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Town of Aurora
Information Report
No. OPS23-003

Subject: 2022 Summary Drinking Water

Prepared by: Iustina Voinea, Program Coordinator, Water/Wastewater/Stormwater

Department: Operational Services

Date: February 21, 2023

In accordance with the Procedure By-law, any Member of Council may request that this Information Report be placed on an upcoming General Committee or Council meeting agenda for discussion.

Executive Summary

The Annual Drinking Water Quality Report (ADWQR), Appendix 1, is a requirement under Schedule 11 of Ontario Regulation (O. Reg.) 170/03 - Drinking Water Systems (the "Regulation") and will be posted to the Town's website on February 28th, as per requirements. This report summarizes water quality monitoring, corrective actions, and major expenses.

Results of water quality testing for bacteria and harmful chemicals indicate that Aurora has a very safe, reliable and secure water supply.

York Region receives treated water from the City of Toronto and the Region of Peel and operates seven (7) wells within the Town.

Background

The Town of Aurora Distribution System, number 260003227, is classified as a Large Municipal Residential System, Class 2 Water Distribution System. The Town operates the distribution system through its Municipal Drinking Water Licence, Number 115-101 and alters the system through its Drinking Water Works Permit, Number 115-201.

The Annual Drinking Water Quality Report is a requirement of Ontario Regulation.

This report fulfills the requirements mandated under the Safe Drinking Water Act, 2002, S.O. 2002, c.32 (the "Act") by providing the Municipal Council an annual summary report on the quality of the drinking water system for the 2022 reporting year.

Legislative amendments to the Act, released in 2004 resulted in substantial changes to Water and Wastewater operations. Amendments to O. Reg. 170/03 increased the regulatory compliance requirements on system operations. The amendments also required an increase in reporting by system owners on the performance of systems to the Ministry of the Environment, Conservation and Parks (MECP) and applicable stakeholders. The MECP "Drinking Water Ontario" web portal provides the most current version of the Act and its regulations.

Reporting under Schedule 22 of O. Reg. 170/03 was mandated, requiring the owner of a drinking water system to prepare a SDWR in accordance with the Regulation and submit the report to Council.

Staff has regularly submitted these reports to Council since 2003 and has made the information available to the public through the Town website.

Analysis**Results of water quality testing for bacteria and harmful chemicals indicate that Aurora has a very safe, reliable and secure water supply.**

Ontario Regulation 170/03 Drinking Water System outlines the testing and reporting requirements for water systems. The above regulation is in support of the Act and outlines all the testing and reporting requirements for drinking water systems. The attached ADWQR fulfills the requirements of this regulation.

The attached ADWQR provides a summary of the legislative requirements under the Act, and includes the prescribed actions taken to address samples failing to meet parameters referred to in the Regulation.

The Town of Aurora is required to sample for microbiological contamination and chlorine residual at random location points throughout the distribution network on a weekly basis. Sampling and testing for Trihalomethanes, Haloacetic Acids, Nitrates and Nitrites are conducted quarterly and for lead bi-annually. The Town applied for regulatory relief for Lead Sampling, under the Act, 2002. Aurora's new regulatory requirement for Lead Sampling is: 8 distribution samples for each sampling period

December 15 to April 15, and June 15 to October 15, starting December 2021 until October 2024.

An adverse result for bacteria testing indicates the presence of bacteria in a test referred to as a “presence/absence test”.

A total of 961 samples were collected for microbiological testing of which seven (7) samples had adverse test results. Six (6) re-test samples passed with no issues. One (1) sample failed second time. It is important to note that in each of the seven (7) adverse samples, there was sufficient chlorine present in the water, well within the regulatory requirements for a safe drinking water system. Re-sampling and reporting protocols were followed for all instances. There were no adverse chlorine residual events during the year of 2022.

There was one adverse result for Sodium, re-sample passed with no issues.

Note: See results on page 3 of attached.

