>• Free of 0.07mg/L</li> </ul>
31-Jul-14	10:35	119341	Combined Chlorine	0.25 mg/L	0.05mg/L	SS-08 on Avenue Road adjacent 238 Lorne Avenue	<ul style="list-style-type: none"> <li>• Flushed system &amp; restored residual</li> <li>• 31-Jul-14 13:15</li> <li>• Free of 0.05mg/L</li> </ul>

## 2014 ANNUAL WATER QUALITY SUMMARY REPORT

Date	Time	AWQI #	Parameter	Standard	Result	Location	Resolution
01-Aug-14	10:00	119364	Combined Chlorine	0.25 mg/L	0.13mg/L	Hydrant Fronting Maurice Court	<ul style="list-style-type: none"> <li>• Flushed system &amp; restored residual</li> <li>• 01-Aug-14 12:00</li> <li>• 0.28mg/L</li> </ul>
02-Aug-14	18:00	119386	Combined Chlorine	0.25 mg/L	0.10mg/L	SS-10 Lindsay Avenue (adjacent 175 Penn Avenue)	<ul style="list-style-type: none"> <li>• Flushed system &amp; restored residual</li> <li>• 02-Aug-14 18:30</li> <li>• 0.40mg/L</li> </ul>
03-Aug-14	17:00	119394	Combined Chlorine	0.25 mg/L	0.06mg/L	SS-10 Lindsay Avenue (adjacent 175 Penn Avenue)	<ul style="list-style-type: none"> <li>• Flushed system &amp; restored residual</li> <li>• 03-Aug-14 20:00</li> <li>• 0.40mg/L</li> </ul>
05-Aug-14	09:25	119409	Combined Chlorine	0.25 mg/L	0.22mg/L	Hydrant Fronting 56 Charles Street (Youth Centre)	<ul style="list-style-type: none"> <li>• Flushed system &amp; restored residual</li> <li>• 05-Aug-14 10:20</li> <li>• 0.61mg/L</li> </ul>
06-Aug-14	08:30	119422	Combined Chlorine	0.25 mg/L	0.02mg/L	Hydrant Fronting 620 Haines Road	<ul style="list-style-type: none"> <li>• Flushed system &amp; restored residual</li> <li>• 06-Aug-14 11:00</li> <li>• Free of 0.05mg/L</li> </ul>
07-Aug-14	08:30	119444	Combined Chlorine	0.25 mg/L	0.08mg/L	SS-08 Avenue Road	<ul style="list-style-type: none"> <li>• Flushed system &amp; restored residual</li> <li>• 07-Aug-14 12:00</li> <li>• 0.26mg/L</li> </ul>
08-Aug-14	08:25	119472	Combined Chlorine	0.25 mg/L	0.01mg/L	SS-28 Main Street N at Max Stiles Park	<ul style="list-style-type: none"> <li>• Flushed system &amp; restored residual</li> <li>• 08-Aug-14 11:00</li> <li>• Free of 0.06mg/L</li> </ul>
12-Aug-14	08:20	119533	Combined Chlorine	0.25 mg/L	0.14mg/L	SS-04 adjacent 531 Davis Drive	<ul style="list-style-type: none"> <li>• Flushed system &amp; restored residual</li> <li>• 12-Aug-14 08:50</li> <li>• 0.26mg/L</li> </ul>
13-Aug-14	09:35	119575	Combined Chlorine	0.25 mg/L	0.04mg/L	Hydrant on Old Main Street west of Jim Barber Court	<ul style="list-style-type: none"> <li>• Flushed system &amp; restored residual</li> <li>• 13-Aug-14 12:30</li> <li>• 0.39mg/L</li> </ul>
14-Aug-14	09:15	119605	Combined Chlorine	0.25 mg/L	0.19mg/L	SS-10 Lindsay Avenue (adjacent 175 Penn Avenue)	<ul style="list-style-type: none"> <li>• Flushed system &amp; restored residual</li> <li>• 14-Aug-14 10:00</li> <li>• 0.55mg/L</li> </ul>



## 2014 ANNUAL WATER QUALITY SUMMARY REPORT

Date	Time	AWQI #	Parameter	Standard	Result	Location	Resolution
15-Aug-14	09:00	119625	Combined Chlorine	0.25 mg/L	0.19mg/L	Hydrant on S/E corner of Timothy Street and Doug Duncan Drive	<ul style="list-style-type: none"> <li>• Flushed system &amp; restored residual</li> <li>• 15-Aug-14 0.28mg/L</li> <li>• 0.28mg/L</li> </ul>
18-Aug-14	08:50	119664	Combined Chlorine	0.25 mg/L	0.21mg/L	Hydrant Fronting 56 Charles Street (Youth Centre)	<ul style="list-style-type: none"> <li>• Flushed system &amp; restored residual</li> <li>• 18-Aug-14 09:20</li> <li>• 0.26mg/L</li> </ul>
19-Aug-14	08:10	119692	Combined Chlorine	0.25 mg/L	0.14mg/L	SS-08 adjacent 238 Lorne Avenue	<ul style="list-style-type: none"> <li>• Flushed system &amp; restored residual</li> <li>• 19-Aug-14 14:15</li> <li>• 0.31mg/L</li> </ul>
20-Aug-14	12:40	119723	Combined Chlorine	0.25 mg/L	0.15mg/L	Hydrant Fronting 287 Penn Avenue	<ul style="list-style-type: none"> <li>• Flushed system &amp; restored residual</li> <li>• 20-Aug-14 13:10</li> <li>• 0.78mg/L</li> </ul>
21-Aug-14	10:20	119739	Combined Chlorine	0.25 mg/L	0.09mg/L	Hydrant Fronting 385 Lorne Avenue	<ul style="list-style-type: none"> <li>• Flushed system &amp; restored residual</li> <li>• 21-Aug-14 11:50</li> <li>• 0.27mg/L</li> </ul>
22-Aug-14	12:05	119769	Combined Chlorine	0.25 mg/L	0.06mg/L	Hydrant Fronting 385 Lorne Avenue	<ul style="list-style-type: none"> <li>• Flushed system &amp; restored residual</li> <li>• 22-Aug-14 13:10</li> <li>• 0.25mg/L</li> </ul>
25-Aug-14	08:10	119789	Combined Chlorine	0.25 mg/L	0.15mg/L	1 <sup>st</sup> Hydrant N of Mulock Drive on Kent Drive	<ul style="list-style-type: none"> <li>• Flushed system &amp; restored residual</li> <li>• 25-Aug-14 08:40</li> <li>• 0.89mg/L</li> </ul>
26-Aug-14	09:00	119810	Combined Chlorine	0.25 mg/L	0.03mg/L	Hydrant Fronting 20 Hillview Drive	<ul style="list-style-type: none"> <li>• Flushed system &amp; restored residual</li> <li>• 26-Aug-14 12:00</li> <li>• 0.62mg/L</li> </ul>
27-Aug-14	08:35	119842	Combined Chlorine	0.25 mg/L	0.02mg/L	SS-28 Main Street N at Max Stiles Park	<ul style="list-style-type: none"> <li>• Flushed system &amp; restored residual</li> <li>• 27-Aug-14 09:45</li> <li>• 0.26mg/L</li> </ul>
28-Aug-14	08:50	119855	Combined Chlorine	0.25 mg/L	0.14mg/L	Hydrant Fronting 482 Ontario Street	<ul style="list-style-type: none"> <li>• Flushed system &amp; restored residual</li> <li>• 28-Aug-14 14:40</li> <li>• 0.82mg/L</li> </ul>
29-Aug-14	08:30	119879	Combined Chlorine	0.25 mg/L	0.11mg/L	Hydrant Fronting 482 Ontario Street	<ul style="list-style-type: none"> <li>• Flushed system &amp; restored residual</li> <li>• 29-Aug-14 13:30</li> <li>• 0.37mg/L</li> </ul>

