



OPTIONAL ANNUAL REPORT TEMPLATE

<b>Drinking-Water System Number:</b>	260026156
<b>Drinking-Water System Name:</b>	Georgina Drinking Water System - Georgina
<b>Drinking-Water System Owner:</b>	Regional Municipality of York
<b>Drinking-Water System Category:</b>	Large Municipal Residential
<b>Period being reported:</b>	January 1, 2010 to December 31, 2010

<p><b><u>Complete if your Category is Large Municipal Residential or Small Municipal Residential</u></b></p> <p>Does your Drinking-Water System serve more than 10,000 people? Yes [ ] No [X]</p> <p>Is your annual report available to the public at no charge on a web site on the Internet? Yes [X] No [ ]</p> <p>Location where Summary Report required under O. Reg. 170/03 Schedule 22 will be available for inspection.</p> <div style="border: 1px solid black; padding: 5px;"> <p>Regional Municipality of York Administration Building Environmental Services Department 17250 Yonge Street Newmarket, Ontario</p> </div>	<p><b><u>Complete for all other Categories.</u></b></p> <p>Number of Designated Facilities served: <input type="text"/></p> <p>Did you provide a copy of your annual report to all Designated Facilities you serve? Yes [ ] No [ ]</p> <p>Number of Interested Authorities you report to: <input type="text"/></p> <p>Did you provide a copy of your annual report to all Interested Authorities you report to for each Designated Facility? Yes [ ] No [ ]</p>
---	---

**Note: For the following tables below, additional rows or columns may be added or an appendix may be attached to the report**

List all Drinking-Water Systems (if any), which receive all of their drinking water from your system:

Drinking Water System Name	Drinking Water System Number
Keswick and Sutton Distribution System	260062686

Did you provide a copy of your annual report to all Drinking-Water System owners that are connected to you and to whom you provide all of its drinking water? Yes [X] No [ ]



Indicate how you notified system users that your annual report is available, and is free of charge.

Public access/notice via the web

Public access/notice via Government Office

Public access/notice via a newspaper

Public access/notice via Public Request

Public access/notice via a Public Library

Public access/notice via other method \_\_\_\_\_

**Describe your Drinking-Water System**

York Region is the wholesale supplier of water to the community of Georgina and is responsible for the supply, production, treatment and storage of water.

The Georgina Water Treatment Plant was commissioned in November 2003 and services communities between Keswick and Sutton. The plant is located in the Town of Georgina on Kennedy Road between Lake Drive and Metro Road on the South shore of Lake Simcoe.

The raw water intake consists of a 1050 mm diameter pipe that extends 1.5 kilometres out into Lake Simcoe to the depth of 19 metres. The location of the intake pipe was based on the available depth of water, the water quality and physical factors. Water is drawn into the wet well via the low lift pumping station located at Lake Drive and Kennedy Road. The pumping station is designed to house pumps and equipment that transmit the water to the treatment plant.

The Georgina Water Treatment Plant uses leading edge technology to treat the raw water from Lake Simcoe. The treatment process, utilizes technology from the GE Zenon, which is designed to remove suspended solids, Cryptosporidium, Giardia and other potentially harmful parasites by drawing the raw water through membranes. The pore sizes of the membranes are 0.038 microns. This allows water to pass through but small enough to remove undesirable impurities.

Chlorine is added as a disinfectant and to maintain water quality through the distribution system. Granular activated carbon filters have been provided for taste and odour control, if required. The water is also fluoridated using hydrofluorsilicic acid.

Treatment processes throughout the plant are monitored by on-line analyzers. The analyzers are equipped with an alarm, which alerts operational staff of conditions that require attention.

At certain times of the year, when the incoming water rises above 12 degrees Celsius, chlorine is added at the intake to limit the growth of zebra mussels.

There is one point of entry from the Georgina Water Treatment Plant to the Sutton distribution system and one storage tower servicing the community of Sutton. There is one point of entry from the Georgina Water Treatment Plant to the Keswick distribution system



and two storage facilities servicing the community of Keswick. Both these systems are connected at the Georgina Water Treatment Plant through the distribution header.

