

The Corporation of the Municipality of Port Hope



Port Hope Water Treatment Plant

2004 Annual Report

February 21, 2005

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

We are pleased to provide the *2004 Annual Report for Port Hope Water Treatment Plant* as outlined in Ontario Regulation 170/03, Section 11 made under the Safe Drinking Water Act.

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, 2004 – December 31, 2004

<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 [X] No []</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>Municipality of Port Hope Town Hall, Public Works Office and Ward 1 Library</p> </div>	<p><u>Complete for all other Categories.</u></p> <p>Number of Designated Facilities served:</p> <div style="border: 1px solid black; width: 100px; height: 20px; margin: 5px 0;"></div> <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:</p> <div style="border: 1px solid black; width: 100px; height: 20px; margin: 5px 0;"></div> <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

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
Mar 25, 2004	Turbidity	> 1.0	NTU	Shut filter off and isolated from system	Mar 25, 2004
July 1, 2004	Total Coliform	5	Counts	Immediately resample and retest. Good chlorine residual	July 1, 2004
Sept. 20, 2004	Turbidity	> 1.0	NTU	Related to operation of discharge valves, (rusty water) for <8 mins	Sept. 20, 2004

Drinking-Water Systems Regulation O. Reg. 170/03

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 Background Samples	Range of Background Results (min #)-(max #)
Raw	52	0 – 41	0 – 220	n/a	n/a
Treated	52	0 – 0	0 – 0	52	0 – 0
Distribution	318	0 – 0	0 - 5	318	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 #)
Turbidity	8760	.020 – 1.45 NTU
Chlorine	8760	.61 – 1.11
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
SGS Lakefield Research	Arsenic	Weekly	2< MDL	ug/L
SGS Lakefield Research	Uranium	Weekly	.080 - .303	ug/L
SGS Lakefield Research and In house	Sodium	Daily	10.93 - 12.40	mg/L
In house	pH	Continuous	7.08 – 7.62	pH
In house	Temperature	Daily	1 - 23	Degrees Celcius
SGS Lakefield	THM's	Monthly	9.50 – 28.5	ug/L
Becquerel Laboratories Inc.	Gross Alpha	Annual	<0.1	Bq/L
Becquerel Laboratories Inc	Gross Beta	Annual	<0.1	Bq/L
Becquerel Laboratories Inc	Tritium	Annual	<1000	Bq/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	08/24/04	.00011	mg/L	No
Arsenic	08/24/04	.002<MDL	mg/L	No
Barium	08/24/04	.019	mg/L	No
Boron	08/24/04	.019	mg/L	No
Cadmium	08/24/04	.0001<MDL	mg/L	No
Chromium	08/24/04	.003<MDL	mg/L	No
Lead	08/24/04	.003<MDL	mg/L	No
Mercury	08/24/04	.000002 <MDL	mg/L	No
Selenium	08/24/04	.003<MDL	mg/L	No
Sodium	08/24/04		mg/L	No
Uranium	08/24/04	.000009 <MDL	mg/L	No
Fluoride	-	-	mg/L	No
Nitrite	02/24/04	.005<MDL	mg/L	No
	05/25/04	.005<MDL		
	08/31/04	.005<MDL		
	11/30/04	.005<MDL		
Nitrate	02/24/04	.446	mg/L	No
	05/25/04	.404		
	08/31/04	.240		
	11/30/04	.106		

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	08/24/04	.00011	mg/L	No
Aldicarb	08/24/04	.00030	mg/L	No
Aldrin + Dieldrin	08/24/04	.000067	mg/L	No
Atrazine + N-dealkylated metabolites	08/24/04	.00012	mg/L	No
Azinphos-methyl	08/24/04	.00021	mg/L	No
Bendiocarb	08/24/04	.00013	mg/L	No
Benzene	08/24/04	.00036	mg/L	No
Benzo(a)pyrene	08/24/04	.000004	mg/L	No
Bromoxynil	08/24/04	.000094	mg/L	No
Carbaryl	08/24/04	.00016	mg/L	No
Carbofuran	08/24/04	.00037	mg/L	No
Carbon Tetrachloride	08/24/04	.00034	mg/L	No
Chlordane (Total)	08/24/04	.00011	mg/L	No
Chlorpyrifos	08/24/04	.00019	mg/L	No
Cyanazine	08/24/04	.00018	mg/L	No

Diazinon	08/24/04	.000081	mg/L	No
Dicamba	08/24/04	.00017	mg/L	No
1,2-Dichlorobenzene	08/24/04	.00056	mg/L	No
1,4-Dichlorobenzene	08/24/04	.00025	mg/L	No
Dichlorodiphenyltrichloroethane (DDT) + metabolites	08/24/04	.00014	mg/L	No
1,2-Dichloroethane	08/24/04	.00032	mg/L	No
1,1-Dichloroethylene (vinylidene chloride)	08/24/04	.00052	mg/L	No
Dichloromethane	08/24/04	.00117	mg/L	No
2-4 Dichlorophenol	08/24/04	.00015	mg/L	No
2,4-Dichlorophenoxy acetic acid (2,4-D)	08/24/04	.00011	mg/L	No
Diclofop-methyl	08/24/04	.00013	mg/L	No
Dimethoate	08/24/04	.00012	mg/L	No
Dinoseb	08/24/04	.000084	mg/L	No
Diquat	08/24/04	.001	mg/L	No
Diuron	08/24/04	.000087	mg/L	No
Glyphosate	08/24/04	.006	mg/L	No
Heptachlor + Heptachlor Epoxide	08/24/04	.00011	mg/L	No
Lindane (Total)	08/24/04	.000056	mg/L	No
Malathion	08/24/04	.000091	mg/L	No
Methoxychlor	08/24/04	.00014	mg/L	No
Metolachlor	08/24/04	.000092	mg/L	No
Metribuzin	08/24/04	.00012	mg/L	No
Monochlorobenzene	08/24/04	.00046	mg/L	No
Paraquat	08/24/04	.001	mg/L	No
Parathion	08/24/04	.00018	mg/L	No
Pentachlorophenol	08/24/04	.00015	mg/L	No
Phorate	08/24/04	.00011	mg/L	No
Picloram	08/24/04	.00020	mg/L	No
Polychlorinated Biphenyls(PCB)	08/24/04	.00004	mg/L	No
Prometryne	08/24/04	.00023	mg/L	No
Simazine	08/24/04	.00015	mg/L	No
THM (NOTE: show latest annual average)	08/24/04	.0167	mg/L	No
Temephos	08/24/04	.00031	mg/L	No
Terbufos	08/24/04	.00012	mg/L	No
Tetrachloroethylene	08/24/04	.00048	mg/L	No
2,3,4,6-Tetrachlorophenol	08/24/04	.00014	mg/L	No
Triallate	08/24/04	.00010	mg/L	No
Trichloroethylene	08/24/04	.00054	mg/L	No
2,4,6-Trichlorophenol	08/24/04	.000252	mg/L	No
2,4,5-Trichlorophenoxy acetic acid (2,4,5-T)	08/24/04	.00014	mg/L	No
Trifluralin	08/24/04	.00012	mg/L	No
Vinyl Chloride	08/24/04	.00008	mg/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)