An adverse test for harmful chemicals occurs when the concentration of a chemical element in the sample is higher than the Maximum Concentration specified by the Ontario Drinking Water Quality Standards. There were no adverse results for any of the chemical tests conducted in 2022.

York Region receives treated water from the City of Toronto and the Region of Peel and operates seven (7) wells within the Town.

York Region receives treated water from the City of Toronto and the Region of Peel and operates seven (7) wells within the Town. The storage and treatment of the water is Region’s responsibility. A blend of this water is supplied to the Town for distribution.

The total volume of water supplied by the York Region to the Town between January 1, 2022 and December 31, 2022 is approximately 6,129,479 m³.

Monthly flows and maximum daily flow are indicated in Table 1.

Table 1

| Month | Monthly Average Flow (m³) | Daily Maximum Flow (m³) |
|------------------|---|---|
| January | 474,774 | 18,827 |
| February | 430,894 | 19,250 |
| March | 459,108 | 17,365 |
| April | 450,257 | 17,842 |
| May | 516,708 | 22,012 |
| June | 583,127 | 24,893 |
| July | 656,294 | 26,131 |
| August | 608,796 | 23,731 |
| September | 545,202 | 21,766 |
| October | 480,037 | 17,138 |
| November | 445,604 | 17,387 |
| December | 478,678 | 17,590 |

Schedule 22 requires that if a system is receiving all its water from another system under an agreement, a comparison of actual flow rates to the flow rates specified in the written agreement, needs to be provided.

Advisory Committee Review

Not applicable.

Legal Considerations

Legal considerations are discussed throughout this report.

Financial Implications

There are no direct financial implications arising from this report.

Communications Considerations

The Town will inform residents of the safety of their drinking water by publicly posting the report to the Town website as per legislation. In addition, the Town will share the results through social media and by updating and sharing the annual water quality results video.

Climate Change Considerations

The recommendations from this report does not impact greenhouse gas emissions or impact climate change adaptation.

Link to Strategic Plan

The submission of the Summary Drinking Water Report supports the Strategic Plan goal of Supporting an Exceptional Quality of Life for All through its accomplishment in satisfying requirements in the following key objective within this goal statement:

Invest in sustainable infrastructure. Maintain and expand infrastructure to support forecasted population growth through technology, waste management, roads, emergency services and accessibility.

Alternative(s) to the Recommendation

1. There are no alternatives to the recommendations presented in this report.

Conclusions

The findings from the 2022 reporting year continue to demonstrate that the Town of Aurora meets all regulatory compliance requirements prescribed through applicable legislation.

Attachments

Attachment #1 – Annual Drinking Water Quality Report – January 1 – December 31, 2022

Previous Reports

OPS22-002, 2021 Summary Drinking Water, February 15, 2022

Pre-submission Review

Agenda Management Team review on February 2, 2023

Approvals

Approved by Allan D. Downey, Director, Operational Services

Approved by Doug Nadorozny, Chief Administrative Officer

Town of Aurora Drinking Water Distribution System

Drinking Water Systems Regulation O. Reg. 170/03

MODIFIED OPTIONAL ANNUAL REPORT TEMPLATE

Drinking-Water System Number: 260003227
Drinking-Water System Name: **Aurora Drinking Water Distribution System**
Drinking-Water System Owner: The Corporation of The Town of Aurora
Drinking-Water System Category: Large Municipal Residential System
Period being reported: January 1, 2022 to December 31, 2022

Town of Aurora's drinking water system is registered as Large Municipal Residential Systems

The Aurora Drinking Water System serves more than 10,000 people.

This annual report is available to the public at no charge on the Town's web site and upon request.