## 2014 ANNUAL WATER QUALITY SUMMARY REPORT

Date	Time	AWQI #	Parameter	Standard	Result	Location	Resolution
02-Sept-14	08:25	119932	Combined Chlorine	0.25 mg/L	0.08mg/L	Hydrant Fronting 184 Sherwood Place	<ul style="list-style-type: none"> <li>• Flushed system &amp; restored residual</li> <li>• 02-Sept-14 10:45</li> <li>• 0.28mg/L</li> </ul>
02-Sept-14	08:40	120007	Total Coliform	0 MAC	PRESENT	SS-20 opposite 124 Skelton Street	<ul style="list-style-type: none"> <li>• Flushed system &amp; resampled</li> <li>• ABSENT 04-Sept-14</li> </ul>
03-Sept-14	08:55	119972	Combined Chlorine	0.25 mg/L	0.14mg/L	Hydrant Fronting 103 Avenue Road	<ul style="list-style-type: none"> <li>• Flushed system &amp; restored residual</li> <li>• 03-Sept-14 09:55</li> <li>• 1.50mg/L</li> </ul>
04-Sept-14	08:35	120000	Combined Chlorine	0.25 mg/L	0.07mg/L	SS-04 adjacent 531 Davis Drive	<ul style="list-style-type: none"> <li>• Flushed system &amp; restored residual</li> <li>• 04-Sept-14 09:40</li> <li>• 0.38mg/L</li> </ul>
05-Sept-14	09:06	120042	Combined Chlorine	0.25 mg/L	0.14mg/L	Hydrant at the corner of Timothy Street and Doug Duncan Drive	<ul style="list-style-type: none"> <li>• Flushed system &amp; restored residual</li> <li>• 05-Sept-14 13:55</li> <li>• 0.67mg/L</li> </ul>
08-Sept-14	08:40	120140	Combined Chlorine	0.25 mg/L	0.10mg/L	SS-20 opposite 124 Skelton Street	<ul style="list-style-type: none"> <li>• Flushed system &amp; restored residual</li> <li>• 08-Sept-14 17:00</li> <li>• 0.34mg/L</li> </ul>
09-Sept-14	09:55	120158	Combined Chlorine	0.25 mg/L	0.14mg/L	Hydrant Fronting 482 Ontario Street	<ul style="list-style-type: none"> <li>• Flushed system &amp; restored residual</li> <li>• 09-Sept-14 10:55</li> <li>• 0.27mg/L</li> </ul>
10-Sept-14	08:40	120171	Combined Chlorine	0.25 mg/L	0.20mg/L	Hydrant Fronting 113 Willow Lane	<ul style="list-style-type: none"> <li>• Flushed system &amp; restored residual</li> <li>• 10-Sept-14 09:30</li> <li>• 0.96mg/L</li> </ul>
11-Sept-14	08:55	120276	Combined Chlorine	0.25 mg/L	0.15mg/L	Hydrant Fronting 20 Hillview Drive	<ul style="list-style-type: none"> <li>• Flushed system &amp; restored residual</li> <li>• 11-Sept-14 09:55</li> <li>• 0.29mg/L</li> </ul>
12-Sept-14	09:30	120301	Combined Chlorine	0.25 mg/L	0.16mg/L	Hydrant opposite 692 College Manor Drive	<ul style="list-style-type: none"> <li>• Flushed system &amp; restored residual</li> <li>• 12-Sept-14 10:20</li> <li>• 0.35mg/L</li> </ul>
15-Sept-14	09:15	120367	Combined Chlorine	0.25 mg/L	0.19mg/L	Hydrant Fronting 507 Malvern Crescent	<ul style="list-style-type: none"> <li>• Flushed system &amp; restored residual</li> <li>• 15-Sept-14 10:15</li> <li>• 0.78mg/L</li> </ul>

## 2014 ANNUAL WATER QUALITY SUMMARY REPORT

Date	Time	AWQI #	Parameter	Standard	Result	Location	Resolution
16-Sept-14	10:00	120383	Combined Chlorine	0.25 mg/L	0.10mg/L	Hydrant Fronting 93 Concession Street	<ul style="list-style-type: none"> <li>• Flushed system &amp; restored residual</li> <li>• 16-Sept-14 12:00</li> <li>• 0.27mg/L</li> </ul>
17-Sept-14	08:30	120402	Combined Chlorine	0.25 mg/L	0.11mg/L	Hydrant Fronting 93 Concession Street	<ul style="list-style-type: none"> <li>• Flushed system &amp; restored residual</li> <li>• 17-Sept-14 09:30</li> <li>• 0.26mg/L</li> </ul>
18-Sept-14	08:25	120430	Combined Chlorine	0.25 mg/L	0.08mg/L	SS-04 at 531 Davis Drive	<ul style="list-style-type: none"> <li>• Flushed system &amp; restored residual</li> <li>• 18-Sept-14 10:50</li> <li>• 0.30mg/L</li> </ul>
19-Sept-14	09:00	120460	Combined Chlorine	0.25 mg/L	0.12mg/L	Hydrant Fronting 25 Charles Street	<ul style="list-style-type: none"> <li>• Flushed system &amp; restored residual</li> <li>• 19-Sept-14 12:00</li> <li>• 0.30mg/L</li> </ul>
22-Sept-14	08:35	120523	Combined Chlorine	0.25 mg/L	0.16mg/L	SS-20 opposite 124 Skelton Street	<ul style="list-style-type: none"> <li>• Flushed system &amp; restored residual</li> <li>• 22-Sept-14 13:30</li> <li>• 0.26mg/L</li> </ul>
23-Sept-14	08:20	120562	Combined Chlorine	0.25 mg/L	0.10mg/L	Hydrant Fronting 385 Lorne Avenue	<ul style="list-style-type: none"> <li>• Flushed system &amp; restored residual</li> <li>• 23-Sept-14 10:20</li> <li>• 0.25mg/L</li> </ul>
24-Sept-14	08:15	120580	Combined Chlorine	0.25 mg/L	0.05mg/L	Hydrant on S/W corner of Oak Street and Penrose Street	<ul style="list-style-type: none"> <li>• Flushed system &amp; restored residual</li> <li>• 24-Sept-14 09:15</li> <li>• 0.51mg/L</li> </ul>
25-Sept-14	08:30	120598	Combined Chlorine	0.25 mg/L	0.14mg/L	Hydrant Fronting 383 Davis Drive	<ul style="list-style-type: none"> <li>• Flushed system &amp; restored residual</li> <li>• 25-Sept-14 09:30</li> <li>• 0.75mg/L</li> </ul>
26-Sept-14	08:45	120620	Combined Chlorine	0.25 mg/L	0.10mg/L	Hydrant on N/W corner of Penrose Street and Bayview Avenue	<ul style="list-style-type: none"> <li>• Flushed system &amp; restored residual</li> <li>• 26-Sept-14 09:15</li> <li>• 1.06mg/L</li> </ul>
29-Sept-14	08:55	120655	Combined Chlorine	0.25 mg/L	0.06mg/L	Hydrant on N/W corner of Oak Street and Penrose Street	<ul style="list-style-type: none"> <li>• Flushed system &amp; restored residual</li> <li>• 29-Sept-14 09:55</li> <li>• 0.70mg/L</li> </ul>

