



2015 ANNUAL REPORT

<b>Drinking-Water System Number:</b>	220001799
<b>Drinking-Water System Name:</b>	Owen Sound Drinking Water System
<b>Drinking-Water System Owner:</b>	City of Owen Sound
<b>Drinking-Water System Category:</b>	Large Municipal Residential
<b>Period being reported:</b>	January 1, 2015 – December 31, 2015

<p><b><u>Complete if your Category is Large Municipal Residential or Small Municipal Residential</u></b></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> <ul style="list-style-type: none"> <li>• Owen Sound City Website <a href="http://www.owensound.ca">http://www.owensound.ca</a></li> <li>• City Clerk’s Office, City Hall</li> <li>• Public Works Office</li> <li>• Water Treatment Plant</li> <li>• Library</li> </ul>	<p><b><u>Complete for all other Categories.</u></b></p> <p>Number of Designated Facilities served: <input type="text" value="n/a"/></p> <p>Did you provide a copy of your annual report to all Designated Facilities you serve? Yes [ ] No [ X ]</p> <p>Number of Interested Authorities you report to: <input type="text" value="n/a"/></p> <p>Did you provide a copy of your annual report to all Interested Authorities you report to for each Designated Facility? Yes [ ] No [ X ]</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
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.

- 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 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 addition and rapid mixing of coagulant), coagulation/flocculation (slower mixing of coagulant), UV disinfection, post chlorination, Fluoridation, and a residue management tank for treating backwash water.

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

The City also has an additional agreement with the Municipality of Meaford to provide potable water from our 36<sup>th</sup> Street East and East Bayshore Rd boundary point to Leith.

**List all water treatment chemicals used over this reporting period**

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

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**

1. PAKScan controller(replaced) - \$18,000. This device controls 26 automated valves for control of filters and flow to treated wells.
2. 10 head Milltronics Level Transmitter (replaced) \$10,000. 10 individual transmitters were purchased to minimize a failure of one 10 unit device.
3. Fluoride pumps -\$10,000 (replaced). New peristaltic pumps purchased, install to be done in 2016.

**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 #)
<b>Raw</b>	52	0-220	0-1950	n/a	n/a
<b>Treated</b>	52	0-0	0-0	52	<10-20
<b>Distribution</b>	482	0-0	0-0	126	<10->2000

**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 #)
<b>Filter 1 Turbidity</b>	<b>8760</b>	<b>0.00 NTU* - 0.64 NTU. Low result occurred two times by power interruptions (Aug 20<sup>th</sup>, and Oct 13<sup>th</sup>), several others were detected on Nov 23<sup>rd</sup>, and 24<sup>th</sup> but filter was offline.</b>
<b>Filter 2 Turbidity</b>	<b>8760</b>	<b>0.00 NTU* - 2.08</b>

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



		NTU. Low result occurred three times by power interruptions (Aug 2 <sup>nd</sup> , Aug 20 <sup>th</sup> , and Oct 13 <sup>th</sup> ). Also, a 0.00 NTU was recorded July 3 <sup>rd</sup> , but the filter was not online. High result was from a spike. Over 1 NTU for 3 minutes (Feb 26 <sup>th</sup> )
Filter 3 Turbidity	8760	0.00 NTU* - 2.85 NTU. Low result occurred three times by power interruptions (Aug 2 <sup>nd</sup> , Aug 20 <sup>th</sup> , and Oct 13 <sup>th</sup> ). High result was a false reading due to a power interruption.
Filter 4 Turbidity	8760	0.00 NTU – 0.54 NTU – Low result occurred two times by power interruptions (Aug 2 <sup>nd</sup> , and Aug 20 <sup>th</sup> ).
Post 1 Chlorine	8760	0.01*-3.11. * Low residual caused by reagent motor failure on unit (Sep 27 <sup>th</sup> ). False low reading detected.
Post 2 Chlorine	8760	0.18-3.14
Municipal Chlorine	8760	0.00*-1.92. Low residual caused by a scheduled shutdown. No water was being pumped at this



		time (Oct 28 <sup>th</sup> ).
Industrial Chlorine	8760	0.95-2.14
Municipal Fluoride	8760	0.28 – 1.11
Industrial Fluoride	8760	0.17-0.85

