

KAGAWONG WTP

SUPPLY SYSTEM

ANNUAL SUMMARY REPORT

2009



**Ontario Clean Water Agency
Agence Ontarienne Des Eaux**

SECTION 1: INTRODUCTION

This report is a summary of water quality information for the Kagawong Water Treatment Facility, published in accordance with Schedule 22 of Ontario's Drinking-Water Systems Regulation for the reporting period of January 1, 2009 to December 31, 2009. The Kagawong Water Treatment Facility is categorized as a Large Municipal Residential Drinking Water System.

This report is prepared by The Ontario Clean Water Agency on behalf of the Town of Kagawong. A copy of the Summary Report is to be provided to the members of the municipal council by March 31, 2010.

SECTION 2: WHAT DOES THE REPORT CONTAIN

The report must list the requirements of the Act, the regulations, the system's approval and any order that the system **failed to meet** at any time during the period covered by the report. The report must also specify the duration of the failure, and for each failure referred to, describe the measures that were taken to correct the failure.

For the purpose of enabling the owner of the system to assess the rated capability of their system to meet existing and future planned water uses, the following information is required to be included in this report:

- A summary of the quantities and flow rates of the water supplied during the period covered by the report, including monthly average and maximum daily flows.
- A comparison of the summary to the rated capacity and flow rates approved in the systems approval.

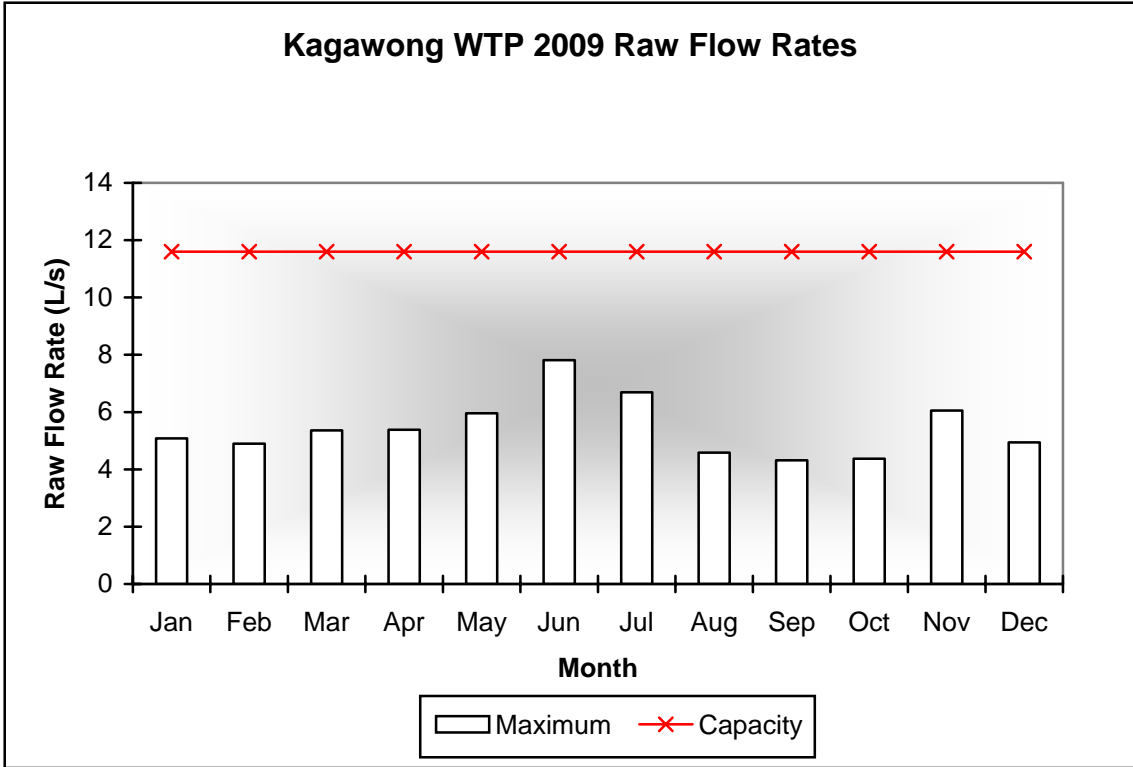
SECTION 3: DAILY FLOW RATES

In accordance with the Certificate of Approval Condition 4.1, the Kagawong water system shall not be operated to exceed a maximum rate of flow of 11.6 L/s and a maximum daily volume of 1002.2 m³/d into the treatment system.

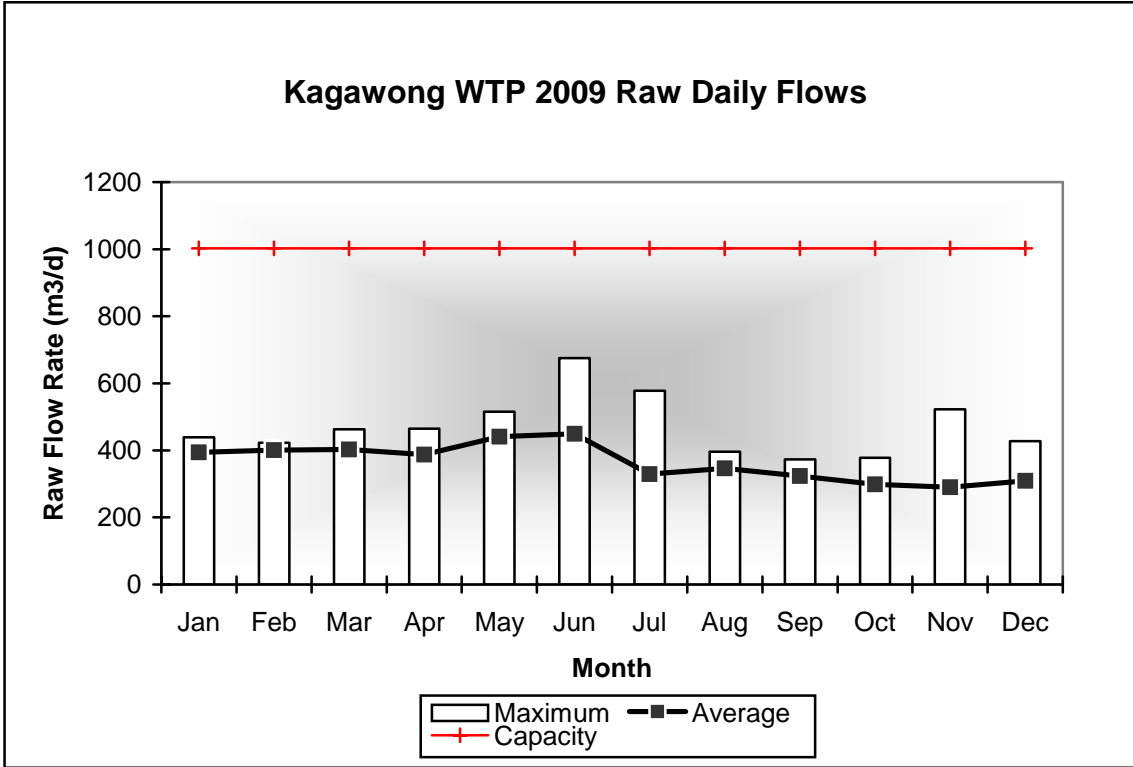
The monthly average raw water flow for this reporting period was 363.98 m³/d and the maximum daily flow for 2009 was 675.0 m³/d. Flow totals and comparison of flow rates to the rated capacity are included in the table and graphs below.

The quantity of water supplied during the reporting period **did not** exceed the rated maximum capacity.

2009	RAW WATER FLOW DATA - TOTAL ALL SOURCES						
	Month	Total Monthly Raw Flow (m3)	Average Raw Flow (m3/d)	Maximum Raw Flow (m3/d)	Maximum Raw Flow Rate (L/s)	Maximum Rated Capacity	
						L/s	m ³ /d
January	12,202.996	393.645	439.0	5.081	11.6	1002.2	
February	11,218.0	400.643	423.0	4.896	11.6	1002.2	
March	12,478.0	402.516	463.0	5.359	11.6	1002.2	
April	11,630.0	387.667	465.0	5.382	11.6	1002.2	
May	13,647.0	440.226	515.0	5.961	11.6	1002.2	
June	13,491.0	449.7	675.0	7.812	11.6	1002.2	
July	10,195.0	328.871	578.0	6.69	11.6	1002.2	
August	10,741.0	346.484	396.0	4.583	11.6	1002.2	
September	9,703.0	323.433	373.0	4.317	11.6	1002.2	
October	9,261.0	298.742	378.0	4.375	11.6	1002.2	
November	8,704.0	290.133	523.0	6.053	11.6	1002.2	
December	9,582.0	309.097	427.0	4.942	11.6	1002.2	
2009 Total	132,852.996						
2009 Summary		363.981	675.0	7.812	11.6	1002.2	



Comparison of Monthly Maximum Flow Rates



Comparison of Monthly Average and Maximum Daily Flow

In accordance with the PTTW, the allowable rate of water taking is 11.67 L/s with a maximum daily volume of 1008.0 m³/d. Attached as Appendix A, find a summary of water taking, including average and maximum flows.

SECTION 4: SYSTEM FAILURES AND CORRECTIONS

There was one Ministry of the Environment Drinking Water Inspection conducted on August 27, 2009, Inspection Report #1-7L0E9. A summary of findings and actions taken follows. A copy of the inspection report is attached as Appendix B, which includes the Certificate of Approval and Permit to Take Water.

August 27, 2009 Inspection Report # 1-7L0E9

Item #1:

The owner was not in compliance with the conditions associated with maximum flow rate or the rated capacity conditions in the Permit, Licence or Approval issued under Part V of the SDWA.

The CofA establishes a plant capacity of 11.6L/s or 1002 m³/day. On December 11, 2008, Daily Process Data Reports indicate that 3,278m³ of water was treated. The logbook indicates that frazzle ice conditions were present that day requiring a large volume of water to be pushed through the intake. Thus the actual value may be falsely recorded - further information is necessary to evaluate the situation.

Action(s) Required:

By November 30, 2009, in accordance with Section 31 of the Safe Drinking Water Act, the Municipality is required to provide further information regarding December 11, 2008, events establishing the accuracy of flow data.

The operating authority is reminded that the Condition 5.2 of the CofA requires documentation of any exceedances required to maintain the drinking water system.

Corrective Action: The large volume of flow recorded in PDC was due to a clerical error in entering the data (typo). The PDC for December 11, 2008 has been corrected to reflect the true value of 327.8m³/d and an updated copy of the Daily PDC Report which reflects the correction was submitted to MOE.

Status: Completed.

Item #2:

All water quality monitoring requirements imposed by the Permit, Licence or Approval issued under Part V of the SDWA were not being met.

Total Suspended Solids (TSS) testing of waste water discharged to the natural environment is required by Certificate of Approval every month. Samples for October, November and December 2008 were not taken. The operator was not familiar with composite sampling requirements.

Action(s) Required:

By November 30, 2009, the Municipality is required to provide an updated sampling plan which outlines the requirements for Total Suspended Solids. This in accordance with Section 31 of the Safe Drinking Water Act.

Corrective Action: A copy of the updated TSS Sampling Plan which outlines the requirements for TSS sampling was sent to the MOE. The operator is aware of the requirements for sampling on a monthly basis and the composite sampling procedure.
Status: Completed.

Item #3:

All sampling requirements for lead prescribed by schedule 15.1 of O. Reg. 170/03 were not met.

Distribution system samples were not taken on the same day as plumbing samples. On March 13, 2009, and March 20, 2009, no hydrant samples were taken. On March 23, 2009, a hydrant sample was taken but no time of sample was listed.

Action(s) Required:

By November 30, 2009, the Municipality is required to provide to the undersigned written assurances of the following:

1. Operators are aware of and will ensure that lead samples in the distribution system will be taken as close as possible to location of plumbing sample and on the same day. This in accordance with Schedule 15, O.Reg 170.
2. Operators will log time of sample in logbook or as a minimum on the chain of custody forms. This in accordance with Schedule 6-10, O.Reg 170.

Corrective Action: 1. Operators are aware of the requirements for distribution sampling for lead and will ensure that lead samples in the distribution system are taken as close as possible to the location of plumbing samples and on the same day.

2. Operators will, at a minimum, log the time of the samples on the chain of custody.

Status: Completed.

Item #4:

All continuous monitoring equipment that was being utilized to fulfill O. Reg. 170/03 requirements was not recording data with the prescribed format.

During the inspection it was noted that the operating system at the plant overwrites data older than 11 months. Though OCWA summary reports are available, the greatest detail from such reports would be daily min, max and averages. In accordance with Schedule 6-5(1)(1)(2), Reg. 170, continuous monitoring records are required to be maintained, and, in accordance with Section 13, Reg 170, such records must be kept for at least two years. Some turbidity data in submitted reports do not include information as laid out in the plant logbook: April 17, 2009, "Filtrate turbidity is 0.21NTU from 11:14am April 16 to 10:11am April 17". Also on July 28, 2009, it was noted that a total of 66 minutes of turbidity >0.01NTU was found on trending.

Action(s) Required:

By November 30, 2009, the Municipality is required to provide to the undersigned an action plan for updating the operating system to include maintaining continuous analyzer data for at least two years.

Further, by November 30, 2009, the Municipality is required to provide to the undersigned an explanation as to why turbidity levels cited in the logbook are not reflected in data summaries.

