

2017 Annual Drinking Water System (DWS) Quality Report for Newmarket DWS

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

Drinking Water System Number: 220002413

Drinking Water System Name: Newmarket DWS

Drinking Water System Owner: The Regional Municipality of York

DWS Category: Large Municipal Residential

Drinking Water System Classification: Water Distribution and Supply III

Reporting period: Jan 1, 2017 - Dec 31, 2017

The Newmarket DWS serves approximately 90030 people

This annual report is available to the public at no charge on the 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.

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
and online, at york.ca/drinkingwater

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

Holland Landing/Queensville/Sharon Distribution System (260001747); Newmarket Distribution System (260003188); Town Of Aurora Distribution System (260003227); Yonge-Green Lane Distribution System (260087685)

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

Description of the Newmarket DWS

Introduction

The Town of Newmarket is located centrally in York Region. Newmarket wells are offline for maintenance. Water from Lake Ontario and groundwater from Aurora are provided through the York DWS. York Region operates the water supply, and the Town of Newmarket maintains and distributes water to users. The Province governs the Region's operations with Acts and Regulations, a Permit to Take Water, a Municipal Drinking Water License and an operating Permit. Lake Ontario water is purchased with supply agreements.

Raw water source

Groundwater

Profile of water in distribution system

Blended - Lake and Groundwater

Water treatment description

Newmarket DWS includes six wells, six storage facilities (two are also rechloramination stations), and two booster pumping stations. Water is disinfected with chloramine. Sodium silicate is used to manage iron and manganese. Storage facilities hold water, and help booster stations maintain pressure. Operators test the water and inspect the process. Online analyzers continuously monitor treatment and water flow. When analyzers detect an issue, the system pauses operation until an operator takes action.

List of water treatment chemicals used in this system

Chlorine (gas, sodium hypochlorite); Ammonia solution; Sodium Silicate

Brief description and breakdown of monetary expenses incurred

\$2,258,879 for general maintenance and repair, and SCADA upgrades to four elevated tanks, five wells, and five meter chambers, Davis Drive meter chamber upgrades, and Yonge Street Aquifer rehabilitation.

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

Test Parameter	Incident Date	Units	Result	Corrective Action	Corrective Action Date
Chlorine Residual	08-Mar-17	mg/L	4.09	Operator attended site, restored facility to normal operation. Compliant grab sample taken.	08-Mar-17
	14-Mar-17	mg/L	4.93	Operator attended site, restored facility to normal operation. Compliant grab sample taken.	14-Mar-17
	19-Jun-17	mg/L	4.23	Operator attended site, restored facility to normal operation. Compliant grab sample taken.	19-Jun-17
	11-Jul-17	mg/L	4.08	Operator attended site, restored facility to normal operation. Compliant grab sample taken.	11-Jul-17
	20-Jul-17	mg/L	0.00	Operator attended site, restored facility to normal operation. Compliant grab sample taken.	20-Jul-17
	26-Jul-17	mg/L	4.22	Operator attended site, restored facility to normal operation. Compliant grab sample taken.	26-Jul-17
	26-Jul-17	mg/L	4.12	Reported as due diligence. Operator attended site. Facility returned to normal operation. Compliant grab sample taken.	27-Jul-17
	28-Jul-17	mg/L	4.31	Operator attended site, restored facility to normal operation. Compliant grab sample taken.	28-Jul-17
	03-Aug-17	mg/L	4.26	Operator attended site, restored facility to normal operation. Compliant grab sample taken.	03-Aug-17
	03-Aug-17	mg/L	4.25	Operator attended site, restored facility to normal operation. Compliant grab sample taken.	03-Aug-17
	06-Aug-17	mg/L	4.19	Operator attended site, restored facility to normal operation. Compliant grab sample taken.	06-Aug-17
	07-Aug-17	mg/L	4.64	Reported as due diligence. Operator attended site. Facility returned to normal operation. Compliant grab sample taken.	07-Aug-17
	07-Aug-17	mg/L	4.41	Operator attended site, restored facility to normal operation. Compliant grab sample taken.	07-Aug-17
	13-Aug-17	mg/L	4.02	Operator attended site, restored facility to normal operation. Compliant grab sample taken.	13-Aug-17
	19-Aug-17	mg/L	4.24	Operator attended site, restored facility to normal operation. Compliant grab sample taken.	19-Aug-17
	30-Aug-17	mg/L	4.32	Operator attended site, restored facility to normal operation. Compliant grab sample taken.	30-Aug-17
	12-Oct-17	mg/L	0.0	Operator attended site, restored facility to normal operation. Compliant grab sample taken.	12-Oct-17
	16-Oct-17	mg/L	4.45	Operator attended site, restored facility to normal operation. Compliant grab sample taken.	16-Oct-17
	14-Nov-17	mg/L	4.26	Operator attended site, restored facility to normal operation. Compliant grab sample taken.	14-Nov-17
	15-Nov-17	mg/L	4.08	Operator attended site, restored facility to normal operation. Compliant grab sample taken.	15-Nov-17
15-Nov-17	mg/L	4.01	Operator attended site, restored facility to normal operation. Compliant grab sample taken.	15-Nov-17	
Primary Disinfection	13-Jun-17	mg/L	0.06	Reported as due diligence. Operator attended site. Facility returned to normal operation. Compliant grab sample taken.	13-Jun-17
	14-Jun-17	mg/L	0.05	Reported as due diligence. Operator attended site. Facility returned to normal operation. Compliant grab sample taken.	14-Jun-17
Total coliform	18-Jun-17	Unitless	presence	Operator attended site. Resample taken. Tank isolated until resample result non-detectable for total coliform.	29-Jun-17
	03-Jul-17	Unitless	presence	Operator attended site. Resample taken. Resample result non-detectable for total coliform and E. coli	05-Jul-17
	07-Aug-17	Unitless	presence	Operator attended site. Resample taken. Tank isolated until resample result non-detectable for total coliform.	09-Aug-17
	09-Aug-17	Unitless	presence	Operator attended site. Resample taken. Tank isolated until resample result non-detectable for total coliform.	11-Aug-17
	11-Aug-17	Unitless	presence	Operator attended site. Resample taken. Tank isolated until resample result non-detectable for total coliform.	13-Aug-17