*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 1	0.00	mg/L
Municipal License # 092-101	Chlorine – Wastewater System	Feb 2	0.00	mg/L
Municipal License # 092-101	Total Suspended Solids	Feb 11	4.0	mg/L
Municipal License # 092-101	Chlorine – Wastewater System	Mar 2	0.00	mg/L
Municipal License # 092-101	Chlorine – Wastewater System	April 1	0.00	mg/L
Municipal License # 092-101	Chlorine – Wastewater System	May 4	0.00	mg/L
Municipal License # 092-101	Total Suspended Solids	May 11	4.0	mg/L
Municipal License # 092-101	Chlorine – Wastewater System	May 11	0.00	mg/L
Municipal License # 092-101	Chlorine – Wastewater System	June 2	0.00	mg/L
Municipal License # 092-101	Chlorine – Wastewater System	July 2	0.00	mg/L
Municipal License # 092-101	Chlorine – Wastewater System	Aug 3	0.00	mg/L



<b>Municipal License # 092-101</b>	<b>Total Suspended Solids</b>	<b>Aug 10</b>	<b>15.0</b>	mg/L
<b>Municipal License # 092-101</b>	<b>Chlorine – Wastewater System</b>	<b>Sep 2</b>	<b>0.00</b>	mg/L
<b>Municipal License # 092-101</b>	<b>Chlorine – Wastewater System</b>	<b>Oct 2</b>	<b>0.00</b>	mg/L
<b>Municipal License # 092-101</b>	<b>Total Suspended Solids</b>	<b>Nov 3</b>	<b>0.00</b>	mg/L
<b>Municipal License # 092-101</b>	<b>Total Suspended Solids</b>	<b>Nov 11</b>	<b>15.0</b>	mg/L
<b>Municipal License # 092-101</b>	<b>Chlorine – Wastewater System</b>	<b>Dec 2</b>	<b>0.00</b>	mg/L

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

<b>Parameter</b>	<b>Sample Date</b>	<b>Result Value</b>	<b>Unit of Measure</b>	<b>Exceedance</b>
<b>Antimony</b>	January 13	0.00017	mg/L	No
<b>Arsenic</b>	January 13	0.0004	mg/L	No
<b>Barium</b>	January 13	0.0124	mg/L	No
<b>Boron</b>	January 13	0.0136	mg/L	No
<b>Cadmium</b>	January 13	<0.000003	mg/L	No
<b>Chromium</b>	January 13	0.00016	mg/L	No
<b>*Lead</b>	n/a	n/a	n/a	n/a
<b>Mercury</b>	January 13	0.00002	mg/L	No
<b>Selenium</b>	January 13	<0.001	mg/L	No
<b>Sodium</b>	February 12, 2013	5.6	mg/L	No
<b>Uranium</b>	January 13	0.000079	mg/L	No
<b>Fluoride – Municipal</b>	December 31	0.68	mg/L	No
<b>Fluoride - Industrial</b>	December 31	0.67	mg/L	No
<b>Nitrite</b>	October 14	<0.003	mg/L	No
<b>Nitrate</b>	October 14	0.223	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	8	0.00002 – 0.00044	0

**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 13	<0.0002	mg/L	No
Aldicarb	Jan 13	<0.00001	mg/L	No
Aldrin + Dieldrin	Jan 13	<0.00001	mg/L	No
Atrazine + N-dealkylated metabolites	Jan 13	0.00002	mg/L	No
Azinphos-methyl	Jan 13	<0.00002	mg/L	No
Bendiocarb	Jan 13	<0.00001	mg/L	No
Benzene	Jan 13	<0.00032	mg/L	No
Benzo(a)pyrene	Jan 13	<0.000004	mg/L	No
Bromoxynil	Jan 13	<0.00033	mg/L	No
Carbaryl	Jan 13	<0.00001	mg/L	No
Carbofuran	Jan 13	<0.00001	mg/L	No
Carbon Tetrachloride	Jan 13	<0.00016	mg/L	No
Chlordane (Total)	Jan 13	<0.00001	mg/L	No
Chlorpyrifos	Jan 13	<0.00002	mg/L	No
Cyanazine	Jan 13	<0.00003	mg/L	No
Diazinon	Jan 13	<0.00002	mg/L	No
Dicamba	Jan 13	<0.00020	mg/L	No
1,2-Dichlorobenzene	Jan 13	<0.00041	mg/L	No
1,4-Dichlorobenzene	Jan 13	<0.00036	mg/L	No
Dichlorodiphenyltrichloroethane (DDT) + metabolites	Jan 13	<0.00001	mg/L	No
1,2-Dichloroethane	Jan 13	<0.00035	mg/L	No
1,1-Dichloroethylene (vinylidene chloride)	Jan 13	<0.00033	mg/L	No
Dichloromethane	Jan 13	<0.00035	mg/L	No
2-4 Dichlorophenol	Jan 13	<0.00015	mg/L	No
2,4-Dichlorophenoxy acetic acid (2,4-D)	Jan 13	<0.00019	mg/L	No
Diclofop-methyl	Jan 13	<0.00040	mg/L	No
Dimethoate	Jan 13	<0.00003	mg/L	No
Dinoseb	Jan 13	<0.00036	mg/L	No
Diquat	Jan 13	<0.001	mg/L	No



