

PETERBOROUGH UTILITIES COMMISSION

ANNUAL REPORT

FOR

CITY OF PETERBOROUGH WATERWORKS

PERIOD: January 1, 2006 – December 31, 2006



MOE Waterworks # 220000497

Part III Form 2
Section 11. ANNUAL REPORT.

Drinking-Water System Number:	220000497
Drinking-Water System Name:	Peterborough Water Treatment Plant
Drinking-Water System Owner:	Peterborough Utilities Commission
Drinking-Water System Category:	WT Class 4
Period being reported:	January 1, 2006 – December 31, 2006

<p><u>Complete if your Category is Large Municipal Residential or Small Municipal Residential</u></p> <p>Does your Drinking-Water System serve more than 10,000 people? Yes [<input checked="" type="checkbox"/>] No []</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 []</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 K9J 6Z5 </div>	<p><u>Complete for all other Categories.</u></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 [] No []</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 [] No []</p>
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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 consist 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 required 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 watershed 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 and a process waste treatment facility. 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 Systems

The water distribution system consists of approximately 404 kilometers of pipe (water mains), 2,069 hydrants and 26,575 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
Jan 4	Background Bacteria	325	Count	Resample	Jan 5
Jan 5	Total Coliform	3	cfu/100ml	Resample	Jan 6
Mar 8	Free Chlorine - Distribution	0.02	mg/L	Flush & Resample	Mar 8
May 1	Free Chlorine-Distribution	0.03	mg/L	Flush & Resample	May 1

May 8	Free Chlorine-Distribution	0.02	mg/L	Flush & Resample	May 9
May 18	Total Coliform	1	cfu/100ml	Resample	May 19
Jun 5	Free Chlorine-Distribution	0.02	mg/L	Flush & Resample	Jun 5
Jul 21	Free Chlorine-Distribution	0.04	mg/L	Flush & Resample	Jul 21
Jul 21	Free Chlorine-Distribution	0.02	mg/L	Flush & Resample	Jul 21
Aug 3	Free Chlorine-Distribution	0.02	mg/L	Flush & Resample	Aug 3
Aug 8	Total Coliform	1	cfu/100ml	Resample	Aug 9
Sept 25	Total Coliform	10	cfu/100ml	Resample	Sept 26
Sept 25	Total Coliform	1	cfu/100ml	Resample	Sept 26
Nov 16	Free Chlorine-Distribution	0	mg/L	Flush & Resample	Nov 16

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	246	0-260	0-760	246	0-760
Treated	247	0-0	0-1	247	0-2
Distribution	1388	0-0	0-3	950	0-120

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	11 x 8,760	0.01 – 0.15 NTU
Chlorine	8,760	1.02 – 1.99 mg/L
Fluoride (If the DWS provides fluoridation)	8,760	0.02-0.98 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
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Aug 16, 2006	Suspended Solids waste process	Jan 06 Apr 03 Jul 03 Oct 02	12.7 16.6 5.9 3.8	mg/L

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<MDL	µg/L	No
Arsenic	Jan 6	2<MDL	µg/L	No
Barium	Jan 6	28	µg/L	No
Boron	Jan 6	13	µg/L	No
Cadmium	Jan 6	0.1<MDL	µg/L	No
Chromium	Jan 6	3<MDL	µg/L	No
Lead	Jan 6	0.2	µg/L	No
Mercury	Jan 6	0.02<MDL	µg/L	No
Selenium	Jan 6	3<MDL	µg/L	No
Sodium	Jan 6	10.8	mg/L	No
Uranium	Jan 6	0.05<MDL	µg/L	No
Fluoride	Jan 6	0.48	mg/L	No
Nitrite	Jan 05 Apr 10 Jul 31 Oct 19	0.072 0.327 0.037 0.018	mg/L	No
Nitrate	Jan 05 Apr 10 Jul 31 Oct 19	<0.005 <0.005 <0.005 <0.005	mg/L mg/L mg/L mg/L	No

