2013 ANNUAL REPORT

Drinking-Water System Number:	**220001799**
Drinking-Water System Name:	Owen Sound Drinking Water System
Drinking-Water System Owner:	City of Owen Sound
Drinking-Water System Category:	Large Municipal Residential
Period being reported:	January 1, 2013 – December 31, 2013

Complete if your Category is Large Municipal Residential or Small Municipal Residential

Does your Drinking-Water System serve more than 10,000 people? Yes [X] No [ ]

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

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

- Owen Sound City Website http://www.owensound.ca
- City Clerk's Office, City Hall
- Public Works Office
- Water Treatment Plant
- Library

Complete for all other Categories.

Number of Designated Facilities served:

n/a

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

Number of Interested Authorities you report to: n/a

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

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
Leith Water Distribution System	260065312

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 [X] No [ ]

Indicate how you notified system users that your annual report is available, and is free of charge.

[X] Public access/notice via the web
[ ] Public access/notice via Government Office
[ ] Public access/notice via a newspaper
[X] Public access/notice via Public Request
[X] Public access/notice via a Public Library
[ ] Public access/notice via other method _____

Describe your Drinking-Water System

The Richard H. Neath Water Purification plant is a surface water treatment plant that draws its water from Georgian Bay. This plant uses direct filtration, and serves a population of 22,000 people. The City's distribution network is divided into 6 pressure zones with approximately 150 km of water main.

The Water Treatment Plant comprises of the following processes; raw water screening, prechlorination, zebra mussel control (chlorination at Intake), flash mixing (initial mixing of coagulant), coagulation/flocculation (mixing of coagulant), UV disinfection, post chlorination, Fluoridation, and a residue management tank for treating backwash water.

The City has a 22,000 m^3 reservoir, with two booster stations that provides addition pressure in the Southeast and southwest portions of the City and outskirts.

List all water treatment chemicals used over this reporting period

Gaseous Chlorine, Hydrofluorosilicic Acid (HFS), PAX XL-6, PAX-XL1900, Sodium Bisulphite (dechlorination chemical), and Alcomer 120L (polymer addition for residue management)

Were any significant expenses incurred to?

[ ] Install required equipment
[X] Repair required equipment
[X] Replace required equipment

Please provide a brief description and a breakdown of monetary expenses incurred

1. Industrial Header piping replacement – $250,000
2. East Hill Pump Station Upgrades – Approximately $700,000, will continue into 2014

3. Natural Gas Conversion and other WTP modification project – Approximately $650,000, will continue into 2014
4. Rotork Actuator – Industrial system - $14,000
5. TP3 Municipal pump Motor/Pump Repair – $17,000
6. P1 Industrial Motor rebuild - $2,500

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

Please see Appendix "A"

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	54	0 - 20	0 - 2100	n/a	n/a
Treated	56	0 - 0	0 - 0	54	<10 - 1240
Distribution	465	0 - 0	0 - 0	105	<10 - 350

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 #)
Filter 1 Turbidity	**8760**	**0.03 – 1.09 NTU* High event was Apr 22/13, over 1 NTU for only 4 minutes.**
Filter 2 Turbidity	**8760**	**0.03 - .95 NTU**
Filter 3 Turbidity	**8760**	**0.01 – 2.80 NTU *High event was Feb 7/13, Line was disrupted when working in area installing Filter 2 Turbidimeter.**

***NOTE**: For continuous monitors use 8760 as the number of samples.*

		Was over 1 NTU for only 4 minutes.
Filter 4 Turbidity	**8760**	**0.02 – 0.98 NTU**
Post 1 Chlorine	**8760**	**0.00 – 3.21 * Low residual recorded was 0.02, problem on Oct 24. Problem was with loss of program in chlorinator. On a couple of occasions, there was a signal issue which showed cl2 residual at 0.00 but trending of data did not show this. Older equipment being replaced in January 2014. Should eliminate this issue.**
Post 2 Chlorine	**8760**	**0.00 – 4.53 * As noted above, there was a signal issue which on several occasions would register a 0.00, but trending did not show this. High Residual was a short spike in residual on Jan 14/13, dropped below 4 mg/L after 90 seconds.**
Municipal Chlorine	**8760**	**0.00 mg/L – 2.00 mg/L. * Low residual was actually a shutdown of the Municipal Header line. A true low residual was**