Corrective Action: Continuous monitoring data is being retained for two years after an issue with the license was resolved. Explanations on the turbidity data were forwarded to the MOE.

Status: Completed.

Item #5:

The following instances of non-compliances were also noted during the inspection:

The following is a summary of "other" non compliance issues described within the report:

1. The pre chlorine analyzer is not functioning accurately. Until fixed, the logbook should reflect that the analyzer is out of service.
2. The exhaust fan for the plant has not functioned since July 17, 2009. Given that sulphuric acid and sodium hypochlorite are stored at the plant, adequate ventilation is important especially during poor weather conditions when operators are unlikely to fully open large doorways. Until fixed, the logbook should reflect that the fan is out of service.
3. During the inspection it was noted that the the zebra mussel system appears to have been out of service from June 1, 2009, though documentation in the logbook is inconsistent.
4. Credits for Cryptosporidium are granted only if the plant achieves turbidity values less than 0.1NTU in 99% of run time each month. The operator does not calculate monthly filter effluent efficiencies.

Action(s) Required:

1. By November 30, 2009, the Municipality is required to provide written assurances to the undersigned that the pre chlorine analyzer has been repaired and that out of service equipment is logged. This in accordance with Section 11(1)(2) of the Safe Drinking Water Act and Section 27(5) of O.Reg. 128.

Corrective Action: On November 12, 2009, Bruce Dixon attended the plant but did not see any issues with the analyzer or the operating system. Scaling was set to match and the problem with apparent discrepancy between the analyzer reading and SCADA is due to the design set up. The injection point is close to the analyzer and therefore poor mixing is causing the variance.

The operator is aware that out of service equipment must be logged daily but due to the fact that the pre chlorine analyzer is functioning, it will not be logged as out of service.

Status: Completed.

2. By November 30, 2009, the Municipality is required to provide written assurances to the undersigned that proper ventilation processes at the plant are functioning and that out of service equipment is logged. This in accordance with Section 11(1)(2) of the Safe Drinking Water Act and Section 27(5) of O.Reg. 128.

Corrective Action: The exhaust fan/ventilation process at the plant has been repaired. The operator is aware that out of service equipment must be logged daily.

Status: Completed.

3. By November 30, 2009, the Municipality is required to provide written assurances to the undersigned that the zebra mussel system will be functioning by May 2010, and that

out of service equipment is logged. This in accordance with Section 11(1)(2) of the Safe Drinking Water Act and Section 27(5) of O.Reg. 128.

Corrective Action: The zebra mussel control system is functioning as of Sept, 2009. The operator is aware that out of service equipment must be logged daily.

Status: Completed.

4. By November 30, 2009, the Municipality is required to

a) provide written assurances to the undersigned that filter efficiencies will be calculated on a monthly basis. Operator must be made aware that failure to achieve acceptable filter efficiencies may amount to a failure to disinfect drinking water and is thus reportable.

b) provide filter efficiency calculations for the months of April, July and August of 2009. This in accordance with the Procedures for Disinfection of Drinking Water in Ontario and Schedule 1-2, O.Reg 170.

Corrective Action: a) Electronic reports are now being generated through the SCADA system. The operator is aware that failure to achieve filter efficiencies may amount to failure to disinfect drinking water and would be reportable.

b) Filter efficiency calculations for the months of April, July and August were provided to the MOE.

Status: Completed.

SECTION 5: CONCLUSION

The Kagawong WTP delivers water that, in all its treated and distribution samples, indicates the water to be free of bacteriological contamination. There were no instances of adverse water quality reported.

The Kagawong WTP for the 2009 operating year was able to meet the demand of water use within the town without exceeding the Permit to Take Water.

Attached as Appendix C, find the 2009 Annual Report as required by Drinking-Water System Regulation O. Reg. 170/03.

APPENDIX A

Annual Record of Water Taking

Personal information contained on this form is collected under the authority of the Ontario Water Resources Act, Section 20. The Purpose of the form is to record details and information about the taking of water annually. Questions should be directed to the respective hub office in your area.
Les renseignements personnels qui figurent dans le présent formulaire sont recueillis en vertu de l'article 20 de la Loi sur les ressources en eau de l'Ontario. Ce formulaire sert à dresser les détails et les renseignements concernant la prise d'eau annuelle. Prière d'adresser toutes questions au personnel du bureau régional de votre secteur.

Year(Année): 2009 Permitt No.(N° de permis):

Source:

Name of Permittee:

Mailing Address:

Location Of Taking:
Lieu de la prise d'eau

Twp. or Municipality:
Canton ou municipalité

Concession:

Lot

Rated Capacity(m3/day)
capacité nominale

Peak Daily Rate Of Taking(L/sec)
Debit de pointe journalier

Peak Daily Rate of Taking (L/min)
Debit de pointe journalier

	Jan/2009	Feb/2009	Mar/2009	Apr/2009	May/2009	Jun/2009	Jul/2009	Aug/2009	Sep/2009	Oct/2009	Nov/2009	Dec/2009	← Total →	← Avg. →	← Max. →	← Criteria →
Total Amt of Taking(m ³)	12,203.0	11,218.0	12,478.0	11,530.0	13,647.0	13,481.0	10,195.0	10,741.0	9,703.0	9,281.0	8,704.0	9,582.0	132,853.0	11,071.08	13,647.0	1,008.0
Avg Daily Taking(m ³)	393.85	400.84	402.52	387.67	440.23	448.7	328.87	346.48	323.43	298.74	290.13	308.1		364.26		
%Rated Capacity(Avg. Daily Taking)	39.05	39.75	39.83	38.46	43.67	44.81	32.63	34.37	32.09	29.64	28.78	30.66				
Max Daily Flow(m ³)	439.0	423.0	483.0	465.0	515.0	675.0	578.0	396.0	373.0	378.0	523.0	427.0			675.0	1,008.0
%Rated Capacity(Max Daily Flow)	43.55	41.96	45.93	46.13	51.09	66.96	57.34	39.29	37.0	37.5	51.88	42.36				

APPENDIX B

2009 MOE Inspection

Ministry of the Environment

Safe Drinking Water Branch

Sudbury District Office
199 Larch Street
Suite 1201
Sudbury, ON P3E 5P9
Tel.: 705 564-3237
Fax: 705 564-4180
Toll Free: 1 800 890-8516

Ministère de l'Environnement

Direction du contrôle de la qualité de
l'eau potable

Bureau du district de Sudbury
199, rue Larch
Bureau 1201
Sudbury (Ontario) P3E 5P9
Tél. : 705 564-3237
Télééc. : 705 564-4180
Sans frais : 1 800 890-8516



October 14, 2009

Ms. Kathy McDonald
Clerk, Township of Billings
P.O. Box 34
Kagawong, Ontario
P0P 1J0

Dear Ms. McDonald:

With regard to the September 2, 2009, water treatment plant inspection, please find enclosed the resulting annual inspection report.

Please note that there are a number of situations of non-compliance with regulatory requirements, which require a response by November 30, 2009. Also, note that the section of the report entitled "Summary of Best Practice Issues and Recommendations" is included not as a regulatory review but to encourage greater effectiveness in drinking water system operations.

In order to measure individual inspection results, the Ministry has established an inspection compliance risk framework based on the principles of the Inspection, Investigation & Enforcement (II&E) Secretariat and advice of internal/external risk experts. The Inspection Summary Rating Record (IRR), included as Appendix IV of the inspection report, provides the Ministry, the system owner and the local Public Health Units with a summarized quantitative measure of the drinking water system's annual inspection and regulated water quality testing performance. IRR ratings are published (for the previous inspection year) in the Ministry's Chief Drinking Water Inspector's Annual Report.

Your staff's cooperation during the inspection was appreciated. Please feel free to contact me at 564-7174, should you have questions.

Sincerely,



Maureen Spinney
Drinking Water Inspector
Sudbury District Office

cc. Ms. Angela Dubois, OCWA
Mr. Burgess Hawkins, Manager, Sudbury District Health Unit



Ministry of the Environment

**KAGAWONG WATER TREATMENT PLANT
Drinking Water System Inspection Report**

DWS Number:	210003084
Inspection Number:	1-7L0E9
Date of Inspection:	Sep 02, 2009
Inspected By:	Maureen Spinney

OWNER INFORMATION:

Company Name: BILLINGS, CORPORATION OF THE TOWNSHIP OF
Street Number: 15 **Unit Identifier:**
Street Name: OLD MILL Rd
City: KAGAWONG
Province: ON **Postal Code:** P0P 1J0

INSPECTION DETAILS:

DWS Name: KAGAWONG WATER TREATMENT PLANT
DWS Address: 75 BEACH ST
County/District: Billings
District/Area Office: Moe Sudbury District
DWS Category: Large Municipal Residential
DWS Number: 210003084
Inspection Type: Announced
Inspection Number: 1-7L0E9
Date of Inspection: Sep 02, 2009
Date of Previous Inspection: Sep 29, 2008

DRINKING WATER SYSTEM COMPONENTS DESCRIPTION

Site (Name): Distribution System
Type: Other **Sub Type:** Other

Comments:

This Class 1 distribution system is operated by OCWA.

The population of Kagawong is estimated to be approximately 350 in the summer months, with approximately 150 residents year round. There are a reported 154 service connections, with approximately eight connections to commercial premises. The marina in town is municipally operated and provides slips for 35 boats, eighteen of which have access to water taps. There are no industrial hookups to water in Kagawong.

The distribution system consists of three main components: Elevated water tower, Town lines and Private lines.

(i) Elevated Water Tower:

The tower was constructed in 2005 and is used for storage and to maintain pressure in the distribution system. The tower is located on the same property as the water plant. A sampling port is located at the tower but there is no capability to continuously analyze chlorine.

(ii) Town Lines:

The distribution system includes 50 through 200mm diameter lines. PVC piping has been used throughout approximately 99% of the system. One line of galvanized 2 inch pipe does form part of the distribution system. There are 9 hydrants owned and maintained by the township.

(iii) Private Lines:

The Township allowed three private lines to be installed and connected to the town water supply with the agreement that maintenance and hookup fees were the sole responsibility of the owners of the private lines. It has been confirmed that there are valves on the town lines where the private lines connect, that allows the water to be shut off, if required. There is an ongoing pressure issue with one of these private lines, and the municipality is still working to mitigate the issue.

Site (Name): Raw Water

Type: Source

Sub Type: Surface

Comments:

The Kagawong Water Treatment Plant (WTP) intake lies in Mudge Bay, just off the North Channel of Georgian Bay in Lake Huron. The old intake has been put to use for the new treatment system.

The intake line is a 116m long, 355mm diameter polyethylene pipe with 10mm opening stainless steel screen. The intake pipe lies weighted down with stone at a depth of approximately 12 feet. The shallow depth makes the intake prone to frazzle ice during winter conditions. There is a zebra mussel control system in place on the intake pipe.

Certificate of Approval 5882-6C4K4Y indicates that the raw watermain between the Low Lift Pumping Station (old WTP) and the new WTP is 150 mm in diameter.

Site (Name): WTP Treated Water

Type: Treated Water POE

Sub Type: Treatment Facility

Comments:

This Class 2, large municipal residential drinking water treatment plant is operated by OCWA.

The plant was constructed in 2005 and provides US Filter membrane (micro) filtration with primary and secondary disinfection using sodium hypochlorite.

Raw water is pumped from the low lift pumping station to the water treatment plant and can be treated for colour with aluminum sulphate when necessary. Sulphuric acid is added for pH adjustment. Water passes through a strainer to remove larger objects and is then distributed to a header and flows into tanks on each of the three Continuous Membrane Filtration (CMF) trains. Water is pumped through the filters and collected in a header assembly where sodium hypochlorite is added for primary and secondary disinfection. Post chlorine injection of sodium hypochlorite is possible but is not currently in use.

Turbidity is continuously monitored on the three membrane trains. Prechlorine is monitored just prior to water entering the contact chamber, and post chlorine is measured post contact chamber.

Treated water is then pumped via one of two high lift pumps to the water tower. There are no connections on the line prior to the tower.

Waste water supernatant is discharged back to the Lake.

INSPECTION SUMMARY

INTRODUCTION

- * The primary focus of this inspection is to confirm compliance with Ministry of the Environment legislation and authorizing documents such as Orders and Certificates of Approval, as well as evaluating conformance with Ministry drinking water related policies and guidelines during the inspection period.

The Ministry is implementing a rigorous and comprehensive approach in the inspection of drinking water systems that keys on the source, treatment and distribution components of the system as well as management practices.

This report is based on a "focused" inspection of your system. Although the inspection involved fewer activities than those normally undertaken by a detailed inspection, it contained most of the elements required to assess key compliance issues.

Your system was chosen for a focused inspection during this inspection cycle because inspection findings over the past three years were such that the number of violations were minimal or non existent, there were few or no orders issued to you that were of significance in the maintenance of water potability and there were no deficiencies as defined in O. Reg. 172/03. The undertaking of a focused inspection at your drinking water system during this year's inspection cycle does not ensure that a similar type of inspection will be conducted at any point in the future.

SOURCE

- * Measures were in place to protect the water source in accordance with a Permit, Licence or Approval issued under Part V of the SDWA.

During the inspection it was noted that there is a water conservation bylaw. A threats inventory was completed. There is no sanitary sewer system, all residences have their own field beds including the water treatment plant. It is recommended that educational material be provided to residents regarding maintaining septic systems.