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<MDL	µg/L	No
Aldicarb	Jan 6	0.30<MDL	µg/L	No
Aldrin + Dieldrin	Jan 6	0.067<MDL	µg/L	No
Atrazine + N-dealkylated metabolites	Jan 6	0.12<MDL	µg/L	No
Azinphos-methyl	Jan 6	0.21<MDL	µg/L	No
Bendiocarb	Jan 6	0.13<MDL	µg/L	No
Benzene	Jan 6	0.36<MDL	µg/L	No
Benzo(a)pyrene	Jan 6	0.004<MDL	µg/L	No
Bromoxynil	Jan 6	0.094<MDL	µg/L	No
Carbaryl	Jan 6	0.16<MDL	µg/L	No

Carbofuran	Jan 6	0.37<MDL	µg/L	No
Carbon Tetrachloride	Jan 6	0.34<MDL	µg/L	No
Chlordane (Total)	Jan 6	0.11<MDL	µg/L	No
Chlorpyrifos	Jan 6	0.18<MDL	µg/L	No
Cyanazine	Jan 6	0.18<MDL	µg/L	No
Diazinon	Jan 6	0.081<MDL	µg/L	No
Dicamba	Jan 6	0.17<MDL	µg/L	No
1,2-Dichlorobenzene	Jan 6	0.56<MDL	µg/L	No
1,4-Dichlorobenzene	Jan 6	0.25<MDL	µg/L	No
Dichlorodiphenyltrichloroethane (DDT) + metabolites	Jan 6	0.14<MDL	µg/L	No
1,2-Dichloroethane	Jan 6	0.32<MDL	µg/L	No
1,1-Dichloroethylene (vinylidene chloride)	Jan 6	0.52<MDL	µg/L	No
Dichloromethane	Jan 6	1.17<MDL	µg/L	No
2-4 Dichlorophenol	Jan 6	0.15<MDL	µg/L	No
2,4-Dichlorophenoxy acetic acid (2,4-D)	Jan 6	0.19<MDL	µg/L	No
Diclofop-methyl	Jan 6	0.13<MDL	µg/L	No
Dimethoate	Jan 6	0.12<MDL	µg/L	No
Dinoseb	Jan 6	0.084<MDL	µg/L	No
Diquat	Jan 6	1<MDL	µg/L	No
Diuron	Jan 6	0.087<MDL	µg/L	No
Glyphosate	Jan 6	6<MDL	µg/L	No
Heptachlor + Heptachlor Epoxide	Jan 6	0.11<MDL	µg/L	No
Lindane (Total)	Jan 6	0.056<MDL	µg/L	No
Malathion	Jan 6	0.091<MDL	µg/L	No
Methoxychlor	Jan 6	0.14<MDL	µg/L	No
Metolachlor	Jan 6	0.092<MDL	µg/L	No
Metribuzin	Jan 6	0.12<MDL	µg/L	No
Monochlorobenzene	Jan 6	0.46<MDL	µg/L	No
Paraquat	Jan 6	1<MDL	µg/L	No
Parathion	Jan 6	0.18<MDL	µg/L	No
Pentachlorophenol	Jan 6	0.15<MDL	µg/L	No
Phorate	Jan 6	0.11<MDL	µg/L	No
Picloram	Jan 6	0.20<MDL	µg/L	No
Polychlorinated Biphenyls(PCB)	Jan 6	0.04<MDL	µg/L	No
Prometryne	Jan 6	0.23<MDL	µg/L	No
Simazine	Jan 6	0.15<MDL	µg/L	No
THM (NOTE: show latest annual average)	Jan 05 Apr 10 Apr 18 Aug 09 Oct 19	65.4	µg/L	No

Temephos	Jan 6	0.31<MDL	µg/L	No
Terbufos	Jan 6	0.12<MDL	µg/L	No
Tetrachloroethylene	Jan 6	0.48<MDL	µg/L	No
2,3,4,6-Tetrachlorophenol	Jan 6	0.14<MDL	µg/L	No
Triallate	Jan 6	0.10<MDL	µg/L	No
Trichloroethylene	Jan 6	0.54<MDL	µg/L	No
2,4,6-Trichlorophenol	Jan 6	0.25<MDL	µg/L	No
2,4,5-Trichlorophenoxy acetic acid (2,4,5-T)	Jan 6	0.14<MDL	µg/L	No
Trifluralin	Jan 6	0.12<MDL	µg/L	No
Vinyl Chloride	Jan 6	0.08<MDL	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)