



Ontario Clean Water Agency
Agence Ontarienne Des Eaux

**Quarterly Report for the Baxter
Water Treatment and Distribution System
Waterworks # 260001013**

Operated by the Ontario Clean Water Agency (OCWA)
under contract to the Township of Essa
for the period ending December 31, 2002

Introduction:

This report summarizes the water quality for the Baxter Water System during the fourth quarter of 2002, published in accordance with Ontario Regulation 506/01 (formerly O.Reg.459/00) titled “**Drinking Water Protection - Larger Water Works**”. It includes important information regarding the source of your water, analytical test results, and how it compares to standards set by the Province. If you have any questions regarding this report, please contact our Client Services Representative listed in Section 3 below.

During this quarter, more than 250 tests for water quality parameters specified in Schedule 2 of Ontario Regulation 506/01 were conducted at SGS/Lakefield Research, an accredited laboratory under contract with OCWA. Of the tests conducted on treated water during this quarter, there were no exceedances reported.

In respect to Operational Parameters, chlorine and turbidity levels in the treated water leaving the pumphouse are analyzed continuously with online equipment and an alarm is signaled when the levels fall below or exceed the standard. During this quarter there was one (1) turbidity exceedance reported.

Compliance With Provincial Regulations:

OCWA operates your water facility in accordance with provincial regulations. Here is how we do it:

- **Use of Accredited Labs:** Analytical tests to monitor your water quality are conducted by a laboratory audited by the Canadian Association for Environmental Analytical Laboratories (CAEAL) and accredited by the Standards Council of Canada (SCC). Accreditation ensures that the laboratory has acceptable laboratory protocols and test methods in place. It also requires the laboratory to provide evidence and assurances of the proficiency of the analysts performing the test methods.
- **Operation by Licensed Operators:** Your water treatment plant and distribution system is operated and maintained by OCWA’s competent and licensed staff. The mandatory licensing program for operators of drinking water facilities in Ontario is regulated under the Ontario Water Resources Act (OWRA) Regulation 435/93. Licensing means that an individual meets the education and experience requirements and has successfully passed the certificate exam.
- **Sampling and Analytical Requirements:** OCWA collects samples from the plant and distribution system to meet the requirements listed in Schedule 2 of Ontario Regulation 506/01 and any additional parameters required by the facility C of A. More information on sampling and analysis including results are available in this report or OCWA and your municipal office.
- **Adherence to Ministry Guidelines and Procedures:** To ensure the protection of the public health and operational excellence, OCWA adheres to the guidelines and procedures developed by the Ministry of Environment and the Ministry of Health.

System Information:

Facility Name:	Baxter Water System	Client Services:	Steve Rohacek
Total Design Capacity:	255 m ³ /day	Phone Number:	(519)770-5699
Raw Water Source:	Groundwater (Two wells)	E-mail Address:	srohacek@ocwa.com
Disinfection Method:	Sodium hypochlorite	Operations Manager:	Matt Tracey
Municipal Location:	Township of Essa	Phone Number:	(705)429-2525
Service Area:	Village of Baxter	E-mail Address:	mtracey@ocwa.com
Service Population:	114	Office Address:	Wasaga Beach, ON

Operational Description: Two drilled wells will provide 255 m³/day potable water to a community of 114. As water is pumped from either well, a flow meter measures the volume of water prior to the addition of sodium hypochlorite. The water then flows to four (4) 425 litre pressure tanks and out into the system. Online analyzers continuously measure the chlorine residual and clarity in the water and if the level falls below or exceeds the predetermined set points an alarm is signaled to staff.

Analytical Test Results:

Micro biological Parameters	October	November	December	Quarter Summary	MAC / IMAC
Total Coliform counts/100mls					
Number of Samples	26	20	20	66	
Number of Detectable Results	0	0	0	0	
Min / Max	0/0	0/0	0/0	0/0	0
Exceedences	0	0	0	0	
E. Coli counts/100mls					
Number of Samples	26	20	20	66	
Number of Detectable Results	0	0	0	0	
Min / Max	0/0	0/0	0/0	0/0	0
Exceedences	0	0	0	0	
Background					
Number of Samples	14	8	8	30	
Number of Detectable Results	3	0	0	3	
Min / Max	0/5	0/0	0/0	0/5	200
Exceedences	0	0	0	0	

Typical sources of microbial contaminants, such as viruses and bacteria, may come from septic systems, agricultural livestock operations, wildlife, and wastewater treatment plants.

COMMENTS: THERE WERE NO EXCEEDENCES IN THE MICROBIOLOGICAL PARAMETERS TESTED DURING THIS QUARTER.

Baxter Water Quality Report ending December 31, 2002

Operational Parameters	October	November	December	Quarter Summary	MAC / IMAC
Chlorine Residual (Plant)					
Number of Samples	31	30	31	92	
Number of Detectable Results	31	30	31	92	.05/4.0 Free
Min / Max	0.10/1.30	0.17/1.63	0.13/1.21	.10/1.63	.25 /3.0 Combined
Exceedances	0	0	0	0	
Chlorine Residual (System)					
Number of Samples	14	8	8	30	
Number of Detectable Results	14	8	8	30	.05/4.0 Free
Min/Max	.16/1.24	.27/.72	.14/1.07	.14/1.24	.25 /3.0 Combined
Exceedances	0	0	0	0	
Turbidity					
Number of Samples	31	30	31	92	
Number of Detectable Results	31	30	31	92	
Min / Max	.30/> 1.0	.36/.46	.36/.55	.30/ > 1.0	1.0
Exceedances	1	0	0	1	
COMMENTS: THERE WAS ONE (1) TURBIDITY EXCEEDANCE REPORTED DURING THIS QUARTER.					

