



# 2021 ANNUAL WATER QUALITY SUMMARY REPORT - FINAL.DOCX

2021 Annual Water Quality Summary Report

## [Abstract](#)

This report contains the information necessary to satisfy the annual reporting requirements stipulated within the Ontario Safe Drinking Act, 2002, and its associated regulations.

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February 28th, 2022

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## Attachments:

There are a number of attachments associated with this report, these attachments consist of the following:

- Attachment One: 2021 MECP Newmarket Distribution System Inspection Report and Rating
- Attachment Two: 2021 Ontario Drinking Water Systems Regulation Annual Report
- Attachment Three: 2021 Town of Newmarket Water Quantity & Flow Rate Data

# Background

## Purpose

The purpose of this Annual Drinking Water Summary Report, and its associated attachments, is to satisfy the annual reporting requirements stipulated within O.Reg 170/03 of the *Safe Drinking Water Act, 2002*. This report, and its associated attachments, also contains information pertaining to the 2021 Annual Ministry of Environment, Conservation and Parks (MECP) Inspection so that the Owner and Public may stay abreast of the Operating Authorities compliance with applicable legislative and regulatory requirements.

## Scope

This Annual Drinking Water Summary Report includes reportable information stipulated within O.Reg 170/03 of the *Safe Drinking Water Act, 2002*, pertaining to the Town of Newmarket's drinking water system for the January 1 to December 31, 2021 reporting period.

## Reporting Requirements under the Ontario Safe Drinking Water Act, 2002

This Annual Drinking Water Summary Report satisfies the requirements of the O.Reg. 170/03 of the *Safe Drinking Water Act, 2002 (SDWA, 2002)*; the requirements for which are identified below:

Section 11 of O. Reg. 170/03 states that the Annual Report must include:

- a brief description of the Drinking Water System, including a list of water treatment chemicals used by the system;
- a summary of adverse test results and other observations that were reported to the MECP during the reporting period;
- a description of any corrective actions that were taken in response to any adverse test results and other observations that were encountered during the reporting period;
- a summary of the most recent water testing results, required under O. Reg. 170/03 and our respective Municipal Drinking Water License (MDWL), that occurred during the reporting period;
- a description of the major expenses incurred during the reporting period to install, repair, or replace required equipment/infrastructure;

- a statement identifying the locations where the annual report will be made available for the public; and,
- the specific number of points sampled during the lead sampling periods identified within O. Reg. 170/03 as well as the total number of samples taken, and the number of points where a sample exceeded the prescribed standard for lead.

Please note that the Town does not utilize any water treatment chemicals as the Town's drinking water system is strictly a drinking water distribution system.

Schedule 22 of O. Reg. 170/03 states that Summary Reports for Municipalities must also include the following:

- a list of the requirements of the *SDWA, 2002* the regulations, the system's approval, Drinking Water Works Permit (DWWP), MDWL, and any orders applicable for the system that were not met at any time during the period covered by the report;
- a list of each requirement that was not met, the duration of the failure and the measures that were taken to correct the failure;
- a summary of the quantities and flow rates of the water supplied during the period covered by the report, including monthly average and maximum daily flows.
- a comparison of the above summary against the rated capacity and flow rates approved in the systems approval, drinking water works permit or municipal drinking water license; or if the system is receiving all of its water from another system under an agreement pursuant to subsection 5(4) of O.Reg. 170/03, to the flow rates specified in this written agreement

Please note that the Town of Newmarket does not have any rated capacities identified within its respective MDWL or DWWP, as it is strictly a drinking water distribution system. Similarly no agreement, under subsection 5(4) of O.Reg. 170/03, is in place between the Regional Municipality of York and the Town of Newmarket; therefore, the above stipulated O.Reg. 170/03 Schedule 22 requirement is not applicable to the Town of Newmarket.

The Town of Newmarket 2021 Drinking Water Summary report satisfies all the above regulatory reporting requirements that are applicable to the Town of Newmarket.

O.Reg. 170/03 requires that a copy of the annual report be provided, without charge, to every person who requests a copy, and that a copy of the annual report be available to the public at no charge on the Town's website. O.Reg. 170/03 also requires that the Owner of a drinking water system take effective steps to advise users of the drinking water system that the annual report is available, at no cost, and how to obtain a copy of the annual report. Additionally, O.Reg. 170/03 requires that the annual report be provided

to members of council by no later than March 31<sup>st</sup> of the year following the associated reporting period.

Copies of the 2021 Annual Water Quality Summary Report are available to the public at:

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

Please note that Newmarket's 2021 Annual Water Quality Summary Report will only be available to the public at the Robert N. Shelton Operations Centre and Newmarket Municipal Offices (Customer Service Counter) once public access has been permitted to these locations.

