

2021 Annual Drinking Water System Quality Report for York DWS

Prepared by The Regional Municipality of York pursuant to Section 11 of O. Reg. 170/03.

Drinking Water System Number: 260001929
Drinking Water System Name: York DWS
Drinking Water System Owner: The Regional Municipality of York
Drinking Water System Category: Large Municipal Residential
Drinking Water System Classification: Water Distribution IV
Reporting period: Jan 1, 2021 - Dec 31, 2021

The York DWS serves approximately 919,820 people.

(Population is the most recent available estimate based on Statistics Canada census data and building permits)

List all Drinking Water Systems which receive their drinking water from the York DWS:

York DWS is the primary water source for: Markham Distribution System (220004162); Richmond Hill Distribution System (260001968); Vaughan Distribution System (260003097). The following systems are connected to or are sub-systems of the York DWS: York Drinking Water sub-system - Aurora (220002440); York Drinking Water sub-system - Holland Landing (220004046); King City Drinking Water System (220002299); Kleinburg Drinking Water System (220002360); York Drinking Water sub-system - Newmarket (220002413); York Drinking Water sub-system - Queensville (260001955); York Drinking Water sub-system - Stouffville (220002333); Town Of Aurora Distribution System (260003227); Town of Newmarket Distribution System (260003188)

This annual report is available to the public at no charge on York Region's website (york.ca/drinkingwater) and upon request. Accessible formats or communication supports are also available upon request. Please contact AccessYork@york.ca or call 1-877-464-9675.

A copy of York Region's annual report was provided to all Drinking Water System owners that are connected to and receive drinking water from York Region.

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

- Media (internet, social media)
- Public requests at any time

Summary report required under O. Reg. 170/03 Schedule 22 will be available for inspection at:

The Regional Municipality of York
Administrative Centre
Environmental Services Department
17250 Yonge Street, Newmarket ON L3Y 6Z1

Description of the York DWS

Introduction

The Cities of Vaughan, Markham and Richmond Hill form the southern border of York Region. These three municipalities receive all their water from Lake Ontario through the York Drinking Water System (York DWS). In these areas, initial treatment of the source water is done by Peel Region and the City of Toronto. Kleinburg, in Vaughan, is its own sub-system. Communities north of Vaughan, Richmond Hill and Markham that receive water from the York DWS, the supply is supplemented with groundwater from wells.

Raw water source

Lake Ontario

Profile of water in distribution system

Lake Ontario (some sub-systems can be supplemented with local groundwater)

Water treatment description

In Vaughan, Richmond Hill, and Markham, purchased water is pre-treated and disinfected by the City of Toronto and Peel Region. Twelve storage facilities hold water and help the nine booster stations maintain pressure. One of these facilities also provides re-chloramination to boost the chloramine residual, and another converts it to free chlorine for the Stouffville DWS. Regional Operators test the water and inspect the process. Test results from certified labs and equipment confirm good water quality. Online analyzers continuously monitor the facilities. When analyzers detect a significant process or water quality issue, the system automatically pauses operation until an operator takes action.

List of water treatment chemicals used in this system

York DWS water is purchased pre-treated from the City of Toronto and Peel Region. Re-chloramination chemicals: Chlorine Gas; Ammonia Solution (Ammonium Sulphate)

Brief description and breakdown of monetary expenses incurred

\$11,904,978 for Standby power generator and fuel tank installation and upgrades, reservoir rehabilitation and upgrades, elevated tank rehabilitation and upgrades, valve chamber repairs and upgrades, watermain installation and rehabilitation, general maintenance and repairs.

Notices submitted under Section 18(1) of the *Safe Drinking Water Act* or Section 16-4 of O. Reg. 170/03 and reported to MECP Spills Action Centre

Adverse Parameter	Incident Date	Adverse Test Result	Corrective Action	Corrective Action Date
Chlorine Residual	Feb 24, 2021	3.75 mg/L	Operator attended site, facility restored to normal operation. Compliant grab sample taken.	Feb 24, 2021
Sodium	Apr 14, 2021	20.8 mg/L	Operator attended site. Resample taken.	Apr 19, 2021

**Microbiological testing completed under
Schedule 10 of O. Reg. 170/03**

For additional distribution samples collected under Schedule 10, refer to the local municipality.

