File ☐Incoming ☐Other
Mayor ☐
Council ☐I ☐A
CAO ☐
Building ☐
Finance ☐S ☐C
Ec Dev ☐S ☐C
Parks & Rec ☐S ☐C
Planning ☐S ☐C
Public Wks ☐S ☐C
PPP ☐
Social Services ☐
☐_____
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From: Rebecca Marshall <RMarshall@ocwa.com>
Sent: Wednesday, February 28, 2018 10:07 AM
To: Elaine Gunnell; Roxanne St. Germain; Patrick Cormier
Cc: Rebecca Marshall; Duquette, Lori (ENE); Ilersich, Sherry (MOECC)
Subject: Temagami North & South 2017 Annual Report
Attachments: Temagami North Annual & Summary Report 2017.pdf; Temagami South Annual & Summary Report 2017.pdf

Good Morning,

Ontario's Drinking Water Systems Regulation (O. Reg. 170/03) made under the *Safe Drinking Water Act in 2002;* requires that the owner of a drinking water system prepare an Annual Compliance Report and an Annual Summary Report which describes the operation of the system and the quality of its water.

Annual Compliance Report

The annual report must cover the period of January 1st to December 31st in a year and must be prepared not later than February 28th of the following year. Pursuant to the legislative requirements, enclosed for your records is the Annual Compliance Report.

In accordance with Section 11 (6), the annual report must:

(a) contain a brief description of the drinking-water system, including a list of water treatment chemicals used by the system during the period covered by the report;

(b) summarize any reports made to the Ministry under subsection 18 (1) of the Act or section 16-4 of Schedule 16 during the period covered by the report;

(c) summarize the results of tests required under the Regulation, the system's approval, drinking water works permit, municipal drinking water licence, or order, including an OWRA order, during the period covered by the report and, if tests required under this Regulation in respect of a parameter were not required during that period, summarize the most recent results of tests of that parameter;

(d) describe any corrective actions taken under Schedule 17 or 18 during the period covered by the report;

(e) describe any major expenses incurred during the period covered by the report to install, repair or replace required equipment; and

(f) if the case of a large municipal residential system or a small municipal residential system, include a statement of where a report prepared under Schedule 22 will be available for inspection under subsection 12 (4) O. Reg. 170/03, s. 11 (6).

In addition, Section 11 (7) gives the direction that a copy of an annual report for the system is given, without charge, to every person who requests a copy and be made available for inspection by any member of the public during normal business hours. The reports should be made available at the Municpal office, or at a location that is accessible to the users of the water system.

Annual Summary Report

The annual summary report must cover the period of January 1st to December 31st in a year and must be prepared not later than March 31st of the following year. Pursuant to the legislative requirements, enclosed for your records is the Annual Summary Report.

As required in *Schedule 22, Summary Reports for Municipalities*, the annual summary must:

(2) (a) list the requirements of the Act, the regulations, the system's approval, drinking water works permit, municipal drinking water licence, and any orders applicable to the system that were not met at any time during the period covered by the report; and

(b) for each requirement referred to in clause (a) that was not met, specify the duration of the failure and the measures that were taken to correct the failure.

(3) The report must also include the following information for the purpose of enabling the owner of the system to assess the capability of the system to meet existing and planned uses of the system:

1. 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.

2. A comparison of the summary referred to in paragraph 1 to the rated capacity and flow rates approved in the system's approval, drinking water works permit or municipal drinking water licence, or if the system is receiving all of its water from another system under an agreement pursuant to subsection 5 (4), to the flow rates specified in the written agreement.

In addition, Section 12 (1) – 4 – gives the direction that a copy of the annual summary for the system is given, without charge, to every person who requests a copy and be made available for inspection by any member of the public during normal business hours. The reports should be made available at the municipal office, or at a location that is accessible to the users of the water system.

These reports were prepared by the Ontario Clean Water Agency (OCWA) on behalf of the municipality and are based on information kept on record by OCWA. The reports cover the period January 1st to December 31st 2017.

Please note that any Provincial Officers Orders or non-compliance issues that you have received directly from the Ministry of the Environment (MOE) should be reviewed. Where non-compliance with the Order or Issue is evident and it is not included in the attached 2017 Annual Compliance/Summary Report, then we recommend that this information be added to the report.

After your review and inclusion of any additional information, this report is to be provided to the members of Council before **March 31, 2018**. Please ensure this distribution.

Yours truly,
Ontario Clean Water Agency

Rebecca Marshall | Process and Compliance Technician | North Eastern Ontario Hub | Ontario Clean Water Agency | Tel: 705-648-4267 | Fax: 705-567-7974 | Email: rmarshall@ocwa.com

Ontario Clean Water Agency
Agence Ontarienne Des Eaux

Temagami North Drinking Water System

2017 ANNUAL/SUMMARY REPORT

Prepared by the Ontario Clean Water Agency
on behalf of the Municipality of Temagami

TABLE OF CONTENTS

EXECUTIVE SUMMARY

The 2017 Annual/Summary Report for the Temagami North Drinking Water System addresses the requirements outlined in Schedule 11 and 22 of the Ontario Drinking Water Systems Regulation (O. Reg. 170/03) under the *Safe Drinking Water Act*, 2002.

The Ontario Clean Water Agency prepares this report on behalf of the Municipality of Temagami by February 28 of each year. The report is accessible on-line on the Municipality of Temagami website at: http://www.temagami.ca/pagesmith/48 and in hard copy upon request. The availability of the Annual/Summary Report is communicated to the Municipality of Temagami consumers via an ad in the community bulletin and notice at the City Hall.

This report is divided into two sections. Section 11 – Annual Report provides a detailed description of the drinking water system, list of chemicals used, significant expenses incurred, notices of adverse test results, any incidents issued, and a summary of all microbiological and operational testing performed. Section 12 – Summary Report for Municipalities presents any requirements the system failed to meet. Also included is a summary of quantities and flow rates generated by the drinking water system.

The Municipality of Temagami complied with the terms and conditions of all Licences and Permits, Ontario Drinking Water Quality Standards Regulation (O. Reg. 169/03), and the Drinking Water Systems Regulation (O. Reg. 170/03) with the exception of those events detailed in Section 2 of the Summary Report.

INTRODUCTION

Municipalities throughout Ontario are required to comply with Ontario Regulation 170/03 made under the *Safe Drinking Water Act*, 2002. The Act was passed following recommendations made by Commissioner O'Conner after the Walkerton Inquiry. The Act's purpose is to protect human health through the control and regulation of drinking-water systems. O. Reg. 170/03 regulates drinking water testing, use of licensed laboratories, treatment requirements and reporting requirements.

O. Reg. 170/03 requires the owner to produce an Annual Report, under Section 11. This report must include the following:

1. Description of system and chemical(s) used
2. Summary of any adverse water quality reports and corrective actions
3. Summary of all required testing
4. Description of any major expenses incurred to install, repair or replace equipment

This Annual Report must be completed by February 28 of each year.

The regulation also requires a Summary Report which must be presented and accepted by Council by March 31 of each year for the preceding calendar year reporting period.

The report must list the requirements of the Act, its regulations, the system's Drinking Water Works Permit (DWWP), Municipal Drinking Water Licence (MDWL), Certificate of Approval (if applicable), and any Provincial Officer Order the system failed to meet during the reporting period. 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.

The *Safe Drinking Water Act*, 2002 and the drinking water regulations can be viewed at the following website: http://www.e-laws.gov.on.ca.