CAPACITY ASSESSMENT

- * There was sufficient monitoring of flow as required by the Permit, Licence or Approval issued under Part V of the SDWA

The Certificate of Approval requires monitoring of raw water flow and treated water flow. The last calibration reports were dated July 7, 2008. Calibrations are scheduled for flow meters during the first week of November 2009.

CAPACITY ASSESSMENT

- * **The owner was not in compliance with the conditions associated with maximum flow rate or the rated capacity conditions in the Permit, Licence or Approval issued under Part V of the SDWA.**

The PTTW establishes a maximum rate of flow equal to 700 Litres/minute or 1,008 m³/day. During 2008 the maximum recorded volume taken in one day was 670m³.

The CofA establishes a plant capacity of 11.6L/s or 1002 m³/day. On December 11, 2008, Daily Process Data Reports indicate that 3,278m³ of water was treated. The logbook indicates that frazzle ice conditions were present that day requiring a large volume of water to be pushed through the intake. Thus the actual value may be falsely recorded - further information is necessary to evaluate the situation. The operating authority is reminded that the Condition 5.2 of the CofA requires documentation of any exceedances required to maintain the drinking water system.

Please see "Required Actions" Section.

TREATMENT PROCESSES

- * **The owner had ensured that all equipment was installed in accordance with the Permit, Licence or Approval issued under Part V of the SDWA.**

During the inspection it was noted that chemical feed pump capacities differ from those described in the CofA.

Also Condition 6.5 of the CofA incorrectly requires that the operations manual include information regarding ground water wells (items vii, viii, ix).

During the municipal licencing process, such details should be revised. Please see "Best Practice Issues and Recommendations" Section.

- * **Records indicated that the treatment equipment was operated in a manner that achieved the design capabilities required under Ontario Regulation 170/03 or a Permit, Licence or Approval issued under Part V of the SDWA at all times that water was being supplied to consumers.**

The water treatment plant is required to achieve primary disinfection in accordance with the process described in the "Procedure for Disinfection of Drinking Water in Ontario". The "Procedure" defines the ct concept as a way of quantifying the capability of a chemical disinfection system in providing pathogen removal.

The following table summarizes removal credits assigned to treatment equipment:

Equipment	Crypto	Giardia	Virus
Membrane	2	3	0
Chlorination	0	0.5	4
Design Totals	2	3.5	4
Required	2	3	4

Disinfection: Currently, as outlined in the Design Report dated March 2004, the plant is operated based on a worst case disinfection scenario (temperature at 0.5 degrees Celsius, highest pH at 8.5, lowest chlorine residual of 0.8mg/l, minimum daily volume in contact tank 126m³, maximum flow of 1002 m³/day, baffle factor of 0.7 in the contact tank - tower is not included). Engineering calculations show that when circumstances are at their worst, the plant can achieve the required ct value of 59 (see Table 1 of the "Procedures"). The operators log ct calculations when disinfection parameters (such as free chlorine residual) vary. Records reviewed present a worst case scenario where pH = 8.5, temp = 0.5, flow = 0.323m³/min, chlorine concentration = 0.65mg/l. Calculations indicate that ct appears to be achieved during the past year. (0.65mg/l X 0.7 X 126m³ / 0.323m³/min = 177mg/l.min)

TREATMENT PROCESSES

Filtration: Note that credits for Cryptosporidium are granted only if the plant has effective backwash procedures, monitors membrane integrity, continuously monitors filtrate turbidity and the plant achieves turbidity values less than 0.1NTU in 99% of run time each month. The operator does not calculate filter effluent efficiencies but does log the number of minutes where filtrate turbidity exceeds 0.1NTU. Please see "Required Actions Section".

It is recommended that an automated report be generated which provides daily summaries of total run time versus total filter time where turbidity is in excess of 0.1NTU. Alternatively, operators will be asked to print out trending screens (showing flow versus turbidity) daily. Please see "Best Practice Issues and Recommendations" Section.

The disinfection component of this plant must account for 0.5 log inactivation of giardia cysts and 4 log inactivation of viruses. The operators have a CT chart posted on the wall for quick reference, and conduct calculations when parameters fall outside of the normal range in order to ensure that they are still meeting their required CT.

- * **Records confirmed that the water treatment equipment which provides chlorination or chloramination for secondary disinfection purposes was operated so that at all times and all locations in the distribution system the chlorine residual was never less than 0.05 mg/l free or 0.25 mg/l combined.**

- * **The Operator-in-Charge had ensured that all equipment used in the processes was monitored, inspected, and evaluated.**

The electronic work order based tracking system normally used by OCWA is not yet in use but is expected to be functional by the end of the year. Currently the operator monitors and maintains equipment based on known procedures used at other plants, and records maintenance work within the plant logbook. It is recommended that the electronic WMS be commissioned without delay. Please see "Best Practice Issues and Recommendations" Section.

A number of equipment maintenance issues need to be addressed:

1. The pre chlorine analyzer is not functioning accurately. The operator relies upon the post chlorine analyzer to determine if ct requirements are met. Until fixed, the logbook should reflect that the analyzer is out of service - please see "Required Actions" section.
2. The exhaust fan for the plant has not functioned since July 17, 2009. Given that sulphuric acid and sodium hypochlorite are stored at the plant, adequate ventilation is important especially during poor weather conditions when operators are unlikely to fully open large doorways. Until fixed, the logbook should reflect that it is out of service - please see "Required Actions" section.
3. Calibration of filtrate turbidity analyzers. The filtrate data examined during the inspection did not fluctuate to any significant degree. Though this is probably due to superior filtration ability of membranes and rounding off data, it was noted that the only recorded calibration dates for the turbidity analyzer occurred on January 2, 2009, January 7, 2009 and March 6, 2009. It is recommended that such analyzers be calibrated often enough to sustain accuracy. Please see "Best Practice Issues and Recommendations" Section.
4. PH meter. On May 6, 2009, the operator cites that the pH meter reading varies (6.54) from the online pH reading(4.47), however a calibration is not performed until June 3, 2009. It is recommended that calibrations occur often enough to sustain accuracy. Please see "Best Practice Issues and Recommendations" Section.
5. The zebra mussel system. During the inspection it was noted that the the zebra mussel system appears to have been out of service from June 1, 2009, though documentation in the logbook is inconsistent. The operator indicates that flow has not been restricted and no evidence of zebra mussels was found this summer. Please see "Required Actions" section.

DISTRIBUTION SYSTEM

DISTRIBUTION SYSTEM

- * **Backflow preventers were not installed at each service connection to Industrial/Commercial/Institutional and agricultural process that were considered high hazard facilities.**

Town staff indicate that Council will consider the mandatory use of backflow preventers at all service connections in the future. It is recommended that backflow preventers be installed on the three private lines connected to the municipal system. Please see "Best Practice Issues and Recommendations" Section.

OPERATIONS MANUALS

- * **The operations and maintenance manuals contained plans, drawings and process descriptions sufficient for the safe and efficient operation of the system.**
- * **The operations and maintenance manuals did meet the requirements of the Permit, Licence or Approval issued under Part V of the SDWA.**

It is recommended that a Standard Operating Procedure be developed for frazzle ice conditions.

LOGBOOKS

- * **Records or other record keeping mechanisms confirmed that operational testing not performed by continuous monitoring equipment was being done by a certified operator, water quality analyst, or person who suffices the requirements of O. Reg. 170/03 7-5.**

Operator indicates that he is called upon by Works crew should they be working on the distribution system.

CONTINGENCY/EMERGENCY PLANNING

- * **The contingency/emergency plan was available for reference by all staff as required by the Permit, Licence or Approval issued under Part V of the SDWA.**

SECURITY

- * **All storage facilities were completely covered and secure.**
 - * **Air vents and overflows associated with reservoirs and elevated storage structures were equipped with screens.**
- The operator is arranging for an inspection of ventilation equipment within the water tower. Thus findings should be logged and maintenance schedules designed.
- * **The owner had provided adequate security measures to protect components of the drinking-water system.**

The tower and the plant are located on the same fenced property

CERTIFICATION AND TRAINING

- * **The overall responsible operator had been designated for each subsystem.**
- * **Operators in charge had been designated for all subsystems which comprised the drinking-water system.**

CERTIFICATION AND TRAINING

- * **Only certified operators made adjustments to the treatment equipment.**

The main operator is an operator in training (OIT) who is required to contact the OIC prior to process changes. The OIC was paged during the inspection and replied within five minutes, confirming his availability.

WATER QUALITY MONITORING

- * **All microbiological water quality monitoring requirements for distribution samples were being met.**

The following microbiological tests were performed on distribution system samples: Minimum eight samples per month plus one per thousand residents (population is 150), for a minimum of 8 samples per month which were tested/analyzed for E. coli, Total Coliforms and a minimum of 25% of samples (2) tested/analyzed for general bacteria population.

- * **All microbiological water quality monitoring requirements for treated samples were being met.**

The following microbiological tests were performed on treated water: Minimum one sample per week with testing for E. coli, Total Coliforms and general bacteria population expressed as Heterotrophic Plate Count.

- * **All inorganic water quality monitoring requirements prescribed by legislation were conducted within the required frequency.**

The following sampling was performed:

Inorganic/organic chemical, required once in 12 months was sampled for on February 02, 2009.

Free chlorine residual level in the distribution system is required 7 times per week, either daily or 4 samples on one day and three samples on another day, at least 48 hours apart.

Free chlorine residual in treated water is required to be tested on a continuous basis as required by the CofA.

Turbidity in filter effluent is required to be tested for on a continuous basis as required by CofA and by regulation.

Sodium testing is required once in 60 months. Last sample taken on January 16, 2008.

Fluoride testing, required once every 60 months was sampled for on January 16, 2008.

Nitrates and THM's, required once every 3 months, was sampled for accordingly:

July 4, 2008, THM result = . October 2, 2008, THM result = 66. December 22, 2008, THM result = 30. January 27, 2009, THM result = 31. April 6, 2009, THM result = 32. July 6, 2009, THM result = 61.

- * **All organic water quality monitoring requirements prescribed by legislation were conducted within the required frequency.**

Please see above summary.

- * **All trihalomethanes water quality monitoring requirements prescribed by legislation were conducted within the required frequency.**

Please see above summary.

- * **All nitrate/nitrite water quality monitoring requirements prescribed by legislation were conducted within the required frequency for the DWS.**

Please see above summary.

WATER QUALITY MONITORING

- * **All sodium water quality monitoring requirements prescribed by legislation were conducted within the required frequency.**

Please see above summary.

- * **All fluoride water quality monitoring requirements prescribed by legislation were conducted within the required frequency.**

Please see above summary.

- * **All water quality monitoring requirements imposed by the Permit, Licence or Approval issued under Part V of the SDWA were not being met.**

Total Suspended Solids (TSS) testing of waste water discharged to the natural environment is required by Certificate of Approval every month. Samples for October, November and December 2008 were not taken. The operator was not familiar with composite sampling requirements. Please see "Required Actions" Section.

PH and free chlorine residual results for each CIP cycle required by Certificate of Approval are available on SCADA.

- * **All sampling requirements for lead prescribed by schedule 15.1 of O. Reg. 170/03 were not met.**

During the period December 15th to April 15th, for a population of approximately 150, O.Reg 170 requires that 10 private residences, 1 nonresidential and 2 distribution samples be taken and analyzed for lead. However on September 04/05, 2008, only 9 residential and 2 distribution system samples were taken. In March of 2009, eleven residential, 1 nonresidential and 3 distribution samples were taken. Results indicate that there were no exceedances.

Operators mostly followed the sampling protocol provided on the Ministry's website:

Samples were not taken from more than one location in the same building. Aerators were not removed and the kitchen tap was used wherever possible. Before the first sample the tap was turned on for at least five minutes. The Operator indicates that he waited between 30 to 35 minutes before taking the first, second and third samples. The first and second samples were sent to the lab while the third sample was immediately tested for pH (result between 7.62 and 8.14). Distribution system samples were analyzed for alkalinity.

Though there were no lead exceedances found, distribution system samples were not taken on the same day as plumbing samples. Should a high lead result be found in the plumbing system, it is extremely important to know whether the distribution system is the source. On March 13, 2009, no hydrant samples were taken. On March 20, 2009, no hydrant samples were taken. On March 23, 2009, a hydrant sample was taken but no time of sample was listed. Further March 12, 2009, lab results indicate that the age of the sample exceeds normal limits. Please see "Required Action" Section.

- * **All sampling requirements for alkalinity and pH prescribed by schedule 15.1 of O. Reg. 170/03 were being met.**
- * **All continuous monitoring equipment utilized for sampling and testing required by O.Reg.170/03, or approval or order, were equipped with alarms or shut-off mechanisms that satisfied the standards described in Schedule 6.**

During the inspection it was noted that the alarm set points were as follows:

Free Chlorine residual in treated water low alarm of 0.75mg/l, low low alarm at 0.70mg/l.

Turbidity in filter effluent high alarm at 0.8NTU. The turbidity alarm is set at this relatively high level since the plant so rarely has turbidity issues. It may be helpful to adjust turbidity alarm set point to 0.1NTU so as to assist the operator in the following:

WATER QUALITY MONITORING

1. Ensuring primary disinfection is achieved (log removal credits for cryptosporidium cannot be assigned to a plant where 99% of filtrate each month is greater than 0.1NTU), and
2. Calculating filter efficiency performance.

Please see "Best Practice Issues and Recommendations" Section.

The alarm and pager systems were successfully tested during the inspection.

