

Optional Annual Report Template

Drinking-Water System Number:	220000772
Drinking-Water System Name:	Oshawa Water Treatment Plant
Drinking-Water System Owner:	Regional Municipality of Durham
Drinking-Water System Category:	Large Municipal Residential System
Period being reported:	January 1 to December 31, 2007

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 []

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

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

Regional Municipality of Durham
Works Department
605 Rossland Rd E.
5th Floor
Whitby, Ontario
L1N 6A3

Complete for all other Categories.

Number of Designated Facilities served:

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

Number of Interested Authorities you report to:

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

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 – Durham Region Works Dept.

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 – Bi-annual newsletter to residents

Describe your Drinking-Water System

The **Oshawa Water Treatment Plant** is a surface water treatment facility that supplies quality potable water to approximately 177,074 consumers in the City of Oshawa and Courtice, an urban area of the Municipality of Clarington. Raw water is drawn from Lake Ontario through two intake pipes. One is 750 mm in diameter extending 831 m into the lake to an intake structure at a depth of 7.6 m. The second is a 900 mm diameter pipe extending 924 m into the lake to an intake structure at a depth of 10.7 m.

The **treatment plant** facility has a rated maximum flow of 134,000 m³/day (29.5 MIGD). The treatment plant facility utilizes the following unit processes and systems: zebra mussel control, screening, pre-chlorination, low lift pumping, coagulation, flocculation, sedimentation, filtration, post-chlorination, water storage, and high lift pumping. The ten (10) filters are dual media sand/anthracite. The process is controlled and monitored by a SCADA (Supervisory Control and Data Acquisition) system.

The **distribution system** delivers the treated water through approximately 735 kilometres of watermains in four (4) pressure zones, and includes four (4) reservoirs and four (4) booster stations. The distribution system in Oshawa is interconnected with the distribution system of Whitby.

List all water treatment chemicals used over this reporting period

Chlorine (disinfectant)
 Aluminum sulphate (coagulant agent)
 Hydrofluosilicic acid (fluoride)

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

Watermain Replacement - \$2,732,000
 Cement lining of Watermains - \$1,000,000
 Cathodic Protection of Watermains - \$178,000
 Installation or replacement of pump at Hortop Pumping Station - \$17,349
 Repaired High Lift pump motor - \$11,460

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
Jun 18	Water & sewer main break during construction activity (Distribution)	--	--	Affected area was immediately isolated from the system and a boil water advisory was issued. Water and sewer mains were repaired. Disinfection, chlorine residual testing and bacteriological sampling followed repair of the watermain. One bacteriological result did not meet the Ontario Drinking Water Quality Standards. See below.	Jun 18,20,22
Jun 20	Total Coliforms (Distribution)	3	CFU/100mL	Sample was collected as part of corrective actions for the above adverse water quality incident. Resamples were collected upstream, downstream and at the location that gave rise to the adverse. Results of the analyses performed on the resamples met the Ontario Drinking Water Quality Standards. Boil water advisory was lifted on Jun 22.	Jun 20, 22
Jul 02	Total Coliforms (Distribution)	2	CFU/100mL	Resamples were collected upstream, downstream and at the location that gave rise to the adverse. Results of the analyses performed on the resamples met the Ontario Drinking Water Quality Standards.	May 30
Jul 26	Lead (Distribution)	0.0291	mg/L	False adverse water quality incident. Elevated lead result was determined to originate from the plumbing within the building.	Jul 26
Jul 30	Chlorine Residual (Distribution)	0.00	mg/L	Affected area was flushed until chlorine residual was restored to above 0.05 mg/L as required by the Ontario Drinking Water Systems Regulation. Bacteriological samples were taken in the affected area. Results of the analyses performed on the samples met the Ontario Drinking Water Quality Standards	Jul 30
Sep 21	Total Coliforms (Distribution)	5	CFU/100mL	Resamples were collected upstream, downstream and at the location that gave rise to the adverse. One	Sep 21, 22, 23, 24

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

				bacteriological result did not meet the Ontario Drinking Water Quality Standards. See below.	
Sep 22	Total Coliforms (Distribution)	2	CFU/100mL	Sample was collected as part of corrective actions for the above adverse water quality incident. Affected area was flushed. Resamples were collected upstream and at the location that gave rise to the adverse. Two bacteriological results did not meet the Ontario Drinking Water Quality Standards. See below.	Sep 22, 23, 24
Sep 23	Total Coliforms (Distribution, 2 locations)	54,2	CFU/100mL	Samples were collected as part of corrective actions for the above two adverse water quality incidents. Affected area was flushed. Two consecutive sets of samples taken 24 hr apart were collected upstream, downstream and at the locations that gave rise to the adverse. Results of the analyses performed on the resamples met the Ontario Drinking Water Quality Standards.	Sep 23, 24
Sep 28	Infiltration of trench water during valve replacement work	--	--	Affected watermain and residences were immediately flushed. Bacteriological samples were collected upstream and downstream of the affected location following repair of the valve. Results of the analyses performed on the samples met the Ontario Drinking Water Quality Standards.	Sep 28
Oct 15	Chlorine Residual (Distribution)	0.00	mg/L	Affected area was flushed until chlorine residual was restored to above 0.05 mg/L as required by the Ontario Drinking-Water Systems Regulation. Bacteriological samples were taken in the affected area. Results of the analyses performed on the samples met the Ontario Drinking Water Quality Standards	Oct 15
Nov 15	Total Coliforms (Distribution)	4	CFU/100mL	Resamples were collected upstream and at the location that gave rise to the adverse. Results of the analyses performed on the resamples met the Ontario Drinking Water Quality Standards.	Nov 15