To enable the Owner to assess the rated capacity of their system to meet existing and future planned water uses, the following information is also required in the report.

1. A summary of the quantities and flow rates of water supplied during the reporting period, including the monthly average and the maximum daily flows.
2. A comparison of the summary to the rated capacity and flow rates approved in the systems approval, drinking water works permit or municipal drinking water licence or a written agreement if the system is receiving all its water from another system under an agreement.

The two reports have been combined and presented to council as the 2017 Annual/Summary Report.

Temagami North Drinking Water System

Section 11

2017 ANNUAL REPORT

for MUNICIPALITIES

Section 11
ANNUAL REPORT

1.0 INTRODUCTION

Drinking-Water System Name	**TEMAGAMI NORTH DRINKING WATER SYSTEM**
Drinking-Water System Number	220000433
Drinking-Water System Owner	The Corporation of the Municipality of Temagami
Drinking-Water System Category	Large Municipal, Residential System
Reporting Period	January 1, 20176 to December 31, 2017

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

Is your annual report available to the public at no charge on a web site on the Internet? Yes at: http://www.temagami.ca/pagesmith/48

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

Temagami Municipal Office
7 Lakeshore Drive
Temagami, ON P0H 2H0

Drinking-Water Systems that receive drinking water from the Temagami North Drinking Water System

The Temagami North Drinking Water System provides all of its drinking water to the community of Temagami North within the Municipality of Temagami.

The Annual Report was not provided to any other Drinking Water System owners

The Ontario Clean Water Agency prepared the 2017 Annual Report for the Temagami North Drinking Water System and provided a copy to the system owner; the Municipality of Temagami. The Temagami North Drinking Water System is a stand-alone system that does not receive water from or send water to another system.

Notification to system users that the Annual Report is available for viewing is accomplished through:

Public access/notice via the web
Public access/notice via Municipal Office
Public access/notice via a community bulletin Public access/notice via a newspaper

2.0 DESCRIPTION OF THE DRINKING WATER SYSTEM

The Temagami North Drinking Water System is owned by The Corporation of the Municipality of Temagami. OCWA is the Operating Authority of the Water Treatment and Distribution Systems. This subject system is not interconnected to any other drinking water systems owned by different owners.

The intake pipe for the Temagami North water treatment plant is located approximately 165 m off the west shore of Net Lake at 10 m below the low water level of the lake. The raw water is directed by gravity via a 222 m long, 250 mm diameter intake pipe to a low lift pumping station consisting of a wet well and two submersible low lift pumps, each rated at 3.8 L/s (328 m^3/day). These pumps are controlled by the systems PLC (programmable logic controller) and discharge to the two BCA Pre-Fabricated package treatment plants.

The BCA plants each consist of a flash mixing chamber, flocculation tank, two clarification chambers, and two deep dual media filters (sand/anthracite). Aluminum sulphate and polymer are added for the coagulation/flocculation process, sodium carbonate for pH adjustment and sodium hypochlorite for disinfection. All chemicals are added using metering pumps. The plant is equipped with an automated monitoring system that records various components of the process including system flows and chemical dosages.

The treated water is directed to two of the three clearwells, which have a combined capacity of 268.9 m^3. The two highlift pumps direct the treated water into the distribution system, which is equipped with a standpipe known as the North Tower. The standpipe has a total storage capacity of 732 m^3 and helps to maintain water pressure within the system. Alarmed chlorine and turbidity monitoring systems are in place to ensure the water is of acceptable quality before entering the distribution system.

Filter backwashes are initiated by head loss, turbidity levels, time or manually by the operator. The backwash wastewater and sedimentation sludge is directed to a drainage system that leads to the Municipal sanitary sewer system for disposal.

A back up 80 kW diesel generator with automatic start is located in a nearby sewage pumping station and is available to provide emergency power for the entire facility in the event of a power interruption.

Classified as a Large Municipal Residential Drinking Water System, Temagami North has approximately 218 service connections serving an estimated population of 300 residents.

3.0 LIST OF WATER TREATMENT CHEMICALS USED OVER THE REPORTING PERIOD

The following chemicals were used in the Temagami North treatment process:

Aluminum Sulphate (Alum) - Coagulation/Flocculation
Polyelectrolyte (Polymer) - Coagulant Aid
Sodium Carbonate (Soda Ash) – pH and Alkalinity Adjustment
Sodium Hypochlorite - Primary Disinfection

All treatment chemicals are NSF/ANSI approved.

4.0 SIGNIFICANT EXPENSES INCURRED TO THE DRINKING WATER SYSTEM

The following work was completed in 2017:

- Multi Ranger (level indicator)
- Generator Load Testing
- New Miltronics installed (spare also purchased)
- Reprogram SCADA

All routine maintenance functions were accomplished through OCWA's comprehensive Workplace Management computerized work order system.

5.0 DETAILS ON NOTICES OF ADVERSE TEST RESULTS AND OTHER PROBLEMS REPORTED TO & SUBMITTED TO THE SPILLS ACTION CENTER

Incident #1 – Sodium Exceedance (AWQI #137330)

Date	October 10, 2017
Details	Sodium result = 26.5 mg/L
Corrective Action	Re-Sample (result = 23.7) MOECC SAC and MOH notified

6.0 MICROBIOLOGICAL TESTING PERFORMED DURING THE REPORTING PERIOD

Sample Type	Number of Samples	*E.coli* Results (min to max)	Total Coliform Results (min to max)	Number of HPC Samples	Range of HPC Results (min to max)
Raw	52	<2 to <4	<2 to 90	N/A	N/A
Treated	52	0 to 0	0 to 0	52	<10 to >1500
Distribution	104	0 to 0	0 to 0	40*	<10 to 80

Maximum Acceptable Concentration (MAC) for *E. coli* = 0 Counts/100 mL
MAC for Total Coliforms = 0 Counts/100 mL
*HPC testing was not completed on any of the monthly samples taken in March and April

7.0 OPERATIONAL TESTING PERFORMED DURING THE REPORTING PERIOD

Continuous Flow Analyzers in Treatment Process

Parameter	Number of Samples	Range of Results (min to max)	Unit of Measure
Turbidity (Filter 1)	8760	0 to 2	NTU
Turbidity (Filter 2)	8760	0 to 2	NTU
Free Chorine	8760	0.94 to 3.33	mg/L

Note: For continuous monitors use 8760 as the number samples for one year.

Effective backwash procedures, including filter to waste are in place to ensure that the effluent turbidity requirements are met all times. Thus, the maximum result of 2 NTU is not representative of the water entering the clearwell.

Free Chlorine Residual in the Distribution System

Number of Samples	Free Chlorine (min to max)	Unit of Measure	Standard
364	0.11 to 2.15	mg/L	$\geq$ 0.05

Note: Four (4) chlorine residual samples are collected one day and three (3) on a second day of each week. The sample sets must be collected at least 48-hours apart.

