

# **2022 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, 2022 - Dec 31, 2022

**The Georgina DWS serves approximately 8,420 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](http://york.ca/drinkingwater)) and upon request. Accessible formats or communication supports are also available upon request. Please contact [AccessYork@york.ca](mailto: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**

\$2,846,904 for standby power generator upgrades, facility rehabilitation and 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 Schedule 16 of O. Reg. 170/03 and reported to MECP Spills Action Centre**

| <b>Incident Description</b> | <b>Incident Date</b> | <b>Adverse Test Result</b> | <b>Corrective Action</b>   | <b>Corrective Action Date</b> |
|-----------------------------|----------------------|----------------------------|--|-------------------------------|
| Filter Performance          | May 2, 2022          | 96.88%                     | Filter performance monitored continuously, alarms halted flow through affected equipment. Operator attended site, facility restored to normal operation. | Apr 25, 2022                  |
| Presence of Total coliform  | Oct 7, 2022          | Presence                   | Operator attended site. Resample taken. Resample result non-detectable for total coliform.   | Oct 7, 2022                   |

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

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

### Raw Samples

| Test Parameter  | Count of Samples | Count of Presence |
|-----------------|------------------|-------------------|
| E. Coli         | 52               | 0                 |
| Total Coliforms | 52               | 19                |

### Treated Samples

| Test Parameter            | Count of Samples | Count of Presence |
|---------------------------|------------------|-------------------|
| E. Coli                   | 54               | 0                 |
| Heterotrophic Plate Count | 52               | 15                |
| Total Coliforms           | 54               | 1                 |

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

| Test Parameter      | Test Unit | No. of Samples <sup>1</sup> | Average | Minimum | Maximum |
|---------------------|-----------|-----------------------------|---------|---------|---------|
| Fluoride            | mg/L      | 8,760                       | 0.71    | 0.20    | 1.40    |
| Free Chlorine       | mg/L      | 8,760                       | 1.67    | 0.00    | 2.95    |
| Turbidity (Raw)     | NTU       | 8,760                       | 0.45    | 0.00    | 10.00   |
| Turbidity (Treated) | NTU       | 8,760                       | 0.03    | 0.01    | 5.00    |

<sup>1</sup> 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](http://york.ca/drinkingwater).

| Test Parameter <sup>2 3</sup>   | Test Unit | No. of Samples <sup>1</sup> | Average | Minimum | Maximum |
|---------------------------------|-----------|-----------------------------|---------|---------|---------|
| Free Chlorine Backwash          | mg/L      | 8,760                       | 0.003   | 0       | 0.2     |
| Haloacetic Acids (Distribution) | ug/L      | 4                           | 30.500  | 26      | 37      |
| Microcystin (Raw)               | ug/L      | 29                          | 0.150   | <0.15   | <0.15   |
| Microcystin (Treated)           | ug/L      | 29                          | 0.150   | <0.15   | <0.15   |
| Nitrate (Treated)               | mg/L      | 4                           | 0.500   | <0.5    | <0.5    |
| Nitrate (Distribution)          | mg/L      | 4                           | 0.500   | <0.5    | <0.5    |
| Nitrite (Treated)               | mg/L      | 4                           | 0.050   | <0.05   | <0.05   |
| Nitrite (Distribution)          | mg/L      | 4                           | 0.050   | <0.05   | <0.05   |
| Sodium                          | mg/L      | 2                           | 33.000  | 32.9    | 33.1    |
| Total Suspended Solids Backwash | mg/L      | 8,760                       | 1.810   | 0       | 40      |
| Trihalomethanes (Treated)       | ug/L      | 13                          | 29.204  | 20.40   | 39.40   |
| Trihalomethanes (Distribution)  | ug/L      | 13                          | 46.727  | 33.80   | 58      |

\*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.

<sup>1</sup> 8,760 is used as the number of samples for continuous analyzers.

<sup>2</sup> 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.

<sup>3</sup> 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. Additional sample points were added in September 2022 to include at least one facility from every subsystem.