## 2014 ANNUAL WATER QUALITY SUMMARY REPORT

Date	Time	AWQI #	Parameter	Standard	Result	Location	Resolution
30-Sept-14	09:35	120675	Combined Chlorine	0.25 mg/L	0.11mg/L	Hydrant on S/E corner of Timothy Street and Doug Duncan Drive	<ul style="list-style-type: none"> <li>• Flushed system &amp; restored residual</li> <li>• 30-Sept-14 11:35</li> <li>• 0.25mg/L</li> </ul>
01-Oct-14	09:15	120684	Combined Chlorine	0.25 mg/L	0.05mg/L	Hydrant on S/E corner of Cotter Street and Water Street	<ul style="list-style-type: none"> <li>• Flushed system &amp; restored residual</li> <li>• 01-Oct-14 15:45</li> <li>• 0.34mg/L</li> </ul>
02-Oct-14	10:00	120709	Combined Chlorine	0.25 mg/L	0.21mg/L	Hydrant Fronting 447 Andrew Street	<ul style="list-style-type: none"> <li>• Flushed system &amp; restored residual</li> <li>• 02-Oct-14 11:00</li> <li>• 0.77mg/L</li> </ul>
03-Oct-14	08:55	120724	Combined Chlorine	0.25 mg/L	0.05mg/L	Hydrant Fronting 447 Andrew Street	<ul style="list-style-type: none"> <li>• Flushed system &amp; restored residual</li> <li>• 03-Oct-14 10:55</li> <li>• 0.80mg/L</li> </ul>
06-Oct-14	09:10	120791	Combined Chlorine	0.25 mg/L	0.06mg/L	SS-27 College Manor Park	<ul style="list-style-type: none"> <li>• Flushed system &amp; restored residual</li> <li>• 06-Oct-14 11:35</li> <li>• 0.38mg/L</li> </ul>
07-Oct-14	11:15	120823	Combined Chlorine	0.25 mg/L	0.19mg/L	Hydrant on S/E corner of Cotter Street and Water Street	<ul style="list-style-type: none"> <li>• Flushed system &amp; restored residual</li> <li>• 07-Oct-14 13:45</li> <li>• 0.25mg/L</li> </ul>
08-Oct-14	09:55	120851	Combined Chlorine	0.25 mg/L	0.09mg/L	Hydrant on S/E corner of Cotter Street and Water Street	<ul style="list-style-type: none"> <li>• Flushed system &amp; restored residual</li> <li>• 08-Oct-14 10:55</li> <li>• 0.31mg/L</li> </ul>
09-Oct-14	09:25	120881	Combined Chlorine	0.25 mg/L	0.11mg/L	Hydrant on S/E corner of Cotter Street and Water Street	<ul style="list-style-type: none"> <li>• Flushed system &amp; restored residual</li> <li>• 09-Oct-14 09:55</li> <li>• 0.45mg/L</li> </ul>
10-Oct-14	12:40	120928	Combined Chlorine	0.25 mg/L	0.09mg/L	Hydrant Fronting 471 Eagle Street	<ul style="list-style-type: none"> <li>• Flushed system &amp; restored residual</li> <li>• 10-Oct-14 14:40</li> <li>• 0.47mg/L</li> </ul>
14-Oct-14	12:45	120989	Combined Chlorine	0.25 mg/L	0.06mg/L	Hydrant Fronting 339 Gaston Place	<ul style="list-style-type: none"> <li>• Flushed system &amp; restored residual</li> <li>• 14-Oct-14 13:45</li> <li>• 0.37mg/L</li> </ul>

## 2014 ANNUAL WATER QUALITY SUMMARY REPORT

Date	Time	AWQI #	Parameter	Standard	Result	Location	Resolution
15-Oct-14	08:30	121021	Combined Chlorine	0.25 mg/L	0.08mg/L	Hydrant Fronting 18100 Yonge Street	<ul style="list-style-type: none"> <li>• Flushed system &amp; restored residual</li> <li>• 15-Oct-14 10:00</li> <li>• 0.30mg/L</li> </ul>
16-Oct-14	13:30	121062	Combined Chlorine	0.25 mg/L	0.21mg/L	2 <sup>nd</sup> Hydrant W of Yonge Street on Aspenwood Drive	<ul style="list-style-type: none"> <li>• Flushed system &amp; restored residual</li> <li>• 16-Oct-14 14:00</li> <li>• 0.33mg/L</li> </ul>
20-Oct-14	09:15	121137	Combined Chlorine	0.25 mg/L	0.05mg/L	Hydrant Fronting 385 Renzius Court	<ul style="list-style-type: none"> <li>• Flushed system &amp; restored residual</li> <li>• 20-Oct-14 10:15</li> <li>• 0.51mg/L</li> </ul>
23-Oct-14	12:55	121215	Combined Chlorine	0.25 mg/L	0.16mg/L	Hydrant Fronting 471 Eagle Street	<ul style="list-style-type: none"> <li>• Flushed system &amp; restored residual</li> <li>• 23-Oct-14 13:55</li> <li>• 0.84mg/L</li> </ul>
29-Oct-14	08:30	121313	Combined Chlorine	0.25 mg/L	0.07mg/L	Hydrant Fronting 447 William Street	<ul style="list-style-type: none"> <li>• Flushed system &amp; restored residual</li> <li>• 29-Oct-14 13:35</li> <li>• 0.27mg/L</li> </ul>
30-Oct-14	09:00	121341	Combined Chlorine	0.25 mg/L	0.12mg/L	Hydrant Fronting 447 William Street	<ul style="list-style-type: none"> <li>• Flushed system &amp; restored residual</li> <li>• 30-Oct-14 14:05</li> <li>• 0.32mg/L</li> </ul>
31-Oct-14	09:15	121363	Combined Chlorine	0.25 mg/L	0.04mg/L	Hydrant opposite 447 William Street	<ul style="list-style-type: none"> <li>• Flushed system &amp; restored residual</li> <li>• 31-Oct-14 12:45</li> <li>• 0.27mg/L</li> </ul>
03-Nov-14	09:35	121388	Combined Chlorine	0.25 mg/L	0.09mg/L	Hydrant opposite 447 William Street	<ul style="list-style-type: none"> <li>• Flushed system &amp; restored residual</li> <li>• 03-Nov-14 11:00</li> <li>• 0.55mg/L</li> </ul>
04-Nov-14	08:40	121407	Combined Chlorine	0.25 mg/L	0.08mg/L	SS-24 18100 Yonge Street	<ul style="list-style-type: none"> <li>• Flushed system &amp; restored residual</li> <li>• 04-Nov-14 09:20</li> <li>• 0.45mg/L</li> </ul>
05-Nov-14	09:00	121424	Combined Chlorine	0.25 mg/L	0.21mg/L	Hydrant Fronting 93 Concession Street	<ul style="list-style-type: none"> <li>• Flushed system &amp; restored residual</li> <li>• 05-Nov-14 10:00</li> <li>• 0.34mg/L</li> </ul>
06-Nov-14	08:45	121437	Combined Chlorine	0.25 mg/L	0.21mg/L	Hydrant Fronting 533 Ainsworth Drive	<ul style="list-style-type: none"> <li>• Flushed system &amp; restored residual</li> <li>• 06-Nov-14 09:45</li> <li>• 0.29mg/L</li> </ul>