- * **All continuous analysers were calibrated, maintained, and operated, in accordance with the manufacturer's instructions or the regulation.**

It would appear from log book entries that calibration of chlorine analyser occurs frequently. However as noted above the only recorded calibration dates for the turbidity analyzer occurred on January 2, 2009, January 7, 2009 and March 6, 2009, though the operator states that calibrations occur approximately every month. In the absence of an electronic maintenance tracking system such calibrations need to be logged carefully. It is also recommended that such analyzers be calibrated often enough to sustain accuracy.

- * **Operators were examining continuous monitoring test results and they were examining the results within 72 hours of the test.**

Such review of trending data are recorded in the plant logbook. Operators should note that unreviewed data should be no older than 72 hours.

- * **Primary disinfection chlorine monitoring was being conducted at a location approved by Permit, Licence or Approval issued under Part V of the SDWA, or at/near a location where the intended CT had just been achieved.**
- * **The secondary disinfectant residual was measured as required for the distribution system.**

Please see above summary.
- * **Records confirmed that chlorine residual tests were being conducted at the same time and at the same location that microbiological samples were obtained.**
- * **Continuous monitoring equipment that was being utilized to fulfill O. Reg. 170/03 requirements was performing tests for the parameters with at least the minimum frequency specified in the Table in Schedule 6 of O. Reg. 170/03.**
- * **All continuous monitoring equipment that was being utilized to fulfill O. Reg. 170/03 requirements was not recording data with the prescribed format.**

During the inspection it was noted that the operating system at the plant overwrites data older than eleven months. Though OCWA summary reports are available, the greatest detail from such reports would be daily min, max and averages. In accordance with Schedule 6-5(1)(1)(2), Reg. 170, continuous monitoring records are required to be maintained, and, in accordance with Section 13, Reg 170, such records must be kept for at least two years. Please see "Required Actions" Section.

Though it would appear quite likely that ct was achieved continuously, since minimum records are not maintained, compliance with treatment requirements cannot be determined.

Some turbidity data in submitted reports do not include information as laid out in the plant logbook: April 17, 2009, "Filtrate turbidity is 0.21NTU from 11:14am April 16 to 10:11am April 17". Also on July 28, 2009, it was noted that a total of 66 minutes of turbidity >0.01NTU was found on trending.

WATER QUALITY MONITORING

- * Continuous monitoring of each filter effluent line was being performed for turbidity.
- * Testing for parameters required by legislation, Order, or a Permit, Licence or Approval issued under Part V of the SDWA was conducted by laboratories in Ontario licenced to test for that parameter, or by eligible laboratories outside Ontario.

The OCWA Espanola hub uses SGS Lakefield Laboratory.

WATER QUALITY ASSESSMENT

- * The inspector collected audit samples during the inspection.
- * Records show that all water sample results taken during the review period met the Ontario Drinking Water Quality Standards (O.Reg. 169/03).

REPORTING & CORRECTIVE ACTIONS

- * Corrective actions (as per Schedule 17) were taken to address adverse conditions, including any other steps that were directed by the Medical Officer of Health.
- * All required notifications of adverse water quality incidents were immediately provided as per O.Reg. 170/03 16-6.
- * All reporting requirements for lead sampling were complied with as per schedule 15.1-9 of O.Reg. 170/03.
- * Where required continuous monitoring equipment used for the monitoring of chlorine residual and/or turbidity triggered an alarm or an automatic shut-off, a qualified person responded in a timely manner and took appropriate actions.

OTHER INSPECTION FINDINGS

- * The following instances of non-compliances were also noted during the inspection:

Please see "Required Actions" Section.

- * The following issues were also noted during the inspection:

During the inspection the average life span of membranes was discussed. Municipal staff voiced concern regarding the affordability of the current water plant let alone putting aside money for the eventual replacement of membranes in approximately 8 to 12 years. It is recommended that staff begin to formulate an action plan by working with their operating authority to establish the actual lifespan of US Filter membranes currently at the treatment plant, determine whether there are strategies which can extend membrane lifespan and advise Municipal Council of eventual replacement costs.

Please see "Best Practice Issues and Recommendations" Section.

NON-COMPLIANCE WITH REGULATORY REQUIREMENTS AND ACTIONS REQUIRED

This section provides a summary of all non-compliance with regulatory requirements identified during the inspection period, as well as actions required to address these issues. Further details pertaining to these items can be found in the body of the inspection report.

1. The owner was not in compliance with the conditions associated with maximum flow rate or the rated capacity conditions in the Permit, Licence or Approval issued under Part V of the SDWA.

The CofA establishes a plant capacity of 11.6L/s or 1002 m³/day. On December 11, 2008, Daily Process Data Reports indicate that 3,278m³ of water was treated. The logbook indicates that frazzle ice conditions were present that day requiring a large volume of water to be pushed through the intake. Thus the actual value may be falsely recorded - further information is necessary to evaluate the situation.

Action(s) Required:

By November 30, 2009, in accordance with Section 31 of the Safe Drinking Water Act, the Municipality is required to provide further information regarding December 11, 2008, events establishing the accuracy of flow data.

The operating authority is reminded that the Condition 5.2 of the CofA requires documentation of any exceedances required to maintain the drinking water system.

2. All water quality monitoring requirements imposed by the Permit, Licence or Approval issued under Part V of the SDWA were not being met.

Total Suspended Solids (TSS) testing of waste water discharged to the natural environment is required by Certificate of Approval every month. Samples for October, November and December 2008 were not taken. The operator was not familiar with composite sampling requirements.

Action(s) Required:

By November 30, 2009, the Municipality is required to provide an updated sampling plan which outlines the requirements for Total Suspended Solids. This in accordance with Section 31 of the Safe Drinking Water Act.

3. All sampling requirements for lead prescribed by schedule 15.1 of O. Reg. 170/03 were not met.

Distribution system samples were not taken on the same day as plumbing samples. On March 13, 2009, and March 20, 2009, no hydrant samples were taken. On March 23, 2009, a hydrant sample was taken but no time of sample was listed.

Action(s) Required:

By November 30, 2009, the Municipality is required to provide to the undersigned written assurances of the following:

1. Operators are aware of and will ensure that lead samples in the distribution system will be taken as close as possible to location of plumbing sample and on the same day. This in accordance with Schedule 15, O.Reg 170.

2. Operators will log time of sample in logbook or as a minimum on the chain of custody forms. This in accordance with Schedule 6-10, O.Reg 170.

4. All continuous monitoring equipment that was being utilized to fulfill O. Reg. 170/03 requirements was not recording data with the prescribed format.

During the inspection it was noted that the operating system at the plant overwrites data older than 11 months. Though OCWA summary reports are available, the greatest detail from such reports would be daily min, max and averages. In accordance with Schedule 6-5(1)(1)(2), Reg. 170, continuous monitoring records are required to be maintained, and, in accordance with Section 13, Reg 170, such records must be kept for at least two years.

Some turbidity data in submitted reports do not include information as laid out in the plant logbook: April 17, 2009, "Filtrate turbidity is 0.21NTU from 11:14am April 16 to 10:11am April 17". Also on July 28, 2009, it was noted that a total of 66 minutes of turbidity >0.01NTU was found on trending.

Action(s) Required:

By November 30, 2009, the Municipality is required to provide to the undersigned an action plan for updating the operating system to include maintaining continuous analyzer data for at least two years.

Further, by November 30, 2009, the Municipality is required to provide to the undersigned an explanation as to why turbidity levels cited in the logbook are not reflected in data summaries.

5. The following instances of non-compliances were also noted during the inspection:

The following is a summary of "other" non compliance issues described within the report:

1. The pre chlorine analyzer is not functioning accurately. Until fixed, the logbook should reflect that the analyzer is out of service.
2. The exhaust fan for the plant has not functioned since July 17, 2009. Given that sulphuric acid and sodium hypochlorite are stored at the plant, adequate ventilation is important especially during poor weather conditions when operators are unlikely to fully open large doorways. Until fixed, the logbook should reflect that the fan is out of service.
3. During the inspection it was noted that the the zebra mussel system appears to have been out of service from June 1, 2009, though documentation in the logbook is inconsistent.
4. Credits for Cryptosporidium are granted only if the plant achieves turbidity values less than 0.1NTU in 99% of run time each month. The operator does not calculate monthly filter effluent efficiencies.

Action(s) Required:

1. By November 30, 2009, the Municipality is required to provide written assurances to the undersigned that the pre chlorine analyzer has been repaired and that out of service equipment is logged. This in accordance with Section 11(1)(2) of the Safe Drinking Water Act and Section 27(5) of O.Reg. 128.
2. By November 30, 2009, the Municipality is required to provide written assurances to the undersigned that proper ventilation processes at the plant are functioning and that out of service equipment is logged. This in accordance with Section 11(1)(2) of the Safe Drinking Water Act and Section 27(5) of O.Reg. 128.
3. By November 30, 2009, the Municipality is required to provide written assurances to the undersigned that the zebra mussel system will be functioning by May 2010, and that out of service equipment is logged. This in accordance with Section 11(1)(2) of the Safe Drinking Water Act and Section 27(5) of O.Reg. 128.
4. By November 30, 2009, the Municipality is required to
 - a) provide written assurances to the undersigned that filter efficiencies will be calculated on a monthly basis. Operator must be made aware that failure to achieve acceptable filter efficiencies may amount to a failure to disinfect drinking water and is thus reportable.
 - b) provide filter efficiency calculations for the months of April, July and August of 2009.

This in accordance with the Procedures for Disinfection of Drinking Water in Ontario and Schedule 1-2, O.Reg 170.

SUMMARY OF BEST PRACTICE ISSUES AND RECOMMENDATIONS

This section provides a summary of all best practice issues identified during the inspection period. Details pertaining to these items can be found in the body of the inspection report. Best Management Practices are recommendations and not mandatory requirements, but may lead to safe drinking water for the consumer.

In the interest of continuous improvement in the interim, it is recommended that owners and operators develop an awareness of the following practices and consider measures to implement them so that all drinking water systems continuously improve their processes.

1. Backflow preventers were not installed at each service connection to Industrial/Commercial/Institutional and agricultural process that were considered high hazard facilities.

Town staff indicate that Council will consider the mandatory use of backflow preventers at all service connections in the future.

Recommendation:

It is recommended that as a minimum, backflow preventers be installed on the three private lines connected to the municipal system.

2. The following issues were also noted during the inspection:

The following is a summary of "other" Best Management Practice issues described within the report:

1. Possible substandard private lines are connected to the municipal system.
2. A field bed is located outside of the water plant.
3. The electronic work order tracking system normally used by OCWA is not yet in use but is expected to be functional by the end of the year.
4. Frazzle ice continues to be a winter problem which can shut down the water plant.
5. Monitoring equipment: a) The only recorded calibration dates for the filtrate turbidity analyzer occurred on January 2, 2009, January 7, 2009 and March 6, 2009. b) Though the operator cites readout variances for the pH meter it takes one month before a calibration is performed.
6. CofA description of plant does not accurately cite dosing pump capacities and Condition 6.5 is inaccurate.
7. Filter efficiency reports are not currently automated.
8. Replacement cost for membranes need to be discussed at Municipal Council.

Recommendation:

1. Given the high probability that the Municipality would be required to remediate a problem encountered with private lines, it is strongly recommended that as a minimum, the Municipality ensure backflow prevention is installed on private lines and that a bylaw be enacted to prevent further connections of private lines.
2. Consider including field bed maintenance in the electronic maintenance system.
3. It is recommended that the electronic WMS be commissioned without delay.
4. Consider developing a SOP for frazzle ice conditions including logging excess water use.
5. Consider reviewing the schedule of equipment calibration to ensure that analyzers are calibrated often enough to sustain accuracy.
6. It is recommended that certificate of approval descriptions be reviewed and refined within the municipal licencing process.
7. Consider generating an automated report providing daily summaries of filtrate turbidity and filter run time which will greatly assist in evaluating filter efficiencies. Consider adjusting set point on filtrate turbidity alarm to 0.1NTU to aid operator in filter efficiency calculations.

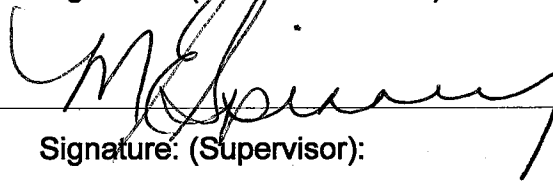
8. During the inspection the average life span of membranes was discussed. Municipal staff voiced concern regarding the affordability of the current water plant let alone putting aside money for the eventual replacement of membranes in approximately 8 to 12 years. It is recommended that staff begin to formulate an action plan by working with their operating authority to establish the actual lifespan of membranes currently at the treatment plant, determine whether there are strategies which can extend membrane lifespan and advise Municipal Council of eventual replacement costs.

SIGNATURES

Inspected By:

Maureen Spinney

Signature: (Provincial Officer):



Reviewed & Approved By:

Brian McMahon

Signature: (Supervisor):



Review & Approval Date:

Oct 14/09

Note: This inspection does not in any way suggest that there is or has been compliance with applicable legislation and regulations as they apply or may apply to this facility. It is, and remains, the responsibility of the owner and/or operating authority to ensure compliance with all applicable legislative and regulatory requirements.