Location where Summary Report required under O. Reg. 170/03 Schedule 22 will be available for inspection:

The Corporation of the Town of Aurora
 100 John West Way, Box 1000
 Aurora Ontario L4G 6J1

www.aurora.ca

List all Drinking Water Systems which receive their drinking water from your system:

| Drinking Water System Name | Drinking Water System Number |
|----------------------------|------------------------------|
| | |
| | |

A copy of Town of Aurora's annual report was provided to York Region Drinking Water System owner from which the drinking water is obtained.

System users were notified that Town of Aurora's annual report is available free of charge by public access and notice through:

- Town's website
- Municipal Government Office
- Public Request at any time

Town of Aurora Drinking Water Distribution System

Drinking Water Systems Regulation O. Reg. 170/03

Description of the Aurora Drinking Water Distribution System

The Town of Aurora's water supply is a blended combination of ground water and surface water. York Region is the wholesale supplier of water to The Town of Aurora. York Region is responsible for the water supply, production, treatment, storage and trunk distribution.

In regards to the ground water, York Region operates seven production wells in Aurora, which range in depth from 98 to 104 meters. In respect to the surface water portion of the supply, the Town currently receives Lake Ontario surface water from two supply sources, the City of Toronto supply and the Region of Peel feed.

The Town owns and operates the distribution network, which includes the watermain piping, booster station, fire hydrants, bulk water filling station, service connections and meters. Aurora's distribution network, which provides water to the consumer, is divided into five pressure districts with pressures varying between 40-100 psi.

The Town's system is comprised of approximately 250 kilometers of watermain, located typically on local roads. The watermain pipe materials consist of ductile iron (48%), cast iron (5%), and PVC (45%).

List all water treatment chemicals used over this reporting period

Not applicable; Treatment chemicals are introduced at various sources by the City of Toronto, Peel Region and York Region only.

Were any significant expenses incurred to?

- Install required equipment
- Repair required equipment
- Replace required equipment

Brief description and breakdown of monetary expenses incurred

| | |
|-----------------------------------|--------------|
| Hydrant maintenance | = \$36,250 |
| Valves exercised | = 472 |
| Water Booster Station maintenance | = \$ 24,550 |
| Waterbox repairs | = \$37,880 |
| Emergency repairs | = \$ 300,000 |

Provide details on the notices submitted in accordance with subsection 18(1) of the Safe Drinking Water Act or section 16-4 of Schedule 16 of O.Reg.170/03 and reported to Spills Action Centre

Town of Aurora Drinking Water Distribution System
Drinking Water Systems Regulation O. Reg. 170/03

| Incident Date and Location | Parameter | Result | Unit of Measure | Corrective Action and Result | Corrective Action Date |
|------------------------------------|------------------|--------|-----------------|------------------------------|-----------------------------------|
| March 28, 2022 (AWQI # 158092) | Sodium | 21.5 | mg/L | Flush main and resample | Resampling on April 1, 2022 |
| June 13, 2022 (AWQI # 158687) | Total Coliforms | P | P/A | Flush main and resample | Resampling on June 14, 2022 |
| July 11, 2022 (AWQI # 159109) | Total Coliforms, | P | P/A | Flush main and resample | Resampling on July 12, 2022 |
| July 12, 2022 (AWQI # 159140) | Total Coliforms | P | P/A | Flush main and resample. | Resampling on July 13, 15, 2022 |
| July 18, 2022 (AWQI # 159211) | Total Coliforms | P | P/A | Flush main and resample. | Resampling on July 20, 2022 |
| August 8, 2022 (AWQI # 159490) | Total Coliforms | P | P/A | Flush main and resample. | Resampling on August 10, 2022 |
| August 8, 2022 (AWQI # 159491) | Total Coliforms | P | P/A | Flush main and resample. | Resampling on August 10, 2022 |
| August 10, 2022 (AWQI # 159530) | Total Coliforms | P | P/A | Flush main and resample. | Resampling on August 12, 13, 2022 |

Microbiological testing done under the Schedule 10, 11 or 12 of Regulation 170/03, during this reporting period.