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

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

Parameter	Sample Source	No. of Samples	No. of Detections
E. coli	Raw	248	0
	Treated	6	0
Heterotrophic Plate Count	Treated	6	1
Total Coliforms	Raw	248	12
	Treated	6	0

Operational testing completed under Schedule 7 of Regulation 170/03 during this reporting period

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

Parameter	Units	No. of Samples	Average	Minimum	Maximum
Chlorine	mg/L	8,760	1.82	0.00	4.99
Turbidity (Treated)	NTU	8,760	0.14	0.06	2.44

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 and are rounded to four decimals. For a complete set of results, see the open dataset available at york.ca/drinkingwater

Parameter	Units	No. of Samples	Average	Minimum	Maximum
Fluoride	mg/L	23	0.459	0.263	0.64
Haloacetic Acids	mg/L	16	0.021	<0.02	0.042
Nitrate	mg/L	12	0.708	<0.5	<1
Nitrate + Nitrite	mg/L	4	1.000	<1	<1
Nitrite	mg/L	12	0.071	<0.05	<0.1
Sodium	mg/L	4	20.525	18.3	21.7
Trihalomethanes	mg/L	16	0.019	0.0133	0.0288

*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

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

Not Applicable
 There were no parameters that exceeded half the standard indicated above for the Newmarket DWS during 2017

Summary of inorganic parameters teste 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	Units	No. of Samples	Average	Minimum	Maximum	ODWS Limit
Antimony	mg/L	4	0.0008	0.0008	0.0008	0.006
Arsenic	mg/L	4	0.0006	<0.0005	0.0008	0.025
Barium	mg/L	4	0.0644	0.0243	0.128	1
Boron	mg/L	4	0.0853	0.0212	0.113	5
Cadmium	mg/L	4	0.0005	<0.0005	<0.0005	0.005
Chromium	mg/L	4	0.0019	0.001	0.0024	0.05
Mercury	mg/L	4	0.0001	<0.00005	<0.00005	0.001
Selenium	mg/L	4	0.0007	<0.0005	0.0011	0.01
Uranium	mg/L	4	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 four decimals. For a complete set of results, see the open dataset available at york.ca/drinkingwater

Not Applicable

Refer to previous reports for the most recent results