Volatile Organic Parameters	October	November	December	Quarter Summary	MAC / IMAC
<i>Typical sources of organic chemical contaminants, including synthetic and volatile organic chemicals, that are byproducts of industrial processes and petroleum production, and can also come from gas stations, urban storm water runoff, and septic systems.</i>					
Comments: VOLATILE ORGANIC PARAMETERS WERE TESTED IN OCTOBER AND THERE WERE NO EXCEEDANCES REPORTED.					

Inorganic Parameters	October	November	December	Quarter Summary	MAC / IMAC
<i>Typical sources of inorganic contaminants, such as salts and metals, can be naturally-occurring or result from urban storm water runoff, industrial, or domestic wastewater discharges, oil & gas production, mining.</i>					
Comments: INORGANIC PARAMETERS WERE NOT TESTED DURING THIS QUARTER.					

Pesticides and PCB Parameters	October	November	December	Quarter Summary	MAC / IMAC
<i>Typical sources of contamination from pesticides and herbicides, may come from a variety of sources such as agriculture, urban storm water runoff, and residential uses.</i>					
Comments: PESTICIDES AND PCB's WERE TESTED IN OCTOBER AND THERE WERE NO EXCEEDANCES REPORTED.					

Radiological Parameters	October	November	December	Quarter Summary	MAC / IMAC
<i>Typical sources of contamination are from man made or natural elements emitting radiation in the form of alpha, beta or gamma particles</i>					
Comments: RADIOLOGICAL PARAMETERS WERE NOT TESTED DURING THIS QUARTER.					

Discussion of Analytical Results:

During this quarter, there were no exceedances reported for the microbiological parameters. In respect to Operational Parameters, one (1) turbidity exceedance was reported as per Regulation 506/01. This parameter is monitored continuously by online equipment. Occasional instantaneous turbidity spikes that occur are believed to be caused from the starting and stopping of pumps, equipment maintenance/calibration and/or air and a buildup of iron sediment in the sample lines. During the above-noted spikes, adequate disinfection was applied to the system; therefore, reducing any risks that may be associated with the high turbidity. The turbidity analyzers are alarmed to notify Operations Staff of continual exceedances. The chlorine levels monitored in the treated and distribution water were maintained as per MOE Procedure B13-3.

All other volatile, organic, inorganic and pesticide parameters tested during this quarter were within the limits specified in Schedule 4 and 5 of ON Reg.506/01.

Ammonia (N) is tested from each well on a weekly basis as per the facility C of A due to the formation of chloramines from the reaction of ammonia and sodium hypochlorite. The average ammonia + ammonium concentration for this quarter was .76 mg/L for Well No. 1 and 1.04 mg/L for Well No. 2.

A requirement of the facility Certificate of Approval (C of A) is a Compliance Report which must be completed and made available not later than March 31, 2003. Upon completion, this report will be located at the Municipal Office and OCWA's Hub Office where it can be inspected.

As outlined in Condition 4 (c) of the C of A, the Compliance Report shall include, at a minimum, the following information:

(i) Under the heading of *Compliance with Terms and Conditions of this Certificate of Approval*, a statement as to compliance with all terms and conditions of the certificate, including any supporting data or other information;

(ii) In the event of any *Non-Compliance* during any reporting period, and under a heading of *"Non-Compliance with Terms and Conditions of this Certificate of Approval"*, details of the non-compliance as well as details of how and when any non-compliance was corrected;

(iii) A summary and discussion of the quantity of water supplied during the reporting period compared to the rated capacity specified in the certificate of approval, including monthly average and maximum daily flows;

(iv) A summary of records made under Condition 2.1 of this Certificate of Approval related to flow rate exceedances, and a summary of analytical results of sampling required by the certificate, including raw water and in-process parameters as specified in the operations manual in accordance with Condition 3.10; and

(v) A summary listing treatment chemicals used, including average dosage rates with special reference to any abnormal usages.

Availability of Analytical Test Results:

The certificate of approval from the Ministry of the Environment, and Regulation 506/01 set out monitoring requirements for your water. The tables above summarize all the results required for inclusion in quarterly reports. Your water is extensively tested for the presence of dozens of compounds. Some compounds, not listed above, may be present in low concentrations and their presence does not necessarily mean that the water poses a health risk. Results of all analytical tests are available through your municipal office and OCWA.

Definitions and Abbreviations:

- **MAC** - Maximum Acceptable Concentration.
- **IMAC** - Interim Maximum Acceptable Concentration.
- **Coliform Bacteria** - a group of commonly occurring rod shaped bacteria. Their presence in a water sample is indicative of inadequate filtration and/or disinfection.
- **Fecal Coliform Bacteria** - refers to a subgroup of coliform bacteria present in the digestive system of warm blooded animals and humans.
- **Heterotrophic Plate Count** - a method of measuring bacterial content in water samples. Also known as Standard Plate Count.
- **Organic Parameter** - a group of chemical compounds containing carbon.
- **Inorganic Parameter** - a group of chemical compounds not containing carbon.
- **Raw Water** - Surface or ground water available as a source of drinking water that has not received any treatment.
- **Combined Chlorine Residual** - total chlorine residual minus free chlorine residual
- **Chloramines** - chloramines are produced when ammonia reacts with chlorine during the disinfection process.