## **Drinking Water System Description**

The Newmarket Water Distribution System is a Class I Distribution Subsystem. From January 1, 2021 to December 31, 2021, eighteen (18) water operators and staff were certified to operate/maintain the system.

The Town of Newmarket purchases water from York Region, who purchases its water from the City of Toronto and Peel Region. York Region also operates and maintains groundwater wells located in the Yonge Street Aquifer that service the Town of Newmarket. The integrated system includes Newmarket's local distribution watermains and York Region's transmission watermains, pumping stations, storage facilities and groundwater treatment facilities. Treated water from the Region supply network is monitored by York Region staff through the Regional SCADA (Supervisory Control and Data Acquisition) system.

The Town and York Region work closely to deliver source to tap drinking water in this complex integrated system.

The Region also produces Annual Drinking Water Summary Report(s) summarizing applicable drinking water system(s) information for the preceding year; these reports are also made available to the public. More information, as well as electronic version(s) of these report(s) are found on their website at [york.ca](http://york.ca).

The Town's Water Distribution System Infrastructure services approximately 87,942 people within the Town of Newmarket.

The Newmarket DWS is comprised of approximately:

- 26,652 metered water services;
- 2718 mainline valves;
- 2,361 fire hydrants;
- 318.6 kilometers of watermain;

- 29 sample stations;
- 10 auto-flushers;
- 6 air/vacuum relief combo valves;
- 4 pressure zones;
- 5 air relief valves; and
- 4 pressure reducing valves

## **Drinking Water System Monetary Expenses**

Information regarding the major expenses incurred by the Town during the period associated with this report to install, repair and/or replace drinking water system infrastructure can be found within “Attachment Two: 2021 Ontario Drinking Water Systems Regulation Annual Report”.

## **Legislative & Regulatory Requirements**

The following are the primary legislative and regulatory requirements that directly affect the operation of the Town’s drinking water distribution system; please note that this is not an exhaustive list of legislative and regulatory requirements applicable to the operation of a Town’s large municipal residential drinking water system.

### **Safe Drinking Water Act, 2002**

The Ontario *Safe Drinking Water Act, 2002* (*SDWA, 2002*) protects human health through the control and regulation of drinking-water systems and drinking-water testing, to name a couple of major components. The Act also contains all the regulations relating to the treatment and distribution of drinking water.

The following are key aspects of the Act:

- Accreditation of operating authorities
- Municipal drinking water systems
- Drinking water testing
- Inspections, Compliance and Enforcement
- Standard of Care

The Town is required to maintain compliance with all applicable *SDWA, 2002* requirements at all times and adequately address any identified incidents of non-compliance.

## **Standard of Care, Section 19, *Safe Drinking Water Act, 2002***

The Standard of Care is the legal responsibility of the Owner and applicable Operating Authority personnel for a municipal drinking water system. It requires municipal drinking water system Owners and applicable Operating Authority personnel to exercise the level of care, diligence, and skill in regards to the system that a reasonably prudent person would be expected to exercise in a similar situation. Municipal drinking water system Owners and applicable Operating Authority personnel must act honestly, competently and with integrity with a view of ensuring the protection and safety of the users of the system. Within the Town's Drinking Water Quality Management Standard (DWQMS) Operational Plan, the Mayor and Council are identified as the Owner of the Town's drinking water distribution system; Public Works Services is identified as the Operating Authority for the Town's drinking water distribution system.

The information contained within this report, and its associated attachments, can assist the Owner and applicable Operating Authority personnel in meeting their respective Standard of Care requirements as identified within the Ontario *Safe Drinking Water Act, 2002*.

### **Ontario Regulation 169/03: Ontario Drinking Water Quality Standards**

The Ontario Drinking Water Quality Standards (O.Reg. 169/03) regulates the maximum allowable concentration of specific parameters in drinking water. This regulation contains microbiological standards, chemical standards and radiological standards for drinking water. Compliance with O. Reg. 169/03 is partially determined through system inspections conducted annually by MECP Inspectors.

### **Ontario Regulation 170/03: Drinking Water Systems Regulation**

The Drinking Water Systems Regulation (O. Reg. 170/03) regulates municipal drinking water systems. This regulation stipulates requirements for operational checks and sampling, chemical and microbiological testing requirements, reporting adverse test results, corrective actions, and reporting, among many other things. Compliance with O. Reg. 170/03 is determined partially through system inspections conducted annually by the MECP. The annual reporting requirements for drinking water systems is also stipulated within O.Reg. 170/03 under Section 11 (Annual Reports) and Schedule 22 (Summary reports for municipalities). The Town is required to maintain compliance with all applicable O.Reg. 170/03 requirements at all times and adequately address any identified incidents of non-compliance.