## 2014 ANNUAL WATER QUALITY SUMMARY REPORT

Date	Time	AWQI #	Parameter	Standard	Result	Location	Resolution
07-Nov-14	09:10	121453	Combined Chlorine	0.25 mg/L	0.13mg/L	Hydrant Fronting 185 Sherwood Place	<ul style="list-style-type: none"> <li>• Flushed system &amp; restored residual</li> <li>• 07-Nov-14 09:40</li> <li>• 0.35mg/L</li> </ul>
10-Nov-14	08:45	121489	Combined Chlorine	0.25 mg/L	0.11mg/L	Hydrant at S/E corner of Eagle Street and Dixon Boulevard	<ul style="list-style-type: none"> <li>• Flushed system &amp; restored residual</li> <li>• 10-Nov-14 09:45</li> <li>• 1.00mg/L</li> </ul>
11-Nov-14	09:45	121510	Combined Chlorine	0.25 mg/L	0.10mg/L	Hydrant Fronting 93 Concession Street	<ul style="list-style-type: none"> <li>• Flushed system &amp; restored residual</li> <li>• 11-Nov-14 12:45</li> <li>• 0.26mg/L</li> </ul>
13-Nov-14	09:40	121541	Combined Chlorine	0.25 mg/L	0.08mg/L	SS-24 18100 Yonge Street	<ul style="list-style-type: none"> <li>• Flushed system &amp; restored residual</li> <li>• 13-Nov-14 09:55</li> <li>• 0.26mg/L</li> </ul>
14-Nov-14	08:00	121559	Combined Chlorine	0.25 mg/L	0.07mg/L	Hydrant Fronting 81 Julia Court	<ul style="list-style-type: none"> <li>• Flushed system &amp; restored residual</li> <li>• 14-Nov-14 09:00</li> <li>• 0.51mg/L</li> </ul>
17-Nov-14	08:35	121583	Combined Chlorine	0.25 mg/L	0.06mg/L	Hydrant Fronting 81 Julia Court	<ul style="list-style-type: none"> <li>• Flushed system &amp; restored residual</li> <li>• 17-Nov-14 09:35</li> <li>• 0.65mg/L</li> </ul>
18-Nov-14	09:00	121599	Combined Chlorine	0.25 mg/L	0.08mg/L	Hydrant Fronting 103 Avenue Road	<ul style="list-style-type: none"> <li>• Flushed system &amp; restored residual</li> <li>• 18-Nov-14 10:00</li> <li>• 1.37mg/L</li> </ul>
19-Nov-14	08:30	121611	Combined Chlorine	0.25 mg/L	0.13mg/L	Hydrant Fronting 385 Lorne Avenue	<ul style="list-style-type: none"> <li>• Flushed system &amp; restored residual</li> <li>• 19-Nov-14 13:30</li> <li>• 0.27mg/L</li> </ul>
20-Nov-14	08:45	121634	Combined Chlorine	0.25 mg/L	0.12mg/L	Hydrant Fronting 385 Lorne Avenue	<ul style="list-style-type: none"> <li>• Flushed system &amp; restored residual</li> <li>• 20-Nov-14 13:15</li> <li>• 0.32mg/L</li> </ul>
21-Nov-14	08:50	121649	Combined Chlorine	0.25 mg/L	0.17mg/L	Hydrant Fronting 385 Lorne Avenue	<ul style="list-style-type: none"> <li>• Flushed system &amp; restored residual</li> <li>• 21-Nov-14 13:50</li> <li>• 0.27mg/L</li> </ul>
22-Nov-14	08:15	121661	Combined Chlorine	0.25 mg/L	0.20mg/L	Hydrant Fronting 385 Lorne Avenue	<ul style="list-style-type: none"> <li>• Flushed system &amp; restored residual</li> <li>• 22-Nov-14 11:15</li> <li>• 0.29mg/L</li> </ul>

## 2014 ANNUAL WATER QUALITY SUMMARY REPORT

Date	Time	AWQI #	Parameter	Standard	Result	Location	Resolution
23-Nov-14	08:20	121666	Combined Chlorine	0.25 mg/L	0.16mg/L	Hydrant Fronting 385 Lorne Avenue	<ul style="list-style-type: none"> <li>• Flushed system &amp; restored residual</li> <li>• 23-Nov-14 11:50</li> <li>• 0.39mg/L</li> </ul>
24-Nov-14	08:30	121715	Combined Chlorine	0.25 mg/L	0.09mg/L	Hydrant Fronting 385 Lorne Avenue	<ul style="list-style-type: none"> <li>• Flushed system &amp; restored residual</li> <li>• 24-Nov-14 10:30</li> <li>• 0.68mg/L</li> </ul>
24-Nov-14	13:45	121788	Total Coliform	0 MAC	PRESENT	SS-24 18100 Yonge Street	<ul style="list-style-type: none"> <li>• Flushed system &amp; resampled</li> <li>• ABSENT 26-Nov-14</li> </ul>
25-Nov-14	09:30	121761	Combined Chlorine	0.25 mg/L	0.19mg/L	Hydrant opposite 447 William Street	<ul style="list-style-type: none"> <li>• Flushed system &amp; restored residual</li> <li>• 25-Nov-14 10:30</li> <li>• 0.55mg/L</li> </ul>
02-Dec-14	13:55	121835	Combined Chlorine	0.25 mg/L	0.14mg/L	Hydrant N of William Roe Boulevard on Cane Parkway	<ul style="list-style-type: none"> <li>• Flushed system &amp; restored residual</li> <li>• 02-Dec-14 14:10</li> <li>• 0.44mg/L</li> </ul>
05-Dec-14	13:00	121863	Combined Chlorine	0.25 mg/L	0.11mg/L	Hydrant Fronting 185 Sherwood Place	<ul style="list-style-type: none"> <li>• Flushed system &amp; restored residual</li> <li>• 05-Dec-14 14:30</li> <li>• 0.26mg/L</li> </ul>
09-Dec-14	12:50	121900	Combined Chlorine	0.25 mg/L	0.17mg/L	Hydrant Fronting 81 Julia Court.	<ul style="list-style-type: none"> <li>• Flushed system &amp; restored residual</li> <li>• 09-Dec-14 13:20</li> <li>• 0.42mg/L</li> </ul>
15-Dec-14	11:20	121999	Total Coliform	0 MAC	PRESENT	SS-24 18100 Yonge Street	<ul style="list-style-type: none"> <li>• Flushed system &amp; resampled</li> <li>• ABSENT 17-Dec-14</li> </ul>
23-Dec-14	10:15	122045	Combined Chlorine	0.25 mg/L	0.17mg/L	Hydrant Fronting 290 Woodland Court.	<ul style="list-style-type: none"> <li>• Flushed system &amp; restored residual</li> <li>• 23-Dec-14 10:45</li> <li>• 0.30mg/L</li> </ul>

**Table 6:** 2014 Adverse Water Quality Incidents (AWQI)

# 2014 ANNUAL WATER QUALITY SUMMARY REPORT

## 2014 Water Consumption and Production Flows

Table 7 below displays the amount of water that was purchased by the Town of Newmarket from York Region along with the amount of water that was billed to the consumers of Newmarket. This table also includes the amount of water that was unaccounted for as well as the percentage of loss. Water that was accounted for but unbilled results from water main breaks, water service leaks, sampling, deficient, aging water meters, system flushing, and theft. The Percent Loss is just the percentage form of the Unbilled Water. In 2014, the Percent Loss was 13.95%, which is down from 2013, where the Percent Loss was 19.57%. Table 8 shows the production flows and consumption for the Town of Newmarket.

### 2014 Water Consumption

Description	Amount
Total Water Billed to the Town of Newmarket by the Region of York (m <sup>3</sup> )	8,124,479m <sup>3</sup>
Total Water Billed to Consumers by the Town of Newmarket (m <sup>3</sup> )	6,991,204m <sup>3</sup>
Unbilled Water (m <sup>3</sup> )	1,133,275m <sup>3</sup>
Percent Loss (%)	13.95 %

Table 7: 2014 Consumption Data



Photo: Sample Station on Main St. N.