**List all water treatment chemicals used over this reporting period**

Chlorine Gas  
Sodium Hypochlorite 12%  
Sulphur Dioxide  
Hydrofluosilicic Acid  
Citric Acid  
Caustic Soda  
Granular Activated Carbon

**Were any significant expenses incurred to?**

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

**Please provide a brief description and a breakdown of monetary expenses incurred**

Some of the following expenditures represent only part of the total project costs.

**Ravenshoe and Woodbine Watermain \$5,200,000**

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

Incident Date	Parameter	Result	Unit of Measure	Corrective Action	Corrective Action Date
January 4, 2010	Sodium	23.4	Mg/L	This adverse captures Sutton Tower under same AWQL. Initial result = 23.3 mg/l - resample result = 23.7	January 11, 2010
September 13, 2010	Total Coliform Bacteria	1	Present	Re-sampled – Absent	September 15, 2010

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

	Number	Range of E.Coli	Range of Total	Number	Range of HPC
--	--------	-----------------	----------------	--------	--------------



	of Samples	Or Fecal Results (min #)-(max #)	Coliform Results (min #)-(max #)	of HPC Samples	Results (min #)-(max #)
Raw	52	1-2	1-80		
Treated	53	0	0-1	53	1-100
Distribution					

**Operational testing done under Schedule 7, 8 or 9 of Regulation 170/03 during the period covered by this Annual Report.**

	Number of Grab Samples	Range of Results (min #)-(max #)
Turbidity Treated	8760	0.004 – 0.643
Turbidity Raw	8760	0.11 – 4.76
Chlorine	8760	0.796 – 3.415
Fluoride	8760	0.200 – 1.623

*NOTE: For continuous monitors use 8760 as the number of samples.*

*NOTE: Record the unit of measure if it is not milligrams per litre.*

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

Date of legal instrument issued	Parameter	Date Sampled	Result	Unit of Measure
Certificate of Approval 5640-667R8N dated December 8, 2004	Suspended Solids (to the lake)	Continuous	Yearly Average 5.215	Mg/L
	Free Chlorine (to the lake)	Continuous	Yearly Average 0.006	Mg/L
	Permeate Turbidity (Keswick Line)	Continuous	Yearly Average 0.048	Mg/L
	Permeate Turbidity (Sutton Line)	Continuous	Yearly Average 0.059	Mg/L

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

**Note: See attached results for Inorganic parameters**



Parameter	Sample Date	Result Value	Unit of Measure	Exceedance
Antimony				
Arsenic				
Barium				
Boron				
Cadmium				
Chromium				
Lead				
Mercury				
Selenium				
Sodium				
Uranium				
Fluoride				
Nitrite				
Nitrate				

**Summary of lead testing under Schedule 15.1 during this reporting period**

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

Location Type	Number of Samples	Range of Lead Results (min#) – (max #)	Number of Exceedances
Plumbing			
Distribution			

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

**Note: See attached results for Organic parameters (THM values in table below)**

Parameter	Sample Date	Result Value	Unit of Measure	Exceedance
Alachlor				
Aldicarb				
Aldrin + Dieldrin				
Atrazine + N-dealkylated metabolites				
Azinphos-methyl				
Bendiocarb				
Benzene				
Benzo(a)pyrene				
Bromoxynil				



Carbaryl				
Carbofuran				
Carbon Tetrachloride				
Chlordane (Total)				
Chlorpyrifos				
Cyanazine				
Diazinon				
Dicamba				
1,2-Dichlorobenzene				
1,4-Dichlorobenzene				
Dichlorodiphenyltrichloroethane (DDT) + metabolites				
1,2-Dichloroethane				
1,1-Dichloroethylene (vinylidene chloride)				
Dichloromethane				
2-4 Dichlorophenol				
2,4-Dichlorophenoxy acetic acid (2,4-D)				
Diclofop-methyl				
Dimethoate				
Dinoseb				
Diquat				
Diuron				
Glyphosate				
Heptachlor + Heptachlor Epoxide				
Lindane (Total)				
Malathion				
Methoxychlor				
Metolachlor				
Metribuzin				
Monochlorobenzene				
Paraquat				
Parathion				
Pentachlorophenol				
Phorate				
Picloram				
Polychlorinated Biphenyls(PCB)				
Prometryne				
Simazine				
THM (NOTE: show latest annual average) Georgina Treated		0.0325	Mg/L	
Temephos				
Terbufos				



Tetrachloroethylene				
2,3,4,6-Tetrachlorophenol				
Triallate				
Trichloroethylene				
2,4,6-Trichlorophenol				
2,4,5-Trichlorophenoxy acetic acid (2,4,5-T)				
Trifluralin				
Vinyl Chloride				

York Region monitors another group of disinfection by-products called haloacetic acids (HAAs). There are no limits set for HAAs in Ontario Drinking Water Standards.