Nitrate & Nitrite at the Water Treatment Plant

Date of Sample	Nitrate Result	Nitrite Result	Unit of Measure	Exceedance
January 9	0.2	<0.03	mg/L	No
April 18	0.2	<0.03	mg/L	No
July 10	<0.1	<0.03	mg/L	No
October 10	0.16	<0.03	mg/L	No

MAC for Nitrate = 10 mg/L
MAC for Nitrite = 1.0 mg/L

Total Trihalomethane in the Distribution System

Date of Sample	THM Result	Running Average	Unit of Measure	Exceedance
January 9	49	49.3	ug/L	No
April 18	37	47.2	ug/L	No
July 10	36.5	43.8	ug/L	No
October 10	47.8	42.6	ug/L	No

MAC for Trihalomethanes = 100 ug/L (Four Quarter Running Average)

Total Haleoacetic Acids in the Distribution System

Date of Sample	HAA Result	Running Average	Unit of Measure	Exceedance
January 9	31	-	ug/L	NA
April 18	40	-	ug/L	NA
July 10	14	-	ug/L	NA
October 10	44	32.3	ug/L	NA

MAC for Haleoacetic Acids = 80 ug/L (Four Quarter Running Average) – Effective January 2020

Summary of Most Recent Lead Data

(Applicable to the following drinking water systems; large municipal residential systems, small, municipal residential systems, and non-municipal year-round residential systems)

The Temagami North Drinking Water System qualified for the 'Exemption from Plumbing Sampling' as described in section 15.1-5 (9) and 15.1-5 (10) of Ontario Regulation 170/03. The exemption applies to a drinking water system if; in two consecutive periods at reduced sampling, not more than 10% of all samples from plumbing exceed the maximum allowable concentration of 10 ug/L for lead. The system is required to test for total alkalinity and pH in one distribution sample collected during the period of December 15 to April 15 and one distribution sample during the period of June 15 to October 15. This testing is required in every 12-month period with lead testing in every third 12-month period.

pH & Alkalinity in the Distribution System

Sample Periods	Number of Samples	Lead	pH	Alkalinity (mg/L)
December 15 to April 15	1	-	7.45	85.9
June 15 to October 15	1	-	6.6	75

Sample Dates: April 12 and October 12, 2017
Next round of lead sample scheduled for 2018

Schedule 23 Inorganic at the Water Treatment Plant

Parameter	Result Value	Unit of Measure	MAC	Exceedance
Antimony	0.5	ug/L	6	No
Arsenic	1	ug/L	25	No
Barium	1	ug/L	1000	No
Boron	2	ug/L	5000	No
Cadmium	0.1	ug/L	5	No
Chromium	1	ug/L	50	No
Mercury	0.1	ug/L	1	No
Selenium	1	ug/L	10	No
Uranium	1	ug/L	20	No

Sample Date: October 10, 2017
Note: Sample required every 12 months. Next sampling scheduled for October 2018.

Schedule 24 Organic at the Water Treatment Plant

Parameter	Result Value	Unit of Measure	MAC	Exceedance
1,1-Dichloroethylene (vinylidene chloride)	<0.3	ug/L	14	No
1,2-Dichlorobenzene	<0.2	ug/L	200	No
1,2-Dichloroethane	<0.2	ug/L	5	No
1,4-Dichlorobenzene	<0.3	ug/L	5	No
2,3,4,6-Tetrachlorophenol	<0.3	ug/L	100	No
2,4,6-Trichlorophenol	<0.2	ug/L	5	No
2,4-D	<0.08	ug/L	100	No
2,4-Dichlorophenol	<0.2	ug/L	900	No
Alachlor	<0.2	ug/L	5	No
Atrazine	<0.2	ug/L	No MAC	No
Atrazine + N-dealkylated metabolites	<0.5	ug/L	5	No
Azinphos-methyl (Guthion)	<0.2	ug/L	20	No
Benzene	<0.1	ug/L	5	No
Benzo(a)pyrene	<0.005	ug/L	0.01	No
Bromoxynil	<0.1	ug/L	5	No
Carbaryl	<1	ug/L	90	No
Carbofuran	<1	ug/L	90	No
Carbon tetrachloride	<0.2	ug/L	5	No
Chlorobenzene	<0.5	ug/L	80	No
Chlorpyriphos (Dursban)	<0.2	ug/L	90	No
Desethyl atrazine	<0.3	ug/L	No MAC	No
Diazinon	<0.2	ug/L	20	No
Dicamba	<0.08	ug/L	120	No
Dichloromethane	<1	ug/L	50	No
Diclofop-methyl	<0.08	ug/L	9	No
Dimethoate	<0.2	ug/L	20	No
Diquat	<0.7	ug/L	70	No
Diuron	<6	ug/L	150	No
Glyphosate	<20	ug/L	280	No
Malathion	<0.2	ug/L	190	No
MCPA	<10	ug/L	100	No
Metolachlor	<0.1	ug/L	50	No
Metribuzin (Sencor)	<0.1	ug/L	80	No
Paraquat	<0.3	ug/L	10	No
Pentachlorophenol	<0.3	ug/L	60	No
Phorate	<0.1	ug/L	2	No
Picloram	<0.08	ug/L	190	No
Prometryne	<0.06	ug/L	1	No
Simazine	<0.2	ug/L	10	No
Terbufos	<0.1	ug/L	1	No
Tetrachloroethylene	<0.3	ug/L	30	No
Total PCBs	<0.06	ug/L	3	No

Parameter	Result Value	Unit of Measure	MAC	Exceedance
Triallate	<0.1	ug/L	230	No
Trichloroethylene	<0.2	ug/L	5	No
Trifluralin	<0.1	ug/L	45	No
Vinyl chloride	<0.1	ug/L	1	No

Sample Date: October 10, 2017

Note: Sample required every 12 months. Next sampling scheduled for October 2018.

Inorganic or Organic Parameter(s) that Exceeded Half the Standard Prescribed in Schedule 2 of Ontario Drinking Water Quality Standards

No inorganic or organic parameter(s) listed in Schedule 23 and 24 of Ontario Regulation 170/03 exceeded half the standard found in Schedule 2 of the Ontario Drinking Water Standard (O. Reg.169/03) during the reporting period.

Most Recent Sodium at the Water Treatment Plant

Date of Sample	Number of Samples	Result Value	Unit of Measure	MAC	Exceedance
October 10, 2017	1	26.5	mg/L	20	Yes
October 18, 2017	1	23.7	mg/L	20	Yes

Note: Sample required every 60 months. Next sampling scheduled for October 2022.
Exceedance reported as required by O. Reg. 170/03 (see AWQI 137330).

Most Recent Fluoride at the Water Treatment Plant

Date of Sample	Number of Samples	Result Value	Unit of Measure	MAC	Exceedance
October 10, 2017	1	0.077	mg/L	1.5	No

Note: Sample required every 60 months. Next sampling scheduled for October 2017.

Additional Testing Performed in Accordance with a Legal Instrument

No additional sampling and testing was required for the Temagami North Drinking Water System during the 2017 reporting year.

Temagami North Drinking Water System

Schedule 22

2017 SUMMARY REPORT

for MUNICIPALITIES

Schedule 22

SUMMARY REPORTS for MUNICIPALITIES

1.0 INTRODUCTION

Drinking-Water System Name	**TEMAGAMI NORTH DRINKING WATER SYSTEM**
Municipal Drinking Water Licence (MDWL)	201-102 (issued July 25, 2016)
Drinking Water Works Permit (DWWP)	201-202 (issued July 25, 2016)
Permit to Take Water (PTTW)	7317-8PBM2Z (issued December 9, 2011)
	4505-AS3NUQ (issued October 26, 2017)
Reporting Period	January 1, 2017 to December 31, 2017

2.0 REQUIREMENTS THE SYSTEM FAILED TO MEET

According to documentation available to the Ontario Clean Water Agency, the following table lists any requirements the system failed to meet during the 2017 reporting period.

