

The Corporation of the Municipality of Port Hope



Port Hope Water Treatment Plant

Old Water Treatment Plant

2005 Annual Report

February 27, 2006

Municipality of Port Hope
P.O. Box 117
56 Queen Street
Port Hope, ON
L1A 3V9

Attention: Mr. Peter Angelo, P. Eng., Director of Municipal Engineering Services

Dear Mr. Angelo:

RE: 2004 Annual Report – Port Hope Water Treatment Plant
Drinking-Water System Number - 22000816

We are pleased to provide the *2005 Annual Report for Port Hope Water Treatment Plant* as outlined in Ontario Regulation 170/03, Section 11 made under the Safe Drinking Water Act.

This report covers the timeframe from January 1, 2005 to August 23, 2005 (date of removing from service) for the old facility only.

Sincerely,

Rick Trumper

Rick Trumper
Water Treatment Supervisor
Municipality of Port Hope

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

Drinking-Water System Number:	220000816
Drinking-Water System Name:	Municipality of Port Hope Water Treatment Plant
Drinking-Water System Owner:	Municipality of Port Hope
Drinking-Water System Category:	Large Municipal Residential
Period being reported:	January 1, 2005 – August 23, 2005

<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 [<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;"> <p>Municipality of Port Hope Town Hall, Public Works Office, Ward 1 and Ward 2 Libraries.</p> </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 [<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>
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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

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 _____

Describe your Drinking-Water System

The Municipality is the Owner and Operator of the Water System that serves the Community of Port Hope with a population of 12,500. It is classed as a Large Municipal Residential system.

The following is a description of the components that in part makeup the Communities Water System.

Raw Water Source

The water supply for the Port Hope Water Treatment plant is obtained from Lake Ontario. Lake Ontario water is of good quality and can be described as a large body of clear-coloured water of low turbidity. The Lake water (raw water) temperature ranges from 0°C (winter) to approximately 21°C (summer). The raw water is what we call a surface water supply, which means that it is considered to be an unprotected source. Raw Water requires full treatment at Port Hope's Water Treatment Plant to make it drinkable or potable.

Raw water is taken into the 762-mm diameter intake pipe through the intake structure were it is then dosed with chlorine for primary disinfection. The intake discharges to a raw water pumping station were it is coarse screened and dosed with alum (aluminium sulphate) to aid settling and filtration.

The raw water quality is monitored by Operations staff at the Treatment Plant.

Water Treatment Plant

The Port Hope Water Treatment Plant is a conventional (full) treatment plant with eight dual hydraulic floc tanks and four settling chambers followed by four dual media rapid sand filters.

The conventional treatment process includes coagulation, flocculation, sedimentation, filtration and chlorine disinfection. Aluminum sulphate (alum) is used as the primary coagulant. Once the raw water is filtered it is classed as treated water and it is again dosed with chlorine and pumped to the two distribution zones in the Community.

The current rated capacity of the plant is 20 ML/day

Water Storage Facilities

At the Marsh St. Water Treatment Plant there are two potable water reservoirs that can contain up to 1,240 M³, other off site storage facilities include a Standpipe that can hold up to 1,205 M³ and an underground reservoir that can hold up to 111 M³.

Water Distribution System

Because of the Community's hilly terrain the Community has been divided into two pressure zones, Zone 1 is located in the lower parts of the Community while Zone 2 controls the higher area. A booster pumping station and an in-ground reservoir/pumping station are located in Zone 2 to maintain adequate pressures and flows in Zone 2. Zone 1 pressures are maintained via the Pumping Station at the Water Treatment Plant and the Standpipe located at the top of Zone 1.

List all water treatment chemicals used over this reporting period

Chlorine
Alum (Aluminum Sulphate)

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

We have undertaken the construction of a new water treatment plant to correct issues identified in our 2001 First Engineers Study. Approximate costs \$16,500,000

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
July 7/05	T. Coli.	1	Colony	resample	July 11/05

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 (Background)	Range of HPC Results (min #)-(max #)
Raw	32	0	0	N/A	N/A
Treated	32	0	0	32	0/1
Distribution	205	0	0/1	205	0-1

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 #)
Raw Turbidity (NTU)	8760	0 - 100
Treated Turbidity (NTU)	8760	0.023 – 0.360
Primary Chlorine (mg/L)	8760	0.14 – 2.38
Post Chlorine (mg/L)	8760	0.62 - 1.0
Fluoride (If the DWS provides fluoridation)	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, order or other legal instrument.

Date of legal instrument issued	Parameter	Date Sampled	Result	Unit of Measure
Certificate of Approval 5488-6DNHC4, Aug. 24/05	Raw Sodium	Jan. 1- Aug. 23/05 Twice Daily		mg/L
Certificate of Approval 5488-6DNHC4, Aug. 24/05	Treated Sodium	Jan. 1- Aug. 23/05 Twice Daily		mg/L
Certificate of Approval 5488-6DNHC4, Aug. 24/05	Total Suspended Solids	Jan. 1- Aug. 23/05 Monthly		mg/L