Reading Name	Georgina WTP Mg/L June 30
Bromochloroacetic acid	0.0047
Dibromoacetic acid	0.004
Dichloroacetic acid	0.0113
Monobromoacetic acid	0.004
Monochloroacetic acid	0.02
Trichloroacetic acid	0.0106

“<” indicates the result is below the Method Detection Limit

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

Parameter	Result Value	Unit of Measure	Date of Sample

(Only if DWS category is large municipal residential, small municipal residential, large municipal non residential, non municipal year round residential, large non municipal non residential)



Inorganics Test Results

Reading	Units	ODWS		04/01/2010	11/01/2010	26/04/2010	12/07/2010	04/10/2010
Antimony as Sb	mg/L	0.006	IMAC	0.0003		0.0002	0.0003	0.0007
Arsenic as As	mg/L	0.025	IMAC	0.0007		< 0.0001	0.0006	0.0007
Barium as Ba	mg/L	1	MAC			0.0263		
Boron as B	mg/L	5	IMAC			0.019		
Cadmium as Cd	mg/L	0.005	MAC	< 0.0001		< 0.0001	< 0.0001	< 0.0001
Chromium as Cr	mg/L	0.05	MAC	< 0.0001		< 0.0001	< 0.0001	< 0.0001
Fluoride as F	mg/L	1.5	MAC	0.448		0.418	0.39	0.4
Lead as Pb	mg/L	0.01	MAC	< 0.0001		< 0.0001	< 0.0001	< 0.0001
Mercury as Hg	mg/L	0.001	MAC			< 0.00002		
Nitrate + Nitrite as N	mg/L	10	MAC	0.08		0.04	0.043	0.05
Nitrate as N	mg/L	10	MAC	0.076		0.04	0.043	0.05
Nitrite	mg/L	1	MAC	< 0.002		< 0.002	< 0.002	< 0.002
Selenium as Se	mg/L	0.01	MAC	0.0002		< 0.0001	0.0001	0.0002
Sodium as Na	mg/L	200	AO	23.4	23.7	24.3	23.9	23.3
Uranium as U	mg/L	0.02	MAC			0.0004		

"<": indicates the result is below Method Detection Limit  
 ODWS: Ontario Drinking Water Standard  
 MAC: Ontario Drinking Water Standard - Health Related (Maximum Acceptable Concentration)  
 AO: Ontario Drinking Water Standard - Non Health Related (Aesthetic Objective)  
 mg/L: milligrams per litre, parts permillion (ppm)