Requirement Failure #1 – Permit to Take Water

Legislation	**Permit to Take Water# 4505-AS3NUQ (issued Oct. 26, 2017)**
Requirement(s) the System Failed to Meet	The maximum flow was exceeded on November 28; due to an increase in turbidity more water was needed to perform extra backwashes
Corrective Action	The issue resolved itself once the turbidity returned to normal
Status	Resolved

Requirement Failure #2 – Missed Heterotrophic Plate Count (HPC) Testing

Legislation	**SDWA - O. Reg. 170/03**
Requirement(s) the System Failed to Meet	HPC testing was not completed on any of the micro bacteriological samples taken from the distribution in the month of March and April 2017. This was due to an error on the chain of custody form.
Corrective Action	The chain of custody form was corrected and re-issued. HPC testing is being done on a weekly basis.
Status	Resolved

For Adverse Water Quality Incidents please see page 7

3.0 SUMMARY OF QUANTITIES & FLOW RATES

The following Water Usage Tables summarize the quantities and flow rates of water taken and produced during the 2017 reporting period, including average monthly volumes, maximum monthly volumes, total monthly volumes and maximum flow rates.

2017 - Monthly Summary of Water Takings from the Source (Net Lake)

Governed by Permit to Take Water (PTTW) #7317-8PBM2Z(Dec. 9, 2011) and #4505-AS3NUQ (Oct. 26, 2017)

Raw Water Usage	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Total Volume (m^3)	4526	3664	4240	3451	4054	4999	4891	4294	3841	4357	5118	4806	52241
Average Volume (m^3 /day)	146	131	137	115	131	167	158	139	128	141	171	155	143
Maximum Volume (m^3 /day)	389	174	180	183	177	375	206	180	184	272	528	198	528
PTTW - Maximum Allowable Volume (m^3/day)	**460**	**460**	**460**	**460**	**460**	**460**	**460**	**460**	**460**	**460**	**460**	**460**	**460**
Maximum Flow Rate (L/min)	460	455	433	404	424	460	436	418	410	435	452	414	460
PTTW - Maximum Allowable Flow Rate (L/min)	**456**	**456**	**456**	**456**	**456**	**456**	**456**	**456**	**456**	**456**	**456**	**456**	**456**

2017 - Monthly Summary of Treated Water Supplied to the Distribution System

Governed by Municipal Drinking Water Licence #201-102

Treated Water Usage	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Total Volume (m^3)	3555	3282	3807	3294	3568	4108	4361	3866	3394	3878	4033	4352	45498
Average Volume (m^3 /day)	123	122	123	110	115	137	141	125	113	125	134	140	126
Maximum Volume (m^3 /day)	176	167	164	184	167	322	203	187	162	242	316	192	322
MDWL - Rated Capacity (m^3/day)	**328**	**328**	**328**	**328**	**328**	**328**	**328**	**328**	**328**	**328**	**328**	**328**	**328**

Flow Monitoring

Municipal Drinking Water Licence (MDWL) #201-102 requires the owner to install a sufficient number of flow measuring devices to permit the continuous measurement and recording of:

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

The Temagami North drinking water system has three flow meters as listed in the MDWL; two installed to monitor raw water entering each package treatment plant and one installed to monitor treated water entering the distribution system. Flow metering devices were calibrated in accordance to manufacturers' specifications on an annual basis and are operating as required.

Comparison of Summary to the Rated Capacity & Flow Rates Approved in the Systems Approval, Licence and Permit

Temagami North DWS' Permit to Take Water (PTTW) #7317-8PBM2Z issued December 9, 2011 allowed the Municipality of Temagami to withdraw water at a maximum flow rate of 456 L/minute and a maximum total daily volume of 460 m^3/day from Net Lake. PTTW #4505-AS3NUQ issued October 26, 2017 allows the same amounts. PTTW #4505-AS3NUQ also allows flow rate exceedances to occur during pump start up if they last less than five minutes.

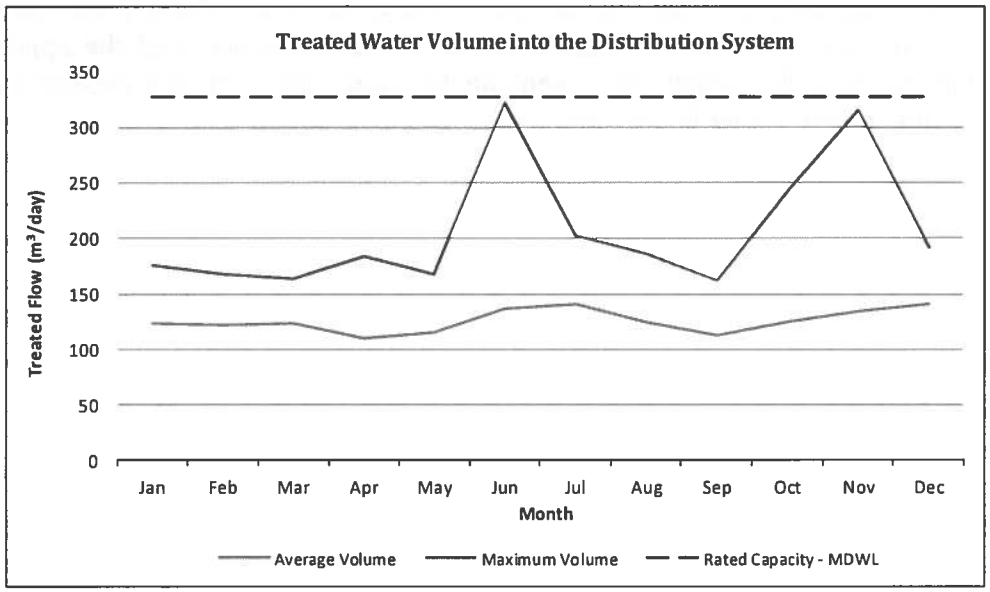
The maximum flow rate was exceeded in January and June due to spikes on pump startup which lasted less than 5 minutes. The maximum total daily volume exceeded in November when more water was needed for extra backwashes due to an increase in turbidity.

Schedule C, Section 1.1 of the MDWL requires that the maximum daily volume of treated water that flows to the distribution system shall not exceed 328 m^3/day. This rate was not exceeded as the maximum flow was 322 m^3.

The following table and graph compare the average and maximum flow rates into the distribution system to the approved rated capacity of the system as identified in the MDWL.

2017 - Daily Volume of Treated Water into the Distribution System

Treated Flow	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Average Volume (m^3/day)	123	122	123	110	115	137	141	125	113	125	134	140
Maximum Volume (m^3/day)	176	167	164	184	167	322	203	187	162	242	316	192
Rated Capacity - MDWL	**328**	**328**	**328**	**328**	**328**	**328**	**328**	**328**	**328**	**328**	**328**	**328**
% Rated Capacity	54	51	50	56	51	98	62	57	49	74	96	59



Summary of System Performance

The following information is provided to enable the Owner to assess the capability of the system to meet existing and future water usage needs:

Rated Capacity of the Plant (MDWL)	328 m^3/day	
Average Daily Flow for 2017	126 m^3/day	38% of the rated capacity
Maximum Daily Flow for 2017	322 m^3/day	98% of the rated capacity
Total Treated Water Produced in 2017	45498 m^3	

