

2021 Annual Drinking Water System Quality Report for Ansnorveldt DWS

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

Drinking Water System Number: 260002213
Drinking Water System Name: Ansnorveldt DWS
Drinking Water System Owner: The Regional Municipality of York
Drinking Water System Category: Large Municipal Residential
Drinking Water System Classification: Water Distribution and Supply II
Reporting period: Jan 1, 2021 - Dec 31, 2021

The Ansnorveldt DWS serves approximately 118 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 Ansnorveldt DWS:

Ansnorveldt Distribution System (260034372)

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 Ansnorveldt DWS

Introduction

Ansnorveldt is located in King Township. The residential community served by the Ansnorveldt Drinking Water System is centred on Dufferin Street, north of Highway 9. Local groundwater is naturally high in minerals. York Region operates the water supply, while the Township of King maintains water quality and distributes it to users. The Province governs York Region's operations with Acts and Regulations, a Permit to Take Water, a Municipal Drinking Water License and an operating Permit.

Raw water source

Groundwater

Profile of water in distribution system

Groundwater

Water treatment description

Two wells share one pumphouse. Water is disinfected with chlorine. No other treatment chemicals are used. Raw water test results show the good health of the aquifer and help staff confirm optimal treatment. Water is stored and kept fresh on site for high demand times. Operators test the water and inspect the process regularly. 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 (Sodium Hypochlorite)

Brief description and breakdown of monetary expenses incurred

\$16,944 for 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

Not Applicable

Intentionally blank. No notices were submitted for this report period.

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

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

Test Parameter	Sample Source	Count of Samples	Count of Presence
E. Coli	Raw	104	0
	Treated	52	0
Heterotrophic Plate Count	Treated	52	8
Total Coliforms	Raw	104	0
	Treated	52	0

**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
Free Chlorine	mg/L	8,760	1.51	0.79	2.23
Turbidity (Treated)	NTU	8,760	0.21	0.13	3.89

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	4	0.253	0.23	0.27
Haloacetic Acids	ug/L	4	9.675	9.30	10
Nitrate	mg/L	4	0.500	<0.50	<0.50
Nitrite	mg/L	4	0.050	<0.05	<0.05
Sodium	mg/L	1	41.100	41.10	41.10
Trihalomethanes	ug/L	4	49.325	44.90	52.60

*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	1	0.0005	<0.0005	<0.0005	0.0060
Arsenic	mg/L	1	0.0005	<0.0005	<0.0005	0.01
Barium	mg/L	1	0.1170	0.1170	0.1170	1
Boron	mg/L	1	0.1770	0.1770	0.1770	5
Cadmium	mg/L	1	0.0005	<0.0005	<0.0005	0.0050
Chromium	mg/L	1	0.0005	<0.0005	<0.0005	0.05
Mercury	ug/L	1	0.0500	<0.05	<0.05	1
Selenium	mg/L	1	0.0005	<0.0005	<0.0005	0.05
Uranium	mg/L	1	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.

Test Parameter	Test Unit	No. of Samples	Average	Minimum	Maximum	ODWS Limit
1,1-dichloroethylene (vinylidene chloride)	ug/L	1	0.300	<0.30	<0.30	14
1,2-(o-dcb) Dichlorobenzene	ug/L	1	0.100	<0.10	<0.10	0.20
1,2-Dichloroethane	ug/L	1	0.100	<0.10	<0.10	5
1,4-(p-dcb) Dichlorobenzene	ug/L	1	0.100	<0.10	<0.10	5
2,3,4,6-Tetrachlorophenol	ug/L	1	0.500	<0.50	<0.50	100
2,4,6-Trichlorophenol	ug/L	1	0.500	<0.50	<0.50	5
2,4-Dichlorophenol	ug/L	1	0.700	<0.70	<0.70	900
2,4-dichlorophenoxyacetic acid (2,4-D)	ug/L	1	0.800	<0.80	<0.80	100
2-methyl-4-chlorophenoxyacetic acid	ug/L	1	5.000	<5	<5	100
Alachlor	ug/L	2	0.400	<0.40	<0.40	5
Atrazine + N-dealkylated metabolites	ug/L	2	0.200	<0.20	<0.20	5
Azinphos-methyl	ug/L	1	0.300	<0.30	<0.30	20
Benzene	ug/L	1	0.100	<0.10	<0.10	1
Benzo(a)pyrene	ug/L	1	0.010	<0.01	<0.01	0.01
Bromoxynil	ug/L	1	0.400	<0.40	<0.40	5
Carbaryl	ug/L	1	3.000	<3	<3	90
Carbofuran	ug/L	1	3.000	<3	<3	90
Carbon Tetrachloride	ug/L	1	0.200	<0.20	<0.20	2
Chlorpyrifos	ug/L	1	0.200	<0.20	<0.20	90
Diazinon	ug/L	1	0.200	<0.20	<0.20	20
Dicamba	ug/L	1	0.400	<0.40	<0.40	120
Dichloromethane	ug/L	1	2.000	<2	<2	50
Diclofop-methyl	ug/L	1	0.400	<0.40	<0.40	9
Dimethoate	ug/L	1	0.300	<0.30	<0.30	20
Diquat	ug/L	1	1.000	<1	<1	70
Diuron	ug/L	1	3.000	<3	<3	150
Glyphosate	ug/L	1	25.000	<25	<25	280
Malathion	ug/L	1	0.200	<0.20	<0.20	190
Metolachlor	ug/L	2	0.200	<0.20	<0.20	50
Metribuzin	ug/L	2	0.300	<0.30	<0.30	80
Monochlorobenzene	ug/L	1	0.100	<0.10	<0.10	80
Paraquat	ug/L	1	1.000	<1	<1	10
Pentachlorophenol	ug/L	1	0.400	<0.40	<0.40	60
Phorate	ug/L	1	0.200	<0.20	<0.20	2
Picloram	ug/L	1	0.700	<0.70	<0.70	190
Polychlorinated Biphenyls (PCBs)	ug/L	1	0.020	<0.02	<0.02	3
Prometryne	ug/L	2	0.200	<0.20	<0.20	1
Simazine	ug/L	2	0.200	<0.20	<0.20	10
Terbufos	ug/L	1	0.200	<0.20	<0.20	1
Tetrachloroethylene (perchloroethylene)	ug/L	1	0.300	<0.30	<0.30	10
Triallate	ug/L	1	4.000	<4	<4	230
Trichloroethylene	ug/L	1	0.100	<0.10	<0.10	5
Trifluralin	ug/L	1	0.006	<0.0060	<0.0060	45
Vinyl Chloride	ug/L	1	0.200	<0.20	<0.20	1

2021 Annual Drinking Water System Quality Report for Aurora DWS

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

Drinking Water System Number: 220002440
Drinking Water System Name: Aurora DWS
Drinking Water System Owner: The Regional Municipality of York
Drinking Water System Category: Large Municipal Residential
Drinking Water System Classification: Water Distribution and Supply III
Reporting period: Jan 1, 2021 - Dec 31, 2021

The Aurora DWS serves approximately 63,490 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 Aurora DWS:

Town of Aurora Distribution System (260003227); 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 Aurora DWS

Introduction

The Town of Aurora is located in the centre of York Region. Local groundwater is naturally high in minerals, and is blended with Lake Ontario water from the York DWS. York Region operates the water supply, while the Town of Aurora maintains water quality and distributes it to users. The Province governs York 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

Aurora DWS includes six wells, six storage facilities, and three booster pumping stations. Chlorine provides disinfection, and chloramine provides a secondary residual. Two facilities also re-chlorinate to boost the residual. Sodium silicate is added to sequester naturally occurring iron and manganese. Storage facilities hold treated water and help booster stations maintain pressure. Operators test the water and inspect the process. Online analyzers continuously monitor the facilities. When a significant process or water quality issue is detected, the system automatically pauses operation until an operator takes action.

List of water treatment chemicals used in this system

Chlorine Gas; Ammonia solution (Ammonium Sulphate); Sodium Silicate

Brief description and breakdown of monetary expenses incurred

\$1,281,428 for treatment facility upgrades, watermain replacement, standby power generator replacement, new well installation, well rehabilitation and maintenance, valve chamber upgrades, 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	Nov 6, 2021	5.00 mg/L	Operator attended site, restored facility to normal operation.	Nov 6, 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.

Test Parameter	Sample Source	Count of Samples	Count of Presence
E. Coli	Raw	237	0
	Treated	91	0
Heterotrophic Plate Count	Treated	91	16
Total Coliforms	Raw	237	2
	Treated	91	0

**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	2.65	0.00	4.00
Turbidity (Treated)	NTU	8,760	0.05	0.02	5.00

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	85	0.369	0.12	0.77
Haloacetic Acids	ug/L	24	8.529	<8	11
Nitrate	mg/L	85	0.500	<0.50	0.51
Nitrite	mg/L	85	0.050	<0.05	<0.05
N-Nitrosodimethylamine (NDMA)	ug/L	2	0.001	<0.0008	<0.0009
Sodium	mg/L	8	15.425	12.10	19.20
Trihalomethanes	ug/L	26	19.156	3.80	29.50

*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	8	0.0005	<0.0005	<0.0005	0.0060
Arsenic	mg/L	8	0.0006	<0.0005	0.0007	0.01
Barium	mg/L	8	0.0368	0.0203	0.0906	1
Boron	mg/L	8	0.0285	0.0262	0.0344	5
Cadmium	mg/L	8	0.0005	<0.0005	<0.0005	0.0050
Chromium	mg/L	8	0.0005	<0.0005	<0.0005	0.05
Mercury	ug/L	8	0.0500	<0.05	<0.05	1
Selenium	mg/L	8	0.0005	<0.0005	<0.0005	0.05
Uranium	mg/L	8	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.