Not Applicable

York DWS does not have any raw water or treatment facilities, so there are no microbiological tests to report here. For more data, view the Open Dataset or refer to the local municipality.

**Operational testing completed under Schedule 7
of O. Reg. 170/03 during this reporting period**

Test Parameter	Test Unit	No. of Samples ¹	Average	Minimum	Maximum
Combined Chlorine	mg/L	8,760	1.68	0.00	3.75

¹ 8,760 is used as the number of samples for continuous analyzers.

Summary of testing pursuant to Schedule 13 of O. Reg. 170/03 and sampling carried out in accordance with the requirement of an approval, order or other legal instrument

Values with a less than sign (" $<$ ") indicate that the test result is below the method detection limit from the accredited laboratory (i.e. non-detect). Average results include values which were returned as non-detect (i.e. the " $<$ " is omitted) and are rounded to three decimals. For a complete set of results, see the open dataset available at york.ca/drinkingwater.

Test Parameter ^{2 3}	Test Unit	No. of Samples ¹	Average	Minimum	Maximum
Fluoride	mg/L	47	0.610	0.50	0.69
Haloacetic Acids	ug/L	47	8.000	<8	<8
Nitrate	mg/L	47	0.500	<0.50	<0.50
Nitrite	mg/L	47	0.050	<0.05	<0.05
N-Nitrosodimethylamine (NDMA)	ug/L	12	0.001	<0.0009	0.0010
Sodium	mg/L	13	16.498	15	20.80
Trihalomethanes	ug/L	48	15.866	6.90	26.30

*Lead testing under Schedule 15.1 is conducted by the local municipality - refer to local municipality reports for results. York Region occasionally collects samples tested for lead for non-regulatory research purposes.

¹ 8,760 is used as the number of samples for continuous analyzers.

² The Average for Haloacetic Acids and Trihalomethanes is calculated as the running annual average of quarterly results in accordance with O. Reg 170/03. The Minimum and Maximum values reflect individual test results.

³ Where sampling for 'N-Nitrosodimethylamine (NDMA)' is required, locations were selected to represent the farthest points in the distribution system. For York DWS and sub-systems, representative sample locations were selected from across the interconnected sub-systems, therefore not all sub-systems were chosen for NDMA sampling.

Organic and inorganic parameter(s), from Schedule 23 and 24, that exceeded half the standard prescribed in Schedule 2 of O. Reg. 169/03 Ontario Drinking Water Quality Standards

Not Applicable
Intentionally blank. There were no applicable test results.

Summary of inorganic parameters tested pursuant to Schedule 23 of O. Reg. 170/03

Values with a less than sign (" $<$ ") indicate that the test result is below the method detection limit from the accredited laboratory (i.e. non-detect). Average results include values which were returned as non-detect and are rounded to four decimals. For a complete set of results, see the open dataset available at york.ca/drinkingwater.

Test Parameter	Test Unit	No. of Samples	Average	Minimum	Maximum	ODWS Limit
Antimony	mg/L	12	0.0005	<0.0005	<0.0005	0.0060
Arsenic	mg/L	12	0.0007	0.0006	0.0008	0.01
Barium	mg/L	12	0.0204	0.0194	0.0219	1
Boron	mg/L	12	0.0278	0.0263	0.0294	5
Cadmium	mg/L	12	0.0005	<0.0005	<0.0005	0.0050
Chromium	mg/L	12	0.0005	<0.0005	<0.0005	0.05
Mercury	ug/L	12	0.0500	<0.05	<0.05	1
Selenium	mg/L	12	0.0005	<0.0005	<0.0005	0.05
Uranium	mg/L	12	0.0005	<0.0005	<0.0005	0.02

**Summary of organic parameters tested pursuant to
Schedule 24 of O. Reg. 170/03**

Values with a less than sign (" $<$ ") indicate that the test result is below the method detection limit from the accredited laboratory (i.e. non-detect). Average results include values which were returned as non-detect and are rounded to three decimals. For a complete set of results, see the open dataset available at york.ca/drinkingwater.

Not Applicable
Schedule 24 sampling is not applicable to the York DWS
as it has no active treatment facilities.