Diuron	Jan 13	<0.00003	mg/L	No
Glyphosate	Jan 13	<0.001	mg/L	No
Heptachlor + Heptachlor Epoxide	Jan 13	<.00001	mg/L	No
Lindane (Total)	Jan 13	<.00001	mg/L	No
Malathion	Jan 13	<.00002	mg/L	No
Methoxychlor	Jan 13	<0.00001	mg/L	No
Metolachlor	Jan 13	<0.00001	mg/L	No
Metribuzin	Jan 13	<0.00002	mg/L	No
Monochlorobenzene	Jan 13	<0.0003	mg/L	No
Paraquat	Jan 13	<0.001	mg/L	No
Parathion	Jan 13	<0.001	mg/L	No
Pentachlorophenol	Jan 13	<0.00002	mg/L	No
Phorate	Jan 13	<0.00015	mg/L	No
Picloram	Jan 13	<0.00001	mg/L	No
Polychlorinated Biphenyls(PCB)	Jan 13	<0.001	mg/L	No
Prometryne	Jan 13	<0.00004	mg/L	No
Simazine	Jan 13	<0.00003	mg/L	No
THM (NOTE: show latest annual average)	2015	0.0385	mg/L	No
Temephos	Jan 13	<0.00001	mg/L	No
Terbufos	Jan 13	<0.00001	mg/L	No
Tetrachloroethylene	Jan 13	<0.00035	mg/L	No
2,3,4,6-Tetrachlorophenol	Jan 13	<0.00020	mg/L	No
Triallate	Jan 13	<0.00001	mg/L	No
Trichloroethylene	Jan 13	<0.00044	mg/L	No
2,4,6-Trichlorophenol	Jan 13	<0.00025	mg/L	No
2,4,5-Trichlorophenoxy acetic acid (2,4,5-T)	Jan 13	<0.00022	mg/L	No
Trifluralin	Jan 13	<0.00001	mg/L	No
Vinyl Chloride	Jan 13	<0.00017	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	05-Feb	122460	Inglis Falls Road, Forest Hill Dr. Hyd # 3-G-91	Pressure	16	psi	House fire in area, pressure below 20 psi for 33 minutes.
2	01-Mar	122667	Marlan Towers - 755 10th St West	Precautionary advisory - water supplied by hydrant	n/a	n/a	Main supply frozen, water supplied by hydrant near apartments. Lifted on April 6th.
3	15-Mar	122831	800 block of 5th Ave 'A' East and 5th Ave East. 19 homes	Precautionary advisory - water supplied by temporary watermain	n/a	n/a	Main supply frozen, temporary watermain installed and supplied homes affected. Lifted on May 1st.
4	08-Apr	123054	3054 3rd Ave West Hyd 4-A-114	Free Cl <sub>2</sub>	0.04	mg/L	Hydrant flushed until free Cl <sub>2</sub> was 0.89 mg/L. Total flushing time was 1 hr 13 min.
5	02-Aug	125428	East Hill Zone	Possible negative/low pressure	,20	psi	Due to a storm, the East Hill Pump Station was off for 8 minutes, pressure was restored and a chlorine residual was checked at end point, 0.21 mg/L
6	25-Sep	126537	125 5th Ave East, Hyd # 2-E-107	Free Cl <sub>2</sub>	0.04	mg/L	Hydrant flushed until free Cl <sub>2</sub> was 0.48 mg/L. Total flushing time was 1 hr 25 mins.
7	30-Nov	127541	2600 3rd Ave East	UVT Monitor off for > 1 hr	n/a	n/a	UVT monitor reset and back online.

**AWQI = Adverse Water Quality Incident**