Test Parameter	Test Unit	No. of Samples	Average	Minimum	Maximum	ODWS Limit
1,1-dichloroethylene (vinylidene chloride)	ug/L	2	0.300	<0.30	<0.30	14
1,2-(o-dcb) Dichlorobenzene	ug/L	2	0.100	<0.10	<0.10	0.20
1,2-Dichloroethane	ug/L	2	0.100	<0.10	<0.10	5
1,4-(p-dcb) Dichlorobenzene	ug/L	2	0.100	<0.10	<0.10	5
2,3,4,6-Tetrachlorophenol	ug/L	2	0.500	<0.50	<0.50	100
2,4,6-Trichlorophenol	ug/L	2	0.500	<0.50	<0.50	5
2,4-Dichlorophenol	ug/L	2	0.700	<0.70	<0.70	900
2,4-dichlorophenoxyacetic acid (2,4-D)	ug/L	2	0.800	<0.80	<0.80	100
2-methyl-4-chlorophenoxyacetic acid	ug/L	2	5.000	<5	<5	100
Alachlor	ug/L	2	0.400	<0.40	<0.40	5
Atrazine + N-dealkylated metabolites	ug/L	2	0.200	<0.20	<0.20	5
Azinphos-methyl	ug/L	2	0.300	<0.30	<0.30	20
Benzene	ug/L	2	0.100	<0.10	<0.10	1
Benzo(a)pyrene	ug/L	2	0.010	<0.01	<0.01	0.01
Bromoxynil	ug/L	2	0.400	<0.40	<0.40	5
Carbaryl	ug/L	2	3.000	<3	<3	90
Carbofuran	ug/L	2	3.000	<3	<3	90
Carbon Tetrachloride	ug/L	2	0.200	<0.20	<0.20	2
Chlorpyrifos	ug/L	2	0.200	<0.20	<0.20	90
Diazinon	ug/L	2	0.200	<0.20	<0.20	20
Dicamba	ug/L	2	0.400	<0.40	<0.40	120
Dichloromethane	ug/L	2	2.000	<2	<2	50
Diclofop-methyl	ug/L	2	0.400	<0.40	<0.40	9
Dimethoate	ug/L	2	0.300	<0.30	<0.30	20
Diquat	ug/L	2	1.000	<1	<1	70
Diuron	ug/L	2	3.000	<3	<3	150
Glyphosate	ug/L	2	25.000	<25	<25	280
Malathion	ug/L	2	0.200	<0.20	<0.20	190
Metolachlor	ug/L	2	0.200	<0.20	<0.20	50
Metribuzin	ug/L	2	0.300	<0.30	<0.30	80
Monochlorobenzene	ug/L	2	0.100	<0.10	<0.10	80
Paraquat	ug/L	2	1.000	<1	<1	10
Pentachlorophenol	ug/L	2	0.400	<0.40	<0.40	60
Phorate	ug/L	2	0.200	<0.20	<0.20	2
Picloram	ug/L	2	0.700	<0.70	<0.70	190
Polychlorinated Biphenyls (PCBs)	ug/L	2	0.020	<0.02	<0.02	3
Prometryne	ug/L	2	0.200	<0.20	<0.20	1
Simazine	ug/L	2	0.200	<0.20	<0.20	10
Terbufos	ug/L	2	0.200	<0.20	<0.20	1
Tetrachloroethylene (perchloroethylene)	ug/L	2	0.300	<0.30	<0.30	10
Triallate	ug/L	2	4.000	<4	<4	230
Trichloroethylene	ug/L	2	0.100	<0.10	<0.10	5
Trifluralin	ug/L	2	0.006	<0.0060	<0.0060	45
Vinyl Chloride	ug/L	2	0.200	<0.20	<0.20	1

2021 Annual Drinking Water System Quality Report for Ballantrae/Musselman's Lake DWS

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

Drinking Water System Number: 220008658
Drinking Water System Name: Ballantrae/Musselman's Lake DWS
Drinking Water System Owner: The Regional Municipality of York
Drinking Water System Category: Large Municipal Residential
Drinking Water System Classification: Water Distribution and Supply II
Reporting period: Jan 1, 2021 - Dec 31, 2021

The Ballantrae/Musselman's Lake DWS serves approximately 5,050 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 Ballantrae/Musselman's Lake DWS:

Ballantrae-Musselman's Lake Distribution System (260006737)

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 Ballantrae/Musselman's Lake DWS

Introduction

The communities of Ballantrae and Musselman's Lake are centered on Aurora Road and Highway 48 in Whitchurch-Stouffville. Local groundwater is naturally high in minerals. York Region operates the water supply, while the Town of Whitchurch-Stouffville maintains water quality and distributes it to users. The Province governs York Region's operations with Acts and Regulations, a Permit to Take Water, a Municipal Drinking Water License and an operating Permit.

Raw water source

Groundwater

Profile of water in distribution system

Groundwater

Water treatment description

Ballantrae-Musselman's Lake system includes three wells and one storage facility. Chlorine provides disinfection and maintains a secondary residual. Sodium silicate is added to sequester naturally occurring iron and manganese. The storage facility holds treated water and maintains pressure. Tests confirm good ground water quality. Operators test the water and inspect the process. Online analyzers continuously monitor treatment and water flow. When a significant process or water quality issue is detected, the system automatically pauses operation until an operator takes action.

List of water treatment chemicals used in this system

Chlorine (Gas, Sodium Hypochlorite); Sodium Silicate

Brief description and breakdown of monetary expenses incurred

\$804,940 for treatment facility upgrades, elevated tank repairs and upgrades, well rehabilitation and maintenance, 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

Not Applicable

Intentionally blank. No notices were submitted for this report period.

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

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

Test Parameter	Sample Source	Count of Samples	Count of Presence
E. Coli	Raw	145	0
	Treated	104	0
Heterotrophic Plate Count	Treated	104	16
Total Coliforms	Raw	145	0
	Treated	104	0

**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
Free Chlorine	mg/L	8,760	1.56	0.00	3.43
Turbidity (Treated)	NTU	8,760	0.05	0.00	2.68

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	12	0.082	<0.05	0.13
Haloacetic Acids	ug/L	4	15.750	<8	21
Nitrate	mg/L	12	0.500	<0.50	<0.50
Nitrite	mg/L	12	0.050	<0.05	<0.05
Sodium	mg/L	3	11.550	10.20	12.80
Trihalomethanes	ug/L	6	22.325	5.70	28.20

*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	3	0.0005	<0.0005	<0.0005	0.0060
Arsenic	mg/L	3	0.0006	<0.0005	0.0007	0.01
Barium	mg/L	3	0.0664	0.0502	0.0865	1
Boron	mg/L	3	0.0153	0.0062	0.0229	5
Cadmium	mg/L	3	0.0005	<0.0005	<0.0005	0.0050
Chromium	mg/L	3	0.0005	<0.0005	<0.0005	0.05
Mercury	ug/L	3	0.0500	<0.05	<0.05	1
Selenium	mg/L	3	0.0005	<0.0005	<0.0005	0.05
Uranium	mg/L	3	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.

Test Parameter	Test Unit	No. of Samples	Average	Minimum	Maximum	ODWS Limit
1,1-dichloroethylene (vinylidene chloride)	ug/L	2	0.300	<0.30	<0.30	14
1,2-(o-dcb) Dichlorobenzene	ug/L	2	0.100	<0.10	<0.10	0.20
1,2-Dichloroethane	ug/L	2	0.100	<0.10	<0.10	5
1,4-(p-dcb) Dichlorobenzene	ug/L	2	0.100	<0.10	<0.10	5
2,3,4,6-Tetrachlorophenol	ug/L	2	0.500	<0.50	<0.50	100
2,4,6-Trichlorophenol	ug/L	2	0.500	<0.50	<0.50	5
2,4-Dichlorophenol	ug/L	2	0.700	<0.70	<0.70	900
2,4-dichlorophenoxyacetic acid (2,4-D)	ug/L	2	0.800	<0.80	<0.80	100
2-methyl-4-chlorophenoxyacetic acid	ug/L	2	5.000	<5	<5	100
Alachlor	ug/L	2	0.400	<0.40	<0.40	5
Atrazine + N-dealkylated metabolites	ug/L	2	0.200	<0.20	<0.20	5
Azinphos-methyl	ug/L	2	0.300	<0.30	<0.30	20
Benzene	ug/L	2	0.100	<0.10	<0.10	1
Benzo(a)pyrene	ug/L	2	0.010	<0.01	<0.01	0.01
Bromoxynil	ug/L	2	0.400	<0.40	<0.40	5
Carbaryl	ug/L	2	3.000	<3	<3	90
Carbofuran	ug/L	2	3.000	<3	<3	90
Carbon Tetrachloride	ug/L	2	0.200	<0.20	<0.20	2
Chlorpyrifos	ug/L	2	0.200	<0.20	<0.20	90
Diazinon	ug/L	2	0.200	<0.20	<0.20	20
Dicamba	ug/L	2	0.400	<0.40	<0.40	120
Dichloromethane	ug/L	2	2.000	<2	<2	50
Diclofop-methyl	ug/L	2	0.400	<0.40	<0.40	9
Dimethoate	ug/L	2	0.300	<0.30	<0.30	20
Diquat	ug/L	2	1.000	<1	<1	70
Diuron	ug/L	2	3.000	<3	<3	150
Glyphosate	ug/L	2	25.000	<25	<25	280
Malathion	ug/L	2	0.200	<0.20	<0.20	190
Metolachlor	ug/L	2	0.200	<0.20	<0.20	50
Metribuzin	ug/L	2	0.300	<0.30	<0.30	80
Monochlorobenzene	ug/L	2	0.100	<0.10	<0.10	80
Paraquat	ug/L	2	1.000	<1	<1	10
Pentachlorophenol	ug/L	2	0.400	<0.40	<0.40	60
Phorate	ug/L	2	0.200	<0.20	<0.20	2
Picloram	ug/L	2	0.700	<0.70	<0.70	190
Polychlorinated Biphenyls (PCBs)	ug/L	2	0.020	<0.02	<0.02	3
Prometryne	ug/L	2	0.200	<0.20	<0.20	1
Simazine	ug/L	2	0.200	<0.20	<0.20	10
Terbufos	ug/L	2	0.200	<0.20	<0.20	1
Tetrachloroethylene (perchloroethylene)	ug/L	2	0.300	<0.30	<0.30	10
Triallate	ug/L	2	4.000	<4	<4	230
Trichloroethylene	ug/L	2	0.100	<0.10	<0.10	5
Trifluralin	ug/L	2	0.006	<0.0060	<0.0060	45
Vinyl Chloride	ug/L	2	0.200	<0.20	<0.20	1

2021 Annual Drinking Water System Quality Report for Georgina DWS

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

Drinking Water System Number: 260026156
Drinking Water System Name: Georgina DWS
Drinking Water System Owner: The Regional Municipality of York
Drinking Water System Category: Large Municipal Residential
Drinking Water System Classification: Water Treatment III
Reporting period: Jan 1, 2021 - Dec 31, 2021

The Georgina DWS serves approximately 8,259 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
Georgina DWS:**

Keswick-Sutton Distribution System (260062686)

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 Georgina DWS

Introduction

The communities of Keswick and Sutton, and other lakeshore communities are located on the south shore of Lake Simcoe. Surface water from Lake Simcoe supplies these communities. The Keswick sub-system supplies the other half of this larger system. York Region operates the water supply, while the Town of Georgina maintains water quality and distributes it to users. The Province governs York Region's operations with Acts and Regulations, a Permit to Take Water, a Municipal Drinking Water License and an operating Permit.