# 2014 ANNUAL WATER QUALITY SUMMARY REPORT

## 2014 Production Flow for Newmarket



Location	January	February	March	April	May	June	July	August	September	October	November	December	Year To Date Total
Aurora Ballymore (Aurora) m <sup>3</sup>	0	0	0	0	0	0	0	0	0	0	0	0	0
Aurora Ballymore (Newmarket) m <sup>3</sup>	28,304	27,744	35,936	33,216	36,160	41,665	62,687	53,600	31,137	28,449	25,247	22,594	426,736
Aurora West 4" (Aurora) m <sup>3</sup>	0	0	0	0	0	0	0	0	0	0	0	0	0
Aurora West 4" (Newmarket) m <sup>3</sup>	48,102	36,948	41,649	43,507	48,641	50,043	43,738	38,007	49,260	55,372	49,825	43,717	548,806
Aurora West 8" (Aurora) m <sup>3</sup>	-1	-1	-1	-1	-1	-1	-2	-1	-1	0	0	-4	-14
Aurora West 8" (Newmarket) m <sup>3</sup>	78,190	56,626	65,353	71,421	82,171	85,563	72,968	64,050	83,416	94,228	86,278	73,463	913,724
Colonel Wayling m <sup>3</sup>	-9,920	-8,960	-9,734	-9,420	-11,780	-11,400	-9,641	-10,106	-13,350	-6,200	-2,262	-4,125	-106,898
Herald Road m <sup>3</sup>	-434	-392	-465	-450	-706	-1,020	-1,079	-1,028	-821	-656	-620	-538	-8,209
Leslie/Broughton (Aurora) m <sup>3</sup>	0	0	0	0	0	0	0	0	0	0	0	0	0
Leslie/Broughton (Newmarket) m <sup>3</sup>	126,596	171,524	196,169	193,865	252,925	253,462	242,875	270,095	222,421	220,666	207,474	227,341	2,585,410
Newmarket Well No. 1 m <sup>3</sup>	16,356	15,544	17,688	18,094	16,980	19,516	28,055	22,012	20,611	22,401	15,714	14,077	227,048
Newmarket Well No. 13 m <sup>3</sup>	36,503	40,876	46,429	49,034	43,978	45,210	75,387	59,945	45,388	37,332	40,960	36,725	557,765
Newmarket Well No. 15 m <sup>3</sup>	20,493	16,809	10,304	0	0	319	3,190	40,657	37,321	29,139	29,075	18,590	205,895
Newmarket Well No. 16 m <sup>3</sup>	44,916	42,578	48,695	49,450	44,645	46,207	78,877	62,189	48,646	39,151	41,680	36,804	583,837
Newmarket Well No. 2 m <sup>3</sup>	37,738	34,678	40,315	37,453	34,644	39,140	61,021	49,450	44,545	46,204	31,139	27,656	483,983
Newmarket/Aurora (Aurora) m <sup>3</sup>	-2	0	-396	-3,454	-607	-270	0	-57	-2,329	-2,206	-3,350	-5,258	-17,929
Newmarket/Aurora (Newmarket) m <sup>3</sup>	48,442	35,321	24,000	32,903	54,267	61,939	55,184	40,736	43,715	38,973	23,554	22,258	481,292
Queensville m <sup>3</sup>	-3,720	-3,360	-3,720	-3,600	-3,720	-3,600	-3,720	-3,720	-3,600	-3,720	-3,600	-3,720	-43,800
Queensville Well No. 1 m <sup>3</sup>	42,429	44,131	37,492	38,798	63,520	55,919	49,085	58,702	66,382	41,048	52,292	47,811	597,607

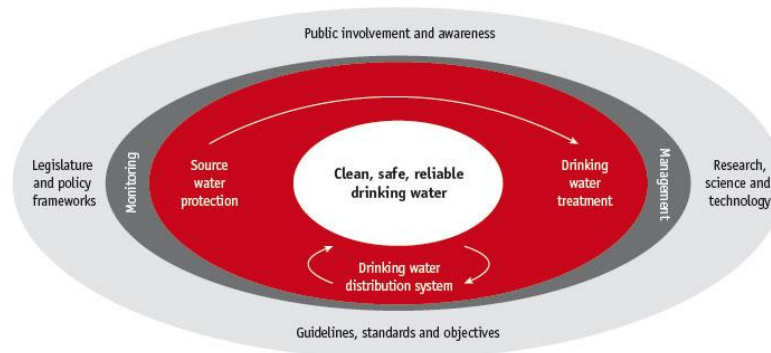
# 2014 ANNUAL WATER QUALITY SUMMARY REPORT

Location	January	February	March	April	May	June	July	August	September	October	November	December	Year To Date Total
Queensville Well No. 2 m <sup>3</sup>	33,749	28,731	47,644	41,970	40,342	57,749	46,347	33,893	25,297	43,110	38,034	47,385	484,251
Queensville Well No. 3 m <sup>3</sup>	79,469	49,626	29,885	46,254	43,357	46,625	72,283	49,252	59,459	41,365	50,942	34,988	603,505
Queensville Well No. 4 m <sup>3</sup>	80,103	50,803	68,710	27,336	50,567	28,996	58,128	66,159	38,449	48,238	52,730	55,772	625,991
Sharon North (Newmarket) m <sup>3</sup>	11	20	0	0	0	0	0	0	0	0	0	0	31
Sharon North (Sharon) m <sup>3</sup>	-13,072	-10,832	-12,480	-11,312	-15,377	-16,368	-15,888	-17,856	-14,977	-21,775	-22,464	-16,912	-189,312
Sharon South m <sup>3</sup>	-13,448	-13,751	-13,050	-11,882	-15,623	-16,611	-13,240	-9,614	-5,187	-1,209	-1,239	-481	-115,335
Woodspring Avenue (East Gwillimbury) m <sup>3</sup>	-23,716	-20,415	-19,930	-23,246	-42,233	-42,981	-68,626	-89,536	-76,155	-72,996	-68,762	-37,961	-586,553
Woodspring Avenue (Newmarket) m <sup>3</sup>	4	12	0	0	0	0	3	0	0	0	0	4	23
Yonge/Aspenwood (East Gwillimbury) m <sup>3</sup>	-17	-60	0	0	0	0	0	0	-15	-29	-15	-19	-155
Yonge/Aspenwood (Newmarket) m <sup>3</sup>	40	37	0	0	0	0	0	0	44	68	43	38	270
Yonge/Bristol (East Gwillimbury) m <sup>3</sup>	-5,695	-4,958	-5,903	-5,115	-5,070	-5,515	-6,511	-7,791	-7,521	-6,930	-6,823	-7,160	-74,991
Yonge/Bristol (Newmarket) m <sup>3</sup>	95	60	0	0	0	0	0	0	31	42	35	33	296
<b>Total Water Consumption m<sup>3</sup></b>	<b>651,514</b>	<b>589,337</b>	<b>644,589</b>	<b>614,820</b>	<b>717,079</b>	<b>734,586</b>	<b>831,121</b>	<b>769,036</b>	<b>692,165</b>	<b>670,062</b>	<b>635,885</b>	<b>633,077</b>	<b>8,183,272</b>
<b>Maximum Daily Flow m<sup>3</sup></b>	<b>26,337</b>	<b>26,697</b>	<b>27,494</b>	<b>25,175</b>	<b>31,892</b>	<b>35,092</b>	<b>32,438</b>	<b>33,642</b>	<b>28,145</b>	<b>26,231</b>	<b>26,229</b>	<b>23,866</b>	<b>35,092</b>
<b>Maximum Date</b>	<b>30-Jan-14</b>	<b>1-Feb-14</b>	<b>2-Mar-14</b>	<b>11-Apr-14</b>	<b>25-May-14</b>	<b>10-Jun-14</b>	<b>22-Jul-14</b>	<b>27-Aug-14</b>	<b>24-Sep-14</b>	<b>27-Oct-14</b>	<b>18-Nov-14</b>	<b>14-Dec-14</b>	
<b>Minimum Daily Flow m<sup>3</sup></b>	<b>15,457</b>	<b>16,830</b>	<b>18,076</b>	<b>15,203</b>	<b>15,431</b>	<b>19,307</b>	<b>21,797</b>	<b>19,733</b>	<b>16,175</b>	<b>17,627</b>	<b>17,142</b>	<b>16,660</b>	<b>15,203</b>
<b>Minimum Date</b>	<b>17-Jan-14</b>	<b>5-Feb-14</b>	<b>24-Mar-14</b>	<b>28-Apr-14</b>	<b>18-May-14</b>	<b>11-Jun-14</b>	<b>3-Jul-14</b>	<b>3-Aug-14</b>	<b>6-Sep-14</b>	<b>17-Oct-14</b>	<b>12-Nov-14</b>	<b>10-Dec-14</b>	
<b>Average Daily Flow m<sup>3</sup></b>	<b>21,017</b>	<b>21,048</b>	<b>20,793</b>	<b>20,494</b>	<b>23,132</b>	<b>24,486</b>	<b>26,810</b>	<b>24,808</b>	<b>23,072</b>	<b>21,615</b>	<b>21,196</b>	<b>20,422</b>	<b>22,408</b>

**Table 8:** 2014 Production Flow Data (York Region, 2015)

## Keeping Newmarket's Drinking Water Safe

As a part of the Walkerton Inquiry, Justice Dennis O'Connor endorsed a "multi-barrier approach" to ensure drinking water safety. This multi-faceted system is a collection of "procedures, processes, and tools that collectively prevent or reduce the contamination of drinking water from source to consumer in order to reduce the risks to public health." (Ontario, Ministry of the Environment, 2007)



**Figure 2: The Multi-Barrier Approach to Drinking Water Protection**  
(Canada, Public Health Agency, 2013)

### The multiple barriers include:

- ❖ **Source Protection** to keep the raw water as clean as possible in order to lower the risks that hazards present
- ❖ **Treatment** to remove and/or neutralize hazards
- ❖ **Monitoring Program** to detect and act on system problems that could impair drinking water safety and to verify the performance of the system components and finished drinking water quality
- ❖ **Effective management systems** including automatic control systems, well-developed responses, and operating practices that are the ultimate means for protecting the safety of drinking water systems.”

