

**PETERBOROUGH UTILITIES COMMISSION**

# **ANNUAL REPORT**

FOR

## **CITY OF PETERBOROUGH WATER WORKS**

**PERIOD: January 1, 2005 – DECEMBER 31, 2005**



**MOE WATERWORKS # 220000497**

**Part III Form 2  
Section 11. ANNUAL REPORT.**

<b>Drinking-Water System Number:</b>	220000497
<b>Drinking-Water System Name:</b>	Peterborough Water Treatment Plant
<b>Drinking-Water System Owner:</b>	Peterborough Utilities Commission
<b>Drinking-Water System Category:</b>	WT Class 4
<b>Period being reported:</b>	January 1, 2005 to December 31, 2005

<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 [<input checked="" type="checkbox"/>] No [ <input type="checkbox"/> ]</p> <p>Is your annual report available to the public at no charge on a web site on the Internet? Yes [<input checked="" type="checkbox"/>] No [ <input type="checkbox"/> ]</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;">                 Peterborough Utilities                  1867 Ashburnham Drive                  Peterborough ON             </div>	<p><b><u>Complete for all other Categories.</u></b></p> <p>Number of Designated Facilities served:  <input style="width: 100px; height: 20px;" type="text"/></p> <p>Did you provide a copy of your annual report to all Designated Facilities you serve? Yes [ <input type="checkbox"/> ] No [ <input type="checkbox"/> ]</p> <p>Number of Interested Authorities you report to: <input style="width: 100px; height: 20px;" 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 [ <input type="checkbox"/> ] No [ <input type="checkbox"/> ]</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
Woodland Acres	210001503

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 [  ]

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** Bill Stuffer

**Describe your Drinking-Water System**

The Peterborough municipal water system is operated by Peterborough Utilities Services Inc. under contract with Peterborough Utilities Commission.

The City of Peterborough municipal water works system generally consists of five elements:

**1. Raw Water**

The source of raw (untreated) water for Peterborough's drinking water is the Otonabee River. The Otonabee River water is of good quality and can be described as a moderately coloured water of low turbidity. The river water temperature ranges from 0°C (winter) to approximately 26°C (summer). The raw river water is what we call a surface water supply, which means that it is considered to be an unprotected source.

Accordingly, we assume that raw water always requires full treatment at the Peterborough Water Treatment Plant to make it drinkable or potable.

The river water quality is monitored by staff at the plant as well as the Otonabee Region Conservation Authority (ORCA) and the Peterborough Health Unit (beaches only). The water shed is protected by planning and approvals processes through the City of Peterborough and ORCA. Since 1998, ORCA has monitored water quality in the Otonabee watershed under the Watershed 2000 Program and the Provincial Water Quality Monitoring Network.

**2. Water Treatment Plant**

The plant is located at 1230 Water Street North, Peterborough, adjacent the Riverview Park & Zoo. The plant was initially built in 1922 and expanded in 1952, 1965 and 1995. The conventional treatment process includes coagulation, flocculation, sedimentation, filtration and chlorine disinfection. Aluminum sulphate (alum) is used as the primary coagulant. The current rated capacity of the plant is 104 ML/day.

**3. Water Storage Tanks and Reservoirs**

Treated water is stored at various locations throughout the City in underground reservoirs and elevated storage tanks. Storage is used to supplement supply during

times of high water demand and in emergency situations such as firefighting. The water storage capacity in the system is 48.2 ML.

#### **4. Water Pumping Stations**

There are three individual pressure zones in Peterborough. Water supply is pumped from the plant or from the Water Street Pumping Station. Approximately one half of the City's water supply is pumped using water-driven turbine pumps powered by the Otonabee River flow. There are four water booster pumping stations around the city which pump water from lower pressure zones to higher pressure zones. Two of the most critical stations have diesel-powered backup in case of an electrical power outage.

#### **5. Water Distribution Piping System**

The water distribution system consists of approximately 421 kilometres of pipe (water mains), 2,015 hydrants and 26,274 individual water services. Hydrants are colour-coded according to the Ontario Fire Code requirements to indicate the available flow rate at a 20 p.s.i. residual pressure.

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

Chlorine  
 Alum (Aluminum Sulphate)  
 BW46M (Sodium Silicate)  
 Hydrofluosilicic Acid  
 N Silicate (Sodium Silicate)

#### **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**

#### **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
March 15	Free Chlorine	52	mg/L	Flush and resample	March 15
April 7	Total Coliform	25	Count	Resample	April 8

Incident Date	Parameter	Result	Unit of Measure	Corrective Action	Corrective Action Date
April 7	E-coli	4	Count	Resample	April 8
May 18	Fluoride	1.64	mg/L	Resample	May 18
June 15	Background Bacti	426	Count	Resample	June 16
July 4	Total Coliform	1360	Count	Resample	July 5
July 6	Free Chlorine	0.03	mg/L	Flush and resample	July 6
Sept 7	Total Coliform	1	Count	Resample	Sept 8
Sept 26	Background Bacti	214	Count	Resample	Sept 29

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

	Number of Samples	Range of E.Coli Or Fecal Results (min #)-(max #)	Range of Total Coliform Results (min #)-(max #)	Number of HPC Samples	Range of HPC Results (min #)-(max #)
Raw	250	0-208	0-824	250	0-920
Treated	248	0-0	0-0	248	0-10
Distribution	1240	0-4	0-1360	772	0-174

**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	11x8,760	0.03 – 0.15 NTU
Chlorine	8,760	1.27-2.25 mg/L
Fluoride (If the DWS provides fluoridation)	8,760	0.07-1.05 mg/L