Raw water source

Lake Simcoe

Profile of water in distribution system

Lake Simcoe

Water treatment description

The Georgina DWS includes one water treatment plant and one storage facility. Incoming water is screened and chlorine addition prevents mussel growth. Membrane filtration removes particles. Granular activated carbon improves taste and controls odour. UV light and chlorine are used for disinfection. Fluoride is added at levels recommended by Ontario's Chief Medical Officer of Health. Operators test the water and inspect the process. Online analyzers continuously monitor treatment and water flow. When a significant process or water quality issue is detected, the system automatically pauses operation until an operator takes action.

List of water treatment chemicals used in this system

Chlorine gas (for disinfection); Granular activated carbon; Non water treatment chemical: Hydrofluosilicic Acid applied; Filtration membranes cleaned with sodium hypochlorite, citric acid, sodium hydroxide, sodium bisulfite; Dechlorination of membrane filter and GAC washwater with sulphur dioxide.

Brief description and breakdown of monetary expenses incurred

\$2,218,811 for treatment plant 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
Filter Performance	Feb 2, 2021	>0.1 NTU	Operator attended site, facility restored to normal operation. Compliant grab sample taken.	Feb 1, 2021
Fluoride	Jan 26, 2021	2.00 mg/L	Flow halted upon alarm and prevented water from entering the distribution system. Operator attended site. Facility returned to normal operation. Compliant grab sample taken.	Jan 26, 2021
	Mar 24, 2021	1.89 mg/L	Flow halted upon alarm and prevented water from entering the distribution system. Operator attended site. Facility returned to normal operation. Compliant grab sample taken.	Mar 24, 2021
	Jun 4, 2021	2.00 mg/L	Flow halted upon alarm and prevented water from entering the distribution system. Operator attended site. Facility returned to normal operation. Compliant grab sample taken.	Jun 4, 2021
	Jun 7, 2021	2.00 mg/L	Flow halted upon alarm and prevented water from entering the distribution system. Operator attended site. Facility returned to normal operation. Compliant grab sample taken.	Jun 8, 2021
	Aug 26, 2021	2.00 mg/L	Flow halted upon alarm and prevented water from entering the distribution system. Operator attended site. Facility returned to normal operation. Compliant grab sample taken.	Aug 26, 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.

Test Parameter	Sample Source	Count of Samples	Count of Presence
E. Coli	Raw	52	0
	Treated	52	0
Heterotrophic Plate Count	Treated	52	2
Total Coliforms	Raw	52	17
	Treated	52	0

**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
Fluoride	mg/L	8,760	0.68	0.20	2.00
Free Chlorine	mg/L	8,760	1.65	0.00	2.60
Turbidity (Raw)	NTU	8,760	0.15	0.11	1.34
Turbidity (Treated)	NTU	8,760	0.03	0.00	5.00

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
Free Chlorine Backwash	mg/L	8,760	0.003	0	0.0970
Haloacetic Acids	ug/L	4	32.500	24	39
Microcystin (Raw)	ug/L	29	0.148	<0.10	<0.15
Microcystin (Treated)	ug/L	29	0.150	<0.10	0.1940
Nitrate	mg/L	8	0.500	<0.50	<0.50
Nitrite	mg/L	8	0.050	<0.05	<0.05
Sodium	mg/L	2	32.950	32.60	33.30
Total Suspended Solids Backwash	mg/L	8,760	2.896	0	40
Trihalomethanes	ug/L	26	41.943	21.50	73.50

*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	2	0.0005	<0.0005	<0.0005	0.0060
Arsenic	mg/L	2	0.0005	<0.0005	<0.0005	0.01
Barium	mg/L	2	0.0214	0.0214	0.0214	1
Boron	mg/L	2	0.0196	0.0189	0.0204	5
Cadmium	mg/L	2	0.0005	<0.0005	<0.0005	0.0050
Chromium	mg/L	2	0.0005	<0.0005	<0.0005	0.05
Mercury	ug/L	2	0.0500	<0.05	<0.05	1
Selenium	mg/L	2	0.0005	<0.0005	<0.0005	0.05
Uranium	mg/L	2	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.

Test Parameter	Test Unit	No. of Samples	Average	Minimum	Maximum	ODWS Limit
1,1-dichloroethylene (vinylidene chloride)	ug/L	1	0.300	<0.30	<0.30	14
1,2-(o-dcb) Dichlorobenzene	ug/L	1	0.100	<0.10	<0.10	0.20
1,2-Dichloroethane	ug/L	1	0.100	<0.10	<0.10	5
1,4-(p-dcb) Dichlorobenzene	ug/L	1	0.100	<0.10	<0.10	5
2,3,4,6-Tetrachlorophenol	ug/L	1	0.500	<0.50	<0.50	100
2,4,6-Trichlorophenol	ug/L	1	0.500	<0.50	<0.50	5
2,4-Dichlorophenol	ug/L	1	0.700	<0.70	<0.70	900
2,4-dichlorophenoxyacetic acid (2,4-D)	ug/L	1	0.800	<0.80	<0.80	100
2-methyl-4-chlorophenoxyacetic acid	ug/L	1	5.000	<5	<5	100
Alachlor	ug/L	1	0.400	<0.40	<0.40	5
Atrazine + N-dealkylated metabolites	ug/L	1	0.200	<0.20	<0.20	5
Azinphos-methyl	ug/L	1	0.300	<0.30	<0.30	20
Benzene	ug/L	1	0.100	<0.10	<0.10	1
Benzo(a)pyrene	ug/L	1	0.010	<0.01	<0.01	0.01
Bromoxynil	ug/L	1	0.400	<0.40	<0.40	5
Carbaryl	ug/L	1	3.000	<3	<3	90
Carbofuran	ug/L	1	3.000	<3	<3	90
Carbon Tetrachloride	ug/L	1	0.200	<0.20	<0.20	2
Chlorpyrifos	ug/L	1	0.200	<0.20	<0.20	90
Diazinon	ug/L	1	0.200	<0.20	<0.20	20
Dicamba	ug/L	1	0.400	<0.40	<0.40	120
Dichloromethane	ug/L	1	2.000	<2	<2	50
Diclofop-methyl	ug/L	1	0.400	<0.40	<0.40	9
Dimethoate	ug/L	1	0.300	<0.30	<0.30	20
Diquat	ug/L	1	1.000	<1	<1	70
Diuron	ug/L	1	3.000	<3	<3	150
Glyphosate	ug/L	1	25.000	<25	<25	280
Malathion	ug/L	1	0.200	<0.20	<0.20	190
Metolachlor	ug/L	1	0.200	<0.20	<0.20	50
Metribuzin	ug/L	1	0.300	<0.30	<0.30	80
Monochlorobenzene	ug/L	1	0.100	<0.10	<0.10	80
Paraquat	ug/L	1	1.000	<1	<1	10
Pentachlorophenol	ug/L	1	0.400	<0.40	<0.40	60
Phorate	ug/L	1	0.200	<0.20	<0.20	2
Picloram	ug/L	1	0.700	<0.70	<0.70	190
Polychlorinated Biphenyls (PCBs)	ug/L	1	0.020	<0.02	<0.02	3
Prometryne	ug/L	1	0.190	<0.19	<0.19	1
Simazine	ug/L	1	0.200	<0.20	<0.20	10
Terbufos	ug/L	1	0.200	<0.20	<0.20	1
Tetrachloroethylene (perchloroethylene)	ug/L	1	0.300	<0.30	<0.30	10
Triallate	ug/L	1	4.000	<4	<4	230
Trichloroethylene	ug/L	1	0.100	<0.10	<0.10	5
Trifluralin	ug/L	1	0.006	<0.0060	<0.0060	45
Vinyl Chloride	ug/L	1	0.200	<0.20	<0.20	1

2021 Annual Drinking Water System Quality Report for Holland Landing DWS

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

Drinking Water System Number: 220004046
Drinking Water System Name: Holland Landing DWS
Drinking Water System Owner: The Regional Municipality of York
Drinking Water System Category: Large Municipal Residential
Drinking Water System Classification: Water Distribution and Supply III
Reporting period: Jan 1, 2021 - Dec 31, 2021

The Holland Landing DWS serves approximately 10,470 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 Holland Landing DWS:

Holland Landing/Queensville/Sharon Distribution System (260001747)

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 Holland Landing DWS

Introduction

Holland Landing is located in western East Gwillimbury. Local groundwater is naturally high in minerals, and is blended with Lake Ontario water and connected groundwater systems from the York DWS. York Region operates the water supply, and the Town of East Gwillimbury maintains water quality and distributes it to users. The Province governs York 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

Holland Landing DWS includes two wells, two storage facilities (elevated tanks), and one booster pumping station. Chlorine provides disinfection, and chloramine provides a secondary residual. Sodium silicate is added to sequester naturally occurring iron and manganese. Storage facilities hold treated 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 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

Chlorine gas; Ammonia solution; Sodium Silicate

Brief description and breakdown of monetary expenses incurred

\$804,259 for well rehabilitation, electrical upgrades, 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
Sodium	Apr 15, 2021	21.9 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.

Test Parameter	Sample Source	Count of Samples	Count of Presence
E. Coli	Raw	102	0
	Treated	102	0
Heterotrophic Plate Count	Treated	102	14
Total Coliforms	Raw	102	0
	Treated	102	0

**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	2.54	0.00	3.76
Turbidity (Treated)	NTU	8,760	0.06	0.02	5.00

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	12	0.214	0.19	0.24
Haloacetic Acids	ug/L	4	8.000	<8	<8
Nitrate	mg/L	12	0.500	<0.50	<0.50
Nitrite	mg/L	12	0.050	<0.05	<0.05
N-Nitrosodimethylamine (NDMA)	ug/L	2	0.001	<0.0009	<0.0009
Sodium	mg/L	4	20.217	19.40	21.90
Trihalomethanes	ug/L	6	13.842	7.40	16.50

*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	3	0.0005	<0.0005	<0.0005	0.0060
Arsenic	mg/L	3	0.0005	<0.0005	<0.0005	0.01
Barium	mg/L	3	0.1487	0.1350	0.1690	1
Boron	mg/L	3	0.0599	0.0568	0.0657	5
Cadmium	mg/L	3	0.0005	<0.0005	<0.0005	0.0050
Chromium	mg/L	3	0.0005	<0.0005	<0.0005	0.05
Mercury	ug/L	3	0.0500	<0.05	<0.05	1
Selenium	mg/L	3	0.0005	<0.0005	<0.0005	0.05
Uranium	mg/L	3	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.