		recorded on July 25/13 at 0.66 mg/L
Industrial Chlorine	**8760**	**0.00 – 2.16 * The low residual was recorded when the equipment was turned off for new piping and valving on Industrial lines at Water Plant in January and February 2013. A true low Chlorine occurred July 26 at 0.41 mg/L.**
Municipal Fluoride	**8760**	**0.00 – 0.98 * Low residual recorded on Dec 19/13 when Municipal line was shut down for maintenance. A true low residual of 0.40 mg/L was recorded on Feb 15/13. On Jul 1/13, the high residual spiked over 0.70 for 10 minutes, and came back down.**
Industrial Fluoride	**8760**	**0.00 – 0.82 * The low residual was recorded when the equipment was turned off for new piping and valving on Industrial lines at Water Plant in January and February 2013. A true low Fluoride residual occurred Oct 7/13 at 0.35 mg/L.**
***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
Municipal License # 092-101	**Chlorine – Wastewater System**	**Jan 2**	**0.00**	mg/L
Municipal License # 092-101	**Chlorine – Wastewater System**	**Feb 4**	**0.00**	mg/L
Municipal License # 092-101	**Total Suspended Solids**	**Feb 23**	**3**	mg/L
Municipal License # 092-101	**Chlorine – Wastewater System**	**Mar 3**	**0.00**	mg/L
Municipal License # 092-101	**Chlorine – Wastewater System**	**Apr 2**	**0.00**	mg/L
Municipal License # 092-101	**Chlorine – Wastewater System**	**May 1**	**0.00**	mg/L
Municipal License # 092-101	**Total Suspended Solids**	**May 23**	**11**	mg/L
Municipal License # 092-101	**Chlorine – Wastewater System**	**June 10**	**0.00**	mg/L
Municipal License # 092-101	**Chlorine – Wastewater System**	**Jul 4**	**0.00**	mg/L
Municipal License # 092-101	**Chlorine – Wastewater System**	**Aug 9**	**0.00**	mg/L
Municipal License # 092-101	**Total Suspended Solids**	**Aug 21**	**2**	mg/L
Municipal License # 092-101	**Chlorine – Wastewater System**	**Sep 5**	**0.00**	mg/L
Municipal License # 092-101	**Chlorine – Wastewater System**	**Oct 2**	**0.00**	mg/L

Municipal License # 092-101	**Chlorine – Wastewater System**	**Nov 1**	**0.00**	mg/L
Municipal License # 092-101	**Total Suspended Solids**	**Nov 20**	**4**	mg/L
Municipal License # 092-101	**Chlorine – Wastewater System**	**Dec 2**	**0.00**	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	January 22	<0.0001	mg/L	No
Arsenic	January 22	0.0004	mg/L	No
Barium	January 22	0.012	mg/L	No
Boron	January 22	<0.005	mg/L	No
Cadmium	January 22	<0.00002	mg/L	No
Chromium	January 22	<0.002	mg/L	No
***Lead**	n/a		n/a	n/a
Mercury	January 22	<0.00002	mg/L	No
Selenium	January 22	<0.001	mg/L	No
Sodium	February 12, 2013	5.6	mg/L	No
Uranium	January 22	0.00008	mg/L	No
Fluoride – Municipal	December 31	0.61	mg/L	No
Fluoride - Industrial	December 31	0.60	mg/L	No
Nitrite	October 18	< 0.1	mg/L	No
Nitrate	October 18	0.3	mg/L	No

*only for drinking water systems testing under Schedule 15.2; this includes large municipal non-residential systems, small municipal non-residential systems, non-municipal seasonal residential systems, large non-municipal non-residential systems, and small non-municipal non-residential systems

Summary of lead testing under Schedule 15.1 during this reporting period
(applicable to the following drinking water systems; large municipal residential systems**,** small municipal residential systems, and non-municipal year-round residential systems)

Location Type	Number of Samples	Range of Lead Results (min#) – (max #)	Number of Exceedances
Plumbing	n/a	n/a	n/a
Distribution	n/a	n/a	n/a

No Lead Samples were collected during this time period.