Appendix I

Certificate of Approval



Ministry
of the
Environment

Ministère
de
l'Environnement

AMENDED CERTIFICATE OF APPROVAL
MUNICIPAL DRINKING WATER SYSTEMS
NUMBER 5882-6C4K4Y

Ontario

The Corporation of the Township of Billings
PO Box 34
Kagawong, Ontario
P0P 1J0

Site Location: Part of Lot 1, Concession 10 and Beach Road
Lot Pt. 1, Concession 10
Billings Township, District of Manitoulin

Pursuant to the Safe Drinking Water Act, 2002, S.O. 2002, c. 32, and the regulations made thereunder and subject to the limitations thereof, this approval is issued under Part V of the Safe Drinking Water Act, 2002, S.O. 2002, c. 32 to:

The Corporation of the Township of Billings
PO Box 34
Kagawong, Ontario
P0P 1J0

PART 1 - DRINKING-WATER SYSTEM DESCRIPTION

1.1 for a drinking-water system serving the Community of Kagawong, rated as set out in Part 4, consisting of the following:

Proposed Works

(as per Application for Approval dated April 14, 2004)

Low Lift Pumping Station (NAD 27; UTM Zone 17; 401041 m E; 5084920 m N)

- conversion of the existing treatment facility into a low lift pumping station as follows:

- removal of the existing pumps within the station and replacement with two (2) low lift vertical turbine pumps rated at 11.6 L/s at a total dynamic head (TDH) of 60 m;

- installation of a new zebra muscle control system complete with chemical metering pump system including a 12 mm diameter pipe feed pipe inside a carrier pipe located on the outside of the existing intake and chemical diffuser at the intake crib;

- all additional removals, mechanical, electrical, control, and alarm modifications as per the contract drawings.

Raw Watermain

- installation of a 150 mm diameter raw watermain from the existing Low Lift Pumping Station to the new Water Treatment Plant described below along Beach Road.

Water Treatment Plant (NAD 27; UTM Zone 17; 401030 m E; 5084420 m N)

- construction of a new water treatment plant at the top of Beach Road consisting of the following:

- three (3) membrane filter trains, each train rated at 492 m³/d (approximately 50% plant capacity) complete

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with all associated equipment;

- a 126 m³ capacity chlorine contact reservoir complete with overflow weir to the high lift well;
- a 9 m³ high lift well attached to the existing chlorine contact reservoir housing two (2) high lift vertical turbine pumps (one duty, one standby) rated at 10.4 L/s at a TDH of 36.4 m pumping treated water into the distribution system via a 200 mm diameter watermain from the plant to the intersection of Beach Road and Lakeshore Road;
- an 84 m³ capacity backwash settling reservoir complete with two (2) backwash pumps rated at 1.3 L/s at a TDH of 4.4 m which pump to the existing ditch along Beach Road via a 50 mm diameter backwash discharge pipe and associated equipment;
- a 3 m³ capacity neutralization reservoir and associated equipment;
- a sump pump (sewage) rated at 1.26 L/s at a total dynamic head (TDH) of 6.4 metres and sump pumps (foundation drains) rated at 1.3 L/s at a total dynamic head (TDH) of 1.3 metres;

- chemical feed systems as follows:
 - a pH adjustment chemical feed system consisting of two (2) metering pumps (duty and standby) rated at 3.8 L/hr, complete with isolation, back pressure and pressure relief valves, connecting piping, 200 L storage tank and mixer and spill containment;
 - an alum coagulant feed system consisting of two (2) metering pumps (duty and standby) rated at 3.8 L/hr, complete with isolation, back pressure and pressure relief valves, connecting piping, 200 L storage tank and mixer and spill containment;
 - a pre-chlorination sodium hypochlorite feed system consisting of two (2) metering pumps (duty and standby) rated at 3.8 L/hr, complete with isolation, back pressure and pressure relief valves, connecting piping, a 200 L storage tank and spill containment;
 - a post-chlorination sodium hypochlorite feed system consisting of two (2) metering pumps (duty and standby) rated at 3.8 L/hr, complete with isolation, back pressure and pressure relief valves, connecting piping, a 200 L storage tank and spill containment;
 - a sodium hypochlorite feed system (for Clean-in-Place cycles) consisting of two (2) metering pumps (duty and standby) rated at 0.3 L/s, complete with related accessories, connecting piping, 200 L storage tank and spill containment;
 - a citric acid chemical feed system (for Clean-in-Place cycles) consisting of two (2) metering pumps (duty and standby) rated at 0.3 L/s, complete with related accessories, connecting piping, 200 L storage tank and mixer and spill containment;
 - a sodium hydroxide chemical feed system (for neutralization) consisting of two (2) metering pumps (duty and standby) rated at 0.3 L/s, complete with related accessories, connecting piping, 200 L storage tank and spill containment;
 - a sodium bisulfite chemical feed system (for dechlorination) consisting of two (2) metering pumps (duty and standby) rated at 0.3 L/s, complete with related accessories, connecting piping, 200 L storage tank and spill containment;

- plant SCADA system;

- all additional mechanical, electrical, control, monitoring, and alarm equipment necessary for the operation of the treatment equipment.

Proposed Works

(as per Application for Approval dated December 6, 2003)

Elevated Tank

- an elevated composite water storage tank with a capacity of 600 m³, located on the southwest corner of Beach Road and Rainbow Road, (UTM coordinates: 401320 m E, 5084370 m N), together with a valve and control room at the base, inlet pipe from the water treatment plant, discharge pipe, overflow pipe, ladder, electric power supply, access road, controls, provisions for residual chlorine measurements and all other items necessary to have a complete and operable system.

Standby Power

- installation of one (1) standby power generator set, at the existing water treatment plant, having rating of 80 kilowatts, to provide power for the water treatment plant during power outage situations.

Existing Water Works

(as per the Engineer's Report entitled "Engineer's Report-Township of Billings-Kagawong Water Works", dated November 27, 2000, prepared by Wm. R. Walker Engineering Inc.)

Raw Water Intake

- a 355 mm diameter series 45 polyethylene intake pipe extending 116 m into Mudge Bay in the North Channel of Lake Huron, with a 10 mm opening stainless steel screen;
- sodium hypochlorite diffuser placed 15 m from end of intake pipe with approximately 100 m of 12 mm diameter chlorine solution line from the chemical pump.

Inlet Chamber

- an inlet chamber 2.48 m x 2.44 m x 5.00 m deep (from underside of floor).

Clear Well/Reservoir

- a clear well/reservoir, approximately 4.12 m x 2.44 m x 5.00 m deep;

- high lift pumps as follows:

- one submersible pump rated at 0.5 L/s at a total dynamic head (TDH) of 68.5 m (out of service);
- one submersible pump rated at 1.3 L/s at a TDH of 73.2 m (out of service);
- one submersible pump rated at 6.4 L/s at a TDH of 73.2 m;
- one submersible pump with a variable frequency drive, rated at 6.4 L/s at a TDH of 70 m;
- fire pump, one vertical turbine pump rated at 10.1 L/s at a TDH of 68.3 m;

- a raw water sampling pump complete with a 25 mm diameter sampling line from the pump to the intake complete with a foot valve;

- disinfection equipment consisting of:

- two (2) sodium hypochlorite electronic metering pumps (1 duty, 1 standby) rated at 0.126 L/min at a TDH

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of 35.2 m, paced by signal from main flow meter complete with auto switch over capability;
- two (2) Sodium Hypochlorite Storage tanks (1 duty, 1 standby) with a volume of 0.100 m³ each;

- main flow meter with electronic output 1242 pulses/100 g (and remote display unit);
- pressure transducer with a range of 0-200 psi, and an output of 4-20 ma;
- pressure switch, with high pressure alarm and shutdown;
- alarm autodialer;
- programmable logic controller;
- on-line turbidity meter, and chart recorder with dual pen continuously recording flow and turbidity;
- on-line continuous chlorine residual analyzer;
- 200 mm line to distribution system;
- all piping, electrical and mechanical works, plumbing and ventilation, yard piping, instrumentation and control and metering equipment.

1.2 all in accordance with the applications and plans and other supporting documents listed in Schedule "A", and all other Schedules, which are attached to, and form part of this approval, except as specified in the conditions contained herein.

PART 2 - DEFINITIONS AND INFORMATION

2.1 Words and phrases not defined in this approval shall be given the same meaning as those set out in the *Safe Drinking Water Act, 2002*, S.O. 2002, c. 32 and any regulations made in accordance with that act, unless the context requires otherwise.

2.2 In this approval

"adverse effect", "contaminant", "impairment" and "natural environment" shall have the same meanings as in the *Environmental Protection Act*, R.S.O.1990, c. E.19 and the *Ontario Water Resources Act*, R.S.O.1990, c. O.40;

"approval" means this entire approval document, issued in accordance with section 36 of the *SDWA*, and includes any schedules to it;

"Director" means a Director appointed pursuant to s. 6 of the *SDWA* for the purposes of Part V of the *SDWA*;

"drinking-water system" includes the works set out in Part 1;

"operating authority" and "owner" mean, in addition to the respective meanings given in the Act, The Corporation of the Township of Billings;

"provincial officer" means a provincial officer appointed pursuant to s. 8 of the *SDWA*;

"rated capacity" means the maximum flow rate of water which can be treated when operating the drinking-water system under design conditions;

"*SDWA*" means the *Safe Drinking Water Act, 2002*, S.O. 2002, c. 32, as amended.

PART 3 - GENERAL

Compliance

3.1 The owner and operating authority shall operate the drinking-water system in accordance with the *SDWA*, any applicable regulations made thereunder, and this approval.

3.2 Despite any condition of this approval to the contrary, the owner and operating authority set out in Part 2 are jointly and severally liable to comply with all conditions of this approval.

3.3 The owner and operating authority shall ensure that any person authorized to carry out work on or operate any aspect of the drinking-water system has been informed of the *SDWA*, all applicable regulations made in accordance with that act, and this approval and shall take all reasonable measures to ensure any such person complies with the same.

3.4 A copy of this approval shall be kept in a conspicuous place so that it is available for reference by all persons responsible for all or part of the operation of the drinking-water system.

Build, etc. in Accordance

3.5 Except as otherwise provided by this approval, the drinking-water system shall be designed, developed, built, operated and maintained in accordance with Part 1 above and the documentation listed in Schedule "A".

Interpretation

3.6 Where there is a conflict between the provisions of this approval and any other document, the following hierarchy shall be used to determine the provision that takes precedence:

- i. The *SDWA*;
- ii. a condition imposed in this approval in accordance with s. 38 of the *SDWA*;
- iii. any regulation made under the *SDWA*;
- iv. this approval;
- v. any application documents listed in Schedule "A" from most recent to earliest; and
- vi. all other documents listed in Schedule "A" from most recent to earliest.

3.7 The requirements of this approval are severable. If any requirement of this approval, or the application of any requirement of this approval to any circumstance, is held invalid or unenforceable, the application of such requirement to other circumstances and the remainder of this approval shall not be affected thereby.

3.8 Nothing in this approval shall be read to provide relief from the need for strict compliance with the *Environmental Assessment Act*, R.S.O. 1990, c E.18.

Other Legal Obligations

3.9 The issuance of, and compliance with the conditions of, this approval does not:

- i. relieve any person of any obligation to comply with any provision of any applicable statute, regulation or other legal requirement; or
- ii. limit in any way the authority of the Ministry to require certain steps be taken or to require the owner to furnish any further information related to compliance with this approval.

3.10 For greater clarity, nothing in this approval shall be read to provide relief from regulatory requirements in accordance with section 38 of the *SDWA*, except as provided in Part 9.

Adverse Effects

3.11 Nothing in this approval shall be read as to permit: i) the discharge of a contaminant into the natural environment that

causes or is likely to cause an adverse effect; or ii) the discharge of any material of any kind into or in any waters or on any shore or bank thereof or into or in any place that may impair the quality of the water of any waters.

3.12 All reasonable steps shall be taken to minimize and ameliorate any adverse effect on the natural environment or impairment of the quality of water of any waters resulting from the operation of the drinking-water system including such accelerated or additional monitoring as may be necessary to determine the nature and extent of the effect or impairment.

3.13 Fulfillment of one or more conditions imposed by this approval does not eliminate the requirement to fulfill any other condition of this approval or the requirements of any applicable statute, regulation, or other legal requirement resulting from any act or omission that causes or is likely to cause an adverse effect on the natural environment or the impairment of water quality.

Change of Owner

3.14 The owner or the operating authority, as the case may be, shall notify the Director, in writing, of any of the following changes within 30 days of the change occurring:

i. change of owner or operating authority;

ii. change of address;

iii. change of partners where the owner is or at any time becomes a partnership, and a copy of the most recent declaration filed under the Business Names Act, R.S.O. 1990, c. B17; or

iv. change of name of the corporation where the owner or operating authority is or at any time becomes a corporation, and a copy of the most current information filed under the Corporations Information Act, R.S.O. 1990, c. C.39.

3.15 In the event of any change in ownership of the drinking-water system, other than change to a successor municipality, the owner shall notify the successor of and provide the successor with a copy of this approval, and the owner shall provide a copy of the notification to the district manager of the local office of the Ministry and the Director.

Inspections

3.16 No person shall hinder or obstruct a provincial officer in the performance of his or her duties, including any and all inspections authorized by the *SDWA*.

Information

3.17 Any information requested, by the Ministry, concerning the drinking-water system and its operation under this approval, including but not limited to any records required to be kept by this approval shall be provided to the Ministry, upon request.

3.18 Records required by or created in accordance with this approval, unless specifically referenced in s. 12 of O. Reg. 170/03, shall be retained for at least 5 years in a location where a provincial officer who is inspecting the treatment system can conveniently view them.