Test Parameter	Test Unit	No. of Samples	Average	Minimum	Maximum	ODWS Limit
1,1-dichloroethylene (vinylidene chloride)	ug/L	2	0.300	<0.30	<0.30	14
1,2-(o-dcb) Dichlorobenzene	ug/L	2	0.100	<0.10	<0.10	0.20
1,2-Dichloroethane	ug/L	2	0.100	<0.10	<0.10	5
1,4-(p-dcb) Dichlorobenzene	ug/L	2	0.100	<0.10	<0.10	5
2,3,4,6-Tetrachlorophenol	ug/L	2	0.500	<0.50	<0.50	100
2,4,6-Trichlorophenol	ug/L	2	0.500	<0.50	<0.50	5
2,4-Dichlorophenol	ug/L	2	0.700	<0.70	<0.70	900
2,4-dichlorophenoxyacetic acid (2,4-D)	ug/L	2	0.800	<0.80	<0.80	100
2-methyl-4-chlorophenoxyacetic acid	ug/L	2	5.000	<5	<5	100
Alachlor	ug/L	3	0.400	<0.40	<0.40	5
Atrazine + N-dealkylated metabolites	ug/L	3	0.200	<0.20	<0.20	5
Azinphos-methyl	ug/L	2	0.300	<0.30	<0.30	20
Benzene	ug/L	2	0.100	<0.10	<0.10	1
Benzo(a)pyrene	ug/L	2	0.010	<0.01	<0.01	0.01
Bromoxynil	ug/L	2	0.400	<0.40	<0.40	5
Carbaryl	ug/L	2	3.000	<3	<3	90
Carbofuran	ug/L	2	3.000	<3	<3	90
Carbon Tetrachloride	ug/L	2	0.200	<0.20	<0.20	2
Chlorpyrifos	ug/L	2	0.200	<0.20	<0.20	90
Diazinon	ug/L	2	0.200	<0.20	<0.20	20
Dicamba	ug/L	2	0.400	<0.40	<0.40	120
Dichloromethane	ug/L	2	2.000	<2	<2	50
Diclofop-methyl	ug/L	2	0.400	<0.40	<0.40	9
Dimethoate	ug/L	2	0.300	<0.30	<0.30	20
Diquat	ug/L	2	1.000	<1	<1	70
Diuron	ug/L	2	3.000	<3	<3	150
Glyphosate	ug/L	2	25.000	<25	<25	280
Malathion	ug/L	2	0.200	<0.20	<0.20	190
Metolachlor	ug/L	3	0.200	<0.20	<0.20	50
Metribuzin	ug/L	3	0.300	<0.30	<0.30	80
Monochlorobenzene	ug/L	2	0.100	<0.10	<0.10	80
Paraquat	ug/L	2	1.000	<1	<1	10
Pentachlorophenol	ug/L	2	0.400	<0.40	<0.40	60
Phorate	ug/L	2	0.200	<0.20	<0.20	2
Picloram	ug/L	2	0.700	<0.70	<0.70	190
Polychlorinated Biphenyls (PCBs)	ug/L	2	0.020	<0.02	<0.02	3
Prometryne	ug/L	3	0.193	<0.19	<0.20	1
Simazine	ug/L	3	0.200	<0.20	<0.20	10
Terbufos	ug/L	2	0.200	<0.20	<0.20	1
Tetrachloroethylene (perchloroethylene)	ug/L	2	0.300	<0.30	<0.30	10
Triallate	ug/L	2	4.000	<4	<4	230
Trichloroethylene	ug/L	2	0.100	<0.10	<0.10	5
Trifluralin	ug/L	2	0.006	<0.0060	<0.0060	45
Vinyl Chloride	ug/L	2	0.200	<0.20	<0.20	1

2021 Annual Drinking Water System Quality Report for Keswick DWS

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

Drinking Water System Number: 210003280
Drinking Water System Name: Keswick DWS
Drinking Water System Owner: The Regional Municipality of York
Drinking Water System Category: Large Municipal Residential
Drinking Water System Classification: Water Treatment III
Reporting period: Jan 1, 2021 - Dec 31, 2021

The Keswick DWS serves approximately 33,054 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 Keswick DWS:

Keswick-Sutton Distribution System (260062686)

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 Keswick DWS

Introduction

The community of Keswick is located on the east shore of Cook's Bay in the Town of Georgina. The Keswick sub-system is part of the larger Georgina DWS. Surface water from Lake Simcoe and Cook's Bay supplies this community. York Region operates the water supply, and the Town of Georgina maintains water quality and distributes it to users. The Province governs York Region's operations with Acts and Regulations, a Permit to Take Water, a Municipal Drinking Water License and an operating Permit.

Raw water source

Lake Simcoe

Profile of water in distribution system

Lake Simcoe

Water treatment description

The Keswick DWS includes one Water Treatment Plant and three storage/rechlorination facilities. Lake water is screened and chlorine prevents mussel growth on the intake pipe. Filtration removes particles. Granular activated carbon improves water taste, and chlorine disinfects it. Fluoride is added at levels recommended by Ontario's Chief Medical Officer of Health. Operators test the water and inspect the process. Online analyzers continuously monitor the facilities and automatically pause operation if an issue is detected.

List of water treatment chemicals used in this system

Chlorine gas; Carbon Dioxide (pH control); Polyaluminum Chloride (coagulation); Granular activated carbon (filtration); Non water treatment chemical: Hydrofluosilicic Acid applied

Brief description and breakdown of monetary expenses incurred

\$1,149,458 for treatment plant upgrades, 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
Sodium	Apr 7, 2021	32.9 mg/L	Operator attended site. Resample taken.	Apr 13, 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.

Test Parameter	Sample Source	Count of Samples	Count of Presence
E. Coli	Raw	31	0
	Treated	13	0
Heterotrophic Plate Count	Treated	13	4
Total Coliforms	Raw	31	20
	Treated	13	0

**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
Fluoride	mg/L	8,760	0.60	0.20	1.18
Free Chlorine	mg/L	8,760	1.32	0.00	5.00
Turbidity (Raw)	NTU	8,760	0.31	0.07	25.00
Turbidity (Treated)	NTU	8,760	0.07	0.00	3.00

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
Haloacetic Acids	ug/L	8	41.125	29	59
Microcystin (Raw)	ug/L	20	0.150	<0.15	<0.15
Nitrate	mg/L	9	0.500	<0.50	<0.50
Nitrite	mg/L	9	0.050	<0.05	<0.05
Sodium	mg/L	3	33.067	32.70	33.60
Total Suspended Solids Backwash	mg/L	3	6.900	4.20	11.80
Trihalomethanes	ug/L	27	55.500	23.10	88.10

*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	2	0.0005	<0.0005	<0.0005	0.0060
Arsenic	mg/L	2	0.0005	<0.0005	<0.0005	0.01
Barium	mg/L	2	0.0210	0.0209	0.0212	1
Boron	mg/L	2	0.0215	0.0213	0.0217	5
Cadmium	mg/L	2	0.0005	<0.0005	<0.0005	0.0050
Chromium	mg/L	2	0.0005	<0.0005	<0.0005	0.05
Mercury	ug/L	2	0.0500	<0.05	<0.05	1
Selenium	mg/L	2	0.0005	<0.0005	<0.0005	0.05
Uranium	mg/L	2	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

**The Keswick DWS was taken offline for
maintenance prior to annual organic parameters sampling.**

2021 Annual Drinking Water System Quality Report for King City DWS

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

Drinking Water System Number: 220002299
Drinking Water System Name: King City DWS
Drinking Water System Owner: The Regional Municipality of York
Drinking Water System Category: Large Municipal Residential
Drinking Water System Classification: Water Distribution and Supply II
Reporting period: Jan 1, 2021 - Dec 31, 2021

The King City DWS serves approximately 7,940 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 King City DWS:

King City Distribution System (260005138)

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 King City DWS

Introduction

King City is a community in south-eastern King Township. King City DWS provides water from Lake Ontario through the York DWS. Two wells are maintained as an emergency backup water source. York Region operates the water supply, and King Township maintains and distributes water to users. The Province governs York 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

King City DWS includes two wells, one pumping station, and two storage facilities. If the wells are used for supply, chlorine provides disinfection, and chloramine provides a secondary residual. Sodium silicate is added to sequester naturally occurring iron and manganese. The backup wells and treatment are tested regularly to ensure safety and performance. Storage facilities hold treated water and maintain pressure. Operators test the water and inspect the process. Online analyzers continuously monitor treatment and water flow. 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

Water in King City comes pre-treated from the York DWS. Well facilities were not run for supply, but can apply chlorine (gas) and ammonia solution for chloramination, and sodium silicate. Treatment systems and well performance are tested regularly in case they are ever needed for backup capacity.

Brief description and breakdown of monetary expenses incurred

\$302,346 for treatment facility upgrades, elevated tank repairs and upgrades, well rehabilitation and maintenance, 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

Not Applicable

Intentionally blank. No notices were submitted for this report period.

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

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

E. Coli	Raw	102	0
Total Coliforms			

Note: no treated results are available for the reporting period as the wells were not operational.

**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	1.97	0.00	3.11

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	7	0.576	0.47	0.66
Haloacetic Acids	ug/L	7	8.000	<8	8
Nitrate	mg/L	7	0.500	<0.50	<0.50
Nitrite	mg/L	7	0.050	<0.05	<0.05
Sodium	mg/L	1	19.900	19.90	19.90
Trihalomethanes	ug/L	9	20.079	14.80	23.60

*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	1	0.0005	<0.0005	<0.0005	0.0060
Arsenic	mg/L	1	0.0007	0.0007	0.0007	0.01
Barium	mg/L	1	0.0201	0.0201	0.0201	1
Boron	mg/L	1	0.0280	0.0280	0.0280	5
Cadmium	mg/L	1	0.0005	<0.0005	<0.0005	0.0050
Chromium	mg/L	1	0.0005	<0.0005	<0.0005	0.05
Mercury	ug/L	1	0.0500	<0.05	<0.05	1
Selenium	mg/L	1	0.0005	<0.0005	<0.0005	0.05
Uranium	mg/L	1	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 King City DWS
as it has no active treatment facilities.**

2021 Annual Drinking Water System Quality Report for Kleinburg DWS

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

Drinking Water System Number: 220002360
Drinking Water System Name: Kleinburg DWS
Drinking Water System Owner: The Regional Municipality of York
Drinking Water System Category: Large Municipal Residential
Drinking Water System Classification: Water Distribution and Supply II
Reporting period: Jan 1, 2021 - Dec 31, 2021

The Kleinburg DWS serves approximately 8,550 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 Kleinburg DWS:

Vaughan Distribution System (260003097)

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 Kleinburg DWS

Introduction

Kleinburg is a village in the City of Vaughan. Kleinburg DWS provides water from Lake Ontario through the York DWS. Two wells are maintained as an emergency backup water source. York Region operates the water supply, and the City of Vaughan maintains and distributes water to users. The Province governs York 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

Kleinburg DWS includes two wells, one storage facility and two booster pumping stations. Chlorine provides disinfection, and chloramine provides a secondary residual. Sodium silicate is added to sequester naturally occurring iron and manganese. The storage facility holds treated water and helps the booster stations maintain pressure. Operators test the water and inspect the process. Online analyzers continuously monitor treatment and water flow. 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

Water in Kleinburg comes pre-treated from the York DWS. Well facilities were not run for supply, but can apply chlorine (gas) and ammonia solution for chloramination, and sodium silicate. Treatment systems and well performance are tested regularly in case they are ever needed for backup capacity.