(Ontario, Ministry of the Environment, 2007)

# 2014 ANNUAL WATER QUALITY SUMMARY REPORT

## DRINKING WATER QUALITY MANAGEMENT STANDARD

Justice Dennis O'Connor, in Part Two of the Report of the Walkerton Inquiry, recommended the adoption of quality management for municipal drinking water systems. It was also recommended that a quality management standard specifically designed for drinking water systems be developed and implemented in Ontario, thus leading to the creation of the Drinking Water Quality Management Standard (DWQMS or the Standard).

The adoption of quality management systems is not new to the drinking water community in Ontario; however the requirement to implement the DWQMS is now mandated through the *Safe Drinking Water Act, 2002* (SDWA).

### The Operational Plan

*“The SDWA requires owners of municipal residential drinking water systems to have an accredited operating authority. In order to become accredited, an operating authority must establish and maintain a quality management system (QMS). Minimum requirements for the QMS are specified in the Standard. Operating authorities will be accredited by a third-party accreditation body against the requirements of this Standard.*

*The DWQMS provides the minimum requirements for an operating authority to document a QMS in an operational plan for each subject system that it operates, which must be accepted by the Ministry of the Environment.*

*Where an operating authority is operating multiple subject systems, the operating authority may choose to develop QMS components that are common for all drinking water systems. The operational plan for the subject system would contain these common components or would reference separate documents that would be available to users of the operational plan. The common QMS components would need to be implemented both at the subject system level and at the corporate level, and corporate roles, responsibilities and authorities would need to be documented for each level.”*

*(Source: Ontario Ministry of the Environment DWQMS Pocket Guide)*

As a part of the QMS, a communication procedure has been developed to ensure that the Owner, Top Management, Operating Authority, Service Suppliers, and the Public are educated through suitable means on the QMS, and the same are informed of any changes that affect the nature or effectiveness of the Operational Plan. Once every 12 months, a Management Review of the QMS is held. The results of this Review are communicated to the Owner through Committee of the Whole Meetings, no later than March 31<sup>st</sup> of each year.

# 2014 ANNUAL WATER QUALITY SUMMARY REPORT

## REQUIREMENTS UNDER THE SAFE DRINKING WATER ACT, 2002 (SDWA)

The Ontario *Safe Drinking Water Act, 2002 (SDWA)* enhances the level of drinking water protection across the province by providing a clear, consistent set of standards and rules to ensure the provision of safe, high-quality drinking water. This Act holds owners of drinking water systems to their responsibilities to protect drinking water consumers: It specifies the requirements for drinking water systems, testing services, and for the certification of operators, as well as setting quality standards and mechanisms for compliance and enforcement. The section of the SDWA that specifically applies to the owners and operating authority of the Newmarket WDS is “*Part III – General Requirements*”. This document outlines the minimum standards that owners/operating authorities must adhere to.

### ***Part III General Requirements (SDWA)***

#### ***Potable water***

*10. Despite any other Act, a requirement that water be “potable” in any Act, regulation, order or other document issued under the authority of any Act or in a municipal by-law shall be deemed to be a requirement to meet, at a minimum, the requirements of the prescribed drinking water quality standards. 2002, c. 32, s. 10.*

#### ***Duties of owners and operating authorities***

*11. (1) Every owner of a municipal drinking water system or a regulated non-municipal drinking water system and, if an operating authority is responsible for the operation of the system, the operating authority for the system shall ensure the following:*

- 1. That all water provided by the system to the point where the system is connected to a user’s plumbing system meets the requirements of the prescribed drinking water quality standards.*
- 2. That, at all times in which it is in service, the drinking water system,
  - i. is operated in accordance with the requirements under this Act,*
  - ii. is maintained in a fit state of repair, and*
  - iii. satisfies the requirements of the standards prescribed for the system or the class of systems to which the system belongs.**
- 3. That the drinking water system is operated by persons having the training or expertise for their operating functions that is required by the regulations and the licence or approval issued or granted for the system under this Act.*
- 4. That all sampling, testing and monitoring requirements under this Act that relate to the drinking water system are complied with.*
- 5. That personnel at the drinking water system are under the supervision of persons having the prescribed qualifications.*

# 2014 ANNUAL WATER QUALITY SUMMARY REPORT

6. That the persons who carry out functions in relation to the drinking water system comply with such reporting requirements as may be prescribed or that are required by the conditions in the licence or approval issued or granted for the system under this Act. 2002, c. 32, s. 11 (1).

## **Duty of owner to report to public**

(2) If an owner of a municipal drinking water system or regulated non-municipal drinking water system is required by the regulations to report on any matter to the public, the owner shall report in accordance with the regulations. 2002, c. 32, s. 11 (2).

## **Out-of-province drinking water testing service**

(3) No owner or operating authority of a municipal drinking water system or regulated non-municipal drinking water system shall obtain a drinking water testing service from a person who is not licensed under Part VII to offer or provide the service unless,

(a) the laboratory at which the testing is to be conducted is located outside Ontario and is an eligible laboratory in respect of the particular tests to be conducted;

(b) the person agrees in writing to comply with section 18 and any prescribed requirements; and

(c) the owner or operating authority provides to the Director appointed for the purposes of Part VII,

(i) written notice of the use of the testing service,

(ii) a copy of the accreditation referred to in clause (4) (a), if applicable, and

(iii) a copy of the agreement referred to in clause (b). 2002, c. 32, s. 11 (3).

## **Eligible laboratory**

(4) For the purposes of this section, a laboratory located outside Ontario is an eligible laboratory in respect of a particular test if the laboratory is on a list maintained by the Director appointed for the purposes of Part VII and,

(a) the laboratory is accredited for the conduct of the test and, in the Director's opinion, the accreditation is equivalent to the accreditation standard of an accreditation body for drinking water testing under Part VII; or

(b) in the Director's opinion,

(i) it is desirable for the purposes of this Act that the test be available,

(ii) there is no laboratory, or there are insufficient laboratories, in the area for the conduct of the test under a licence issued under Part VII, and

(iii) the person who is to provide the drinking water testing service will be capable of conducting the test at the laboratory, or causing the test to be conducted there. 2002, c. 32, s. 11 (4).