*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

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

Parameter	Sample Date	Result Value	Unit of Measure	Exceedance
Antimony	Jan. 6	0.6	mg/L	No
Arsenic	Jan. 6	2	mg/L	No

Parameter	Sample Date	Result Value	Unit of Measure	Exceedance
Barium	Jan. 6	26	µg/L	No
Boron	Jan. 6	10	µg/L	No
Cadmium	Jan. 6	0.1	µg/L	No
Chromium	Jan. 6	3	µg/L	No
Lead	Jan. 6	0.1	µg/L	No
Mercury	Jan. 6	0.02	µg/L	No
Selenium	Jan. 6	3	µg/L	No
Sodium	Jan. 6	7.22	mg/L	No
Uranium	Jan. 6	0.05	µg/L	No
Fluoride	Continuous	0.12-1.04	mg/L	No
Nitrite	Jan. 6	0.066	mg/L	No
	Apr. 11	0.203	mg/L	
	July 12	0.060	mg/L	
	Oct. 11	0.024	mg/L	
Nitrate	Jan. 6	<0.005	mg/L	No
	Apr. 11	<0.005	mg/L	
	July 12	<0.005	mg/L	
	Oct. 11	<0.005	mg/L	

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

Parameter	Sample Date	Result Value	Unit of Measure	Exceedance
Alachlor	Jan. 6	<0.11	µg/L	No
Aldicarb	Jan. 6	<0.30	µg/L	No
Aldrin + Dieldrin	Jan. 6	<0.067	µg/L	No
Atrazine + N-dealkylated metabolites	Jan. 6	<0.12	µg/L	No
Azinphos-methyl	Jan. 6	<0.21	µg/L	No
Bendiocarb	Jan. 6	<0.13	µg/L	No
Benzene	Jan. 6	<0.36	µg/L	No
Benzo(a)pyrene	Jan. 6	<0.004	µg/L	No
Bromoxynil	Jan. 6	<0.094	µg/L	No
Carbaryl	Jan. 6	<0.16	µg/L	No
Carbofuran	Jan. 6	<0.37	µg/L	No
Carbon Tetrachloride	Jan. 6	<0.34	µg/L	No
Chlordane (Total)	Jan. 6	<0.11	µg/L	No
Chlorpyrifos	Jan. 6	<0.18	µg/L	No
Cyanazine	Jan. 6	<0.18	µg/L	No
Diazinon	Jan. 6	<0.081	µg/L	No
Dicamba	Jan. 6	<0.17	µg/L	No
1,2-Dichlorobenzene	Jan. 6	<0.56	µg/L	No

Parameter	Sample Date	Result Value	Unit of Measure	Exceedance
1,4-Dichlorobenzene	Jan. 6	<0.25	µg/L	No
Dichlorodiphenyltrichloroethane (DDT) + metabolites	Jan. 6	<0.14	µg/L	No
1,2-Dichloroethane	Jan. 6	<0.32	µg/L	No
1,1-Dichloroethylene (vinylidene chloride)	Jan. 6	<0.52	µg/L	No
Dichloromethane	Jan. 6	<1.17	µg/L	No
2-4 Dichlorophenol	Jan. 6	<0.15	µg/L	No
2,4-Dichlorophenoxy acetic acid (2,4-D)	Jan. 6	<0.11	µg/L	No
Diclofop-methyl	Jan. 6	<0.13	µg/L	No
Dimethoate	Jan. 6	<0.12	µg/L	No
Dinoseb	Jan. 6	<0.084	µg/L	No
Diquat	Jan. 6	<1	µg/L	No
Diuron	Jan. 6	<0.087	µg/L	No
Glyphosate	Jan. 6	<6	µg/L	No
Heptachlor + Heptachlor Epoxide	Jan. 6	<0.11	µg/L	No
Lindane (Total)	Jan. 6	<0.056	µg/L	No
Malathion	Jan. 6	<0.091	µg/L	No
Methoxychlor	Jan. 6	<0.14	µg/L	No
Metolachlor	Jan. 6	<0.092	µg/L	No
Metribuzin	Jan. 6	<0.12	µg/L	No
Monochlorobenzene	Jan. 6	<0.46	µg/L	No
Paraquat	Jan. 6	<1	µg/L	No
Parathion	Jan. 6	<0.18	µg/L	No
Pentachlorophenol	Jan. 6	<0.15	µg/L	No
Phorate	Jan. 6	<0.11	µg/L	No
Picloram	Jan. 6	<0.20	µg/L	No
Polychlorinated Biphenyls(PCB)	Jan. 6	<0.04	µg/L	No
Prometryne	Jan. 6	<0.23	µg/L	No
Simazine	Jan. 6	<0.15	µg/L	No
THM (NOTE: show latest annual average)	Jan. 6 Apr. 11 July 12 Oct. 11	77	µg/L	No
Temephos	Jan. 6	<0.31	µg/L	No
Terbufos	Jan. 6	<0.12	µg/L	No
Tetrachloroethylene	Jan. 6	<0.48	µg/L	No
2,3,4,6-Tetrachlorophenol	Jan. 6	<0.14	µg/L	No
Triallate	Jan. 6	<0.10	µg/L	No
Trichloroethylene	Jan. 6	<0.54	µg/L	No
2,4,6-Trichlorophenol	Jan. 6	<0.25	µg/L	No

Parameter	Sample Date	Result Value	Unit of Measure	Exceedance
2,4,5-Trichlorophenoxy acetic acid (2,4,5-T)	Jan. 6	<0.14	µg/L	No
Trifluralin	Jan. 6	<0.12	µg/L	No
Vinyl Chloride	Jan. 6	<0.08	µg/L	No

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)**