Brief description and breakdown of monetary expenses incurred

\$73,413 for well rehabilitation and maintenance, 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

Not Applicable

Intentionally blank. No notices were submitted for this report period.

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

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

Test Parameter	Sample Source	Count of Samples	Count of Presence
E. Coli	Raw	102	0
Total Coliforms	Raw	102	0

Note: no treated results are available for the reporting period as the wells were not operational.

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

Test Parameter					
Combined Chlorine	mg/L	8,760	1.87	0.06	3.37

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	4	0.575	0.49	0.67
Haloacetic Acids	ug/L	4	8.025	<8	8.10
Nitrate	mg/L	4	0.500	<0.50	<0.50
Nitrite	mg/L	4	0.050	<0.05	<0.05
Sodium	mg/L	1	18.300	18.30	18.30
Trihalomethanes	ug/L	4	20.650	16	26

*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	1	0.0005	<0.0005	<0.0005	0.0060
Arsenic	mg/L	1	0.0007	0.0007	0.0007	0.01
Barium	mg/L	1	0.0204	0.0204	0.0204	1
Boron	mg/L	1	0.0275	0.0275	0.0275	5
Cadmium	mg/L	1	0.0005	<0.0005	<0.0005	0.0050
Chromium	mg/L	1	0.0005	<0.0005	<0.0005	0.05
Mercury	ug/L	1	0.0500	<0.05	<0.05	1
Selenium	mg/L	1	0.0005	<0.0005	<0.0005	0.05
Uranium	mg/L	1	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 Kleinburg DWS
as it has no active treatment facilities.**

2021 Annual Drinking Water System Quality Report for Mount Albert DWS

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

Drinking Water System Number: 220006543
Drinking Water System Name: Mount Albert DWS
Drinking Water System Owner: The Regional Municipality of York
Drinking Water System Category: Large Municipal Residential
Drinking Water System Classification: Water Distribution and Supply II
Reporting period: Jan 1, 2021 - Dec 31, 2021

The Mount Albert DWS serves approximately 5,656 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 Mount Albert DWS:

Mount Albert Distribution System (260002265)

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 Mount Albert DWS

Introduction

The village of Mount Albert is located in the east side of Town of East Gwillimbury around Mount Albert Road, between Highway 48 and York Durham Line. Local groundwater is naturally high in minerals. York Region operates the water supply, while the Town of East Gwillimbury maintains water quality and distributes it to users. The Province governs York Region's operations with Acts and Regulations, a Permit to Take Water, a Municipal Drinking Water License and an operating Permit.

Raw water source

Groundwater

Profile of water in distribution system

Groundwater

Water treatment description

Mount Albert DWS includes three wells and two storage facilities. Chlorine provides disinfection and maintains a secondary residual. Sodium silicate is added to sequester naturally occurring iron and manganese. Storage facilities hold treated water and maintain pressure. Tests confirm good groundwater quality. Operators test the water and inspect the process. Online analyzers continuously monitor treatment and water flow. 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

Chlorine (Sodium Hypochlorite and Chlorine Gas); Sodium Silicate

Brief description and breakdown of monetary expenses incurred

\$93,823 for well rehabilitation and maintenance, 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

Not Applicable

Intentionally blank. No notices were submitted for this report period.

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

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

Test Parameter	Sample Source	Count of Samples	Count of Presence
E. Coli	Raw	128	0
	Treated	104	0
Heterotrophic Plate Count	Treated	104	32
Total Coliforms	Raw	128	0
	Treated	104	0

**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
Free Chlorine	mg/L	8,760	1.60	0.00	3.77
Turbidity (Treated)	NTU	8,760	0.07	0.03	4.22

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	12	0.055	<0.05	0.06
Haloacetic Acids	ug/L	4	8.000	<8	<8
Nitrate	mg/L	12	2.196	<0.50	3.90
Nitrite	mg/L	12	0.050	<0.05	<0.05
Sodium	mg/L	3	12.075	10.60	14.30
Trihalomethanes	ug/L	6	18.625	1.20	26

*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	3	0.0005	<0.0005	<0.0005	0.0060
Arsenic	mg/L	3	0.0005	<0.0005	<0.0005	0.01
Barium	mg/L	3	0.0545	0.0485	0.0620	1
Boron	mg/L	3	0.0089	0.0086	0.0091	5
Cadmium	mg/L	3	0.0005	<0.0005	<0.0005	0.0050
Chromium	mg/L	3	0.0005	<0.0005	<0.0005	0.05
Mercury	ug/L	3	0.0500	<0.05	<0.05	1
Selenium	mg/L	3	0.0005	<0.0005	<0.0005	0.05
Uranium	mg/L	3	0.0037	<0.0005	0.0063	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.

Test Parameter	Test Unit	No. of Samples	Average	Minimum	Maximum	ODWS Limit
1,1-dichloroethylene (vinylidene chloride)	ug/L	2	0.300	<0.30	<0.30	14
1,2-(o-dcb) Dichlorobenzene	ug/L	2	0.100	<0.10	<0.10	0.20
1,2-Dichloroethane	ug/L	2	0.100	<0.10	<0.10	5
1,4-(p-dcb) Dichlorobenzene	ug/L	2	0.100	<0.10	<0.10	5
2,3,4,6-Tetrachlorophenol	ug/L	2	0.500	<0.50	<0.50	100
2,4,6-Trichlorophenol	ug/L	2	0.500	<0.50	<0.50	5
2,4-Dichlorophenol	ug/L	2	0.700	<0.70	<0.70	900
2,4-dichlorophenoxyacetic acid (2,4-D)	ug/L	2	0.800	<0.80	<0.80	100
2-methyl-4-chlorophenoxyacetic acid	ug/L	2	5.000	<5	<5	100
Alachlor	ug/L	2	0.400	<0.40	<0.40	5
Atrazine + N-dealkylated metabolites	ug/L	2	0.200	<0.20	<0.20	5
Azinphos-methyl	ug/L	2	0.300	<0.30	<0.30	20
Benzene	ug/L	2	0.100	<0.10	<0.10	1
Benzo(a)pyrene	ug/L	2	0.010	<0.01	<0.01	0.01
Bromoxynil	ug/L	2	0.400	<0.40	<0.40	5
Carbaryl	ug/L	2	3.000	<3	<3	90
Carbofuran	ug/L	2	3.000	<3	<3	90
Carbon Tetrachloride	ug/L	2	0.200	<0.20	<0.20	2
Chlorpyrifos	ug/L	2	0.200	<0.20	<0.20	90
Diazinon	ug/L	2	0.200	<0.20	<0.20	20
Dicamba	ug/L	2	0.400	<0.40	<0.40	120
Dichloromethane	ug/L	2	2.000	<2	<2	50
Diclofop-methyl	ug/L	2	0.400	<0.40	<0.40	9
Dimethoate	ug/L	2	0.300	<0.30	<0.30	20
Diquat	ug/L	2	1.000	<1	<1	70
Diuron	ug/L	2	3.000	<3	<3	150
Glyphosate	ug/L	2	25.000	<25	<25	280
Malathion	ug/L	2	0.200	<0.20	<0.20	190
Metolachlor	ug/L	2	0.200	<0.20	<0.20	50
Metribuzin	ug/L	2	0.300	<0.30	<0.30	80
Monochlorobenzene	ug/L	2	0.100	<0.10	<0.10	80
Paraquat	ug/L	2	1.000	<1	<1	10
Pentachlorophenol	ug/L	2	0.400	<0.40	<0.40	60
Phorate	ug/L	2	0.200	<0.20	<0.20	2
Picloram	ug/L	2	0.700	<0.70	<0.70	190
Polychlorinated Biphenyls (PCBs)	ug/L	2	0.020	<0.02	<0.02	3
Prometryne	ug/L	2	0.200	<0.20	<0.20	1
Simazine	ug/L	2	0.200	<0.20	<0.20	10
Terbufos	ug/L	2	0.200	<0.20	<0.20	1
Tetrachloroethylene (perchloroethylene)	ug/L	2	0.300	<0.30	<0.30	10
Triallate	ug/L	2	4.000	<4	<4	230
Trichloroethylene	ug/L	2	0.100	<0.10	<0.10	5
Trifluralin	ug/L	2	0.006	<0.0060	<0.0060	45
Vinyl Chloride	ug/L	2	0.200	<0.20	<0.20	1

2021 Annual Drinking Water System 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
Drinking Water System Category: Large Municipal Residential
Drinking Water System Classification: Water Distribution and Supply III
Reporting period: Jan 1, 2021 - Dec 31, 2021

The Newmarket DWS serves approximately 97,970 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 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)

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 Newmarket DWS

Introduction

The Town of Newmarket is located centrally in York Region. Groundwater from the Newmarket wells is blended with water from Lake Ontario and groundwater from Aurora from the York DWS. York Region operates the water supply, and the Town of Newmarket maintains and distributes water to users. The Province governs York 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 five wells, six storage facilities, and two booster pumping stations. Chlorine provides disinfection, and chloramine provides a secondary residual. One of these facilities also re-chloraminates to boost the residual. Sodium silicate is added to sequester naturally occurring iron and manganese. Storage facilities hold treated water and help booster stations maintain pressure. Operators test the water and inspect the process. 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

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

Brief description and breakdown of monetary expenses incurred

\$1,641,475 for well rehabilitation and maintenance, watermain repair, new water meter chamber installation, elevated tank repairs and upgrades, SCADA upgrades, valve chamber upgrades, 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

Not Applicable

Intentionally blank. No notices were submitted for this report period.