## **Ontario Regulation 128/04: Certification of Drinking Water System Operators and Water Quality Analysts**

The Certification of Drinking Water Operators and Water Quality Analyst Regulation (O. Reg. 128/04) establishes the training and certification requirements for Operators of regulated drinking water systems in Ontario. Operators are required to achieve and maintain compliance with these training and certification requirements in order to be able to legally operate drinking water systems regulated under O.Reg. 128/04 and the *Safe Drinking Water Act, 2002*. O. Reg 128/04 also specifies overall responsible operator (ORO) requirements, operator in charge (OIC) responsibilities, record keeping requirements, and operations/maintenance manuals requirements, to name a few aspects. Compliance with O. Reg. 128/04 is determined partially through system inspections conducted annually by the MECP. The Town is required to maintain compliance with all applicable O.Reg. 128/04 requirements at all times and adequately address any identified incidents of non-compliance.

## **Ontario Regulation 453/07: Financial Plans**

The Financial Plans Regulation (O. Reg. 453/07) requirements dictate that all owners of municipal residential drinking water systems prepare a Financial Plan that detail the drinking water system's six year projected financial information. O.Reg. 453/07 also specifies what needs to be included in these Financial Plans. As part of the process identified within O.Reg. 453/07, Financial Plan's must be formally approved and acknowledged by the Owner of the drinking water system through a resolution of the municipal council. The Financial Plan requirements specified within O.Reg. 453/07 are one of the components associated with the provincial drinking water system approvals framework that is applicable to the Town and must be complied with at all times. The O.Reg. 453/07 Financial Plan is also associated with the Operating Authorities respective MDWL and must be updated in accordance with O.Reg. 453/07 Financial Plan requirements as part of the provincial MDWL renewal process. The Town is required to maintain compliance with all applicable O.Reg. 453/07 requirements at all times and adequately address any identified incidents of non-compliance.

## **Drinking Water Quality Management Standard (DWQMS)**

The Drinking Water Quality Management Standard (DWQMS) sets out the framework for Operating Authorities and Owners of Drinking Water Systems to develop and maintain a Quality Management System (QMS) that is relevant and appropriate for their respective drinking water system. The DWQMS is the approved QMS under the *SDWA, 2002*. The



purpose of a QMS is to establish policy and objectives, achieve those objectives as well as direct and control an organization with regards to quality. To adhere to the DWQMS requirements the Town has developed a DWQMS Operational Plan that is relevant and appropriate for the Town, this DWQMS Operational Plan is the QMS associated with the Town's drinking water system. The Town's QMS is subject to annual internal and external audits as part of the on-going Operating Authority accreditation process. The DWQMS, and associated QMS requirements, is one of the components associated with the provincial drinking water system approvals framework that is applicable to the Town. The Town is required to maintain compliance with all applicable DWQMS requirements at all times and adequately address any identified incidents of non-compliance.

### **Drinking Water System Licence and Permit**

- Municipal Drinking Water License (MDWL) number: 124-101 (Issue Number 7)
- Drinking Water Works Permit (DWWP) number: 124-201 (Issue Number 3)

The Town's MDWL and the DWWP describe system-specific requirements in addition to those included in provincial regulations. These documents outline detailed conditions and regulatory requirements in regards to the operation, maintenance, and monitoring of the drinking water system, among many other things. The MDWL and DWWP are two of the components associated with the provincial drinking water system approvals framework that are applicable to the Town and must be complied with at all times. The MDWL is valid for a period of five (5) years and must be renewed every five (5) years in accordance with MECP requirements; the DWWP is also renewed on this frequency as part of the MDWL renewal process. The Town is required to maintain compliance with all applicable MDWL and DWWP requirements at all times and adequately address any identified incidents of non-compliance.

## **Regulatory Compliance and MECP Inspections**

### **2021 Adverse Water Quality Incidents (AWQI's)**

In 2021 a total of 91 (ninety-one) AWQI events occurred: 88 (eighty-eight) were related to low chlorine residuals, 2 (two) were related to the presence of Total Coliform, and 1 (one) was related to an elevated level of sodium.

The AWQI involving sodium was reported to the local Medical Officer of Health (MOH) and the Ministry of Environment, Conservation and Parks (MECP). In addition, the Town performed corrective actions necessary to resolve this AWQI in a timely fashion. The MOH and the MECP were satisfied with the Town's reporting and corrective actions performed.

