



February 11, 2015

The Corporation of the Municipality of Huron East
72 Main St. S
P.O. Box 610
Seaforth, ON
N0K 1W0

Attention: Brad Knight, Administrator, Clerk-Treasurer

**RE: Seaforth Well Supply System
2014 Annual Report**

Dear Brad,

Please find attached the 2014 Annual Operations Report for the Seaforth Water System, in accordance with Section 11(1) of O. Reg. 170/03. This report covers the period from January 1 to December 31 and meets the requirement of being prepared by February 28 of this year.

Please ensure that a copy of this report is given, without charge, to every person who requests a copy. In addition, please make certain that effective steps are taken to advise residents that copies of the report are available, and of how a copy can be obtained.

As per Schedule 22 of O. Reg. 170/03, please ensure that at least a copy of the Summary Report is given to the members of municipal council no later than March 31, 2015.

Finally, please ensure that a letter is sent to OMI Canada Inc verifying that this report has been received and accepted by Council.

If you have any questions regarding the report, we would be pleased to address them and you should contact the undersigned accordingly.

Sincerely,

OMI Canada Inc.

A handwritten signature in black ink, appearing to read "Joe Arnold".

Joe Arnold
Project Manager
Huron East
Project
519 490 5586

cc. B. Mills, Municipality of Huron East;

2014 ANNUAL REPORT FOR WATER SYSTEMS

Part 1 – ANNUAL REPORT (as required by O. Reg. 170/03, Section 11)

Drinking-Water System Number:	220001511
Drinking-Water System Name:	Seaforth Well Supply System
Drinking-Water System Owner:	The Corporation of the Municipality of Huron East
Drinking-Water System Category:	Large Municipal Residential
Period being reported:	January 1-December 31, 2014

Complete if your Category is Large Municipal Residential or Small Municipal Residential	Complete for all other Categories
Does your Drinking-Water System serve more than 10,000 people? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Number of Designated Facilities served:
Is your annual report available to the public at no charge on a web site on the Internet? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Did you provide a copy of your annual report to all Designated Facilities you serve? <input type="checkbox"/> Yes <input type="checkbox"/> No
Location where Summary Report required under O. Reg. 170/03 Schedule 22 will be available for inspection. Town Office 72 Main St. S. Seaforth, ON	Number of Designated Facilities served: Did you provide a copy of your annual report to all Interested Authorities you report to for each Designated Facility? <input type="checkbox"/> Yes <input type="checkbox"/> No

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?

n/a

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

<input checked="" type="checkbox"/> Public access/notice via the web	<input checked="" type="checkbox"/> Public access/notice via Government Office	<input type="checkbox"/> Public access/notice via a newspaper
<input type="checkbox"/> Public access/notice via Public Request	<input type="checkbox"/> Public access/notice via a Public Library	<input type="checkbox"/> Public access/notice via a Public Library

Describe your Drinking Water System

As of mid-April 2009, the town of Seaforth draws its water supply from three groundwater wells. All wells are located at 40 Welsh St. The Welsh Street facility consists of an above ground pump house with three groundwater wells each located north of the pump house. TW1 (Test Well #1; but is to be considered to be a production well) is a 150mm diameter, 85m deep groundwater well located at 48m north of the new pump house. It is equipped with a submersible turbine pump rated

at 6.4L/s. PW1 (Production Well #1) is a 300mm diameter, 105m deep drilled groundwater well located 43m north of the pump house. It is equipped with a variable speed submersible turbine pump rated at 35/Ls. PW2 has the same dimensions as PW1 and is located 18m north of the pump house. It contains a variable speed submersible turbine pump rated at 40/Ls. Three vertical turbine high lift pumps (one rated at 26L/s and two rated at 44L/s at 48m TDH) convey the water to the distribution system.

Treatment for the Welsh St. well consists of a chlorination system that includes two sodium hypochlorite metering pumps (one main and one backup) and one 200 L day tank for sodium hypochlorite. Sodium Silicate is also added to the system (three pumps available, 1 dedicated to each well) as well as a 200L day tank. A continuous online chlorine analyzer equipped with alarms monitor the chlorine residual in treated water just prior to the point of entry into the distribution system.

Water in excess of demand in the distribution system is pumped to the elevated storage tank. When a predetermined level in the tower is reached, the distribution pump(s) shut down.

The 1930 m³ elevated storage tank was constructed in 1998 and is located at 85 Daly Street. The elevated tank water level cycles based on demand and provides emergency storage, fire protection and peak demand storage for the Seaforth water supply system.