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

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

Test Parameter	Sample Source	Count of Samples	Count of Presence
E. Coli	Raw	207	0
	Treated	104	0
Heterotrophic Plate Count	Treated	104	23
Total Coliforms	Raw	207	0
	Treated	104	0

**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	2.60	0.00	3.99
Turbidity (Treated)	NTU	8,760	0.05	0.02	1.30

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	59	0.332	0.13	0.64
Haloacetic Acids	ug/L	15	8.631	<8	10
Nitrate	mg/L	59	0.500	<0.50	<0.50
Nitrite	mg/L	59	0.050	<0.05	<0.05
N-Nitrosodimethylamine (NDMA)	ug/L	14	0.001	<0.0008	0.0013
Sodium	mg/L	5	17.583	15.90	18.90
Trihalomethanes	ug/L	17	19.038	6.40	28.40

*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	5	0.0005	<0.0005	<0.0005	0.0060
Arsenic	mg/L	5	0.0005	<0.0005	0.0006	0.01
Barium	mg/L	5	0.0807	0.0215	0.1630	1
Boron	mg/L	5	0.0340	0.0281	0.0441	5
Cadmium	mg/L	5	0.0005	<0.0005	<0.0005	0.0050
Chromium	mg/L	5	0.0005	<0.0005	<0.0005	0.05
Mercury	ug/L	5	0.0500	<0.05	<0.05	1
Selenium	mg/L	5	0.0005	<0.0005	<0.0005	0.05
Uranium	mg/L	5	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.

Test Parameter	Test Unit	No. of Samples	Average	Minimum	Maximum	ODWS Limit
1,1-dichloroethylene (vinylidene chloride)	ug/L	2	0.300	<0.30	<0.30	14
1,2-(o-dcb) Dichlorobenzene	ug/L	2	0.100	<0.10	<0.10	0.20
1,2-Dichloroethane	ug/L	2	0.100	<0.10	<0.10	5
1,4-(p-dcb) Dichlorobenzene	ug/L	2	0.100	<0.10	<0.10	5
2,3,4,6-Tetrachlorophenol	ug/L	2	0.500	<0.50	<0.50	100
2,4,6-Trichlorophenol	ug/L	2	0.500	<0.50	<0.50	5
2,4-Dichlorophenol	ug/L	2	0.700	<0.70	<0.70	900
2,4-dichlorophenoxyacetic acid (2,4-D)	ug/L	2	0.800	<0.80	<0.80	100
2-methyl-4-chlorophenoxyacetic acid	ug/L	2	5.000	<5	<5	100
Alachlor	ug/L	2	0.400	<0.40	<0.40	5
Atrazine + N-dealkylated metabolites	ug/L	2	0.200	<0.20	<0.20	5
Azinphos-methyl	ug/L	2	0.300	<0.30	<0.30	20
Benzene	ug/L	2	0.100	<0.10	<0.10	1
Benzo(a)pyrene	ug/L	2	0.010	<0.01	<0.01	0.01
Bromoxynil	ug/L	2	0.400	<0.40	<0.40	5
Carbaryl	ug/L	2	3.000	<3	<3	90
Carbofuran	ug/L	2	3.000	<3	<3	90
Carbon Tetrachloride	ug/L	2	0.200	<0.20	<0.20	2
Chlorpyrifos	ug/L	2	0.200	<0.20	<0.20	90
Diazinon	ug/L	2	0.200	<0.20	<0.20	20
Dicamba	ug/L	2	0.400	<0.40	<0.40	120
Dichloromethane	ug/L	2	2.000	<2	<2	50
Diclofop-methyl	ug/L	2	0.400	<0.40	<0.40	9
Dimethoate	ug/L	2	0.300	<0.30	<0.30	20
Diquat	ug/L	2	1.000	<1	<1	70
Diuron	ug/L	2	3.000	<3	<3	150
Glyphosate	ug/L	2	25.000	<25	<25	280
Malathion	ug/L	2	0.200	<0.20	<0.20	190
Metolachlor	ug/L	2	0.200	<0.20	<0.20	50
Metribuzin	ug/L	2	0.300	<0.30	<0.30	80
Monochlorobenzene	ug/L	2	0.100	<0.10	<0.10	80
Paraquat	ug/L	2	1.000	<1	<1	10
Pentachlorophenol	ug/L	2	0.400	<0.40	<0.40	60
Phorate	ug/L	2	0.200	<0.20	<0.20	2
Picloram	ug/L	2	0.700	<0.70	<0.70	190
Polychlorinated Biphenyls (PCBs)	ug/L	2	0.020	<0.02	<0.02	3
Prometryne	ug/L	2	0.195	<0.19	<0.20	1
Simazine	ug/L	2	0.200	<0.20	<0.20	10
Terbufos	ug/L	2	0.200	<0.20	<0.20	1
Tetrachloroethylene (perchloroethylene)	ug/L	2	0.300	<0.30	<0.30	10
Triallate	ug/L	2	4.000	<4	<4	230
Trichloroethylene	ug/L	2	0.100	<0.10	<0.10	5
Trifluralin	ug/L	2	0.006	<0.0060	<0.0060	45
Vinyl Chloride	ug/L	2	0.200	<0.20	<0.20	1

2021 Annual Drinking Water System Quality Report for Nobleton DWS

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

Drinking Water System Number: 220002306
Drinking Water System Name: Nobleton DWS
Drinking Water System Owner: The Regional Municipality of York
Drinking Water System Category: Large Municipal Residential
Drinking Water System Classification: Water Distribution and Supply II
Reporting period: Jan 1, 2021 - Dec 31, 2021

The Nobleton DWS serves approximately 6,105 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 Nobleton DWS:

Nobleton Distribution System-260002577

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 Nobleton DWS

Introduction

Nobleton is located in King Township, and the municipal drinking water system is centered on King Road and Highway 27. Local groundwater is naturally high in minerals. Tests confirm ground water quality. York Region operates the water supply, while King Township maintains water quality and distributes it to users. The Province governs York Region's operations with Acts and Regulations, a Permit to Take Water, a Municipal Drinking Water License and an operating Permit.

Raw water source

Groundwater

Profile of water in distribution system

Groundwater

Water treatment description

Nobleton DWS includes three wells, two storage facilities, and one booster pumping station. Chlorine provides disinfection and maintains a secondary residual. Sodium silicate is added to sequester naturally occurring iron and manganese. Storage facilities hold treated water and help the booster station maintain pressure. Operators test the water and inspect the process. Online analyzers continuously monitor treatment and water flow. 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

Chlorine (Sodium Hypochlorite and Chlorine Gas); Sodium Silicate

Brief description and breakdown of monetary expenses incurred

\$308,633 for treatment facility upgrades, well rehabilitation and maintenance, 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

Not Applicable

Intentionally blank. No notices were submitted for this report period.

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

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

Test Parameter	Sample Source	Count of Samples	Count of Presence
E. Coli	Raw	145	1
	Treated	142	0
Heterotrophic Plate Count	Treated	142	32
Total Coliforms	Raw	145	3
	Treated	142	0

**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
Free Chlorine	mg/L	8,760	1.61	0.00	3.71
Turbidity (Treated)	NTU	8,760	0.08	0.02	5.00

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	18	0.123	0.11	0.15
Haloacetic Acids	ug/L	8	9.625	<8	12
Nitrate	mg/L	18	0.500	<0.50	<0.50
Nitrite	mg/L	18	0.050	<0.05	<0.05
Sodium	mg/L	4	15.875	13	19
Trihalomethanes	ug/L	10	29.975	5.50	45.80

*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	4	0.0005	<0.0005	<0.0005	0.0060
Arsenic	mg/L	4	0.0005	<0.0005	<0.0005	0.01
Barium	mg/L	4	0.2012	0.1840	0.22	1
Boron	mg/L	4	0.0408	0.0340	0.0485	5
Cadmium	mg/L	4	0.0005	<0.0005	<0.0005	0.0050
Chromium	mg/L	4	0.0005	<0.0005	<0.0005	0.05
Mercury	ug/L	4	0.0500	<0.05	<0.05	1
Selenium	mg/L	4	0.0005	<0.0005	<0.0005	0.05
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 three 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
1,1-dichloroethylene (vinylidene chloride)	ug/L	2	0.300	<0.30	<0.30	14
1,2-(o-dcb) Dichlorobenzene	ug/L	2	0.100	<0.10	<0.10	0.20
1,2-Dichloroethane	ug/L	2	0.100	<0.10	<0.10	5
1,4-(p-dcb) Dichlorobenzene	ug/L	2	0.100	<0.10	<0.10	5
2,3,4,6-Tetrachlorophenol	ug/L	2	0.500	<0.50	<0.50	100
2,4,6-Trichlorophenol	ug/L	2	0.500	<0.50	<0.50	5
2,4-Dichlorophenol	ug/L	2	0.700	<0.70	<0.70	900
2,4-dichlorophenoxyacetic acid (2,4-D)	ug/L	2	0.800	<0.80	<0.80	100
2-methyl-4-chlorophenoxyacetic acid	ug/L	2	5.000	<5	<5	100
Alachlor	ug/L	3	0.400	<0.40	<0.40	5
Atrazine + N-dealkylated metabolites	ug/L	3	0.200	<0.20	<0.20	5
Azinphos-methyl	ug/L	2	0.300	<0.30	<0.30	20
Benzene	ug/L	2	0.100	<0.10	<0.10	1
Benzo(a)pyrene	ug/L	2	0.010	<0.01	<0.01	0.01
Bromoxynil	ug/L	2	0.400	<0.40	<0.40	5
Carbaryl	ug/L	2	3.000	<3	<3	90
Carbofuran	ug/L	2	3.000	<3	<3	90
Carbon Tetrachloride	ug/L	2	0.200	<0.20	<0.20	2
Chlorpyrifos	ug/L	2	0.200	<0.20	<0.20	90
Diazinon	ug/L	2	0.200	<0.20	<0.20	20
Dicamba	ug/L	2	0.400	<0.40	<0.40	120
Dichloromethane	ug/L	2	2.000	<2	<2	50
Diclofop-methyl	ug/L	2	0.400	<0.40	<0.40	9
Dimethoate	ug/L	2	0.300	<0.30	<0.30	20
Diquat	ug/L	2	1.000	<1	<1	70
Diuron	ug/L	2	3.000	<3	<3	150
Glyphosate	ug/L	2	25.000	<25	<25	280
Malathion	ug/L	2	0.200	<0.20	<0.20	190
Metolachlor	ug/L	3	0.200	<0.20	<0.20	50
Metribuzin	ug/L	3	0.300	<0.30	<0.30	80
Monochlorobenzene	ug/L	2	0.100	<0.10	<0.10	80
Paraquat	ug/L	2	1.000	<1	<1	10
Pentachlorophenol	ug/L	2	0.400	<0.40	<0.40	60
Phorate	ug/L	2	0.200	<0.20	<0.20	2
Picloram	ug/L	2	0.700	<0.70	<0.70	190
Polychlorinated Biphenyls (PCBs)	ug/L	2	0.020	<0.02	<0.02	3
Prometryne	ug/L	3	0.200	<0.20	<0.20	1
Simazine	ug/L	3	0.200	<0.20	<0.20	10
Terbufos	ug/L	2	0.200	<0.20	<0.20	1
Tetrachloroethylene (perchloroethylene)	ug/L	2	0.300	<0.30	<0.30	10
Triallate	ug/L	2	4.000	<4	<4	230
Trichloroethylene	ug/L	2	0.100	<0.10	<0.10	5
Trifluralin	ug/L	2	0.006	<0.0060	<0.0060	45
Vinyl Chloride	ug/L	2	0.200	<0.20	<0.20	1

2021 Annual Drinking Water System Quality Report for Schomberg DWS

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

Drinking Water System Number: 220004901

Drinking Water System Name: Schomberg DWS

Drinking Water System Owner: The Regional Municipality of York

Drinking Water System Category: Large Municipal Residential

Drinking Water System Classification: Water Distribution and Supply II, Water Treatment II

Reporting period: Jan 1, 2021 - Dec 31, 2021

The Schomberg DWS serves approximately 2,941 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 Schomberg DWS:

Schomberg Distribution System (260005151)

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 Schomberg DWS

Introduction

Schomberg is located within the Township of King around the intersections of Highway 27 and Highway 9, just south of the border with Simcoe County. Local groundwater is naturally high in minerals. Tests confirm ground water quality. York Region operates the water supply, while King Township maintains water quality and distributes it to users. The Province governs York Region's operations with Acts and Regulations, a Permit to Take Water, a Municipal Drinking Water License and an operating Permit.