The two AWQIs involving Total Coliform were isolated incidents and associated with 1 (one) specific sample location per incident. The corrective actions necessary to resolve these AWQIs were completed by the Town in a timely fashion once the Town was informed of these AWQIs. All the necessary corrective actions and reporting requirements were completed, with respect to these two (2) AWQIs, to the satisfaction of the local MOH and the MECP.

All applicable AWQI's must be reported to the MECP as well as the local MOH in accordance with *SDWA, 2002* and O.Reg. 170/03 requirements. Based upon the information possessed by the Operating Authority, in 2021 all AWQI's were reported in accordance with *SDWA, 2002* and O.Reg. 170/03 requirements. Additionally, any corrective actions that must be taken to resolve an AWQI must be completed in accordance with O.Reg. 170/03, our respective MDWL as well as any additional instruction provided by the MOH. Based upon the information possessed by the Operating Authority, all corrective actions that were necessary to resolve the AWQIs that occurred in 2021 were completed in accordance with the requirements stipulated within O.Reg. 170/03, our respective MDWL, and any additional instruction provided by the MOH. More Specific information regarding the AWQI's that occurred in 2021, as well as any corrective actions that were taken, can be found within "Attachment Two: 2021 Ontario Drinking Water Systems Regulation Annual Report".

## **2021 Annual MECP Inspection Results**

The Town undergoes an annual inspection of its drinking water system by the MECP. The primary focus of the annual MECP drinking water system inspection is to confirm the Town is complying with applicable legislative and regulatory requirements that fall under the jurisdiction of the MECP. Schedule 22 of O.Reg. 170/03 requires that all non-compliance(s) with applicable legislation be documented within the Summary Report.

During the 2021 inspection the MECP did not identify any incidents of non-compliance with regulatory requirements and the Town received a final inspection rating of 100% as a result of the 2021 MECP inspection. The final inspection rating received during the 2021 MECP inspection was an improvement over the final inspection rating of 97.57% received in relation to the 2020 MECP Inspection. The full details regarding the 2021 MECP inspection are located within "Attachment One: 2021 MECP Newmarket Distribution System Inspection Report".

## 2021 Water Quantity & Flow Rate Data

The 2021 water quantity and flow rate data is located within “Attachment Three: 2021 Town of Newmarket Water Quantity & Flow Rate Data”

## 2021 Water Quality Data

The applicable 2021 water quality data is located within “Attachment Two: 2021 Ontario Drinking Water Systems Regulation Annual Report”.

Specific Information regarding the summary of the most recent water testing results that occurred during the reporting period associated with this report, as required under O.Reg. 170/03 and the Town’s respective MDWL, can be found within “Attachment Two: 2021 Ontario Drinking Water Systems Regulation Annual Report”.

Specific information regarding any lead sampling that took place during the reporting period associated with this report can be found within “Attachment Two: 2021 Ontario Drinking Water Systems Regulation Annual Report”.

In 2021 twelve (12) exceedances were observed by the Town with respect to sodium concentrations in drinking water samples that were collected from the distribution system; based upon the 2021 drinking water sample results the sodium concentrations within the Town’s distribution system ranged from 14.0 – 24.7 mg/L. A drinking water sample with a result indicating that the concentration of sodium exceeds 20 mg/L is prescribed as an adverse result of a drinking water test for the purpose of Section 18 of the *SDWA, 2002*; and must therefore be reported accordingly. A result indicating that the concentration of sodium exceeds 20 mg/L in a drinking water sample must be reported under Section 18 of the *SDWA, 2002* if a report has not been made in respect to sodium in the preceding 57 months. The last report that the Town made with respect to a sodium exceedance was January 11<sup>th</sup>, 2021 therefore the next reporting date with respect to an adverse result for sodium in the Town’s drinking water is October 11<sup>th</sup>, 2025; any sodium exceedances that may be observed by the Town in the future will be reported and responded to in accordance with all applicable legislative and regulatory requirements. The Town continues to meet all legislative and regulatory response obligations with respect to sodium exceedances identified within drinking water samples, no further actions are required by the Town at this time in relation to this subject matter.

Sodium is a naturally occurring element in the environment that may be present in both groundwater and surface water sources. Sodium levels in groundwater and surface water sources may also be influenced by road salt application practices. Sodium levels within municipal drinking water may also be influenced due to the addition of water treatment/conditioning chemicals, such as sodium silicate and sodium hypochlorite; both of which are added to the drinking water supplied to the Town by York Region. Additional information regarding sodium in drinking water can be located on the “Drinking Water Quality and Monitoring” page of York Regions website.