4.0 CONCLUSION

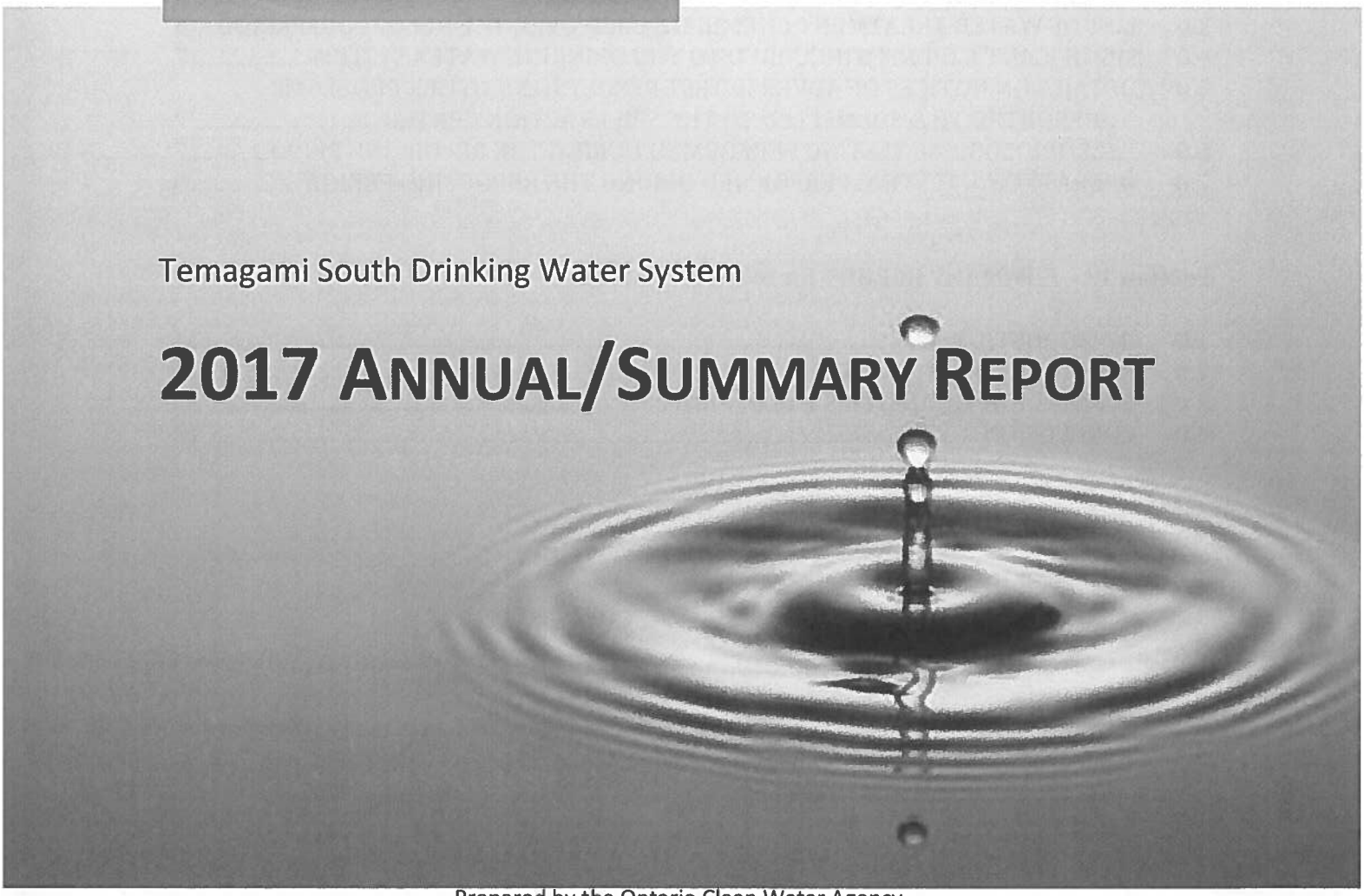
The Temagami North Drinking Water System addressed incidents of non-compliance with the regulatory requirements of the Safe Drinking Water Act and its Regulations and the terms and conditions outlined in its specific approval, drinking water works permit and municipal drinking water licence during the reporting period.

The system was able to operate, for the most part, in accordance with the terms and conditions of the Permit to Take Water and in accordance with the rate capacity of the approval and licence while meeting the community's demand for water use with the exceptions of the exceedances mentioned earlier in the report.

Ontario Clean Water Agency
Agence Ontarienne Des Eaux

Temagami South Drinking Water System

2017 ANNUAL/SUMMARY REPORT



Prepared by the Ontario Clean Water Agency
on behalf of the Municipality of Temagami

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EXECUTIVE SUMMARY

The 2017 Annual/Summary Report for the Temagami South Drinking Water System addresses the requirements outlined in Section 11 and Schedule 22 of the Ontario Drinking Water Systems Regulation (O. Reg. 170/03) under the *Safe Drinking Water Act*, 2002.

The Ontario Clean Water Agency prepares this report on behalf of the Municipality of Temagami by February 28 of each year. The report is accessible on-line on the Municipality of Temagami website at: http://www.temagami.ca/pagesmith/48 and in hard copy upon request. The availability of the Annual/Summary Report is communicated to the Municipality of Temagami consumers via an ad in the community bulletin and notice at the City Hall.

This report is divided into two sections. Section 11 – Annual Report provides a detailed description of the drinking water system, list of chemicals used, significant expenses incurred, notices of adverse test results, any incidents issued, and a summary of all microbiological and operational testing performed. Schedule 22 – Summary Report for Municipalities presents any requirements the system failed to meet. Also included is a summary of quantities and flow rates generated by the drinking water system.

The Municipality of Temagami complied with the terms and conditions of all Licences and Permits, Ontario Drinking Water Quality Standards Regulation (O. Reg. 169/03), and the Drinking Water Systems Regulation (O. Reg. 170/03) with the exception of those events detailed in Section 2 of the Summary Report.

INTRODUCTION

Municipalities throughout Ontario are required to comply with Ontario Regulation 170/03 made under the *Safe Drinking Water Act*, 2002. The Act was passed following recommendations made by Commissioner O'Conner after the Walkerton Inquiry. The Act's purpose is to protect human health through the control and regulation of drinking-water systems. O. Reg. 170/03 regulates drinking water testing, use of licensed laboratories, treatment requirements and reporting requirements.

O. Reg. 170/03 requires the owner to produce an Annual Report, under Section 11. This report must include the following:

1. Description of system and chemical(s) used
2. Summary of any adverse water quality reports and corrective actions
3. Summary of all required testing
4. Description of any major expenses incurred to install, repair or replace equipment

This Annual Report must be completed by February 28 of each year.

The regulation also requires a Summary Report which must be presented and accepted by Council by March 31 of each year for the preceding calendar year reporting period.

The report must list the requirements of the Act, its regulations, the system's Drinking Water Works Permit (DWWP), Municipal Drinking Water Licence (MDWL), Certificate of Approval (if applicable), and any Provincial Officer Order the system failed to meet during the reporting period. 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.

The *Safe Drinking Water Act*, 2002 and the drinking water regulations can be viewed at the following website: http://www.e-laws.gov.on.ca.

To enable the Owner to assess the rated capacity of their system to meet existing and future planned water uses, the following information is also required in the report.

1. A summary of the quantities and flow rates of water supplied during the reporting period, including the monthly average and the maximum daily flows.
2. A comparison of the summary to the rated capacity and flow rates approved in the systems approval, drinking water works permit or municipal drinking water licence or a written agreement if the system is receiving all its water from another system under an agreement.

The two reports have been combined and presented to council as the 2017 Annual/Summary Report.