Raw water source

Groundwater

Profile of water in distribution system

Groundwater

Water treatment description

Schomberg DWS includes one Water treatment Plant, three wells and one storage/rechloramination facility. Naturally occurring methane is removed through pre-oxidation with chlorine followed by air stripping. Potassium permanganate is added for iron and manganese removal using media filtration. Water is disinfected with UV light, followed by chlorine which combines with naturally occurring ammonia to form chloramines to provide a secondary residual. Operators test the water and inspect the process. 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

Potassium Permanganate; Chlorine gas (forms chloramine when it combines with naturally occurring ammonia)

Brief description and breakdown of monetary expenses incurred

\$205,026 for well rehabilitation and maintenance, 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 21, 2021	3.10 mg/L	Operator attended site, facility restored to normal operation. Compliant grab sample taken.	Feb 21, 2021
	Mar 30, 2021	3.66 mg/L	Operator attended site, facility restored to normal operation. Compliant grab sample taken.	Mar 30, 2021
	Apr 24, 2021	3.04 mg/L	Operator attended site, facility restored to normal operation. Compliant grab sample taken.	Apr 24, 2021
	May 30, 2021	3.12 mg/L	Operator attended site, facility restored to normal operation. Compliant grab sample taken.	May 30, 2021
	Sep 9, 2021	4.48 mg/L	Operator attended site, facility restored to normal operation. Compliant grab sample taken.	Sep 9, 2021
	Sep 10, 2021	4.10 mg/L	Operator attended site, facility restored to normal operation. Compliant grab sample taken.	Sep 10, 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.

Test Parameter	Sample Source	Count of Samples	Count of Presence
E. Coli	Raw	156	0
	Treated	52	0
Heterotrophic Plate Count	Treated	52	6
Total Coliforms	Raw	156	0
	Treated	52	0

**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	2.51	0.00	5.00
Turbidity (Treated)	NTU	8,760	0.21	0.09	1.19

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	8	0.158	0.12	0.18
Haloacetic Acids	ug/L	4	8.000	<8	<8
Nitrate	mg/L	8	0.500	<0.50	<0.50
Nitrite	mg/L	8	0.340	<0.05	0.63
N-Nitrosodimethylamine (NDMA)	ug/L	5	0.001	<0.0009	<0.0010
Sodium	mg/L	2	20.450	19.80	21.10
Trihalomethanes	ug/L	5	3.663	2.90	4.50

*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	2	0.0005	<0.0005	<0.0005	0.0060
Arsenic	mg/L	2	0.0006	0.0006	0.0006	0.01
Barium	mg/L	2	0.1085	0.1070	0.11	1
Boron	mg/L	2	0.0688	0.0684	0.0691	5
Cadmium	mg/L	2	0.0005	<0.0005	<0.0005	0.0050
Chromium	mg/L	2	0.0005	<0.0005	<0.0005	0.05
Mercury	ug/L	2	0.0500	<0.05	<0.05	1
Selenium	mg/L	2	0.0005	<0.0005	<0.0005	0.05
Uranium	mg/L	2	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.

Test Parameter	Test Unit	No. of Samples	Average	Minimum	Maximum	ODWS Limit
1,1-dichloroethylene (vinylidene chloride)	ug/L	1	0.300	<0.30	<0.30	14
1,2-(o-dcb) Dichlorobenzene	ug/L	1	0.100	<0.10	<0.10	0.20
1,2-Dichloroethane	ug/L	1	0.100	<0.10	<0.10	5
1,4-(p-dcb) Dichlorobenzene	ug/L	1	0.100	<0.10	<0.10	5
2,3,4,6-Tetrachlorophenol	ug/L	1	0.500	<0.50	<0.50	100
2,4,6-Trichlorophenol	ug/L	1	0.500	<0.50	<0.50	5
2,4-Dichlorophenol	ug/L	1	0.700	<0.70	<0.70	900
2,4-dichlorophenoxyacetic acid (2,4-D)	ug/L	1	0.800	<0.80	<0.80	100
2-methyl-4-chlorophenoxyacetic acid	ug/L	1	5.000	<5	<5	100
Alachlor	ug/L	1	0.400	<0.40	<0.40	5
Atrazine + N-dealkylated metabolites	ug/L	1	0.200	<0.20	<0.20	5
Azinphos-methyl	ug/L	1	0.300	<0.30	<0.30	20
Benzene	ug/L	1	0.100	<0.10	<0.10	1
Benzo(a)pyrene	ug/L	1	0.010	<0.01	<0.01	0.01
Bromoxynil	ug/L	1	0.400	<0.40	<0.40	5
Carbaryl	ug/L	1	3.000	<3	<3	90
Carbofuran	ug/L	1	3.000	<3	<3	90
Carbon Tetrachloride	ug/L	1	0.200	<0.20	<0.20	2
Chlorpyrifos	ug/L	1	0.200	<0.20	<0.20	90
Diazinon	ug/L	1	0.200	<0.20	<0.20	20
Dicamba	ug/L	1	0.400	<0.40	<0.40	120
Dichloromethane	ug/L	1	2.000	<2	<2	50
Diclofop-methyl	ug/L	1	0.400	<0.40	<0.40	9
Dimethoate	ug/L	1	0.300	<0.30	<0.30	20
Diquat	ug/L	1	1.000	<1	<1	70
Diuron	ug/L	1	3.000	<3	<3	150
Glyphosate	ug/L	1	25.000	<25	<25	280
Malathion	ug/L	1	0.200	<0.20	<0.20	190
Metolachlor	ug/L	1	0.200	<0.20	<0.20	50
Metribuzin	ug/L	1	0.300	<0.30	<0.30	80
Monochlorobenzene	ug/L	1	0.100	<0.10	<0.10	80
Paraquat	ug/L	1	1.000	<1	<1	10
Pentachlorophenol	ug/L	1	0.400	<0.40	<0.40	60
Phorate	ug/L	1	0.200	<0.20	<0.20	2
Picloram	ug/L	1	0.700	<0.70	<0.70	190
Polychlorinated Biphenyls (PCBs)	ug/L	1	0.020	<0.02	<0.02	3
Prometryne	ug/L	1	0.200	<0.20	<0.20	1
Simazine	ug/L	1	0.200	<0.20	<0.20	10
Terbufos	ug/L	1	0.200	<0.20	<0.20	1
Tetrachloroethylene (perchloroethylene)	ug/L	1	0.300	<0.30	<0.30	10
Triallate	ug/L	1	4.000	<4	<4	230
Trichloroethylene	ug/L	1	0.100	<0.10	<0.10	5
Trifluralin	ug/L	1	0.006	<0.0060	<0.0060	45
Vinyl Chloride	ug/L	1	0.200	<0.20	<0.20	1

2021 Annual Drinking Water System Quality Report for Sharon/Queensville DWS

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

Drinking Water System Number: 260001955
Drinking Water System Name: Sharon/Queensville DWS
Drinking Water System Owner: The Regional Municipality of York
Drinking Water System Category: Large Municipal Residential
Drinking Water System Classification: Water Distribution and Supply III
Reporting period: Jan 1, 2021 - Dec 31, 2021

The Sharon/Queensville DWS serves approximately 4,840 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 Sharon/Queensville DWS:

Holland Landing/Queensville/Sharon Distribution System (260001747); 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 Sharon/Queensville DWS

Introduction

Queensville and Sharon are in the Town of East Gwillimbury. Local groundwater is naturally high in minerals, and is blended with Lake Ontario water from the York DWS. York Region operates the water supply, and the Town of East Gwillimbury maintains water quality and distributes it to users. The Province governs York 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

Sharon-Queensville DWS includes four wells and one storage facility (elevated tank). Chlorine provides disinfection, and chloramine provides a secondary residual. Sodium silicate is added to sequester naturally occurring iron and manganese. The storage facility holds treated water and helps to maintain pressure. Tests confirm good groundwater quality. Operators test the water and inspect the process. Online analyzers continuously monitor treatment and water flow. 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

Chlorine gas; Ammonia solution; Sodium Silicate

Brief description and breakdown of monetary expenses incurred

\$362,845 for treatment facility upgrades, well rehabilitation and maintenance, 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
Sodium	Apr 21, 2021	22.0 mg/L	Operator attended site. Resample taken.	Apr 26, 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.

Test Parameter	Sample Source	Count of Samples	Count of Presence
E. Coli	Raw	197	0
	Treated	104	0
Heterotrophic Plate Count	Treated	104	26
Total Coliforms	Raw	197	0
	Treated	104	0

**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	2.42	0.48	3.55
Turbidity (Treated)	NTU	8,760	0.06	0.02	5.00

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	12	0.208	0.19	0.23
Haloacetic Acids	ug/L	4	10.500	10	11
Nitrate	mg/L	12	0.500	<0.50	<0.50
Nitrite	mg/L	12	0.050	<0.05	<0.05
N-Nitrosodimethylamine (NDMA)	ug/L	2	0.001	<0.0008	<0.0008
Sodium	mg/L	4	21.067	20.40	22
Trihalomethanes	ug/L	6	19.358	15.20	27

*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	3	0.0005	<0.0005	<0.0005	0.0060
Arsenic	mg/L	3	0.0005	<0.0005	0.0006	0.01
Barium	mg/L	3	0.1400	0.1350	0.1440	1
Boron	mg/L	3	0.0548	0.0512	0.0606	5
Cadmium	mg/L	3	0.0005	<0.0005	<0.0005	0.0050
Chromium	mg/L	3	0.0005	<0.0005	<0.0005	0.05
Mercury	ug/L	3	0.0500	<0.05	<0.05	1
Selenium	mg/L	3	0.0005	<0.0005	<0.0005	0.05
Uranium	mg/L	3	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.

