

**2012 Annual Report**

Drinking-Water System Number:	<b>220008006</b>
Drinking-Water System Name:	<b>Munster Hamlet Well System</b>
Drinking-Water System Owner:	<b>City of Ottawa</b>
Drinking-Water System Category:	<b>Large Municipal Residential</b>
Period being reported:	<b>January 1<sup>st</sup> – December 31<sup>st</sup> 2012</b>

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

Does your Drinking-Water System serve more than 10,000 people? **No**

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

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

**Britannia Water Purification Plant  
2731 Cassels St., Ottawa Ontario  
K2B 1A8  
Telephone: 613-828-2727**

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?

**N/A**

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?

**N/A**

**List all Drinking-Water Systems (if any), which receive all of their drinking water from your system:**

**N/A**

**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.**

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 Munster Hamlet water system draws ground water from two wells. One well is located at the treatment facility on Coldstream Drive, while the second well is located in a separate facility approximately 500 metres away on Munster Side Road. The source water in both wells is of high quality. Both wellheads are protected in enclosed buildings. There is little potential for contamination from surface water.

The purification process in Munster Hamlet consists of the following steps:

- disinfection (**free** chlorine using sodium hypochlorite)
- storage (contact time & hydraulic storage)
- high-lift pumping into the distribution system

This treatment process results in water that is clear and most importantly safe to drink.

Treated water is then pumped through the distribution network to reach water customers in Munster Hamlet. All treatment, pumping, and storage systems are controlled by a dedicated SCADA computer system and monitored by certified water treatment operators 24 hours per day.

On-line analyzers are used to measure chlorine residual and turbidity of the treated water. A continuous chlorine analyzer complete with alarm settings is installed at the Munster Community Centre in order to monitor the chlorine residual in the distribution system. In addition, a certified operator visits the well system twice per week to collect water samples and conduct on-site water quality tests.

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

Sodium Hypochlorite (liquid – 6%)

**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. Hydro Generator Project: Phase 1 of a project to install a permanent generator at the Munster Hamlet Well Station was initiated in 2012. The initial phase involves analyzing the capacity of the station to allow for the appropriate sizing of a generator. The complete project is estimated to cost \$ 1.4 million with project completion anticipated in 2014.
2. Upgrade Diesel Pump #3: The exhaust stack of the diesel drive pump was replaced to bring it into compliance with TSSA Regulations. The cost of this project was \$50,000.

**Table 1 Adverse Water Quality events for the Munster Well system.**

Incident Date	Test Parameter and Location	Result	Unit of Measure	Corrective Action	Date of Resolution
9-Jul-12 AWQI# 106968	Sodium > 20 mg/L Munster well system Treated & Distribution	Treated= 75.4 Distribution =75.0	mg/L	5 yr reporting	9-Jul-12

**Table 2 Microbiological testing done under 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	210	0	0	208	<10 - 2000
Treated	105	0	0	104	<10 - 250
Distribution	209	0	0	208	<10 - 3000

**Table 3 Operational testing for treated water done under Schedule 7, 8 or 9 of Regulation 170/03 during this reporting period.**

	<b>Number of Grab Samples</b>	<b>Results (min - max)</b>
Turbidity	104 + continuous	0.26 – 2.00 NTU
Chlorine	82 + continuous	0.64 – 1.32 mg/L
Fluoride (If the DWS provides fluoridation)	6	0.62 – 0.66 mg/L (naturally occurring in well water)

**Table 4 Summary of additional testing and sampling carried out in accordance with requirement of approval, order or other legal instruments.**

<b>Date of legal instrument issued</b>	<b>Parameter</b>	<b>Date Sampled</b>	<b>Result</b>	<b>Unit of Measure</b>

**Table 5 Summary of Inorganic parameters tested in treated water 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>
Antimony	Jan – Dec 2012	ND	mg/L	No
Arsenic	Jan – Dec 2012	0.0003	mg/L	No
Barium	Jan – Dec 2012	0.0658	mg/L	No
Boron	Jan – Dec 2012	0.3484	mg/L	No
Cadmium	Jan – Dec 2012	ND	mg/L	No
Chromium	Jan – Dec 2012	0.0003	mg/L	No
Lead	Jan – Dec 2012	0.0002	mg/L	No
Mercury	Jan – Dec 2012	ND	mg/L	No
Selenium	Jan – Dec 2012	0.0002	mg/L	No
Sodium	Jan – Dec 2012	76.7	mg/L	Yes - Advisory***
Uranium	Jan – Dec 2012	0.0003	mg/L	No
Fluoride	Jan – Dec 2012	0.64	mg/L	No
Nitrate	Jan – Dec 2012	0.01	mg/L	No
Nitrite	Jan – Dec 2012	ND	mg/L	No

**ND** denotes non-detectable results

**NOTE\***: Inorganic parameters are tested monthly. The values in the table represent annual average values.

**NOTE\*\***: The determination of exceedances are based on all results in the data set.

**NOTE\*\*\***: Sodium concentration is above the advisory limit of 20.0 mg/L for treated water. Notification of the sodium exceedance was made to the MOE and Public Health Department on July 09, 2012 for this water system (notification is required every 60 months).