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 22	<0.0003	mg/L	No
Aldicarb	Jan 22	<0.003	mg/L	No
Aldrin + Dieldrin	Jan 22	<0.00002	mg/L	No
Atrazine + N-dealkylated metobolites	Jan 22	<0.0005	mg/L	No
Azinphos-methyl	Jan 22	<0.001	mg/L	No
Bendiocarb	Jan 22	<0.003	mg/L	No
Benzene	Jan 22	<0.0005	mg/L	No
Benzo(a)pyrene	Jan 22	<0.000005	mg/L	No
Bromoxynil	Jan 22	<0.0003	mg/L	No
Carbaryl	Jan 22	<0.003	mg/L	No
Carbofuran	Jan 22	<0.001	mg/L	No
Carbon Tetrachloride	Jan 22	<0.0002	mg/L	No
Chlordane (Total)	Jan 22	<0.00004	mg/L	No
Chlorpyrifos	Jan 22	<0.0005	mg/L	No
Cyanazine	Jan 22	<0.0005	mg/L	No
Diazinon	Jan 22	<0.001	mg/L	No
Dicamba	Jan 22	<0.005	mg/L	No
1,2-Dichlorobenzene	Jan 22	<0.0001	mg/L	No
1,4-Dichlorobenzene	Jan 22	<0.0002	mg/L	No
Dichlorodiphenyltrichloroethane (DDT) + metabolites	Jan 22	<0.00001	mg/L	No
1,2-Dichloroethane	Jan 22	<0.0001	mg/L	No
1,1-Dichloroethylene (vinylidene chloride)	Jan 22	<0.0001	mg/L	No
Dichloromethane	Jan 22	<0.0003	mg/L	No
2-4 Dichlorophenol	Jan 22	<0.0001	mg/L	No
2,4-Dichlorophenoxy acetic acid (2,4-D)	Jan 22	<0.005	mg/L	No
Diclofop-methyl	Jan 22	<0.0005	mg/L	No
Dimethoate	Jan 22	<0.001	mg/L	No
Dinoseb	Jan 22	<0.0005	mg/L	No
Diquat	Jan 22	<0.005	mg/L	No

Diuron	Jan 22	<0.005	mg/L	No
Glyphosate	Jan 22	<0.025	mg/L	No
Heptachlor + Heptachlor Epoxide	Jan 22	<0.0001	mg/L	No
Lindane (Total)	Jan 22	<0.0001	mg/L	No
Malathion	Jan 22	<0.005	mg/L	No
Methoxychlor	Jan 22	<0.0001	mg/L	No
Metolachlor	Jan 22	<0.003	mg/L	No
Metribuzin	Jan 22	<0.003	mg/L	No
Monochlorobenzene	Jan 22	<0.0002	mg/L	No
Paraquat	Jan 22	<0.001	mg/L	No
Parathion	Jan 22	<0.003	mg/L	No
Pentachlorophenol	Jan 22	<0.0001	mg/L	No
Phorate	Jan 22	<0.0003	mg/L	No
Picloram	Jan 22	<0.005	mg/L	No
Polychlorinated Biphenyls(PCB)	Jan 22	<0.00005	mg/L	No
Prometryne	Jan 22	<0.0001	mg/L	No
Simazine	Jan 22	<0.0005	mg/L	No
THM (NOTE: show latest annual average)	2013	0.0347	mg/L	No
Temephos	Jan 22	<0.010	mg/L	No
Terbufos	Jan 22	<0.0003	mg/L	No
Tetrachloroethylene	Jan 22	<0.0002	mg/L	No
2,3,4,6-Tetrachlorophenol	Jan 22	<0.0001	mg/L	No
Triallate	Jan 22	<0.010	mg/L	No
Trichloroethylene	Jan 22	<0.0001	mg/L	No
2,4,6-Trichlorophenol	Jan 22	<0.0001	mg/L	No
2,4,5-Trichlorophenoxy acetic acid (2,4,5-T)	Jan 22	<0.010	mg/L	No
Trifluralin	Jan 22	<0.0005	mg/L	No
Vinyl Chloride	Jan 22	<0.0002	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
none			

APPENDIX "A"

#	Notification Date	AWQI #(s)	Adverse Location	Adverse Parameter	Adverse Result	Units	Remedial Action
1	20-Feb	110051	Hwy 6 & 10	Low Pressure	0	psi	Broken water main caused loss of pressure, main repaired, flushed and bacti sampled.
2	16-May	111049	Water Treatment Plant - Industrial Header Point of Entry	Communications to Lowlift Building RN3	n/a	n/a	Loss of Comms caused by ethernet line coming out of router. Comms reestablished, cable secured and comm alarm created.
3	25-Sep	114274	173 6th Ave East Hyd 2-E-101	Low Chlorine	0.02	mg/L	Flushed for 1.5 hours, end Cl2 residual 0.31 mg.L