PART 4 - PERFORMANCE

Rated Capacity

4.1 The drinking-water system shall not be operated to exceed the rated capacity for the maximum flow rate into the treatment system of 11.6 L/s.

Increase to Rated Capacity

4.2 Despite condition 4.1, the drinking water system may be operated at a rate above the rated capacity set out in condition 4.1 where necessary for:

- i. fighting a large fire; or
- ii. the maintenance of the drinking-water system.

4.3 Condition 4.2 shall not be construed to allow drinking-water to be supplied that does not meet all other applicable standards and legal requirements.

Management of Residue

4.4 The average annual concentration of suspended solids in the effluent discharged from the backwash wastewater facilities shall not exceed 25 mg/L.

PART 5 - MONITORING AND RECORDING

Flow measuring devices

5.1 Install a sufficient number of flow-measuring devices within the drinking-water system to permit continuous measurement and recording of:

- i. the flow rate and daily volume of water conveyed into the treatment system; and
- ii. the flow rate and daily volume of water conveyed from the treatment system to the distribution system.

5.2 Records shall be maintained that set out the parameters recorded in accordance with condition 5.1, and where a measured flow rate into a treatment system, train, or stage exceeds the maximum flow rate set out for that treatment system, train, or stage in Part 4, the amount, date, time and duration of the exceedence shall also be recorded.

Calibration of flow measuring devices

5.3 All flow measuring devices must be checked and calibrated in accordance with the manufacturer’s instructions.

5.4 If the manufacturer’s instructions do not indicate how often to check and calibrate the flow measuring devices, the equipment must be checked and calibrated at least once every year during which the drinking-water system is in operation.

Additional Sampling - Management of Residue

5.5 In addition to any other sampling and analysis that may be required, sampling and analysis shall be undertaken for the parameters listed in Table 5.1 at the listed frequencies and locations.

Table 5.1: Management of Residue Sampling

<u>Item</u>	<u>Parameter</u>	<u>Frequency</u>	<u>Location</u>
1.	Suspended Solids (composite)	Monthly	Point of discharge from the backwash reservoir
2.	Free Chlorine Residual (continuous)	Per each CIP cycle	Within the neutralization reservoir
3.	pH (continuous)	Per each CIP cycle	Within the neutralization reservoir

5.6 For the purposes of Table 5.1, composite means the mean of three samples taken during the discharge event, with at least one sample taken immediately following the commencement of the discharge, one sample taken approximately at the mid-point of the discharge event and one sample taken immediately before the discharge ceases.

PART 6 - OPERATIONS AND MAINTENANCE

Chemical standards

6.1 All chemicals and materials used in the operation of the drinking-water system that come into contact with water within the system shall meet all applicable standards set by both the American Water Works Association ("AWWA") and the American National Standards Institute ("ANSI") safety criteria standards NSF/60 and NSF/61.

6.2 The most current chemical and material product registration documentation from a testing institution accredited by either the Standards Council of Canada or by the American National Standards Institution shall be available at all times for each chemical and material used in the operation of the drinking-water system that comes into contact with water within the system.

6.3 Condition 6.2 does not apply in the context of any particular chemical or material where the Owner has written documentation signed by the Director that indicates that the Ministry is satisfied that the chemical or material is acceptable for use within the drinking-water system and that chemical or material is only used as permitted by the documentation.

Operations manual

6.4 An up-to-date operations manual shall be maintained and available for reference by all persons responsible for all or part of the operation of the drinking-water system.

6.5 The operations manual shall include at a minimum:

- i. the requirements of this approval and associated procedures;
- ii. the operation and maintenance recommendations from the most recent engineers' report;
- iii. procedures for the monitoring and recording of in-process parameters necessary for the control of the treatment system and assessing the performance of the drinking-water system;
- iv. procedures for the operation and maintenance of monitoring equipment;
- v. contingency plans and procedures for the provision of adequate equipment and material to deal with emergencies, upset and equipment breakdown;
- vi. procedures for the dealing with complaints related to the drinking-water system, including the recording of the nature of the complaint and any investigation and corrective action taken in respect of the complaint;
- vii. an inspection schedule for all wells associated with the water treatment system(s), including all production wells, standby wells, test wells and monitoring wells;
- viii. defined well inspection and maintenance procedures for the entire well structure of each well, including all above and below grade well components;
- ix. remedial action plans for situations where an inspection indicates non-compliance with respect to regulatory requirements and/or risk to raw well water quality.

6.6 Procedures necessary to the operation of any physical alterations of the drinking-water system shall be incorporated into the operations manual prior to the alterations coming into operation.

Drawings

6.7 Up-to-date Process Flow Diagrams (PFD) and Process and Instrumentation Diagrams (P&ID) for the treatment system shall be kept on site at the drinking water system.

6.8 All drawings and diagrams in the possession of the owner or operating authority that show the treatment system as

constructed shall be retained.

6.9 An alteration to the treatment system shall be incorporated into Process Flow Diagrams (PFD), Process and Instrumentation Diagrams (P&ID), and record drawings and diagrams within one year of the substantial completion of the alteration and shall be retained and shall be made readily available for inspection by Ministry staff.

PART 7 - FUTURE ALTERATIONS

Approved future alterations

7.1 *Not Applicable*

Certificate of compliance

7.2 *Not Applicable*

PART 8 - STUDIES AND UPGRADES REQUIRED

8.1 Subject to Condition 8.3 below, by **June 15, 2005**, the Owner shall implement the following physical improvements to the works, in keeping with recommendations of the Engineers' Report and related correspondence:

(a) Provide filtration and primary disinfection appropriate for a surface water raw water supply in accordance with O. Reg. 170/03, Schedule 1, section 1-4.

(b) All works and measures necessary to ensure the effective treatment and integrity of the works, including but not limited to:

- i. recalibration, refurbishment and/or replacement of all raw and treated water flow measuring and monitoring devices
- ii. standby power to provide continuous operation of the treatment works
- iii. surface water drainage improvements in and around the treatment works to prevent contamination of the water works

8.2 The owner shall, during the interim period until the implementation of the upgrades to the treatment system required under condition 8.1, operate the treatment system with the following interim measures in place:

- i. free chlorine residual of at least 0.2 mg/L to be maintained throughout the distribution system; and
- ii. turbidity of the treated water entering the distribution system shall be monitored and recorded continuously.

Requirement not an approval

8.3 The owner shall not construct any works required by this part until all associated approvals, licenses and permits have been obtained from the Ministry.

PART 9 - RELIEF FROM REGULATORY REQUIREMENTS

Relief from regulatory requirements

9.1 *Not Applicable*

Conditions in exchange for relief from regulatory requirements

9.2 *Not Applicable*

SCHEDULE - A

The following supporting documents form part of this approval.

1. Application dated
2. Application dated April 14, 2004
 - Design brief, drawings, and specifications dated March 2004 prepared by Wm. R. Walker Engineering Inc.
 - Correspondence from Wm. R. Walker Engineering Inc. to MOE, dated June 30, 2004.
3. Application dated December 6, 2003
 - Correspondence dated October 6 2003, signed by Catherine Taddo, P.Eng., Wm. R. Walker Engineering Inc.
 - Correspondence dated December 10 2003, signed by Catherine Taddo, P.Eng., Wm. R. Walker Engineering Inc.
 - Correspondence dated February 13 2004, signed by Catherine Taddo, P.Eng., Wm. R. Walker Engineering Inc.
 - a report entitled "Township of Billings Kagawong, Ontario Environmental Study Report Improvements to Existing System & Water Treatment Plant" dated May 2002, prepared by Wm. R. Walker Engineering Inc.
 - Final Plans and Specifications dated march 2004
 - Correspondence dated April 19 2004, signed by Catherine Taddo, P.Eng., Wm. R. Walker Engineering Inc.
 - Correspondence dated April 27 2004, signed by Catherine Taddo, P.Eng., Wm. R. Walker Engineering Inc.
 - Correspondence dated April 29 2004, signed by Catherine Taddo, P.Eng., Wm. R. Walker Engineering Inc.
4. The original applications for approval, including design calculations, engineering drawings and reports, and other supporting documents prepared in support of any previous certificate(s) of approval issued for any works now approved and replaced by this approval, unless this approval states otherwise.

This Certificate of Approval revokes and replaces Certificate(s) of Approval No. 2446-623K4M issued on July 12, 2004

All or part of this decision may be reviewable in accordance with the provisions of Part X of the SDWA. In accordance with Section 129(1) of the Safe Drinking Water Act, Chapter 32 Statutes of Ontario, 2002, as amended, you may by written notice served upon me and the Environmental Review Tribunal within 15 days after receipt of this notice, require a hearing by the Tribunal. Section 129(2) sets out a procedure upon which the 15 days may be extended by the Tribunal. Section 129(3) of the Safe Drinking Water Act, Chapter 32 Statutes of Ontario, 2002, provides that the Notice requiring the hearing shall state:

1. The aspect of the decision, including the portion of the permit, licence, approval, order or notice of administrative penalty in respect of which the hearing is required; and
2. The grounds for review to be relied on by the person at the hearing.

Except with leave of the Tribunal, a person requiring a hearing in relation to a reviewable decision is not entitled to,

- (a) a review of an aspect of the decision other than that stated in the notice requiring the hearing; or
- (b) a review of the decision other than on the grounds stated in the notice

The Notice should also include:

3. The name of the appellant;
4. The address of the appellant;
5. The Certificate of Approval number;
6. The date of the Certificate of Approval;
7. The name of the Director;
8. The municipality within which the works are located;

And the Notice should be signed and dated by the appellant.

This Notice must be served upon:

CONTENT COPY OF ORIGINAL

The Secretary*
Environmental Review Tribunal
2300 Yonge St., 12th Floor
P.O. Box 2382
Toronto, Ontario
M4P 1E4

AND

The Director
Part V, *Safe Drinking Water Act, 2002*
Ministry of Environment
2 St. Clair Avenue West, Floor 12A
Toronto, Ontario
M4V 1L5

*** Further information on the Environmental Review Tribunal's requirements for an appeal can be obtained directly from the Tribunal at: Tel: (416) 314-4600, Fax: (416) 314-4506 or www.ert.gov.on.ca**

The above noted water works are approved under Part V of the Safe Drinking Water Act.

DATED AT TORONTO this 11th day of May, 2005

Ranee Mahalingam, P.Eng.
Director
Part V of *the Safe Drinking Water Act, 2002*

GZ/
c: District Manager, MOE Sudbury
Drinking Water Supervisor, MOE Sudbury
Manager, DWWSS, Standards Development Branch
David Spacek, P. Eng., Wm. R. Walker Engineering Inc.

Appendix II

Permit to Take Water

PERMIT TO TAKE WATER
Surface Water
NUMBER 7363-7SXNEP

Pursuant to Section 34 of the Ontario Water Resources Act, R.S.O. 1990 this Permit To Take Water is hereby issued to:

The Corporation of the Township of Billings
Post Office Box 34
Kagawong, Ontario, P0P 1J0
Canada

For the water Lake Huron (North Channel, Mudge Bay)
taking from:
Located at: 316 Main St Kagawong
Billings, District of Manitoulin

For the purposes of this Permit, and the terms and conditions specified below, the following definitions apply:

DEFINITIONS

- (a) "Director" means any person appointed in writing as a Director pursuant to section 5 of the OWRA for the purposes of section 34, OWRA.
- (b) "Provincial Officer" means any person designated in writing by the Minister as a Provincial Officer pursuant to section 5 of the OWRA.
- (c) "Ministry" means Ontario Ministry of the Environment.
- (d) "District Office" means the Sudbury District Office.
- (e) "Permit" means this Permit to Take Water No. 7363-7SXNEP including its Schedules, if any, issued in accordance with Section 34 of the OWRA.
- (f) "Permit Holder" means The Corporation of the Township of Billings.
- (g) "OWRA" means the *Ontario Water Resources Act*, R.S.O. 1990, c. O. 40, as amended.

You are hereby notified that this Permit is issued subject to the terms and conditions outlined below:

TERMS AND CONDITIONS

1. Compliance with Permit

- 1.1 Except where modified by this Permit, the water taking shall be in accordance with the application for this Permit To Take Water, dated March 9, 2009 and signed by Angela Dubois, and all Schedules included in this Permit.
- 1.2 The Permit Holder shall ensure that any person authorized by the Permit Holder to take water under this Permit is provided with a copy of this Permit and shall take all reasonable measures to ensure that any such person complies with the conditions of this Permit.
- 1.3 Any person authorized by the Permit Holder to take water under this Permit shall comply with the conditions of this Permit.
- 1.4 This Permit is not transferable to another person.
- 1.5 This Permit provides the Permit Holder with permission to take water in accordance with the conditions of this Permit, up to the date of the expiry of this Permit. This Permit does not constitute a legal right, vested or otherwise, to a water allocation, and the issuance of this Permit does not guarantee that, upon its expiry, it will be renewed.
- 1.6 The Permit Holder shall keep this Permit available at all times at or near the site of the taking, and shall produce this Permit immediately for inspection by a Provincial Officer upon his or her request.
- 1.7 The Permit Holder shall report any changes of address to the Director within thirty days of any such change. The Permit Holder shall report any change of ownership of the property for which this Permit is issued within thirty days of any such change. A change in ownership in the property shall cause this Permit to be cancelled.

