Part III Form 2
Section 11. ANNUAL REPORT.

Drinking-Water System Number:	**220004947**
Drinking-Water System Name:	Caledon East
Drinking-Water System Owner:	Region of Peel
Drinking-Water System Category:	Large Municipal Residential
Period being reported:	January 1, 2003 to December 31, 2003

Complete if your Category is Large Municipal Residential or Small Municipal Residential

Does your Drinking-Water System serve more than 10,000 people? Yes [ ] No [x]

Is your annual report available to the public at no charge on a web site on the Internet? Yes [x] No [ ]

Location where Report required under O. Reg. 170/03 Schedule 22 will be available for inspection.

Region of Peel
10 Peel Centre Drive, 4th Floor
Brampton, Ontario
L6T 4B9

Complete for all other Categories.

Number of Designated Facilities served:

None

Did you provide a copy of your annual report to all Designated Facilities you serve? N/A
Yes [ ] No [ ]

Number of Interested Authorities you report to: N/A

Did you provide a copy of your annual report to all Interested Authorities you report to for each Designated Facility?
Yes [ ] No [ ] N/A

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

None

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 [ ] No [x]

Indicate how you notified system users that your annual report is available, and is free of charge.
[x] Public access/notice via the web
[x] Public access/notice via Government Office
[x] Public access/notice via a newspaper

[x] Public access/notice via Public Request
[ ] Public access/notice via a Public Library
[ ] Public access/notice via other method _____

Describe your Drinking-Water System

Population served in Caledon East is 3475

Caledon East Well Pump House No.2

A communal well water supply system consisting of one (1) well supply and treatment system and associated appurtenances, located at 15897 Airport Road in the Town of Caledon (Caledon East), (NAD 83: UTM Zone 17: 591269.00m E, 4857896.00m N) as follows:

254 mm diameter 30 m deep casing with a 6.0 m long well screen length drilled ground water production well. Well equipped with a submersible well water pump rated at 18.2 L/s at a Total Dynamic Head (TDH) of 91.4m

equipped complete with flow meter, air release valve, pump control and check valve, raw and treated water sample taps, a pressure relief as well as a manual by pass and all other fittings.

Connecting piping 100mm diameter pipe well pump header in the pump house increasing to 150 mm diameter discharge line.

Online continuous chlorine analyzer with alarm and lockout capability

Located in a concrete block well pump house

One (1) sodium hypochlorite system consisting of:

One (1) metering pump, capable of handling up to 1.8 L/h of sodium hypochlorite solution. Shelved stand-by chemical feed pump available on-site

Sodium hypochlorite supplied from 204 L drums

One (1) sodium silicate system for iron sequestration consisting of:

One (1) metering pump, capable of handling up to 5.83 L/h.

Sodium silicate supplied from 204 L drums.

All instrumentation and equipment compatible with the Region's SCADA system.

Caledon East Well Pump House No.3

A communal well water supply system consisting of one (1) well supply and treatment system and associated appurtenances, located at 20 Robert Carson Drive in the Town of Caledon (Caledon East) (NAD 83: UTM Zone 17: 591402.00 m E, 4858177.00 m N) as follows:

300 mm diameter 48 m deep casing with a 7.6 m long well screen length drilled ground water production well. Well equipped with a submersible well water pump rated at 30.3 L/s at a TDH of 111.0 m.

equipped complete with flow meter, air release valve, pump control and check valve, raw and treated water sample taps, a pressure relief as well as a manual by pass, all other fittings

connecting piping 100 mm diameter pipe well pump header in the pump house increasing to 150 mm diameter discharge line.

Online continuous chlorine analyzer with alarm and lockout capability

Located in a concrete block well pump house

One (1) sodium hypochlorite system consisting of:

One (1) metering pump, capable of handling up to 1.8 L/h of sodium hypochlorite solution. Shelved stand-by chemical feed pump available on-site.

Sodium hypochlorite supplied from 204 L drums

All instrumentation and equipment compatible with the Region's SCADA system.

Caledon East Well Pump House No.4

A communal well water supply system consisting of one (1) well supply and treatment system and associated appurtenances, located at 5612 The Granite Stones Drive in the Town of Caledon (Caledon East) at (NAD 83: UTM Zone 17: 589450.00 m E, 4858282.00 m N) as follows:

254 mm diameter 57 m deep casing with a 7.6 m long well screen length drilled ground water production well. Well equipped with a submersible well water pump rated at 45 L/s at a TDH of 75 m.

equipped complete with 150 mm diameter magnetic flow meter, air release valve, pump control and check valve, raw and treated water sample taps, pressure relief as well as a manual by pass and all other fittings

connecting piping 150 mm diameter pipe well pump header in the pump house increasing to 300 mm diameter discharge line.