Dec 07	Total Coliforms (Distribution)	8	CFU/100mL	Resamples were collected upstream and at the location that gave rise to the adverse. Results of the analyses performed on the resamples met the Ontario Drinking Water Quality Standards.	Dec 07
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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 Results MF	Range of Total Coliform Results MF	E.Coli Results P/A	Total Coliform Results P/A	Number of HPC Samples	Range of HPC Results (min #)-(max #)	Number of BKG Samples	Range of BKG Results (min #)-(max #)
Raw	200	<1-12	<1-46,000	--	--	--	--	200	<1-900
Treated	205	--	--	A	A	206	<1-22	--	--
	1	<1	<1	--	--	--	--	--	--
Distribution	1178	--	--	A	A	922	<1-23,000	16	<1-<1
	369	<1-<1	<1-54 (8)*						

MF: Membrane Filter; P/A Presence/Absence; BKG: Background Bacteria; HPC: Heterotrophic Bacteria; M: Estimated Count

*Number in parentheses represents number of exceedance(s)

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 – filter effluent	8760	0.015-0.430 NTU
Free Chlorine – Plant	8760	0.85-5.1
Free Chlorine – Distribution	2935	0.00-4.55
Fluoride (If the DWS provides fluoridation)	8760	0.10-0.87

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
December 21, 2006	Raw Water			
	Gross Beta	Jan – Dec	0.06-0.13	Bq/L
	Tritium	Jan – Dec	3.0-13	Bq/L
	Treated Water*			
	Gross Alpha	Jan - Nov	<0.04	Bq/L
	Gross Beta	Jan – Nov	0.05-0.06	Bq/L
	Tritium	Jan – Nov	<5-15	Bq/L
	Cesium-134	Jan – Nov	<0.3	Bq/L
	Cesium-137	Jan – Nov	<0.3	Bq/L
	Cobalt-60	Jan – Nov	<0.3	Bq/L
	Iodine-131	Jan – Nov	<0.3	Bq/L
	Residue Management			
	Aluminum	Jan 05 - Dec 20	16.1-92.0	mg/L
	Chlorine	Jan 05 - Dec 20	1.60-2.32	mg/L
Suspended Solids	Jan 05 - Dec 20	124-398	mg/L	

To date, the treated water radionuclides results for December have not been received. The results will be updates as the information becomes available.

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

Parameter	Sample Date	Result Value	Unit of Measure	Exceedance	Number of Samples
Antimony	Mar 21 – Nov 28	<0.0004-0.0006	mg/L	No	4
Arsenic	Mar 21 – Nov 28	<0.0004-0.0005	mg/L	No	4
Barium	Jun 06, Oct 31	0.0245-0.0231	mg/L	No	2
Boron	Jun 06, Oct 31	0.019-0.0292	mg/L	No	2
Cadmium	Mar 21 – Nov 28	<0.0001-0.0001	mg/L	No	4
Chromium	Mar 21 – Nov 28	<0.0003-0.0003	mg/L	No	4
Lead - Distribution	Mar 20 – Aug 15	<0.0007	mg/L	No	5
Mercury	Jun 06, Oct 31	<0.01	ug/L	No	2
Selenium	Mar 21 – Nov 28	<0.002-0.0004	mg/L	No	4
Sodium	Mar 14 – Nov 28	12.9-16.3	mg/L	No	4
Uranium	Jun 06, Oct 31	<0.002-0.0004	mg/L	No	2
Nitrite	Jan 01 – Dec 04	<0.002-<0.05	mg/L	No	15
Nitrate	Jan 01 – Dec 04	0.24-0.65	mg/L	No	15

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

Parameter	Sample Date	Result Value	Unit of Measure	Exceedance	Number of Samples
Alachlor	Aug 30, Nov 22	<0.4	ug/L	No	2
Aldicarb	Aug 30, Nov 22	<3.5	ug/L	No	2
Aldrin + Dieldrin	Aug 30, Nov 22	<0.006	ug/L	No	2