Certificate of Approval 5488-6DNHC4, Aug. 24/05	Raw Temperature	Jan. 1- Aug. 23/05 Twice Daily		Celsius
Certificate of Approval 5488-6DNHC4, Aug. 24/05	Treated Temperature	Jan. 1- Aug. 23/05 Twice Daily		Celsius
Certificate of Approval 5488-6DNHC4, Aug. 24/05	Raw pH	Jan. 1- Aug. 23/05 Continuous		pH
Certificate of Approval 5488-6DNHC4, Aug. 24/05	Treated pH	Jan. 1- Aug. 23/05 Continuous		pH
Certificate of Approval 5488-6DNHC4, Aug. 24/05	Treated Arsenic	Jan. 1- Aug. 23/05 Weekly		ug/L
Certificate of Approval 5488-6DNHC4, Aug. 24/05	Treated Uranium	Jan. 1- Aug. 23/05 Continuous		ug/L
Certificate of Approval 5488-6DNHC4, Aug. 24/05	Treated Trihalomethanes	Jan. 1- Aug. 23/05 Monthly		ug/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	July 26/05	0.6 <MDL	ug/L	No
Arsenic	July 26/05	2 <MDL	ug/L	No
Barium	July 26/05	23	ug/L	No
Boron	July 26/05	20	ug/L	No
Cadmium	July 26/05	0.1 <MDL	ug/L	No
Chromium	July 26/05	3 <MDL	ug/L	No
Lead	July 26/05	0.6	ug/L	no
Mercury	July 26/05	0.02 <MDL	ug/L	No
Selenium	July 26/05	3 <MDL	ug/L	No
Uranium	July 26/05	0.17	ug/L	No
Fluoride	N/A	-	-	-

Nitrite	Feb. 22/05 - Nov. 30/05	0.005	mg/L	no
Nitrate	Feb. 22/05 - Nov. 30/05	.475 - 0.544	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	July 26/05	0.11 <MDL	ug/L	No
Aldicarb	July 26/05	0.30 <MDL	ug/L	No
Aldrin + Dieldrin	July 26/05	0.067 <MDL	ug/L	No
Atrazine + N-dealkylated metabolites	July 26/05	0.12 <MDL	ug/L	No
Azinphos-methyl	July 26/05	0.21 <MDL	ug/L	No
Bendiocarb	July 26/05	0.13 <MDL	ug/L	No
Benzene	July 26/05	0.36 <MDL	ug/L	No
Benzo(a)pyrene	July 26/05	0.004 <MDL	ug/L	No
Bromoxynil	July 26/05	0.094 <MDL	ug/L	No
Carbaryl	July 26/05	0.16 <MDL	ug/L	No
Carbofuran	July 26/05	0.37 <MDL	ug/L	No
Carbon Tetrachloride	July 26/05	0.34 <MDL	ug/L	No
Chlordane (Total)	July 26/05	0.11 <MDL	ug/L	No
Chlorpyrifos	July 26/05	0.18 <MDL	ug/L	No
Cyanazine	July 26/05	0.18 <MDL	ug/L	No
Diazinon	July 26/05	0.081 <MDL	ug/L	No
Dicamba	July 26/05	0.17 <MDL	ug/L	No
1,2-Dichlorobenzene	July 26/05	0.56 <MDL	ug/L	No
1,4-Dichlorobenzene	July 26/05	0.25 <MDL	ug/L	No
Dichlorodiphenyltrichloroethane (DDT) + metabolites	July 26/05	0.14 <MDL	ug/L	No
1,2-Dichloroethane	July 26/05	0.32 <MDL	ug/L	No
1,1-Dichloroethylene (vinylidene chloride)	July 26/05	0.52 <MDL	ug/L	No
Dichloromethane	July 26/05	1.17 <MDL	ug/L	No
2-4 Dichlorophenol	July 26/05	0.15 <MDL	ug/L	No
2,4-Dichlorophenoxy acetic acid (2,4-D)	July 26/05	0.11 <MDL	ug/L	No
Diclofop-methyl	July 26/05	0.13 <MDL	ug/L	No
Dimethoate	July 26/05	0.12 <MDL	ug/L	No
Dinoseb	July 26/05	0.084 <MDL	ug/L	No
Diquat	July 26/05	1 <MDL	ug/L	No
Diuron	July 26/05	0.087 <MDL	ug/L	No
Glyphosate	July 26/05	6 <MDL	ug/L	No
Heptachlor + Heptachlor Epoxide	July 26/05	0.11 <MDL	ug/L	No
Lindane (Total)	July 26/05	0.056 <MDL	ug/L	No

Malathion	July 26/05	0.091 <MDL	ug/L	No
Methoxychlor	July 26/05	0.14 <MDL	ug/L	No
Metolachlor	July 26/05	0.092 <MDL	ug/L	No
Metribuzin	July 26/05	0.12 <MDL	ug/L	No
Monochlorobenzene	July 26/05	0.46 <MDL	ug/L	No
Paraquat	July 26/05	1 <MDL	ug/L	No
Parathion	July 26/05	0.18 <MDL	ug/L	No
Pentachlorophenol	July 26/05	0.15 <MDL	ug/L	No
Phorate	July 26/05	0.11 <MDL	ug/L	No
Picloram	July 26/05	0.20 <MDL	ug/L	No
Polychlorinated Biphenyls(PCB)	July 26/05	0.04 <MDL	ug/L	No
Prometryne	July 26/05	0.23 <MDL	ug/L	No
Simazine	July 26/05	0.15 <MDL	ug/L	No
THM (NOTE: show latest annual average)	Feb. 22/05 – Nov. 29/05	26	ug/L	no
Temephos	July 26/05	0.31 <MDL	ug/L	No
Terbufos	July 26/05	0.12 <MDL	ug/L	No
Tetrachloroethylene	July 26/05	0.48 <MDL	ug/L	No
2,3,4,6-Tetrachlorophenol	July 26/05	0.14 <MDL	ug/L	No
Triallate	July 26/05	0.10 <MDL	ug/L	No
Trichloroethylene	July 26/05	0.54 <MDL	ug/L	No
2,4,6-Trichlorophenol	July 26/05	0.25 <MDL	ug/L	No
2,4,5-Trichlorophenoxy acetic acid (2,4,5-T)	July 26/05	0.14 <MDL	ug/L	No
Trifluralin	July 26/05	0.12 <MDL	ug/L	No
Vinyl Chloride	July 26/05	0.08 <MDL	ug/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)