Online continuous chlorine analyzer with alarm and lockout capability

Online turbidimeter

Located in a concrete block well pump house

One (1) sodium hypochlorite system consisting of:

One (1) metering pump, capable of handling up to 9 L/s of sodium hypochlorite solution. Shelved stand-by chemical feed pump available on-site.

Sodium hypochlorite supplied from 204 L drums.

One (1) sodium silicate system for iron sequestration consisting of:

One (1) metering pump, capable of handling up to 5.83 L/h.

Sodium silicate supplied from 204 L drums.

125 kW, 600 V, 3 phase diesel generator set with all ancillary equipment, and diesel uel tank having a storage capacity of 1,100 L.

Booster pumping system to supply a small sub-division including, three (3) pressure tanks with a total volume of 2.4 m^3 and a maximum operating pressure of 1000 kPa, with two (2) centrifugal end suction horizontal closed coupled booster pumps (duty/stand-by), each rated at 30 L/s at a TDH of 31 m equipped with a 3.7 kW and 18.6 kW electric motors respectively; with manometer and piezometer tubing, associated piping, pressure gauges and valving.

All instrumentation and control system equipment compatible with the Region's SCADA system.

Motor control centre with associated electrical and mechanical control systems.

<u>Caledon East Well Pump House No.5 (Works Previously Approved Under CofA No. 7562-4USS4E But Not Constructed)</u>

An existing 150 mm diameter 39.6 m deep drilled groundwater well with a 300 mm diameter casing extending 27.6 m deep (Well No.5), located in Lot 23, Concession 1 at 16399 Airport Road, Caledon East, (NAD 83: UTM Zone 17: 590139.00 m E, 4858989.00 m N) equipped with a deep well submersible pump, rated at 30.3 L/s at a TDH of 73.4 m, with a 150 mm diameter discharge line connected to the well pump header in the pumphouse described below;

A well pumphouse, located over the well, housing treatment and control facilities, including:

150 mm header with appurtenances,

chlorination system utilizing sodium hypochlorite consisting of two (2) 1,130 L polyethylene druns and two (2) chemical feed pumps (one duty, one standby) with a feed line injecting to the 150 mm header before the static mixer,

catalytic iron removal system backwashing to an exterior subsurgace cast-in place concrete storage structure of 70 m^3 total capacity for the settling of iron precipitate, equipped with two (2) submersible pumps, capable of pumping at a rate of 2.5 L/s for the recirculation of supernatant to a point upstream of the chlorination point,

discharge to a 300 mm watermain through a chlorine analyzer sampling point and 150 mm magnetic flow meter

a 50 HP standby diesel generator located in an area contained by a 200 mm curb, with a 1135 L fuel tank contained in a 600 mm high containment area.

A chlorine contact chamber consisting of a 1350 mm diameter, 25 m long concrete pressure pipe to achieve a minimum chlorine contact time (calculated as T_{10}).

Discharge of the treated water to the existing 300 mm diameter watermain in Airport Road via a 300 mm diameter PVC pipe and gate valve.

<u>Note:</u> Well No. 5 is not in use.

List all water treatment chemicals used over this reporting period

Sodium Hypochlorite
Sodium Silicates

Were any significant expenses incurred to?

[x] Install required equipment
[x] Repair required equipment
[x] Replace required equipment

Describe

Caledon East Waterworks

Significant Installations	Approximate Expenditure
Caledon East Reservoir Expansion	$1,250,000
Water Service Installations	$6,470

Significant Repairs	Approximate Expenditure
Watermain Breaks	$6,500
Fire Hydrant Repairs	$7,800
Water Distribution System Valve Repairs	$6,900
Water Service Repairs	$13,157

Significant Replacements	Approximate Expenditure
Fire Hydrant Replacements	$4,100
Water Service Replacements	$800