Temagami South Drinking Water System

Section 11

2017 ANNUAL REPORT

for MUNICIPALITIES

Section 11
ANNUAL REPORT

1.0 INTRODUCTION

Drinking-Water System Name	**TEMAGAMI SOUTH DRINKING WATER SYSTEM**
Drinking-Water System Number	220000424
Drinking-Water System Owner	The Corporation of the Municipality of Temagami
Drinking-Water System Category	Large Municipal, Residential System
Reporting Period	January 1, 2017 to December 31, 2017

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

Is your annual report available to the public at no charge on a web site on the Internet? Yes at: http://www.temagami.ca/pagesmith/48

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

Temagami Municipal Office
7 Lakeshore Drive
Temagami, ON P0H 2H0

Drinking-Water Systems that receive drinking water from the Temagami South Drinking Water System

The Temagami South Drinking Water System provides all drinking water to the Municipality of Temagami.

The Annual Report was not provided to any other Drinking Water System owners

The Ontario Clean Water Agency prepared the 2017 Annual Report for the Temagami South Drinking Water System and provided a copy to the system owner; the Municipality of Temagami. The Temagami South Drinking Water System is a stand-alone system that does not receive water from or send water to another system.

Notification to system users that the Annual Report is available for viewing is accomplished through:

Public access/notice via the web
Public access/notice via Government Office
Public access/notice via a community bulletin Public access/notice via a newspaper

2.0 DESCRIPTION OF THE DRINKING WATER SYSTEM

The Temagami South Drinking Water System is owned by The Corporation of the Municipality of Temagami. The Ontario Clean Water Agency is the Operating Authority of the Water Treatment and Distribution systems. This subject system is not interconnected to any other drinking water systems owned by different owners.

Located on Lakeshore Road, the Temagami South treatment plant obtains its source water from Lake Temagami. The water is drawn through a 20 m long, 200 mm diameter intake pipe that extends from a submerged intake structure 5.7 m below the average water level. The intake pipe directs water by gravity to a low lift pumping station consisting of a wet well and two submersible low lift pumps, each rated at 11 L/s (950 m^3/day). These pumps are controlled by the treatment systems' PLC and discharge to the two package plants located within the WTP.

The treatment systems are two different package plants. One is a BCA Pre-Fabricated package treatment plant which operates automatically and the other is a Neptune Microfloc "Trident" package treatment plant which operates manually. Each plant provides chemically assisted filtration through coagulation, flocculation, sedimentation and filtration operations. Aluminum sulphate and polymer are added to the raw water upstream of the static mixer for the coagulation/flocculation process. Sodium carbonate is injected for pH adjustment and sodium hypochlorite is used for disinfection. All chemicals are added using two metering pumps. The plant is equipped with an automated monitoring system that records various components of the process.

The filtered water is then directed to two clearwells having a total capacity of 280.68 m^3. Two high lift pumps rated at 916 m^3/day direct finished water to the distribution system and an elevated tower, which maintains pressure to the distribution system. Alarmed chlorine and turbidity monitoring systems are in place to monitor water quality leaving the treatment facility.

Filter backwashes are initiated by head loss, turbidity levels, and timer or manually by the operator. Filter backwash and clarifier waste are stored in a wastewater holding tank before being pumped to the Municipal sewer system for disposal.

For emergency purposes, a 60 kW diesel generator set is available to provide emergency power to the entire facility in the event of a power outage.

Temagami South is classified as a Large Municipal Residential Drinking Water System and has 182 service connections serving a nominal population of 350 residents. The distribution system is equipped with an elevated storage reservoir known as the "South Tower" which has a working storage capacity of 570 m^3 and assists with maintaining water pressure in the system.

3.0 LIST OF WATER TREATMENT CHEMICALS USED OVER THE REPORTING PERIOD

The following chemicals were used in the Temagami South Drinking Water System treatment process:

Aluminum Sulphate (Alum) – Coagulation/Flocculation
Polyelectrolyte (Polymer) - Coagulant Aid
Sodium Carbonate (Soda Ash) – pH and Alkalinity Adjustment
Sodium Hypochlorite – Disinfection

All treatment chemicals are NSF/ANSI approved.

4.0 SIGNIFICANT EXPENSES INCURRED TO THE DRINKING WATER SYSTEM

The following work was completed in 2017:

- New Multi-Ranger (Level indicator) installed
- New PLC Power Supply installed
- Intake Inspection completed

All routine maintenance functions were accomplished through OCWA's comprehensive Workplace Management computerized work order system.

5.0 DETAILS ON NOTICES OF ADVERSE TEST RESULTS AND OTHER PROBLEMS REPORTED TO & SUBMITTED TO THE SPILLS ACTION CENTER

Incident #1 – Sodium Exceedance (AWQI #137332)

Date	October 10, 2017
Details	Sodium result = 23.1 mg/L (Treated sample)
Corrective Action	Re-Sample (result = 19.4)

6.0 MICROBIOLOGICAL TESTING PERFORMED DURING THE REPORTING PERIOD

Sample Type	Number of Samples	*E.coli* Results (min to max)	Total Coliform Results (min to max)	Number of HPC Samples	Range of HPC Results (min to max)
Raw	52	0 to 12* NDOGT	0 to 485* NDOGT	N/A	N/A
Treated	52	0 to 0	0 to 0	52	<10 to 40
Distribution	104	0 to 0	0 to 0	52	<10 to 70

Maximum Acceptable Concentration (MAC) for *E. coli* = 0 Counts/100 mL
MAC for Total Coliforms = 0 Counts/100 mL
* EC/TC results for May 23, July 17 and December 4 were reported as NDOGT – no data, overgrown with target organisms

7.0 OPERATIONAL TESTING PERFORMED DURING THE REPORTING PERIOD

Continuous Flow Analyzers in Treatment Process

Parameter	Number of Samples	Range of Results (min to max)	Unit of Measure
Turbidity (Filter 1)	-	-	NTU
Turbidity (Filter 2)	8760	0 to 2	NTU
Free Chorine	8760	0.96 to 4.13	mg/L

Note: For continuous monitors use 8760 as the number samples for one year.
Filter 1 was not in use in 2017. The Neptune Plant only operates manually.

Effective backwash procedures, including filter to waste are in place to ensure that the effluent turbidity requirements are met all times. Thus, the maximum result of 2 NTU is not representative of the water entering the clearwell.

Free Chlorine Residual in the Distribution System

Number of Samples	Free Chlorine (min to max)	Unit of Measure	Standard
368	0.25 to 1.69	mg/L	$\geq$ 0.05

Note: Four (4) chlorine residual samples are collected one day and three (3) on a second day of each week. The sample sets must be collected at least 48-hours apart.