Test Parameter	Test Unit	No. of Samples	Average	Minimum	Maximum	ODWS Limit
1,1-dichloroethylene (vinylidene chloride)	ug/L	2	0.300	<0.30	<0.30	14
1,2-(o-dcb) Dichlorobenzene	ug/L	2	0.100	<0.10	<0.10	0.20
1,2-Dichloroethane	ug/L	2	0.100	<0.10	<0.10	5
1,4-(p-dcb) Dichlorobenzene	ug/L	2	0.100	<0.10	<0.10	5
2,3,4,6-Tetrachlorophenol	ug/L	2	0.500	<0.50	<0.50	100
2,4,6-Trichlorophenol	ug/L	2	0.500	<0.50	<0.50	5
2,4-Dichlorophenol	ug/L	2	0.700	<0.70	<0.70	900
2,4-dichlorophenoxyacetic acid (2,4-D)	ug/L	2	0.800	<0.80	<0.80	100
2-methyl-4-chlorophenoxyacetic acid	ug/L	2	5.000	<5	<5	100
Alachlor	ug/L	2	0.400	<0.40	<0.40	5
Atrazine + N-dealkylated metabolites	ug/L	2	0.200	<0.20	<0.20	5
Azinphos-methyl	ug/L	2	0.300	<0.30	<0.30	20
Benzene	ug/L	2	0.100	<0.10	<0.10	1
Benzo(a)pyrene	ug/L	2	0.010	<0.01	<0.01	0.01
Bromoxynil	ug/L	2	0.400	<0.40	<0.40	5
Carbaryl	ug/L	2	3.000	<3	<3	90
Carbofuran	ug/L	2	3.000	<3	<3	90
Carbon Tetrachloride	ug/L	2	0.200	<0.20	<0.20	2
Chlorpyrifos	ug/L	2	0.200	<0.20	<0.20	90
Diazinon	ug/L	2	0.200	<0.20	<0.20	20
Dicamba	ug/L	2	0.400	<0.40	<0.40	120
Dichloromethane	ug/L	2	3.950	3.50	4.40	50
Diclofop-methyl	ug/L	2	0.400	<0.40	<0.40	9
Dimethoate	ug/L	2	0.300	<0.30	<0.30	20
Diquat	ug/L	2	1.000	<1	<1	70
Diuron	ug/L	2	3.000	<3	<3	150
Glyphosate	ug/L	2	25.000	<25	<25	280
Malathion	ug/L	2	0.200	<0.20	<0.20	190
Metolachlor	ug/L	2	0.200	<0.20	<0.20	50
Metribuzin	ug/L	2	0.300	<0.30	<0.30	80
Monochlorobenzene	ug/L	2	0.100	<0.10	<0.10	80
Paraquat	ug/L	2	1.000	<1	<1	10
Pentachlorophenol	ug/L	2	0.400	<0.40	<0.40	60
Phorate	ug/L	2	0.200	<0.20	<0.20	2
Picloram	ug/L	2	0.700	<0.70	<0.70	190
Polychlorinated Biphenyls (PCBs)	ug/L	2	0.020	<0.02	<0.02	3
Prometryne	ug/L	2	0.200	<0.20	<0.20	1
Simazine	ug/L	2	0.200	<0.20	<0.20	10
Terbufos	ug/L	2	0.200	<0.20	<0.20	1
Tetrachloroethylene (perchloroethylene)	ug/L	2	0.300	<0.30	<0.30	10
Triallate	ug/L	2	4.000	<4	<4	230
Trichloroethylene	ug/L	2	0.100	<0.10	<0.10	5
Trifluralin	ug/L	2	0.006	<0.0060	<0.0060	45
Vinyl Chloride	ug/L	2	0.200	<0.20	<0.20	1

2021 Annual Drinking Water System Quality Report for Stouffville DWS

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

Drinking Water System Number: 220002333

Drinking Water System Name: Stouffville DWS

Drinking Water System Owner: The Regional Municipality of York

Drinking Water System Category: Large Municipal Residential

Drinking Water System Classification: Water Distribution and Supply III, Water Treatment I

Reporting period: Jan 1, 2021 - Dec 31, 2021

The Stouffville DWS serves approximately 31,360 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 Stouffville DWS:

Stouffville Distribution System (260003162)

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 Stouffville DWS

Introduction

Stouffville is a community in the Town of Whitchurch-Stouffville. Local groundwater is naturally high in minerals, and blends with Lake Ontario water from the York DWS. York Region operates the water supply, while the Town maintains water quality and distributes it to users. The Province governs York 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

Stouffville DWS includes five wells, three storage facilities, and four booster pumping stations (one booster station borders with York DWS). Chlorine provides disinfection and maintains a secondary residual. Chloramines from the York DWS are converted to free chlorine. Sodium silicate is added to sequester naturally occurring iron and manganese. Storage facilities hold treated water and help booster stations maintain pressure. Operators test the water and inspect the process. 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

Chlorine (gas and sodium hypochlorite); Sodium silicate

Brief description and breakdown of monetary expenses incurred

\$903,397 for treatment facility upgrades, elevated tank upgrades, well rehabilitation and maintenance, 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
Sodium	Apr 7, 2021	26.3 mg/L	Operator attended site. Resample taken.	Apr 12, 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.

Test Parameter	Sample Source	Count of Samples	Count of Presence
E. Coli	Raw	254	0
	Treated	150	0
Heterotrophic Plate Count	Treated	150	21
Total Coliforms	Raw	254	0
	Treated	150	0

**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
Free Chlorine	mg/L	8,760	1.57	0.00	3.92
Turbidity (Treated)	NTU	8,760	0.05	0.02	5.00

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	35	0.106	<0.05	0.20
Haloacetic Acids	ug/L	12	8.333	<8	12
Nitrate	mg/L	35	0.796	<0.50	2.24
Nitrite	mg/L	35	0.050	<0.05	<0.05
N-Nitrosodimethylamine (NDMA)	ug/L	3	0.001	<0.0009	<0.0009
Sodium	mg/L	6	43.888	25.90	74.70
Trihalomethanes	ug/L	15	15.580	<0.50	34.40

*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	5	0.0005	<0.0005	<0.0005	0.0060
Arsenic	mg/L	5	0.0005	<0.0005	<0.0005	0.01
Barium	mg/L	5	0.1112	0.0881	0.1340	1
Boron	mg/L	5	0.0271	0.0131	0.0505	5
Cadmium	mg/L	5	0.0005	<0.0005	<0.0005	0.0050
Chromium	mg/L	5	0.0005	<0.0005	<0.0005	0.05
Mercury	ug/L	5	0.0500	<0.05	<0.05	1
Selenium	mg/L	5	0.0005	<0.0005	<0.0005	0.05
Uranium	mg/L	5	0.0016	<0.0005	0.0025	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.

Test Parameter	Test Unit	No. of Samples	Average	Minimum	Maximum	ODWS Limit
1,1-dichloroethylene (vinylidene chloride)	ug/L	4	0.300	<0.30	<0.30	14
1,2-(o-dcb) Dichlorobenzene	ug/L	4	0.100	<0.10	<0.10	0.20
1,2-Dichloroethane	ug/L	4	0.100	<0.10	<0.10	5
1,4-(p-dcb) Dichlorobenzene	ug/L	4	0.100	<0.10	<0.10	5
2,3,4,6-Tetrachlorophenol	ug/L	3	0.500	<0.50	<0.50	100
2,4,6-Trichlorophenol	ug/L	3	0.500	<0.50	<0.50	5
2,4-Dichlorophenol	ug/L	3	0.700	<0.70	<0.70	900
2,4-dichlorophenoxyacetic acid (2,4-D)	ug/L	3	0.800	<0.80	<0.80	100
2-methyl-4-chlorophenoxyacetic acid	ug/L	3	5.000	<5	<5	100
Alachlor	ug/L	3	0.400	<0.40	<0.40	5
Atrazine + N-dealkylated metabolites	ug/L	3	0.200	<0.20	<0.20	5
Azinphos-methyl	ug/L	3	0.300	<0.30	<0.30	20
Benzene	ug/L	4	0.100	<0.10	<0.10	1
Benzo(a)pyrene	ug/L	3	0.010	<0.01	<0.01	0.01
Bromoxynil	ug/L	3	0.400	<0.40	<0.40	5
Carbaryl	ug/L	3	3.000	<3	<3	90
Carbofuran	ug/L	3	3.000	<3	<3	90
Carbon Tetrachloride	ug/L	4	0.200	<0.20	<0.20	2
Chlorpyrifos	ug/L	3	0.200	<0.20	<0.20	90
Diazinon	ug/L	3	0.200	<0.20	<0.20	20
Dicamba	ug/L	3	0.400	<0.40	<0.40	120
Dichloromethane	ug/L	4	4.075	<2	10.30	50
Diclofop-methyl	ug/L	3	0.400	<0.40	<0.40	9
Dimethoate	ug/L	3	0.300	<0.30	<0.30	20
Diquat	ug/L	3	1.000	<1	<1	70
Diuron	ug/L	3	3.000	<3	<3	150
Glyphosate	ug/L	3	25.000	<25	<25	280
Malathion	ug/L	3	0.200	<0.20	<0.20	190
Metolachlor	ug/L	3	0.200	<0.20	<0.20	50
Metribuzin	ug/L	3	0.300	<0.30	<0.30	80
Monochlorobenzene	ug/L	4	0.100	<0.10	<0.10	80
Paraquat	ug/L	3	1.000	<1	<1	10
Pentachlorophenol	ug/L	3	0.400	<0.40	<0.40	60
Phorate	ug/L	3	0.200	<0.20	<0.20	2
Picloram	ug/L	3	0.700	<0.70	<0.70	190
Polychlorinated Biphenyls (PCBs)	ug/L	3	0.020	<0.02	<0.02	3
Prometryne	ug/L	3	0.200	<0.20	<0.20	1
Simazine	ug/L	3	0.200	<0.20	<0.20	10
Terbufos	ug/L	3	0.200	<0.20	<0.20	1
Tetrachloroethylene (perchloroethylene)	ug/L	4	0.300	<0.30	<0.30	10
Triallate	ug/L	3	4.000	<4	<4	230
Trichloroethylene	ug/L	4	0.100	<0.10	<0.10	5
Trifluralin	ug/L	3	0.006	<0.0060	<0.0060	45
Vinyl Chloride	ug/L	4	0.200	<0.20	<0.20	1

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)

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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

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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.