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 (dd/mm/yy)	Parameter	Result	Unit of Measure	Corrective Action	Corrective Action Date (dd/mm/yy)
28/01/03	Sodium – Well 2	45.4	mg/L	Health authority notified	28/01/03
28/01/03	Sodium – Well 3	89	mg/L	Health authority notified	28/01/03
28/01/03	Sodium - Reservoir	78.4	mg/L	Health authority notified	28/01/03
26/05/03	HPC	1300	HPC/1 ML	Re-sampled	03/06/03
14/05/03	Sodium	44.9	mg/L	Health authority notified	14/05/03
14/05/03	Sodium	82.5	mg/L	Health authority notified	14/05/03
14/05/03	Sodium	26.7	mg/L	Health authority notified	14/05/03
29/07/03	Background	>200	CFU/ 100mL	Re-sampled upstream, downstream and the reported location	05/08/03
29/07/03	Total Coliform Background	65 >200	CFU/ 100mL CFU/ 100mL	Re-sampled upstream, downstream and the reported location	08/05/03
05/08/03	Total Coliform Background	8 >200	CFU/ 100mL CFU/ 100mL	Re-sampled downstream and the reported location	12/08/03

Note: Incident date represents the sampling date, corrective action date represents the date the incident was resolved.

Microbiological testing done under section 8 (2) during this reporting period

	Number of Samples	Range of E.Coli or Fecal Results (#-#)	Range of Total Coliform Results (#-#)	Range of Background Results	Number of HPC Samples	Range of HPC Results (#-#)
Caledon East 2 Raw	50	0	0	--	27	0
Caledon East 2 Treated	50	0	0	--	10	0
Caledon East 3 Raw	52	0	0	--	32	0
Caledon East 3 Treated	52	0	0	--	11	0
Caledon East 4 Raw	49	0	0	--	29	0
Caledon East 4 Treated	50	0	0	--	13	0 - 1300
Distribution	241	0	0 - 65	0- 200	0	0

Operational testing done under Schedule 7, 8 or 9 during the period covered by this Annual Report.

	Number of Grab Samples	Range of Results (#-#) Caledon East Well 2	Range of Results (#-#) Caledon East Well 3	Range of Results (#-#) Caledon East Well 4
Turbidity	8760	0.00 – 0.36	0.00 - 0.88	0.03 – 0.54
Chlorine	8760	0.86 – 1.84	0.93 - 1.94	1.15 -1.90
Fluoride (If the DWS provides fluoridation)	N/A	N/A	N/A	N/A

***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 or order.

Date of order or C of A	Parameter	Date Sampled	Result	Unit of Measure

Summary of Inorganic parameters tested during this reporting period or most recent

Parameter	Sample Date (dd/mm/yy)	Result Value Caledon Well #2	Result Value Caledon Well #3	Result Value Caledon Well #4	Unit of Measure	Exceedance
Antimony	20/11/03 26/11/03	 0	0	0	ug/L	
Arsenic	14/05/03 26/11/03	 0	0	0	ug/L	
Barium	14/05/03 26/11/03	 112	101	132	ug/L	
Boron	14/05/03 26/11/03	 42	52	16	ug/L	
Cadmium	14/05/03 26/11/03	 0	0	0	ug/L	
Chromium	14/05/03 26/11/03	 0	0	0	ug/L	
Lead	14/05/03	0	0	0	ug/L	
Mercury	14/05/03	0	.21	0	ug/L	
Selenium	14/05/03	0	0	0	ug/L	
Uranium	14/05/03 26/11/03	 0.7	0.6	0.7	ug/L	
Fluoride	26/11/03	0.07	0.034	0.07		
Nitrite	26/11/03	0	0	0		
Nitrate	26/11/03	1.88	6.15	0		

Summary of Organic parameters sampled during this reporting period or most recent

Parameter	Sample Date (dd/mm/yy)	Result Value Caledon Well #2	Result Value Caledon Well #3	Result Value Caledon Well #4	Unit of Measure	Exceedance
Alachlor	23/04/03 17/07/03 26/11/03	 0	 0	0		
Aldicarb	23/04/03 17/07/03 26/11/03	 0	 0	0		
Aldrin + Dieldrin	23/04/03 17/07/03 26/11/03	 0	 0	0		
Atrazine + N-dealkylated metobolites	26/11/03	0			ug/L	
Atrazine	23/04/03 17/07/03	 	 0	0	ug/L ug/L	
Azinphos-methyl	23/04/03 17/07/03 26/11/03	 0	 0	0		
Bendiocarb	23/04/03 17/07/03 26/11/03	 0	 0	0		
Benzene	14/05/03 17/07/03 **26/11/03**	 0	 0	0		
Benzo(a)pyrene	23/04/03 17/07/03 26/11/03	 0	 0	0		
Bromoxynil	23/04/03 17/07/03 26/11/03	 0	 0	0		