2. General Conditions and Interpretation

2.1 Inspections

The Permit Holder must forthwith, upon presentation of credentials, permit a Provincial Officer to carry out any and all inspections authorized by the OWRA, the *Environmental Protection Act*, R.S.O. 1990, the *Pesticides Act*, R.S.O. 1990, or the *Safe Drinking Water Act*, S. O. 2002.

2.2 Other Approvals

The issuance of, and compliance with this Permit, does not:

- (a) relieve the Permit Holder or any other person from any obligation to comply with any other applicable legal requirements, including the provisions of the *Ontario Water Resources Act*, and the *Environmental Protection Act*, and any regulations made thereunder; or
- (b) limit in any way any authority of the Ministry, a Director, or a Provincial Officer, including the authority to require certain steps be taken or to require the Permit Holder to furnish any

	Source Name / Description:	Source: Type:	Taking Specific Purpose:	Taking Major Category:	Max. Taken per Minute (litres):	Max. Num. of Hrs Taken per Day:	Max. Taken per Day (litres):	Max. Num. of Days Taken per Year:	Zone/ Easting/ Northing:
1	Lake Huron (North Channel, Mudge Bay)	Lake	Municipal	Water Supply	700	24	1,008,000	365	17 401405 5085124
						Total Taking:	1,008,000		

4. Monitoring

4.1 The Permit Holder shall maintain a record of all water takings. This record shall include the dates and times of water takings, and the total measured amounts of water pumped per day for each day that water is taken under the authorization of this Permit. The Permit Holder shall keep all required records up to date and available at or near the site of the taking and shall produce the records immediately for inspection by a Provincial Officer upon his or her request.

5. Impacts of the Water Taking

5.1 Notification

The Permit Holder shall immediately notify the local District Office of any complaint arising from the taking of water authorized under this Permit and shall report any action which has been taken or is proposed with regard to such complaint. The Permit Holder shall immediately notify the local District Office if the taking of water is observed to have any significant impact on the surrounding waters. After hours, calls shall be directed to the Ministry's Spills Action Centre at 1-800-268-6060.

5.2 For Surface-Water Takings

The taking of water (including the taking of water into storage and the subsequent or simultaneous withdrawal from storage) shall be carried out in such a manner that streamflow is not stopped and is not reduced to a rate that will cause interference with downstream uses of water or with the natural functions of the stream.

6. Director May Amend Permit

The Director may amend this Permit by letter requiring the Permit Holder to suspend or reduce the taking to an amount or threshold specified by the Director in the letter. The suspension or reduction in taking shall be effective immediately and may be revoked at any time upon notification by the Director. This condition does not affect your right to appeal the suspension or reduction in taking to the Environmental Review Tribunal under the *Ontario Water Resources Act*, Section 100 (4).

The reasons for the imposition of these terms and conditions are as follows:

1. Condition 1 is included to ensure that the conditions in this Permit are complied with and can be enforced.
2. Condition 2 is included to clarify the legal interpretation of aspects of this Permit.
3. Conditions 3 through 6 are included to protect the quality of the natural environment so as to safeguard the ecosystem and human health and foster efficient use and conservation of waters. These conditions allow for the beneficial use of waters while ensuring the fair sharing, conservation and sustainable use of the waters of Ontario. The conditions also specify the water takings that are authorized by this Permit and the scope of this Permit.

In accordance with Section 100 of the Ontario Water Resources Act, R.S.O. 1990, you may by written Notice served upon me and the Environmental Review Tribunal within 15 days after receipt of this Notice, require a hearing by the Tribunal. Section 101 of the Ontario Water Resources Act, R.S.O. 1990, as amended, provides that the Notice requiring the hearing shall state:

1. The portions of the Permit or each term or condition in the Permit in respect of which the hearing is required, and;
2. The grounds on which you intend to rely at the hearing in relation to each portion appealed.

In addition to these legal requirements, the Notice should also include:

3. The name of the appellant;
4. The address of the appellant;
5. The Permit to Take Water number;
6. The date of the Permit to Take Water;
7. The name of the Director;
8. The municipality within which the works are located;

This notice must be served upon:

*The Secretary
Environmental Review Tribunal
655 Bay Street, 15th Floor
Toronto ON
MSG 1E5*

AND

*The Director, Section 34
Ministry of the Environment
331-435 James St S
Thunder Bay ON P7E 6S7
Fax: (807)475-1754*

Further information on the Environmental Review Tribunal's requirements for an appeal can be obtained directly from the Tribunal:

by telephone at (416) 314-4600

by fax at (416) 314-4506

by e-mail at www.ert.gov.on.ca

This Permit cancels and replaces Permit Number 4743-5ZXGWN, issued on 2004/06/14.

Dated at Thunder Bay this 12th day of June, 2009.



*Patrick Morash
Director, Section 34
Ontario Water Resources Act , R.S.O. 1990*

Schedule A

This Schedule "A" forms part of Permit To Take Water 7363-7SXNEP, dated June 12, 2009.

Appendix III

Ministry Audit Sample Results

APPENDIX
Table 1
KAGAWONG WATER TREATMENT PLANT
AUDIT SAMPLE RESULTS - 02-SEP-2009
CHEMICAL / PHYSICAL PARAMETERS - HEALTH RELATED

Sample # 1 - TREATED WATER

Sample # 2 - DISTRIBUTION

Parameter	Units	MAC ¹	IMAC ²	AO ³	SAMPLE	SAMPLE
					# 1	# 2
ANTIMONY, UNFILTERED TOTAL	UG/L		6		.64 +/-0.16	
ARSENIC, UNFILTERED TOTAL	UG/L		25		.44 +/-0.14	
BARIUM, UNFILTERED TOTAL	UG/L	1000			11.6 +/-1.20	
BENZENE C6H6	UG/L	5			.05 <=W	.05 <=W
BORON, UNFILTERED TOTAL	UG/L		5000		12 +/-2.90	
BROMODICHLOROMETHANE	UG/L				7.8	8.8
BROMOFORM	UG/L				.5 <=W	.5 <=W
CADMIUM, UNFILTERED TOTAL	UG/L	5			0 +/-0.01	
CARBON TETRACHLORIDE	UG/L	5			.2 <=W	.2 <=W
CHLOROBENZENE	UG/L	80			.05 <=W	.05 <=W
CHLORODIBROMOMETHANE	UG/L				1 <T	1 <T
CHLOROFORM CHCL3	UG/L				37.7	46.7
CHROMIUM, UNFILTERED TOTAL	UG/L	50			.1 +/-0.50	
DICHLOROBENZENE 1,2	UG/L	200			.05 <=W	.05 <=W
DICHLOROBENZENE 1,4	UG/L	5			.05 <=W	.05 <=W
DICHLOROETHANE 1,2	UG/L		5		.05 <=W	.05 <=W
DICHLOROETHYLENE 1,1	UG/L	14			.05 <=W	.05 <=W
FLUORIDE, UNFILTERED REACTIVE	MG/L	1.5 b			.07	
LEAD, UNFILTERED TOTAL	UG/L	10 c			.04 +/-0.05	.4 +/-0.36
MERCURY, UNFILTERED TOTAL	UG/L	1			.02 <=W	
METHYLENE CHLORIDE	UG/L	50			.2 <=W	.2 <=W
NITRATES TOTAL, UNFIL.REAC	MG/L	10 d			.128	
NITRITE, UNFILTERED REACTIVE	MG/L	1 d			.001 <=W	
SELENIUM, UNFILTERED TOTAL	UG/L	10			0 +/-1.00	
TETRACHLOROETHYLENE	UG/L	30			.05 <=W	.05 <=W
TRICHLOROETHYLENE C2HCL3	UG/L	5			.05 <=W	.05 <=W
TRIHALOMETHANES, TOTAL	UG/L	100 e			46.5	56.5
URANIUM, UNFILTERED TOTAL	UG/L	20			.17 +/-0.05	
VINYL CHLORIDE C2H3CL	UG/L	2			.05 <=W	.05 <=W

Shortforms:

<T	-	A measurable trace amount; interpret with caution	NA	-	Result not available
<W	-	No measurable response (zero) : < Reported value	NS	-	Not sampled
<=W	-	No measurable response (zero) : < Reported value	NG/L	-	Nanograms per litre
<	-	Actual result is less than reported value	UG/L	-	Micrograms per litre
ND	-	Not detected	MG/L	-	Milligrams per litre
!NP	-	No appropriate procedure available			

Footnotes:

- 1 Maximum Acceptable Concentration
- 2 Interim Maximum Acceptable Concentration
- 3 Aesthetic Objective
- 4 Includes *alpha*-chlordane, *gamma*-Chlordane and Oxychlordane
- 5 Includes *p,p'*-DDE, *o,p'*-DDT, *p,p'*-DDD and *p,p'*DDT
 - a) Total toxic equivalents when compared with 2,3,7,8,-TCDD (tetrachlorodibenzo-p-dioxin)
 - b) Where fluoride is added to drinking water, it is recommended that the concentration be adjusted to 0.5 - 0.8 mg/L, the optimum level for control of tooth decay.

Where supplies contain naturally occurring fluoride at levels higher than 1.5 mg/L but less than 2.4 mg/L the Ministry of Health and Long Term Care recommends an approach through local boards of health to raise public and professional awareness to control excessive exposure to fluoride from other sources.

Levels above the MAC must be reported to the local Medical Officer of Health.
 - c) This standard applies to water at the point of consumption. Since lead is a component in some plumbing systems, first flush water may contain higher concentrations of lead than water that has been flushed for five minutes.
 - d) Where both nitrate and nitrite are present, the total of the two should not exceed 10 mg/L (as nitrogen).
 - e) The standard is expressed as a running annual average of quarterly samples measured at a point reflecting the maximum residence time in the distribution system.

APPENDIX
Table 2
KAGAWONG WATER TREATMENT PLANT
AUDIT SAMPLE RESULTS - 02-SEP-2009
MICROBIOLOGICAL PARAMETERS - HEALTH RELATED

Sample # 1 - TREATED WATER

Sample # 2 - DISTRIBUTION

Sample # 3 - DISTRIBUTION

Parameter	Units	MAC ¹	AO ²	SAMPLE	
				# 1	# 2
NT: DETERIORATION INDICATORS	C/100ML		0	NOT DETECTED	NOT DETECTED
NT: ESCHERICHIA COLI	C/100ML	0		ABSENT	ABSENT
NT: TOTAL COLIFORMS	C/100ML	0		ABSENT	ABSENT

APPENDIX
Table 2
KAGAWONG WATER TREATMENT PLANT
AUDIT SAMPLE RESULTS - 02-SEP-2009
MICROBIOLOGICAL PARAMETERS - HEALTH RELATED

Sample # 1 - TREATED WATER

Sample # 2 - DISTRIBUTION

Sample # 3 - DISTRIBUTION

Parameter	Units	MAC ¹	AO ²	SAMPLE
				# 3
NT: DETERIORATION INDICATORS	C/100ML		0	NOT DETECTED
NT: ESCHERICHIA COLI	C/100ML	0		ABSENT
NT: TOTAL COLIFORMS	C/100ML	0		ABSENT

Notes:

- Escherichia coli is a more definitive indicator of fecal contamination than fecal coliforms or total coliforms.
- At elevated levels, the general bacterial population may interfere with the detection of coliforms. This general population can be estimated from either background colony counts on the total coliform membrane filters or heterotrophic plate counts (HPC).

Shortforms:

C/100mL - Count per 100 millilitre

C/mL - Count per millilitre

Footnotes:

1. Maximum Acceptable Concentration
2. Aesthetic Objective

According to section 16-3 of O.Reg. 170/03, the following are prescribed as adverse results of a drinking-water test for the purpose of section 18 of the Safe Drinking Water Act 2002:

1. A result that exceeds any of the standards prescribed by Schedule 1, 2 or 3 to the Ontario Drinking-Water Quality Standards, other than the standard for fluoride, if the result is from a sample of drinking water.
2. A result indicating the presence of *Aeromonas* spp., *Pseudomonas aeruginosa*, *Staphylococcus aureus*, *Clostridium* spp. or fecal streptococci (Group D streptococci) in a sample of drinking water.
3. A result indicating the presence of a pesticide not listed in Schedule 2 to the Ontario Drinking-Water Quality Standards in a sample of drinking water, at any concentration.
4. A result indicating that the concentration of free chlorine residual is less than 0.05 milligrams per litre in a distribution sample, if the drinking-water system provides chlorination and does not provide chloramination.
5. A result indicating that the concentration of combined chlorine residual is less than 0.25 milligrams per litre in a distribution sample, if the drinking-water system provides chloramination.
6. If the drinking-water system is required to provide filtration and a report under subsection 18 (1) of the Act has not been made in respect of turbidity in the preceding 24 hours, a result indicating that turbidity exceeds 1.0 Nephelometric Turbidity Units (NTU) in,
 - i. a grab sample of water taken from a filter effluent line, or
 - ii. two samples of water from a filter effluent line that are tested by continuous monitoring equipment, if the two samples were taken 15 minutes or more apart and the later of the two samples was the first sample that was taken 15 minutes or more after the earlier sample.
7. If an approval or order, including an OWRA order, identifies a parameter as a health-related parameter and establishes a maximum concentration for the parameter, a result indicating that the parameter exceeds the maximum concentration in a sample of drinking water.
8. A result indicating that the concentration of sodium exceeds 20 milligrams per litre in a sample of drinking water, if a report under subsection 18 (1) of the Act has not been made in respect of sodium in the preceding 60 months.
9. A result indicating that the concentration of fluoride exceeds 1.5 milligrams per litre in a sample of drinking water, if,
 - i. the drinking-water system provides fluoridation and a report under subsection 18 (1) of the Act has not been made in respect of fluoride in the preceding 24 hours, or
 - ii. the drinking-water system does not provide fluoridation and a report under subsection 18 (1) of the Act has not been made in respect of fluoride in the preceding 60 months.