Organics Test Results

Reading	Units	ODWS	04/01/2010	26/04/2010	12/07/2010	04/10/2010
(DDT) + Metabolites	mg/L	0.03	MAC	< 0.000008		
1,1-dichloroethylene (vinylidene chloride)	mg/L	0.014	MAC	< 0.0003	< 0.0003	< 0.0003
1,2-(o-dcb) Dichlorobenzene	mg/L	0.2	MAC	< 0.0001	< 0.0001	< 0.0001
1,2-Dichloroethane	mg/L	0.005	IMAC	< 0.0001	< 0.0001	< 0.0001
1,4-(p-dcb) Dichlorobenzene	mg/L	0.005	MAC	< 0.0001	< 0.0001	< 0.0001
2,3,4,6-Tetrachlorophenol	mg/L	0.1	MAC		< 0.0005	
2,4,5-trichlorophenoxyacetic acid (2,4,5-T)	mg/L	0.28	MAC		< 0.0005	
2,4,6-Trichlorophenol	mg/L	0.005	MAC		< 0.0005	
2,4-Dichlorophenol	mg/L	0.9	MAC		< 0.0007	
2,4-dichlorophenoxyacetic acid (2,4-D)	mg/L	0.1	IMAC		< 0.0008	
Alachlor	mg/L	0.005	IMAC		< 0.0004	
Aldicarb	mg/L	0.009	MAC		< 0.0045	
Aldrin + Dieldrin	mg/L	0.0007	MAC		< 0.000006	
Atrazine + N-dealkylated metabolites	mg/L	0.005	IMAC		< 0.0002	
Azinphos-methyl	mg/L	0.02	MAC		< 0.0003	
Bendiocarb	mg/L	0.04	MAC		< 0.003	
Benzene	mg/L	0.005	MAC	< 0.0001	< 0.0001	< 0.0001
Benzo(a)pyrene	mg/L	0.00001	MAC		< 0.00001	
Bromoxynil	mg/L	0.005	IMAC		< 0.0004	
Carbaryl	mg/L	0.09	MAC		< 0.003	
Carbofuran	mg/L	0.09	MAC		< 0.003	
Carbon Tetrachloride	mg/L	0.005	MAC	< 0.0002	< 0.0002	< 0.0002
Chlordane (Total)	mg/L	0.007	MAC		< 0.000006	
Chlorpyrifos	mg/L	0.09	MAC		< 0.0002	
Cyanazine	mg/L	0.01	IMAC		< 0.0003	
Diazinon	mg/L	0.02	MAC		< 0.0002	
Dicamba	mg/L	0.12	MAC		< 0.0004	
Dichloromethane	mg/L	0.05	MAC	< 0.0005	< 0.0005	< 0.0005
Diclofop-methyl	mg/L	0.009	MAC		< 0.0004	
Dimethoate	mg/L	0.02	IMAC		< 0.0003	
Dinoseb	mg/L	0.01	MAC		< 0.0005	
Diquat	mg/L	0.07	MAC		< 0.001	
Diuron	mg/L	0.15	MAC		< 0.003	
Glyphosate	mg/L	0.28	IMAC		< 0.025	
Heptachlor + Heptachlor Epoxide	mg/L	0.003	MAC		< 0.000008	
Lindane	mg/L	0.004	MAC		< 0.000005	
Malathion	mg/L	0.19	MAC		< 0.0002	
Methoxychlor	mg/L	0.9	MAC		< 0.000009	
Metolachlor	mg/L	0.05	IMAC		< 0.0002	
Metribuzin	mg/L	0.08	MAC		< 0.0003	
Monochlorobenzene	mg/L	0.08	MAC	< 0.0001	< 0.0001	< 0.0001
Paraquat	mg/L	0.01	IMAC		< 0.001	
Parathion	mg/L	0.05	MAC		< 0.0002	



Organics Test Results

Reading	Units	ODWS		04/01/2010	26/04/2010	12/07/2010	04/10/2010
Pentachlorophenol	mg/L	0.06	MAC		< 0.0004		
Phorate	mg/L	0.002	IMAC		< 0.0002		
Picloram	mg/L	0.19	IMAC		< 0.0007		
Polychlorinated Biphenyls (PCBs)	mg/L	0.003	IMAC		< 0.00002		
Prometryne	mg/L	0.001	IMAC		< 0.0002		
Simazine	mg/L	0.01	IMAC		< 0.0002		
Temephos	mg/L	0.28	IMAC		< 0.003		
Terbufos	mg/L	0.001	IMAC		< 0.0002		
Tetrachloroethylene (perchloroethylene)	mg/L	0.03	MAC	< 0.0003	< 0.0003	< 0.0003	< 0.0003
Triallate	mg/L	0.23	MAC		< 0.004		
Trichloroethene	mg/L	0.005	MAC	< 0.0001	< 0.0001	< 0.0001	< 0.0001
Trifluralin	mg/L	0.045	IMAC		< 0.000006		
Vinyl Chloride	mg/L	0.002	MAC	< 0.0002	< 0.0002	< 0.0002	< 0.0002

"<": indicates the result is below Method Detection Limit

ODWS: Ontario Drinking Water Standard

MAC: Ontario Drinking Water Standard - Health Related (Maximum Acceptable Concentration)

AO: Ontario Drinking Water Standard - Non Health Related (Aesthetic Objective)

mg/L: milligrams per litre, parts permillion (ppm)