Nitrate & Nitrite at the Water Treatment Plant

Date of Sample	Nitrate Result	Nitrite Result	Unit of Measure	Exceedance
January 9	<0.1	<0.03	mg/L	No
April 18	<0.1	<0.03	mg/L	No
July 10	<0.1	<0.03	mg/L	No
October 10	<0.1	<0.03	mg/L	No

MAC for Nitrate = 10 mg/L
MAC for Nitrite = 1.0 mg/L

Total Trihalomethane in the Distribution System

Date of Sample	THM Result	Running Average	Unit of Measure	Exceedance
January 9	32.8	53.9	ug/L	No
April 18	22	47.7	ug/L	No
July 10	37.4	42.8	ug/L	No

Date of Sample	THM Result	Running Average	Unit of Measure	Exceedance
October 10	69.3	40.4	ug/L	No

MAC for Trihalomethanes = 100 ug/L (Four Quarter Running Average)

Total Haleoacetic Acids in the Distribution System

Date of Sample	HAA Result	Running Average	Unit of Measure	Exceedance
January 9	26	-	ug/L	NA
April 18	40	-	ug/L	NA
July 10	<8	-	ug/L	NA
October 10	52	31.5	ug/L	NA

MAC for Haleoacetic Acids = 80 ug/L (Four Quarter Running Average) – Effective January 2020

Summary of Most Recent Lead Data

(Applicable to the following drinking water systems; large municipal residential systems, small, municipal residential systems, and non-municipal year-round residential systems)

The Temagami South Drinking Water System qualified for the 'Exemption from Plumbing Sampling' as described in section 15.1-5 (9) and 15.1-5 (10) of Ontario Regulation 170/03. The exemption applies to a drinking water system if; in two consecutive periods at reduced sampling, not more than 10% of all samples from plumbing exceed the maximum allowable concentration of 10 ug/L for lead. As such, the system was required to test for total alkalinity and pH in one distribution sample collected during the period of December 15 to April 15 and one distribution sample collected during the period of June 15 to October 15. This testing is required in every 12-month period with lead testing in every third 12-month period.

pH & Alkalinity in the Distribution System

Sample Periods	#of Samples	Lead Results ug/L	pH Results	Alkalinity Results (mg/L)
December 15 to April 15	1	-	7.34	114
June 15 to October 15	1	-	7.5	50.1

Sample Dates: April 12 and October 12, 2017
Next round of lead testing scheduled for 2018

Schedule 23 Inorganic at the Water Treatment Plant

Parameter	Result Value	Unit of Measure	MAC	Exceedance
Antimony	<0.5	ug/L	6	No
Arsenic	<1	ug/L	25	No
Barium	6	ug/L	1000	No
Boron	4.8	ug/L	5000	No

Parameter	Result Value	Unit of Measure	MAC	Exceedance
Cadmium	<0.1	ug/L	5	No
Chromium	<1	ug/L	50	No
Mercury	<0.1	ug/L	1	No
Selenium	<1	ug/L	10	No
Uranium	<1	ug/L	20	No

Sample Date: October 10, 2017

Note: Sample required every 12 months. Next sampling scheduled for October 2018.

Schedule 24 Organic at the Water Treatment Plant

Parameter	Result Value	Unit of Measure	MAC	Exceedance
1,1-Dichloroethylene	<0.3	ug/L	14	No
1,2-Dichlorobenzene	<0.2	ug/L	200	No
1,2-Dichloroethane	<0.2	ug/L	5	No
1,4-Dichlorobenzene	<0.3	ug/L	5	No
2,3,4,6-Tetrachlorophenol	<0.3	ug/L	100	No
2,4,6-Trichlorophenol	<0.2	ug/L	5	No
2,4-D	<0.08	ug/L	100	No
2,4-Dichlorophenol	<0.2	ug/L	900	No
Alachlor	<0.2	ug/L	5	No
Atrazine	<0.5	ug/L	No MAC	No
Atrazine + N-dealkylated metabolites	<1	ug/L	5	No
Azinphos-methyl (Guthion)	<0.2	ug/L	20	No
Benzene	<0.5	ug/L	5	No
Benzo(a)pyrene	<0.2	ug/L	0.01	No
Bromoxynil	<0.1	ug/L	5	No
Carbaryl	<0.005	ug/L	90	No
Carbofuran	<0.09	ug/L	90	No
Carbon tetrachloride	<1	ug/L	5	No
Chlorobenzene	<1	ug/L	80	No
Chlorpyriphos (Dursban)	<0.2	ug/L	90	No
Desethyl atrazine	<0.5	ug/L	No MAC	No
Diazinon	<0.2	ug/L	20	No
Dicamba	<0.3	ug/L	120	No
Dichloromethane	<0.2	ug/L	50	No
Diclofop-methyl	<0.08	ug/L	9	No
Dimethoate	<1	ug/L	20	No
Diquat	<0.08	ug/L	70	No
Diuron	<0.2	ug/L	150	No
Glyphosate	<0.6	ug/L	280	No
Malathion	<6	ug/L	190	No
MCPA	0.084	ug/L	100	No
Metolachlor	<20	ug/L	50	No

Parameter	Result Value	Unit of Measure	MAC	Exceedance
Metribuzin (Sencor)	<0.2	ug/L	80	No
Paraquat	<10	ug/L	10	No
Pentachlorophenol	<0.1	ug/L	60	No
Phorate	<0.1	ug/L	2	No
Picloram	<0.3	ug/L	190	No
Prometryne	<0.3	ug/L	1	No
Simazine	<0.1	ug/L	10	No
Terbufos	<0.08	ug/L	1	No
Tetrachloroethylene	<0.06	ug/L	30	No
Total PCBs	<0.2	ug/L	3	No
Triallate	<0.1	ug/L	230	No
Trichloroethylene	<0.3	ug/L	5	No
Trifluralin	<0.06	ug/L	45	No
Vinyl chloride	<0.1	ug/L	1	No

Sample Date: October 10, 2017

Note: Sample required every 12 months. Next sampling scheduled for October 2018.

Inorganic or Organic Parameter(s) that Exceeded Half the Standard Prescribed in Schedule 2 of Ontario Drinking Water Quality Standards

No inorganic or organic parameter(s) listed in Schedule 23 and 24 of Ontario Regulation 170/03 exceeded half the standard found in Schedule 2 of the Ontario Drinking Water Standard (O. Reg.169/03) during the reporting period.

Most Recent Sodium at the Water Treatment Plant

Date of Sample	Number of Samples	Result Value	Unit of Measure	MAC	Exceedance
October 10, 2017	1	23.1	mg/L	20	Yes
October 18, 2017	1	19.7	mg/L	20	No

Note: Sample required every 60 months. Next sampling scheduled for October 2022.
Exceedance reported as required by O. Reg. 170/03 (see AWQI 137332).

Most Recent Fluoride at the Water Treatment Plant

Date of Sample	Number of Samples	Result Value	Unit of Measure	MAC	Exceedance
October 10, 2017	1	0.084	mg/L	1.5	No

Note: Sample required every 60 months. Next sampling scheduled for October 2022.

Summary of Additional Testing Performed in Accordance with a Legal Instrument

No additional sampling and testing was required for the Temagami South Drinking Water System during the 2017 reporting year.

Temagami South Drinking Water System

Schedule 22

2017 SUMMARY REPORT

for MUNICIPALITIES

Schedule 22

SUMMARY REPORTS for MUNICIPALITIES

1.0 INTRODUCTION

Drinking-Water System Name	**TEMAGAMI SOUTH DRINKING WATER SYSTEM**
Municipal Drinking Water Licence (MDWL)	201-101 (issued July 25, 2016)
Drinking Water Works Permit (DWWP)	201-201 (issued July 25, 2016)
Permit to Take Water (PTTW)	7317-8PBM2Z (issued December 9, 2011)
	4505-AS3NUQ (issued October 26, 2017)
Reporting Period	January 1, 2017 to December 31, 2017

2.0 REQUIREMENTS THE SYSTEM FAILED TO MEET

Requirement Failure #1 – Turbidity Analyzer not Alarmed

Legislation	**O. Reg. 170/03 - subsection 6-5(1) 5 of schedule 6**
Requirement(s) the System Failed to Meet	On October 2 the turbidity analyzer malfunctioned (bulb failure) without an alarm being triggered. The alarm feature was not enabled.
Corrective Action	The plant was shut down and the analyzer was immediately repaired and the alarm feature was enabled.
Status	Resolved

Requirement Failure #2 – Filter Turbidity not Tested and Recorded

Legislation	**. Reg. 170/03 - subsection 6-5(1) 1 of schedule 6**
Requirement(s) the System Failed to Meet	On October 2 when the analyzer failed the filter effluent turbidity was not being tested and recorded at the required frequency. The analyzer was stuck at zero for 56 minutes- there was no alarm because it was not enabled.
Corrective Action	The plant was shut down and the analyzer was immediately repaired and the alarm feature was enabled.
Status	Resolved

3.0 SUMMARY OF QUANTITIES & FLOW RATES

The following Water Usage Tables summarize the quantities and flow rates of water taken and produced during the 2017 reporting period, including average monthly volumes, maximum monthly volumes, total monthly volumes and maximum flow rates.