| | Number of Samples | Range of E.Coli Or Fecal Results (min)-(max) | Range of Total Coliform Results (min)-(max) | Number of HPC Samples | Range of HPC Results (min)-(max) |
|---------------------|-------------------|--|---|-----------------------|----------------------------------|
| Raw | N/A | N/A | N/A | N/A | N/A |
| Treated | N/A | N/A | N/A | N/A | N/A |
| Distribution | 961 | 0-P | 0-P | 457 | 0-16 |

Operational testing done under Schedule 7, 8 or 9 of Regulation 170/03 during this reporting period

| | Number of Grab Samples | Range of Results (min #)-(max #) | Unit of Measure | <i>NOTE: For continuous monitors use 8760 as the number of samples.</i> |
|--|------------------------|------------------------------------|-----------------|---|
| Turbidity (treated) | Not Applicable | | | |
| Chlorine (combined) | 1125 | Free: 0.00-0.19 Total: 0.73-2.3 | mg/L | |
| Fluoride (If the DWS provides fluoridation) | Not Applicable | | | |

Town of Aurora Drinking Water Distribution System
Drinking Water Systems Regulation O. Reg. 170/03

Summary of additional testing and sampling carried out in accordance with the requirement of an approval, order or other legal instrument

| Date of legal instrument issued | Parameter | Date Sampled | Result | Unit of Measure |
|---------------------------------|-----------|--------------|--------|-----------------|
| Not Applicable | | | | |

Summary of Inorganic parameters tested during this reporting period or the most recent sample results

| Parameter | Sample Date | Result Value | Unit of Measure | Exceedance |
|-----------|--------------|--------------|-----------------|------------|
| Antimony | | | | |
| Arsenic | | | | |
| Barium | | | | |
| Boron | | | | |
| Cadmium | | | | |
| Chromium | | | | |
| *Lead | | | | |
| Mercury | | | | |
| Selenium | | | | |
| Sodium | | | | |
| Uranium | | | | |
| Fluoride | | | | |
| Nitrite | Oct 31, 2022 | <0.05 | mg/L | No |
| Nitrate | Oct 31, 2022 | <0.5 | mg/L | No |

*only for drinking water systems testing under Schedule 15.2; this includes large municipal non-residential systems, small municipal non-residential systems, non-municipal seasonal residential systems, large non-municipal non-residential systems, and small non-municipal non-residential systems

Summary of lead testing under Schedule 15.1 during this reporting period

(applicable to the following drinking water systems; large municipal residential systems, small municipal residential systems, and non-municipal year-round residential systems)

| Location Type | Number of Samples | Range of Lead Results (min) – (max) | Unit of Measure | Number of Exceedances |
|---------------|-------------------|-------------------------------------|-----------------|-----------------------|
| Plumbing | 0 | NA | mg/L | 0 |
| Distribution | 16 | <0.0005 – 0.0006 | mg/L | 0 |

Summary of Organic parameters sampled during this reporting period or the most recent sample results

**Town of Aurora Drinking Water Distribution System
Drinking Water Systems Regulation O. Reg. 170/03**

| Parameter | Sample Date | Result Value | Unit of Measure | Exceedance |
|----------------------|-------------|--------------|-----------------|------------|
| HAA (annual average) | quarterly | 8.00 | ug/l | No |
| THM (annual average) | quarterly | 17.30 | ug/l | No |

List any Inorganic or Organic parameter(s) that exceeded half the standard prescribed in Schedule 2 of Ontario Drinking Water Quality Standards

| Parameter | Result Value | Unit of Measure | Date of Sample |
|-----------|--------------|-----------------|----------------|
| N/A | | | |

List any Inorganic or Organic parameter(s) that exceeded half the standard prescribed in Schedule 2 of Ontario Drinking Water Quality Standards

| Parameter | Result Value | Unit of Measure | Date of Sample |
|-----------|--------------|-----------------|----------------|
| N/A | | | |