**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](http://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              | 0.0246  | 0.0218  | 0.0273  | 1          |
| Boron          | mg/L      | 2              | 0.0212  | 0.0192  | 0.0232  | 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](http://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   | <0.3    | <0.3    | 14         |
| 1,2-(o-dcb) Dichlorobenzene                | ug/L      | 1              | 0.100   | <0.1    | <0.1    | 200        |
| 1,2-Dichloroethane                         | ug/L      | 1              | 0.100   | <0.1    | <0.1    | 5          |
| 1,4-(p-dcb) Dichlorobenzene                | ug/L      | 1              | 0.100   | <0.1    | <0.1    | 5          |
| 2,3,4,6-Tetrachlorophenol                  | ug/L      | 1              | 0.500   | <0.5    | <0.5    | 100        |
| 2,4,6-Trichlorophenol                      | ug/L      | 1              | 0.500   | <0.5    | <0.5    | 5          |
| 2,4-Dichlorophenol                         | ug/L      | 1              | 0.700   | <0.7    | <0.7    | 900        |
| 2,4-dichlorophenoxyacetic acid (2,4-D)     | ug/L      | 1              | 0.800   | <0.8    | <0.8    | 100        |
| 2-methyl-4-chlorophenoxyacetic acid        | ug/L      | 1              | 5.000   | <5      | <5      | 100        |
| Alachlor                                   | ug/L      | 1              | 0.400   | <0.4    | <0.4    | 5          |
| Atrazine + N-dealkylated metabolites       | ug/L      | 1              | 0.200   | <0.2    | <0.2    | 5          |
| Azinphos-methyl                            | ug/L      | 1              | 0.300   | <0.3    | <0.3    | 20         |
| Benzene                                    | ug/L      | 1              | 0.100   | <0.1    | <0.1    | 1          |
| Benzo(a)pyrene                             | ug/L      | 1              | 0.010   | <0.01   | <0.01   | 0.01       |
| Bromoxynil                                 | ug/L      | 1              | 0.400   | <0.4    | <0.4    | 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   | <0.2    | <0.2    | 2          |
| Chlorpyrifos                               | ug/L      | 1              | 0.200   | <0.2    | <0.2    | 90         |
| Diazinon                                   | ug/L      | 1              | 0.200   | <0.2    | <0.2    | 20         |
| Dicamba                                    | ug/L      | 1              | 0.400   | <0.4    | <0.4    | 120        |
| Dichloromethane                            | ug/L      | 1              | 2.000   | <2      | <2      | 50         |
| Diclofop-methyl                            | ug/L      | 1              | 0.400   | <0.4    | <0.4    | 9          |
| Dimethoate                                 | ug/L      | 1              | 0.300   | <0.3    | <0.3    | 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   | <0.2    | <0.2    | 190        |
| Metolachlor                                | ug/L      | 1              | 0.200   | <0.2    | <0.2    | 50         |
| Metribuzin                                 | ug/L      | 1              | 0.300   | <0.3    | <0.3    | 80         |
| Monochlorobenzene                          | ug/L      | 1              | 0.100   | <0.1    | <0.1    | 80         |
| Paraquat                                   | ug/L      | 1              | 1.000   | <1      | <1      | 10         |
| Pentachlorophenol                          | ug/L      | 1              | 0.400   | <0.4    | <0.4    | 60         |
| Phorate                                    | ug/L      | 1              | 0.200   | <0.2    | <0.2    | 2          |
| Picloram                                   | ug/L      | 1              | 0.700   | <0.7    | <0.7    | 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   | <0.2    | <0.2    | 10         |
| Terbufos                                   | ug/L      | 1              | 0.200   | <0.2    | <0.2    | 1          |
| Tetrachloroethylene (perchloroethylene)    | ug/L      | 1              | 0.300   | <0.3    | <0.3    | 10         |
| Triallate                                  | ug/L      | 1              | 4.000   | <4      | <4      | 230        |
| Trichloroethylene                          | ug/L      | 1              | 0.100   | <0.1    | <0.1    | 5          |
| Trifluralin                                | ug/L      | 1              | 0.006   | <0.006  | <0.006  | 45         |
| Vinyl Chloride                             | ug/L      | 1              | 0.200   | <0.2    | <0.2    | 1          |