Carbaryl	23/04/03 17/07/03 26/11/03	 0	 0	0		
Carbofuran	23/04/03 17/07/03 26/11/03	 0	 0	0		
Carbon Tetrachloride	14/05/03 17/07/03 **26/11/03**	 0	 0	0		
Chlordane (Total)	23/04/03 17/07/03 26/11/03	 0	 0	0		
Chlorpyrifos	23/04/03 17/07/03 26/11/03	 0	 0	0		
Cyanazine	23/04/03 17/07/03 26/11/03	 0	 0	0		
Diazinon	23/04/03 17/07/03 26/11/03	 0	 0	0		
Dicamba	23/04/03 17/07/03 26/11/03	 0	 0	0		
1,2-Dichlorobenzene	14/05/03 17/07/03 **26/11/03**	 0	 0	0		
1,4-Dichlorobenzene	14/05/03 17/07/03 **26/11/03**	 0	 0	0		
Dichlorodiphenyltrichloroethane (DDT) + metabolites	23/04/03 17/07/03 26/11/03	 0	 0	0		
1,2-Dichloroethane	23/04/03 17/07/03 26/11/03	 0	 0	0		
1,1-Dichloroethylene (vinylidene chloride)	23/04/03 17/07/03 26/11/03	 0	 0	0		
Dichloromethane	14/05/03 17/07/03 26/11/03	 0	 0	0		
2-4 Dichlorophenol	23/04/03 17/07/03 26/11/03	 0	 0	0		
2,4-Dichlorophenoxy acetic acid (2,4-D)	23/04/03 17/07/03 26/11/03	 0	 0	0		
Diclofop-methyl	23/04/03 17/07/03 26/11/03	 0	 0	0		
Dimethoate	23/04/03 17/07/03 26/11/03	 0	 0	0		
Dinoseb	23/04/03 17/07/03 26/11/03	 0	 0	0		

Diquat	23/04/03 17/07/03 26/11/03	 0	0	0		
Diuron	23/04/03 17/07/03 26/11/03	 0	0	0		
Glyphosate	23/04/03 17/07/03 26/11/03	 0	0	0		
Heptachlor + Heptachlor Epoxide	23/04/03 17/07/03 26/11/03	 0	0	0		
Linadane (Total)	23/04/03 17/07/03 26/11/03	 0	0	0		
Malathion	23/04/03 17/07/03 26/11/03	 0	0	0		
Methoxychlor	23/04/03 17/07/03 26/11/03	 0	0	0		
Metolachlor	23/04/03 17/07/03 26/11/03	 0	0	0		
Metribuzin	23/04/03 17/07/03 26/11/03	 0	0	0		
Monochlorobenzene	23/04/03 17/07/03 26/11/03	 0	0	0		
Paraquat	23/04/03 17/07/03 26/11/03	 0	0	0		
Parathion	23/04/03 17/07/03 26/11/03	 0	0	0		
Pentachlorophenol	23/04/03 17/07/03 26/11/03	 0	0	0		
Phorate	23/04/03 17/07/03 26/11/03	 0	0	0		
Picloram	23/04/03 17/07/03 26/11/03	 0	0	0		
Polychlorinated Biphenyls(PCB)	23/04/03 17/07/03 26/11/03	 0	0	0		
Promethyne	23/04/03 17/07/03 26/11/03	 0	0	0		
Simazine	23/04/03 17/07/03 26/11/03	 0	0	0		
THM **(**NOTE**:** show latest quarterly average**)**	14/05/03 17/07/03 26/11/03	 11	12	3.27	ug/L	

Temephos	23/04/03 17/07/03 26/11/03	 0	0	0		
Terbufos	23/04/03 17/07/03 26/11/03	 0	0	0		
Tetrachloroethylene	23/04/03 17/07/03 26/11/03	 0	0	0		
2,3,4,6-Tetrachlorophenol	23/04/03 17/07/03 26/11/03	 0	0	0		
Triallate	23/04/03 17/07/03 26/11/03	 0	0	0		
Trichloroethylene	23/04/03 17/07/03 26/11/03	 0	0	0		
2,4,6-Trichlorophenol	23/04/03 17/07/03 26/11/03	 0	0	0		
2,4,5-Trichlorophenoxy acetic acid (2,4,5-T)	23/04/03 17/07/03 26/11/03	 0	0	0		
Trifluralin	23/04/03 17/07/03 26/11/03	 0	0	0		
Vinyl Chloride	14/05/03 17/07/03 26/11/03	 0	0	0		

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 category is large municipal residential, small municipal residential, large municipal non residential, small municipal non residential, large non municipal non residential)