Atrazine + N-dealkylated metabolites	Aug 30, Nov 22	<0.2	ug/L	No	2
Azinphos-methyl	Aug 30, Nov 22	<0.3	ug/L	No	2
Bendiocarb	Aug 30, Nov 22	<3.0	ug/L	No	2
Benzene	Aug 30, Nov 22	<0.1	ug/L	No	2
Benzo(a)pyrene	Aug 30, Nov 22	<0.01	ug/L	No	2
Bromoxynil	Aug 30, Nov 22	<0.4	ug/L	No	2
Carbaryl	Aug 30, Nov 22	<0.2	ug/L	No	2
Carbofuran	Aug 30, Nov 22	<4.0	ug/L	No	2
Carbon Tetrachloride	Aug 30, Nov 22	<0.2	ug/L	No	2
Chlordane (Total)	Aug 30, Nov 22	<0.006	ug/L	No	2
Chlorpyrifos	Aug 30, Nov 22	<0.2	ug/L	No	2
Cyanazine	Aug 30, Nov 22	<0.3	ug/L	No	2
Diazinon	Aug 30, Nov 22	<0.2	ug/L	No	2
Dicamba	Aug 30, Nov 22	<0.4	ug/L	No	2
1,2-Dichlorobenzene	Aug 30, Nov 22	<0.1	ug/L	No	2
1,4-Dichlorobenzene	Aug 30, Nov 22	<0.1	ug/L	No	2
Dichlorodiphenyltrichloroethane (DDT) + metabolites	Aug 30, Nov 22	<0.008	ug/L	No	2
1,2-Dichloroethane	Aug 30, Nov 22	<0.1	ug/L	No	2
1,1-Dichloroethylene (vinylidene chloride)	Aug 30, Nov 22	<0.3	ug/L	No	2
Dichloromethane	Aug 30, Nov 22	<0.5	ug/L	No	2
2,4-Dichlorophenol	Aug 30, Nov 22	<0.4	ug/L	No	2
2,4-Dichlorophenoxy acetic acid (2,4-D)	Aug 30, Nov 22	<0.8	ug/L	No	2
Diclofop-methyl	Aug 30, Nov 22	<0.4	ug/L	No	2
Dimethoate	Aug 30, Nov 22	<0.3	ug/L	No	2
Dinoseb	Aug 30, Nov 22	<0.5	ug/L	No	2
Diquat	Aug 30, Nov 22	<0.1	ug/L	No	2
Diuron	Aug 30, Nov 22	<0.2	ug/L	No	2
Glyphosate	Aug 30, Nov 22	<2.0	ug/L	No	2
Heptachlor + Heptachlor Epoxide	Aug 30, Nov 22	<0.008	ug/L	No	2
Lindane (Total)	Aug 30, Nov 22	<0.005	ug/L	No	2
Malathion	Aug 30, Nov 22	<0.2	ug/L	No	2
Methoxychlor	Aug 30, Nov 22	<0.009	ug/L	No	2
Metolachlor	Aug 30, Nov 22	<0.2	ug/L	No	2
Metribuzin	Aug 30, Nov 22	<0.3	ug/L	No	2
Monochlorobenzene	Aug 30, Nov 22	<0.1	ug/L	No	2
Paraquat	Aug 30, Nov 22	<0.1	ug/L	No	2
Parathion	Aug 30, Nov 22	<0.2	ug/L	No	2
Pentachlorophenol	Aug 30, Nov 22	<0.4	ug/L	No	2
Phorate	Aug 30, Nov 22	<0.2	ug/L	No	2
Picloram	Aug 30, Nov 22	<0.7	ug/L	No	2
Polychlorinated Biphenyls(PCB)	Aug 30, Nov 22	<0.02	ug/L	No	2
Prometryne	Aug 30, Nov 22	<0.2	ug/L	No	2
Simazine	Aug 30, Nov 22	<0.2	ug/L	No	2
THM – Distribution (NOTE: show latest annual average)	Jan 04-Dec 06	41	ug/L	No	12

Temephos	Aug 30, Nov 22	<3	ug/L	No	2
Terbufos	Aug 30, Nov 22	<0.2	ug/L	No	2
Tetrachloroethylene	Aug 30, Nov 22	<0.3	ug/L	No	2
2,3,4,6-Tetrachlorophenol	Aug 30, Nov 22	<0.5	ug/L	No	2
Triallate	Aug 30, Nov 22	<2.0	ug/L	No	2
Trichloroethylene	Aug 30, Nov 22	<0.1	ug/L	No	2
2,4,6-Trichlorophenol	Aug 30, Nov 22	<0.5	ug/L	No	2
2,4,5-Trichlorophenoxy acetic acid (2,4,5-T)	Aug 30, Nov 22	<0.5	ug/L	No	2
Trifluralin	Aug 30, Nov 22	<0.006	ug/L	No	2
Vinyl Chloride	Aug 30, Nov 22	<0.2	ug/L	No	2

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
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(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)