The distribution system supplies water to the entire Town of Seaforth and the Village of Egmondville. The system is composed of cast iron, ductile iron and PVC pipe with 110 hydrants. One automatic blow-off and seven manual blow-offs are connected throughout the distribution system. The elevated storage tank and the underground reservoir are used as a supplementary supply for emergencies.

The Municipality of Huron East operates and maintains the distribution system with the exception of flushing, which is contracted to Operations Management International Canada Inc.

List all water treatment chemicals used over this reporting period

12% Sodium hypochlorite solution
Sodium silicate (in the new system only)

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

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	Units	Corrective Action	Corrective Action Date
April 7/14	Sodium	57.8	mg/L	Public Notification	N/A
April 7/14	Fluoride	1.69	mg/L	Public Notification	N/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 Results (min #) - (max #)	Range of Total Coliform Results (min #) - (max #)	Number of HPC Samples	Range of HPC Results (min #) - (max #)
Raw (TW1)	52	0	0	N/A	-
Raw (PW1)	52	0	0	N/A	-
Raw (PW2)	49	0	0-12	N/A	-
Treated (40 Welsh)	52	0	0	52	<10-200
Distribution	208	0	0	104	<10-940

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 #)	Units
Turbidity (TW1)	52	0.14-0.69	NTU
Turbidity (PW1)	52	0.16-0.95	NTU
Turbidity (PW2)	49	0.18-0.99	NTU
Chlorine (Tower)	8760	0.32-2.70	mg/L
Chlorine (40 Welsh)	8760	0.46-2.59	mg/L
Fluoride (If the DWS provides fluoridation)	n/a		

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

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	May/22/12	.20	ug/L	No
Arsenic	May/22/12	1.2	ug/L	No
Barium	May/22/12	27.4	ug/L	No
Boron	May/22/12	131	ug/L	No
Cadmium	May/22/12	0.037	ug/L	No
Chromium	May/22/12	0.6	ug/L	No
Lead-sampling conducted by the Municipality of Huron East; see summary below				
Mercury	May/22/12	<MDL	ug/L	No
Selenium	May/22/12	<MDL	ug/L	No
Sodium	April 7/14	57.8	mg/L	Yes
Uranium	May/22/12	7.65	ug/L	No
Fluoride	April 7/14	1.69	mg/L	Yes
Nitrite	Jan 28/14	<0.003	mg/L	No
Nitrate	Jan 28 /14	<0.006	mg/L	No
Nitrite	April 7/14	<0.003	mg/L	No
Nitrate	April 7/14	<0.013	mg/L	No
Nitrite	July 2/14	<0.003	mg/L	No
Nitrate	July 2/14	<0.015	mg/L	No
Nitrite	Oct 6/14	<0.003	mg/L	No
Nitrate	Oct 6/14	<0.013	mg/L	No

Summary of Lead Results* Sampled by Municipal Staff

Sampling Period	Range of Results (µg/L)	Non-residential	Distribution	Adverse Incidents?
Dec-15-13-Apr-15-14	0.11-0.27	N/A	2	No
Jun-15-14-Oct-15-14	0.06-0.25	N/A	2	No

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

Parameter	Sample Date	Result Value	Unit of Measure	Exceedance
Alachlor	May/22/12	<MDL	ug/L	No
Aldicarb	May/22/12	<MDL	ug/L	No
Aldrin + Dieldrin	May/22/12	<MDL	ug/L	No
Atrazine + N-dealkylated metabolites	May/22/12	<MDL	ug/L	No
Azinphos-methyl	May/22/12	<MDL	ug/L	No
Bendiocarb	May/22/12	<MDL	ug/L	No
Benzene	May/22/12	<MDL	ug/L	No
Benzo(a)pyrene	May/22/12	<MDL	ug/L	No
Bromoxynil	May/22/12	<MDL	ug/L	No
Carbaryl	May/22/12	<MDL	ug/L	No
Carbofuran	May/22/12	<MDL	ug/L	No
Carbon Tetrachloride	May/22/12	<MDL	ug/L	No
Chlordane (Total)	May/22/12	<MDL	ug/L	No
Iorpyrifos	May/22/12	<MDL	ug/L	No
Cyanazine	May/22/12	<MDL	ug/L	No