**Table 6 Summary of lead testing under Schedule 15.1 during this reporting period.**

Location Type	Number of Samples	Range of Lead Results (min#) – (max #)	Number of Exceedances
Distribution	4	2.9 - 6.0 ppb	0

**Table 7 Summary of Organic parameters in treated water tested during this reporting period or the most recent sample results.**

Parameter	Sample Date	Result Value	Unit of Measure	Exceedance*
Alachlor	March 21, 2012	ND	mg/L	No
Aldicarb	March 21, 2012	ND	mg/L	No
Aldrin + Dieldrin	March 21, 2012	ND	mg/L	No
Atrazine + N-dealkylated metabolites	March 21, 2012	ND	mg/L	No
Azinphos-methyl	March 21, 2012	ND	mg/L	No
Bendiocarb	March 21, 2012	ND	mg/L	No
Benzene	March 21, 2012	ND	mg/L	No
Benzo(a)pyrene	March 21, 2012	ND	mg/L	No
Bromoxynil	March 21, 2012	ND	mg/L	No
Carbaryl	March 21, 2012	ND	mg/L	No
Carbofuran	March 21, 2012	ND	mg/L	No
Carbon Tetrachloride	March 21, 2012	ND	mg/L	No
Chlordane (Total)	March 21, 2012	ND	mg/L	No
Chlorpyrifos	March 21, 2012	ND	mg/L	No
Cyanazine	March 21, 2012	ND	mg/L	No
Diazinon	March 21, 2012	ND	mg/L	No
Dicamba	March 21, 2012	ND	mg/L	No
1,2-Dichlorobenzene	March 21, 2012	ND	mg/L	No
1,4-Dichlorobenzene	March 21, 2012	ND	mg/L	No
Dichlorodiphenyltrichloroethane (DDT) + metabolites	March 21, 2012	ND	mg/L	No
1,2-Dichloroethane	March 21, 2012	ND	mg/L	No

Parameter	Sample Date	Result Value	Unit of Measure	Exceedance*
1,1-Dichloroethylene	March 21, 2012	ND	mg/L	No
Dichloromethane	March 21, 2012	ND	mg/L	No
2-4 Dichlorophenol	March 21, 2012	ND	mg/L	No
2,4-Dichlorophenoxy acetic acid (2,4-D)	March 21, 2012	ND	mg/L	No
Diclofop-methyl	March 21, 2012	ND	mg/L	No
Dimethoate	March 21, 2012	ND	mg/L	No
Dinoseb	March 21, 2012	ND	mg/L	No
Diquat	March 21, 2012	ND	mg/L	No
Diuron	March 21, 2012	ND	mg/L	No
Glyphosate	March 21, 2012	ND	mg/L	No
Heptachlor + Heptachlor Epoxide	March 21, 2012	ND	mg/L	No
Lindane (Total)	March 21, 2012	ND	mg/L	No
Malathion	March 21, 2012	ND	mg/L	No
Methoxychlor	March 21, 2012	ND	mg/L	No
Metolachlor	March 21, 2012	ND	mg/L	No
Metribuzin	March 21, 2012	ND	mg/L	No
Monochlorobenzene	March 21, 2012	ND	mg/L	No
Paraquat	March 21, 2012	ND	mg/L	No
Parathion	March 21, 2012	ND	mg/L	No
Pentachlorophenol	March 21, 2012	ND	mg/L	No
Phorate	March 21, 2012	ND	mg/L	No
Picloram	March 21, 2012	ND	mg/L	No
Polychlorinated Biphenyls(PCB)	March 21, 2012	ND	mg/L	No
Prometryne	March 21, 2012	ND	mg/L	No
Simazine	March 21, 2012	ND	mg/L	No
Trihalomethanes**	Jan – Dec, 2012	0.026	mg/L	No
Temephos	March 21, 2012	ND	mg/L	No
Terbufos	March 21, 2012	ND	mg/L	No
Tetrachloroethylene	March 21, 2012	ND	mg/L	No
2,3,4,6-Tetrachlorophenol	March 21, 2012	ND	mg/L	No
Triallate	March 21, 2012	ND	mg/L	No
Trichloroethylene	March 21, 2012	ND	mg/L	No
2,4,6-Trichlorophenol	March 21, 2012	ND	mg/L	No
2,4,5-Trichlorophenoxy acetic acid (2,4,5-T)	March 21, 2012	ND	mg/L	No
Trifluralin	March 21, 2012	ND	mg/L	No
Vinyl Chloride	March 21, 2012	ND	mg/L	No

ND denotes non-detectable results

NOTE\*: The determination of exceedances are based on all results in the data set.

NOTE\*\*: The reported THM result is an annual average of the maximum value observed in each quarter.

**Table 8 Inorganic or Organic parameters that exceeded half the standard prescribed in Schedule 2 of Ontario Drinking Water Quality Standards.**

Parameter	Result Value	Unit of Measure	Date of Sample