# 2014 ANNUAL WATER QUALITY SUMMARY REPORT

## **List of out-of-province laboratories**

*(5) For the purposes of subsection (4), a laboratory may be added to the list maintained by the Director, and may be retained on the list, only if,*

*(a) any fee required under this Act has been paid in respect of the laboratory; and*

*(b) the laboratory complies with the prescribed requirements. 2002, c. 32, s. 11 (5).*

## **Director's direction**

*(6) The Director may issue a direction to one or more owners or operating authorities prohibiting them from obtaining drinking water testing services from a laboratory located outside Ontario if the Director has reason to believe that the laboratory has ceased to be an eligible laboratory or has failed to comply with section 18 or a prescribed requirement. 2002, c. 32, s. 11 (6).*

## **Same**

*(7) Every person who receives a direction under subsection (6) shall comply with the direction and advise the Director in writing of the alternative laboratory from which the person will obtain drinking water testing services. 2002, c. 32, s. 11 (7).*

## **Revocation of direction**

*(8) The Director may revoke a direction issued under subsection (6) if he or she is of the opinion that the reasons for issuing the direction no longer exist. 2002, c. 32, s. 11 (8).*

## **Operator's certificate**

*12. (1) No person shall operate a municipal drinking water system or a regulated non-municipal drinking water system unless the person holds a valid operator's certificate issued in accordance with the regulations. 2002, c. 32, s. 12 (1).*

## **Transitional**

*(2) For the purposes of subsection (1), a valid operator's licence issued under section 6 of Ontario Regulation 435/93 under the Ontario Water Resources Act shall be deemed to be an operator's certificate until the day the operator's licence expires or is cancelled or suspended. 2002, c. 32, s. 12 (2).*

## **Same**

*(3) For the purposes of subsection (1), a valid operator's licence issued under section 7 or 8 of Ontario Regulation 435/93 under the Ontario Water Resources Act shall be deemed to be an operator's certificate until the earlier of,*

*(a) the day the operator's licence is cancelled or suspended; and*

# 2014 ANNUAL WATER QUALITY SUMMARY REPORT

*(b) the day that is the second anniversary of the day of filing of a regulation made under this Act governing the application and issue of operator's certificates. 2002, c. 32, s. 12 (3).*

## **Same**

*(4) If an operator's licence mentioned in subsection (3) expires before the day described in clause (3) (b) and is not renewed, the licence ceases to be deemed to be an operator's certificate on the day it expires. 2002, c. 32, s. 12 (4).*

## **Duty to have accredited operating authority**

*13. (1) Every owner of a municipal drinking water system shall ensure that an accredited operating authority is in charge of the system at all times on and after the day specified in the regulations for the municipality, the system or the owner of the system. 2002, c. 32, s. 13 (1).*

## **Same**

*(2) If the Minister makes a regulation requiring an accredited operating authority to be in charge of a non-municipal drinking water system, the owner of the system shall ensure that an accredited operating authority is in charge of the system at all times. 2002, c. 32, s. 13 (2).*

## **Agreement with accredited operating authority**

*14. (1) If an accredited operating authority is in charge of a drinking water system and it is not the owner of the system, the accredited operating authority and the owner of the system shall enter into an agreement that contains the following:*

- 1. A description of the system or the parts of the system for which the operating authority is responsible.*
- 2. A description of the respective responsibilities of the owner and the operating authority to ensure that the operation, maintenance, management and alteration of the system comply with this Act, the regulations, any order under this Act and the conditions in,
  - i. the drinking water works permit and the municipal drinking water licence for the system, in the case of a municipal drinking water system, or*
  - ii. the approval for the system, in the case of a non-municipal drinking water system.**
- 3. A description of the respective responsibilities of the owner and the accredited operating authority in the event a deficiency is determined to exist or an emergency occurs.*
- 4. A description of the respective responsibilities of the owner and the accredited operating authority to ensure that the operational plans for the system are reviewed and revised appropriately and that both parties are informed of all revisions.*
- 5. Any other provisions required by the regulations. 2002, c. 32, s. 14 (1).*



# 2014 ANNUAL WATER QUALITY SUMMARY REPORT

## **Delegation of duty**

*(2) If an owner of a drinking water system enters into an agreement with an accredited operating authority, the owner may, in the agreement, delegate a duty imposed on the owner under this Act to the accredited operating authority. 2002, c. 32, s. 14 (2).*

## **Exception**

*(3) A delegation referred to in subsection (2) shall not relieve the owner of the drinking water system from the duty to comply with section 19 or the duty,*

*(a) to ensure that the accredited operating authority carries out its duties under this Act and the agreement in a competent and diligent manner while it is in charge of the system; and*

*(b) upon discovery that the accredited operating authority is failing to act in accordance with clause (a), to take all reasonable steps to ensure that the operation of the system complies with the requirements under this Act. 2002, c. 32, s. 14 (3).*

## **Agreement to be made public**

*(4) The contents of every agreement referred to in subsection (1) between an owner of a drinking water system and an accredited operating authority shall be made public by the owner of the system in accordance with the requirements prescribed by the Minister. 2002, c. 32, s. 14 (4).*

## **Directions, operational plans**

*15. (1) The Director shall, on or before the prescribed date, issue directions governing the preparation and content of operational plans for municipal drinking water systems and may issue such additional directions as the Director considers necessary for the purposes of this section. 2002, c. 32, s. 15 (1).*

## **Same**

*(2) If the Minister makes a regulation requiring a non-municipal drinking water system or a class of non-municipal drinking water systems to have operational plans, the Director shall, on or before the date prescribed by the Minister, issue directions governing the preparation and content of operational plans for the system or systems. 2002, c. 32, s. 15 (2).*

## **Same**

*(3) The Director may amend, revoke or replace a direction issued under this section. 2002, c. 32, s. 15 (3).*

## **Content of direction**

*(4) The direction shall include,*

*(a) minimum content requirements for operational plans;*

*(b) rules respecting the retention of copies of versions of operational plans;*

# 2014 ANNUAL WATER QUALITY SUMMARY REPORT

*(c) rules respecting the public disclosure of the contents of operational plans; and*

*(d) such other requirements as the Director considers necessary for the purposes of this Act and the regulations. 2002, c. 32, s. 15 (4).*

## **Same**

*(5) A direction issued under this section may,*

*(a) be general or limited in its application;*

*(b) apply in respect of any class of drinking water systems;*

*(c) require the preparation of operational plans for a treatment system, a distribution system or any part of either or both of them. 2002, c. 32, s. 15 (5).*

## **Publication**

*(6) A direction, amendment to a direction or revocation of a direction takes effect when a notice of the direction, amendment or revocation, as the case may be, is given in the Registry. 2002, c. 32, s. 15 (6).*

## **Legislation Act, 2006, Part III**

*(7) Part III (Regulations) of the Legislation Act, 2006 does not apply to a direction issued under this section. 2002, c. 32, s. 15 (7); 2006, c. 21, Sched. F, s. 132 (1).*

## **Operational plans**

*16. (1) If operational plans are required for a drinking water system under this Act, every owner and accredited operational authority of the system shall,*

*(a) ensure that the plans comply with such directions issued under section 15 that apply in respect of the system; and*

*(b) make public the contents of the operating plans in accordance with the Director's directions. 2002, c. 32, s. 16 (1).*

## **Submission of plans, municipal drinking water system**

*(2) Every owner of a municipal drinking water system shall provide a copy of all operational plans for the system to the Director on or before the day prescribed by the regulations for the municipality, the system or the owner of the system. 2002, c. 32, s. 16 (2).*

## **Review of plans**

*(3) The Director shall review the operational plans for the municipal drinking water system and shall issue a notice,*

*(a) accepting the plans if the Director is satisfied that the plans satisfy the directions; or*

# 2014 ANNUAL WATER QUALITY SUMMARY REPORT

*(b) rejecting the plans for the reasons set out in the notice, if the Director is not satisfied that the plans satisfy the directions. 2002, c. 32, s. 16 (3).*

## **Resubmission of plans**

*(4) The owner of a municipal drinking water system whose operational plans are rejected by the Director shall revise and resubmit the revised plans to the Director in accordance with the directions specified in the notice. 2002, c. 32, s. 16 (4).*

## **Ownership of operational plans**

*17. (1) All operational plans for a drinking water system remain the property of the owner of the system, irrespective of who prepares or revises the plans. 2002, c. 32, s. 17 (1).*

## **Retention of plans**

*(2) Every accredited operating authority of a drinking water system for which operational plans are required under this Act shall retain copies of the operational plans for the system in accordance with the Director's directions under section 15. 2002, c. 32, s. 17 (2).*

## **Same**

*(3) Upon termination of an agreement between the owner and the accredited operating authority of a system, the accredited operating authority shall ensure that the owner has copies of the most recently prepared and revised operational plans for the system. 2002, c. 32, s. 17 (3).*

## **Duty to report adverse test result**

*18. (1) Each of the following persons shall report every prescribed adverse result of a drinking water test conducted on any waters from a municipal drinking water system or a regulated non-municipal drinking water system to the Ministry and the medical officer of health immediately after the adverse result is obtained:*