APPENDIX
Table 3
KAGAWONG WATER TREATMENT PLANT
AUDIT SAMPLE RESULTS - 02-SEP-2009
CHEMICAL / PHYSICAL PARAMETERS - NOT HEALTH RELATED

Sample # 1 - TREATED WATER

Sample # 2 - DISTRIBUTION

Parameter	Units	OBJECTIVE	TYPE OF OBJECTIVE	SAMPLE	
				# 1	# 2
ALUMINIUM, UNFILTERED TOTAL	UG/L	100	OG	1.44 +/-0.58	
COPPER, UNFILTERED TOTAL	UG/L	1000	AO	1.3 +/-0.50	
DICHLOROBENZENE 1,2	UG/L	3	AO	.05 <=W	.05 <=W
ETHYLBENZENE C8H10	UG/L	2.4	AO	.15 <T	.15 <T
IRON, UNFILTERED TOTAL	UG/L	300	AO	5 +/-6.00	
MANGANESE, UNFILTERED TOTAL	UG/L	50	AO	-0.2 +/-0.05	
TOLUENE C7H8	UG/L	24	AO	.1 <T	.1 <T
XYLENE-M AND P	UG/L	300	AO	.7	.75
XYLENE-O C8H10	UG/L	300	AO	.35 <T	.35 <T
ZINC, UNFILTERED TOTAL	UG/L	5000	AO	.5 +/-0.20	

Shortforms:

<T - A measurable trace amount; interpret with caution
 <W - No measurable response (zero) : < Reported value
 <=W - No measurable response (zero) : < Reported value
 < - Actual result is less than reported value
 ND - Not detected
 NA - Result not available
 NS - Not sampled
 DEG - Degree celsius

AO - Aesthetic Objective
 OG - Operational Guideline
 FTU = NTU - Nephelometric Turbidity Unit
 TCU - True Colour Units
 NG/L - Nanograms per litre
 UG/L - Micrograms per litre
 MG/L - Milligrams per litre

Footnotes:

- a) No limit has been established for this parameter.
- b) Organic Nitrogen = (Total Kjeldahl Nitrogen - Ammonia)
- c) The aesthetic objective for sodium in drinking water is 200 mg/L. The local Medical Officer of Health should be notified when the sodium concentration exceeds 20 mg/L so that this information may be communicated to local physicians for their use with patients on sodium restricted diets.
- d) When sulphate levels exceed 500 mg/L, water may have a laxative effect on some people.
- e) Applicable for all water at the point of consumption.

Appendix IV
Inspection Rating Record

Ministry of the Environment - Inspection Summary Rating Record (Reporting Year - 2009-2010)

DWS Name: KAGAWONG WATER TREATMENT PLANT
DWS Number: 210003084
DWS Owner: Billings, Corporation Of The Township Of
Municipal Location: Billings

Regulation: O.REG 170/03
Category: Large Municipal Residential System
Type Of Inspection: Focused
Inspection Date: September 2, 2009
Ministry Office: Sudbury District

Maximum Question Rating: 561

Inspection Module	Non-Compliance Rating
Source	0 / 14
Capacity Assessment	16 / 30
Treatment Processes	0 / 77
Operations Manuals	0 / 28
Logbooks	0 / 14
Contingency/Emergency Planning	0 / 7
Certification and Training	0 / 28
Water Quality Monitoring	34 / 289
Reporting & Corrective Actions	0 / 74
TOTAL	50 / 561

Inspection Risk Rating	8.91%
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FINAL INSPECTION RATING:	91.09%
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Ministry of the Environment - Detailed Inspection Rating Record (Reporting Year - 2009-2010)

DWS Name: KAGAWONG WATER TREATMENT PLANT
DWS Number: 210003084
DWS Owner: Billings, Corporation Of The Township Of
Municipal Location: Billings
Regulation: O.REG 170/03
Category: Large Municipal Residential System
Type Of Inspection: Focused
Inspection Date: September 2, 2009
Ministry Office: Sudbury District

Non-compliant Question(s)	Question Rating
Capacity Assessment	
Is the owner in compliance with the conditions associated with maximum flow rate or the rated capacity conditions in the Permit, Licence or Approval issued under Part V of the SDWA?	16
Water Quality Monitoring	
Are all sampling requirements for lead being met as prescribed by schedule 15.1 of O. Reg. 170/03?	8
Are all water quality monitoring requirements imposed by the Permit, Licence or Approval issued under Part V of the SDWA being met?	12
Is all continuous monitoring equipment that is being utilized to fulfill O. Reg. 170/03 requirements recording data with the prescribed format?	14
TOTAL QUESTION RATING	50

Maximum Question Rating: 561

Inspection Risk Rating	8.91%
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FINAL INSPECTION RATING:	91.09%
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APPENDIX C

**Annual Report:
2009 Operating Year**

**Part III Form 2
Section 11. ANNUAL REPORT.**

Drinking-Water System Number:	210003084
Drinking-Water System Name:	Kagawong Water Treatment Facility
Drinking-Water System Owner:	The Corporation of the Township of Billings
Drinking-Water System Category:	Large Municipal Residential
Period being reported:	January 1, 2009 – December 31, 2009

<p><u>Complete if your Category is Large Municipal Residential or Small Municipal Residential</u></p> <p>Does your Drinking-Water System serve more than 10,000 people? Yes [] No [X]</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> <div style="border: 1px solid black; padding: 5px;"> Township of Billings, Township Office 15 Old Mill Road Kagawong, Ontario POP 1J0 </div>	<p><u>Complete for all other Categories.</u></p> <p>Number of Designated Facilities served: <input style="width: 100px; height: 20px;" type="text"/></p> <p>Did you provide a copy of your annual report to all Designated Facilities you serve? Yes [] No []</p> <p>Number of Interested Authorities you report to: <input style="width: 100px; height: 20px;" type="text"/></p> <p>Did you provide a copy of your annual report to all Interested Authorities you report to for each Designated Facility? Yes [] No []</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

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 [] 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

A US Filter membrane filtration plant supplying water to the Town of Kagawong drawing water from Lake Huron, consisting of three membrane filter trains, a chlorine contact reservoir, clear well and two high lift pumps supplying the tower and the Town. The rated capacity of the system is 11.6 L/s. Waste water is stored on site and periodically removed to disposal while the supernatant is discharged back to the Lake.

List all water treatment chemicals used over this reporting period

Sodium Hypochlorite (12%)
 Sodium Bisulphate (35%)
 Sulphuric Acid
 Sodium Hydroxide
 Citric Acid

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. Chlorine analyzer - \$3713.58
2. Leak detection performed by asset management - \$2185.90
3. SCADA system repairs (level transmitter replaced) - \$3231.56
4. High lift pump repairs - \$738.59
5. Membrane repairs - \$1787.44
6. Filter performance programming - \$882.05

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
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 Or Fecal Results (min #)-(max #)	Range of Total Coliform Results (min #)-(max #)	Number of HPC /Background Samples	Range of HPC Results (min #)-(max #)
Raw	52	0-7	0-74		
Treated	52	0-0	0-0	52	0-17
Distribution	113	0-0	0-0	55	0-2000

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 #)
Turbidity (Filter 1)	8760	0.00-0.20 NTU
Turbidity(Filter 2)	8760	0.00-0.88 NTU
Turbidity(Filter 3)	8760	0.00-0.21 NTU
Chlorine (TW-Plant)	8760	0.59-3.04
Chlorine (Dist)	8760	0.45-1.68

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

*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
05/11/2005	Suspended Solids	Monthly	2009 Average 3.0	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	02/02/2009	0.09	ug/L	No
Arsenic	02/02/2009	0.7	ug/L	No
Barium	02/02/2009	11.8	ug/L	No
Boron	02/02/2009	13.9	ug/L	No
Cadmium	02/02/2009	0.008	ug/L	No
Chromium	02/02/2009	<0.5	ug/L	No
Lead(Dist)	N/A			
Mercury	02/02/2009	<0.02	ug/L	No
Selenium	02/02/2009	<1.0	ug/L	No
Sodium	01/16/2008	5.59	mg/L	No
Uranium	02/02/2009	0.170	ug/L	No

Fluoride	01/16/2008	0.07	mg/L	No
Nitrite	10/19/2009	<0.005	mg/L	No
Nitrate	10/19/2009	0.137	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 #)	Unit of Measure	Number of Exceedances
Plumbing	24	0.11-71.00	ug/L	2
Distribution	4	0.40-3.90	ug/L	0

MAC for Lead: 10 ug/L

Location Type	Number of Samples	Range of pH Results (min#) – (max #)	Range of Alkalinity Results mg/L as CaCO₃ (min#) – (max#)
Plumbing	24	6.89-8.47	N/A
Distribution	4	7.11-7.93	67-73

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

Parameter	Sample Date (mm/dd/yyyy)	Result Value	Unit of Measure	Exceedance
Alachlor	01/27/2009	<0.11	ug/L	No
Aldicarb	01/27/2009	<0.30	ug/L	No
Aldrin + Dieldrin	01/27/2009	<0.067	ug/L	No
Atrazine + N-dealkylated metabolites	01/27/2009	<0.12	ug/L	No
Azinphos-methyl	01/27/2009	<0.21	ug/L	No
Bendiocarb	01/27/2009	<0.13	ug/L	No
Benzene	01/27/2009	<0.37	ug/L	No
Benzo(a)pyrene	01/27/2009	<0.004	ug/L	No
Bromoxynil	01/27/2009	<0.33	ug/L	No
Carbaryl	01/27/2009	<0.16	ug/L	No
Carbofuran	01/27/2009	<0.37	ug/L	No
Carbon Tetrachloride	01/27/2009	<0.41	ug/L	No
Chlordane (Total)	01/27/2009	<0.11	ug/L	No
Chlorpyrifos	01/27/2009	<0.18	ug/L	No
Cyanazine	01/27/2009	<0.18	ug/L	No
Diazinon	01/27/2009	<0.081	ug/L	No
Dicamba	01/27/2009	<0.20	ug/L	No
1,2-Dichlorobenzene	01/27/2009	<0.50	ug/L	No
1,4-Dichlorobenzene	01/27/2009	<0.21	ug/L	No
Dichlorodiphenyltrichloroethane (DDT) + metabolites	01/27/2009	<0.14	ug/L	No

1,2-Dichloroethane	01/27/2009	<0.43	ug/L	No
1,1-Dichloroethylene (vinylidene chloride)	01/27/2009	<0.41	ug/L	No
Dichloromethane	01/27/2009	<0.34	ug/L	No
2,4 Dichlorophenol	01/27/2009	<0.15	ug/L	No
2,4-Dichlorophenoxy acetic acid (2,4-D)	01/27/2009	<0.19	ug/L	No
Diclofop-methyl	01/27/2009	<0.40	ug/L	No
Dimethoate	01/27/2009	<0.12	ug/L	No
Dinoseb	01/27/2009	<0.36	ug/L	No
Diquat	02/02/2009	<1.0	ug/L	No
Diuron	01/27/2009	<0.087	ug/L	No
Glyphosate	02/02/2009	<6.0	ug/L	No
Heptachlor + Heptachlor Epoxide	01/27/2009	<0.11	ug/L	No
Lindane (Total)	01/27/2009	<0.056	ug/L	No
Malathion	01/27/2009	<0.091	ug/L	No
Methoxychlor	01/27/2009	<0.14	ug/L	No
Metolachlor	01/27/2009	<0.092	ug/L	No
Metribuzin	01/27/2009	<0.12	ug/L	No
Monochlorobenzene	01/27/2009	<0.58	ug/L	No
Paraquat	02/02/2009	<1.0	ug/L	No
Parathion	01/27/2009	<0.18	ug/L	No
Pentachlorophenol	01/27/2009	<0.15	ug/L	No
Phorate	01/27/2009	<0.11	ug/L	No
Picloram	01/27/2009	<0.25	ug/L	No
Polychlorinated Biphenyls(PCB)	01/27/2009	<0.04	ug/L	No
Prometryne	01/27/2009	<0.23	ug/L	No
Simazine	01/27/2009	<0.15	ug/L	No
THM (NOTE: show latest annual average)	2009	41.75	ug/L	No
Temephos	01/27/2009	<0.31	ug/L	No
Terbufos	01/27/2009	<0.12	ug/L	No
Tetrachloroethylene	01/27/2009	<0.45	ug/L	No
2,3,4,6-Tetrachlorophenol	01/27/2009	<0.14	ug/L	No
Triallate	01/27/2009	<0.10	ug/L	No
Trichloroethylene	01/27/2009	<0.38	ug/L	No
2,4,6-Trichlorophenol	01/27/2009	<0.25	ug/L	No
2,4,5-Trichlorophenoxy acetic acid (2,4,5-T)	01/27/2009	<0.22	ug/L	No
Trifluralin	01/27/2009	<0.12	ug/L	No
Vinyl Chloride	01/27/2009	<0.17	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	Result Value	Unit of Measure	Date of Sample
Distribution THM	61.0	ug/L	July 6-2009

(Only if DWS category is large municipal residential, small municipal residential, large municipal non residential, non municipal year round residential, large non municipal non residential)