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

Diazinon	May/22/12	<MDL	ug/L	No
Dicamba	May/22/12	<MDL	ug/L	No
1,2-Dichlorobenzene	May/22/12	<MDL	ug/L	No
1,4-Dichlorobenzene	May/22/12	<MDL	ug/L	No
Dichlorodiphenyltrichloroethane (DDT) + metabolites	May/22/12	<MDL	ug/L	No
1,2-Dichloroethane	May/22/12	<MDL	ug/L	No
1,1-Dichloroethylene (vinylidene chloride)	May/22/12	<MDL	ug/L	No
Dichloromethane	May/22/12	<MDL	ug/L	No
2-4 Dichlorophenol	May/22/12	<MDL	ug/L	No
2,4-Dichlorophenoxy acetic acid (2,4-D)	May/22/12	<MDL	ug/L	No
Diclofop-methyl	May/22/12	<MDL	ug/L	No
Dimethoate	May/22/12	<MDL	ug/L	No
Dinoseb	May/22/12	<MDL	ug/L	No
Diquat	May/22/12	<MDL	ug/L	No
Diuron	May/22/12	<MDL	ug/L	No
Glyphosate	May/22/12	<MDL	ug/L	No
Heptachlor + Heptachlor Epoxide	May/22/12	<MDL	ug/L	No
Lindane (Total)	May/22/12	<MDL	ug/L	No
Malathion	May/22/12	<MDL	ug/L	No
Methoxychlor	May/22/12	<MDL	ug/L	No
Metolachlor	May/22/12	<MDL	ug/L	No
Metribuzin	May/22/12	<MDL	ug/L	No
Monochlorobenzene	May/22/12	<MDL	ug/L	No
Paraquat	May/22/12	<MDL	ug/L	No
Parathion	May/22/12	<MDL	ug/L	No
Pentachlorophenol	May/22/12	<MDL	ug/L	No
Phorate	May/22/12	<MDL	ug/L	No
Picloram	May/22/12	<MDL	ug/L	No
Polychlorinated Biphenyls(PCB)	May/22/12	<MDL	ug/L	No
Prometryne	May/22/12	<MDL	ug/L	No
Simazine	May/22/12	<MDL	ug/L	No
THM (NOTE: show latest annual average)	Q1-Q4 2014	20.7	µg/L	No
Temephos	May/22/12	<MDL	ug/L	No
Terbufos	May/22/12	<MDL	ug/L	No
Tetrachloroethylene	May/22/12	<MDL	ug/L	No
2,3,4,6-Tetrachlorophenol	May/22/12	<MDL	ug/L	No
Triallate	May/22/12	<MDL	ug/L	No
Trichloroethylene	May/22/12	<MDL	ug/L	No
2,4,6-Trichlorophenol	May/22/12	<MDL	ug/L	No
2,4,5-Trichlorophenoxy acetic acid (2,4,5-T)	May/22/12	<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	Sample Date	Result Value	Unit of Measure	ODWS Criteria
Fluoride	April 7/14	1.69	mg/L	1.5
Sodium	April 7/14	57.8	mg/L	20

Part 2 – SUMMARY REPORT (as required by O. Reg 170/03, Schedule 22)

Non – Compliance with Legislations, Regulations, Approvals & Orders

During this period, the Facility was operated in full compliance with the Act, the regulations and the Facility's approval, save and except for the following:

Requirement	Duration of Failure	Measures to Correct the Failure
None		

System Capability Assessment

Comparison of Flow Rates (m³/d):

Month	Avg. Flow TW1	Max. Flow TW1	Avg. Flow PW1	Max. Flow PW1	Avg. Flow PW2	Max. Flow PW2	Max Daily Total (PW1+PW2+TW1)
January	72	109	289	441	647	829	1283
February	78	120	331	466	701	874	1280
March	95	122	380	529	853	931	1483
April	113	160	384	507	846	1044	1545
May	128	260	461	1010	964	1409	1933
June	124	338	544	1351	935	1623	2042
July	58	414	1162	1901	153	797	2315
August	97	226	680	1364	544	1098	1684
September	105	177	424	809	730	956	1637
October	69	191	312	922	509	1115	1426
November	66	132	268	683	509	755	1387
December	53	124	343	658	455	788	1030
AVERAGE	88	-	464	-	653	-	1587
MAXIMUM	128	414	1162	1901	964	1623	2342
Total Rated CAPACITY	3456	3456	3456	3456	3456	3456	3456
%CAPACITY	3.7	11.9	33.6	55.0	27.8	46.9	67.7