- 1. The operating authority responsible for the system or, if there is no operating authority responsible for the system, the owner of the system.*
- 2. The person operating the laboratory at which the adverse result was obtained. 2002, c. 32, s. 18 (1); 2007, c. 10, Sched. D, s. 3 (6).*

## **Same**

*(2) A report under subsection (1) shall be made in accordance with the regulations. 2002, c. 32, s. 18 (2).*

## **Duty to report to the owner**

*(3) If an operating authority is required to report an adverse test result under subsection (1), the operating authority shall also immediately report the adverse test result to the owner of the system for which the operating authority is responsible. 2007, c. 10, Sched. D, s. 3 (7).*

# 2014 ANNUAL WATER QUALITY SUMMARY REPORT

## **Duty of laboratory to report**

*(4) Every person operating a laboratory who is required to report an adverse test result under subsection (1) shall also notify the operating authority responsible for the system or, if there is no operating authority responsible for the system, the owner of the system, of every adverse test result relating to the system, immediately after the adverse result is obtained. 2007, c. 10, Sched. D, s. 3 (7).*

## **Duty to report adverse test result**

*18.1 (1) The person operating the laboratory at which an adverse result was obtained shall report every prescribed adverse result of a drinking water test conducted on any waters from a small drinking water system within the meaning of the Health Protection and Promotion Act to the Ministry of Health and Long-Term Care and the medical officer of health immediately after the adverse result is obtained. 2007, c. 10, Sched. D, s. 3 (8).*

## **Same**

*(2) A report under subsection (1) shall be made in accordance with the regulations. 2007, c. 10, Sched. D, s. 3 (8).*

## **Duty of laboratory to report**

*(3) Every person operating a laboratory who is required to report an adverse test result under subsection (1) shall also notify the operator responsible for the system or, if there is no operator responsible for the system, the owner of the system, of every adverse test result relating to the system, immediately after the adverse result is obtained. 2007, c. 10, Sched. D, s. 3 (8).*

## **Standard of care, municipal drinking water system**

*19. (1) Each of the persons listed in subsection (2) shall,*

*(a) exercise the level of care, diligence and skill in respect of a municipal drinking water system that a reasonably prudent person would be expected to exercise in a similar situation; and*

*(b) act honestly, competently and with integrity, with a view to ensuring the protection and safety of the users of the municipal drinking water system. 2002, c. 32, s. 19 (1).*

## **Same**

*(2) The following are the persons listed for the purposes of subsection (1):*

*1. The owner of the municipal drinking water system.*

*2. If the municipal drinking water system is owned by a corporation other than a municipality, every officer and director of the corporation.*

*3. If the system is owned by a municipality, every person who, on behalf of the municipality, oversees the accredited operating authority of the system or exercises decision-making authority over the system. 2002, c. 32, s. 19 (2).*

# 2014 ANNUAL WATER QUALITY SUMMARY REPORT

## **Offence**

*(3) Every person under a duty described in subsection (1) who fails to carry out that duty is guilty of an offence. 2002, c. 32, s. 19 (3).*

## **Same**

*(4) A person may be convicted of an offence under this section in respect of a municipal drinking water system whether or not the owner of the system is prosecuted or convicted. 2002, c. 32, s. 19 (4).*

## **Reliance on experts**

*(5) A person shall not be considered to have failed to carry out a duty described in subsection (1) in any circumstance in which the person relies in good faith on a report of an engineer, lawyer, accountant or other person whose professional qualifications lend credibility to the report. 2002, c. 32, s. 19 (5).*

## **Prohibition**

*20. (1) No person shall cause or permit any thing to enter a drinking water system if it could result in,*

*(a) a drinking water health hazard;*

*(b) a contravention of a prescribed standard; or*

*(c) interference with the normal operation of the system. 2002, c. 32, s. 20 (1).*

## **Exception**

*(2) Subsection (1) does not apply to prohibit activities that are carried out,*

*(a) in the course of the proper operation, maintenance, repair or alteration of a drinking water system; or*

*(b) under a statutory authority or for the purposes of complying with a statutory requirement. 2002, c. 32, s. 20 (2).*

## **Dilution no defence**

*(3) For the purposes of prosecuting the offence of contravening subsection (1), it is not necessary to prove that the thing, if it was diluted when or after it entered the system, continued to result in or could have resulted in a drinking water health hazard. 2002, c. 32, s. 20 (3).*

(Safe Drinking Water Act, 2002)

# 2014 ANNUAL WATER QUALITY SUMMARY REPORT

## References

- Canada, Public Health Agency. "Food-borne and Water-borne Infections – Invisible Threats". [http://www.phac-aspc.gc.ca/cphorsphc-respcacsp/2013/food-water\\_alim-eau-eng.php](http://www.phac-aspc.gc.ca/cphorsphc-respcacsp/2013/food-water_alim-eau-eng.php). 23 October 2013. Web. 30 January 2015.
- Canada. Statistics Canada. "Focus on Geography Series, 2011 Census: Census subdivision of Newmarket, T – Ontario". <http://www12.statcan.gc.ca/census-recensement/2011/as-sa/fogs-spg/Facts-csd-eng.cfm?LANG=Eng&GK=CSD&GC=3519048>. 17 April 2014. Web. 10 February 2015.
- Ontario, Ministry of the Environment. "Implementing Quality Management: A Guide for Ontario's Drinking Water Systems". <https://archive.org/stream/implementingqual00snsn21766#page/n0/mode/2up>. July 2007. Web. 30 January 2015.
- Ontario, Ministry of the Environment. "Municipal Drinking Water License Number 124-101". 18 May, 2012.
- Ontario. Service Ontario. "Municipal Drinking Water License: License Number: 124-101; Issue Number: 2; The Corporation of the Town of Newmarket". May 18, 2012.
- Ontario, Service Ontario, "Safe Drinking Water Act, 2002 (S.O. 2002, CHAPTER 32)". "PART III - GENERAL REQUIREMENTS". Consolidation Period: From January 1, 2015 to the e-Laws currency date. [http://www.e-laws.gov.on.ca/html/statutes/english/elaws\\_statutes\\_02s32\\_e.htm](http://www.e-laws.gov.on.ca/html/statutes/english/elaws_statutes_02s32_e.htm) Last amendment: See Table of Public Statute Provisions Repealed Under Section 10.1 of the Legislation Act, 2006 – December 31, 2012. Web. 30 January 2015.
- Ontario, Service Ontario "Safe Drinking Water Act, 2002 (S.O. 2002, CHAPTER 32)". PART V – MUNICIPAL DRINKING WATER SYSTEMS: APPROVALS FOR MUNICIPAL DRINKING WATER SYSTEMS. Section 38. Schedule 15.1 of Regulation 170/03. Consolidation Period: From January 1, 2015 to the e-Laws currency date. [http://www.e-laws.gov.on.ca/html/statutes/english/elaws\\_statutes\\_02s32\\_e.htm](http://www.e-laws.gov.on.ca/html/statutes/english/elaws_statutes_02s32_e.htm). Last amendment: See Table of Public Statute Provisions Repealed Under Section 10.1 of the Legislation Act, 2006 – December 31, 2012. Web. 30 January 2015.
- York Region. "Town of Newmarket Monthly Water 2014". January 30, 2015. Email Received: February 3, 2015.

# 2014 ANNUAL WATER QUALITY SUMMARY REPORT

## Contact Information

**Jeff Ellis** – Supervisor of Water/Waste Water

**Tel** 905-953-5300, ext. 2564

**Fax** 905-953-5319

**Bill Wilson** – Manager of Water/Waste Water

**Tel** 905-953-5300, ext. 2553

**Fax** 905-953-5319

The Corporation of the Town of Newmarket, Public Works Services Department  
1275 Maple Hill Court, Newmarket, ON, L3Y 9E8

**Tel** 905.953.5300, ext.2550

**Fax** 905-953-5319

[www.newmarket.ca](http://www.newmarket.ca)

*The Public Works Services Department is pleased to present this report for 2014 to members of Council and our residents.*