2017 - Monthly Summary of Water Takings from the Source (Lake Temagami)

Governed by Permit to Take Water (PTTW) #7317-8PBM2Z, issued December 9, 2011 and 4505-AS3NUQ, issued October 26, 2017

Raw Water Usage	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Total Volume (m^3)	4208	4342	4870	3700	4338	5429	5129	6204	4128	4691	5144	6078	58261
Average Volume (m^3/day)	150	155	157	128	140	181	165	200	138	151	171	203	162
Maximum Volume (m^3/day)	217	220	216	165	232	401	213	326	197	273	405	277	405
PTTW - Maximum Allowable Volume (m^3/day)	**1006**	**1006**	**1006**	**1006**	**1006**	**1006**	**1006**	**1006**	**1006**	**1006**	**1006**	**1006**	**1006**
Maximum Flow Rate (L/min)	700	706	723	628	642	614	652	643	687	615	641	606	723
PTTW - Maximum Allowable Flow Rate (L/min)	**700**	**700**	**700**	**700**	**700**	**700**	**700**	**700**	**700**	**700**	**700**	**700**	**700**

2017 - Monthly Summary of Treated Water Supplied to the Distribution System

Governed by Municipal Drinking Water Licence #201-101, issued July 25, 2016

Treated Water Usage	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Total Volume (m^3)	4452	3865	4657	3603	4148	5156	4867	5784	3928	4484	4832	5742	55518
Average Volume (m^3/day)	148	149	150	124	134	172	157	187	131	145	161	191	154
Maximum Volume (m^3/day)	191	211	187	164	172	394	209	318	173	266	344	266	394
MDWL - Rated Capacity (m^3/day)	**950**	**950**	**950**	**950**	**950**	**950**	**950**	**950**	**950**	**950**	**950**	**950**	**950**

Flow Monitoring

Municipal Drinking Water Licence (MDWL) #201-101 requires the owner to install a sufficient number of flow measuring devices to permit the continuous measurement and recording of:

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

The Temagami South drinking water system has a total of four flow meters as listed in the MDWL; two installed to monitor raw water entering the treatment plant and one installed to monitor treated water entering the distribution system, the fourth one is to measure backwashes. Flow metering devices were calibrated in accordance to manufacturers' specifications on an annual basis and are operating as required.

Comparison of Summary to the Rated Capacity & Flow Rates Approved in the Systems Approval, Licence and Permit

Temagami South DWS' Permit to Take Water (PTTW) #7317-8PBM2Z issued December 9, 2011 allows the Municipality of Temagami to withdraw water at a maximum flow rate of 700 L/minute and a maximum total daily volume of 1006 m^3/day from Net Lake. PTTW #4505-AS3NUQ issued October 26, 2017 allows the same amounts. PTTW #4505-AS3NUQ also allows flow rate exceedances to occur during pump start up if they last less than five minutes.

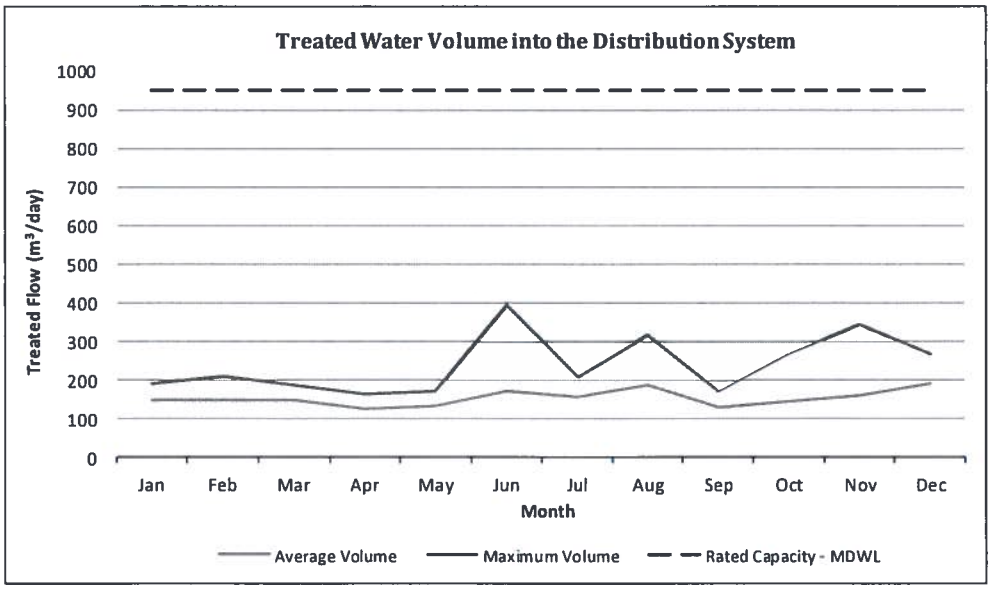
The maximum volume taken was 405m^3/day and the maximum flow rate was 723 L/minute. The maximum flow rate was exceeded in February and March due to spikes on pump startup which lasted less than 5 minutes.

Schedule C, Section 1.1 of the MDWL requires that the maximum daily volume of treated water that flows to the distribution system shall not exceed 950 m^3/day. This rate was not exceeded during the reporting period. The maximum recorded volume was 394 m^3/day which represents approximately 41 % of the rated capacity.

The following table and graph compare the average and maximum flow rates into the distribution system to the approved rated capacity of the system as identified in the MDWL.

2017 - Daily Volume of Treated Water into the Distribution System

Treated Flow	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Average Volume (m^3 /day)	148	149	150	124	134	172	157	187	131	145	161	191
Maximum Volume (m^3 /day)	191	211	187	164	172	394	209	318	173	266	344	266
Rated Capacity - MDWL	**950**	**950**	**950**	**950**	**950**	**950**	**950**	**950**	**950**	**950**	**950**	**950**
% Rated Capacity	20	22	20	17	18	41	22	33	18	28	36	28



Summary of System Performance

The following information is provided to enable the Owner to assess the capability of the system to meet existing and future water usage needs:

Rated Capacity of the Plant (MDWL)	950 m^3/day	
Average Daily Flow for 2016	154m^3/day	16% of the rated capacity
Maximum Daily Flow for 2016	394 m^3/day	41 % of the rated capacity
Total Treated Water Produced in 2017	55518 m^3	

4.0 CONCLUSION

The Temagami South Drinking Water System addressed incidents of non-compliance with the regulatory requirements of the Safe Drinking Water Act and its Regulations and the terms and conditions outlined in its specific approval, drinking water works permit and municipal drinking water licence during the reporting period.

The system was able to operate in accordance with the terms and conditions of the Permit to Take Water and in accordance with the rate capacity of the approval and licence while meeting the community's demand for water use at times other than dates listed in section 2.0.