

Action



Ontario Clean Water Agency
Agence Ontarienne Des Eaux

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Latchford Drinking Water System



2015 ANNUAL/SUMMARY REPORT

Prepared by the Ontario Clean Water Agency
on behalf of the Town of Latchford



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EXECUTIVE SUMMARY

The 2015 Annual/Summary Report for the Latchford 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 has prepared this report on behalf of the Town of Latchford. The report is accessible at the Municipal Office. The availability of the Annual/Summary Report is communicated to the Town of Latchford consumers by putting up notices at the town office and areas around town.

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.

The Town of Latchford 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.

Section 22 of 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 2015 Annual/Summary Report.



Latchford Drinking Water System

Section 11

2015 ANNUAL REPORT for MUNICIPALITIES



Section 11

ANNUAL REPORT

1.0 INTRODUCTION

Drinking-Water System Name	LATCHFORD DRINKING WATER SYSTEM
Drinking-Water System Number	210000960
Drinking-Water System Owner	The Corporation of the Town of Latchford
Drinking-Water System Category	Large Municipal, Residential System
Reporting Period	January 1, 2015 to December 31, 2015

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? No

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

Town of Latchford
10 Main Street
Latchford, ON POJ 1N0

Drinking-Water Systems that receive drinking water from the Latchford Drinking Water System

The Latchford Drinking Water System provides all of its drinking water to the community of Latchford within the Town of Latchford.

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

The Ontario Clean Water Agency prepared the 2015 Annual Report for the Latchford Drinking Water System and provided a copy to the system owner; the Town of Latchford. The Latchford 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 a community bulletin



2.0 DESCRIPTION OF THE DRINKING WATER SYSTEM

The community of Latchford is currently supplied with water from Bay Lake, which is part of the Montreal River system. The source water is very soft with low alkalinity. The raw water is high in color and fairly low in turbidity.

The intake structure is located approximately 140m off shore and is made of a timber crib and sits approximately 1.15m off the bottom of Bay Lake in approximately 5.5 meters of water (depending on DAM height).

Raw water enters the intake well VIA a 210m of 250mm diameter pipe. An intake screen and a 100mm flush line from the high lift pumps. The low lift station contains a wet well and has 3 vertical turbine pumps two duty and one standby, each rated at 2.9L/s.

There are two treatment trains; each train is capable of treating water at a rate of 6.3L/second. The trains provide full conventional treatment consisting of coagulation flocculation, sedimentation and filtration.

The distribution system services an approximate population of 300 residents and 190 homes which makes this system a Large Residential drinking water system.

There is a looped line back to the water treatment plant as a return line of 100mm diameter from the distribution system that enters the clear well inside the water plant with a totalizing flow meter, this was installed as a way to prevent freezing due to historical problems.

3.0 LIST OF WATER TREATMENT CHEMICALS USED OVER THE REPORTING PERIOD

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

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

All treatment chemicals are NSF/ANSI approved.

4.0 SIGNIFICANT EXPENSES INCURRED TO THE DRINKING WATER SYSTEM

- Low lift #1 replaced
- Low lift #2 and #3 repaired
- Generator serviced and repaired



5.0 DRINKING WATER SYSTEM HIGHLIGHTS

The Latchford Drinking Water System (DWS) provides safe and reliable drinking water to the residents of the Town of Latchford. On an annual basis the Ministry of Environment (MOE) performs an inspection of municipal drinking water systems to assess compliance with the regulations. The MOE conducted an unannounced inspection of the Latchford DWS on June 3, 2014 which covered the period from September 16, 2013 to June 2, 2014. The system received a rating of 98.83. Due to a change in MOE inspectors the Latchford DWS was not inspected in 2015.

The Latchford DWS Quality Management System was audited by SAI Global on July 29, 2015; there was one non-conformance item which was resolved immediately. The Management Review meeting had not yet been completed at the time of the audit.

Work other than regular maintenance;

- Repaired #2 filter Back wash valve
- Check valves changed on low lift pumps
- Low lifts adjusted to run in sequence instead of all the time
- Replaced sodium hypochlorite feed line and solenoid
- Replaced the actuator on the filter backwash valve
- Replaced UPS on filters and fuses in the filter panel

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

Sodium Exceedance on April 27, 2015, reported to MOECC SAC and the Temiskaming Health Unit. A resample was taken and it also exceeded the limit of 20 mg/L. Sodium exceedances are communicated to local medical doctors so they can advise any patients on low sodium diets not to drink the water.

7.0 MICROBIOLOGICAL TESTING PERFORMED DURING THE REPORTING PERIOD

Sample Type	Number of Samples	<i>E.coli</i> (min to max)	Total Coliform (min to max)	# of HPC Samples	HPC (min to max)
Raw	51	0 to 30	0 to 218	-	-
Treated	51	0 to 0	0 to 0	51	<10 to 50
Distribution	102	0 to 0	0 to 0	51	<10 to 20

Maximum Acceptable Concentration (MAC) for *E. coli* = 0 Counts/100 mL

MAC for Total Coliforms = 0 Counts/100 mL



8.0 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 1	NTU
Turbidity (Filter 2)	8760	0 to 1	NTU
Free Chlorine	8760	0.64 to 2.13	mg/L

Notes:

-For continuous monitors use 8760 as the number of samples for one year.

*The above information is based on data provided to OCWA

Chlorine Residual in the Distribution System

Number of Samples	Chlorine (min to max)	Unit of Measure	Standard
329	0.42 - 1.31	mg/L	≥ 0.05

*The above information is based on data provided to OCWA.

Nitrate & Nitrite at the Water Treatment Plant

Date of Sample	Nitrate Result	Nitrite Result	Unit of Measure	Exceedance
January 19	<0.1	<0.05	mg/L	No
April 7	0.12	<0.03		
July 13	0.13	<0.03		
October 13	<0.1	<0.05		

MAC for Nitrate = 10 mg/L

MAC for Nitrite = 1.0 mg/L

The above data is based on information available to OCWA.

Total Trihalomethanes in the Distribution System

Date of Sample	THM Result	Unit of Measure	Running Average	Exceedance
January 19	40.5	ug/L	59.9	No
April 7	60.5	ug/L		
July 13	77.2	ug/L		
October 13	61.4	ug/L		

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

The above data is based on information available to OCWA.



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 Latchford Drinking Water System qualified for the 'Exemption from Plumbing Sampling' as described in section 15.1-5 (9-10) 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 periods of December 15 to April 15 and 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	pH Results	Alkalinity Results
Dec. 15 to April 15	1	0.37	7.3	56.6
June 15 to Oct.15	1	n/a	6.91	49.6

Sample Date: April 10 and October 13

The above data is based on data available to OCWA.

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	14.3	ug/L	1000	No
Boron	2	ug/L	5000	No
Cadmium	<0.1	ug/L	5	No
Chromium	2.1	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: April 27, 2015

Note: Sample required every 12 months.

Schedule 24 Organic at the Water Treatment Plant

Parameter	Result Value	Unit of Measure	MAC	Exceedance
1,1-Dichloroethylene (vinylidene chloride)	<0.2	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	<0.2	ug/L	5	No



Parameter	Result Value	Unit of Measure	MAC	Exceedance
2,3,4,6-Tetrachlorophenol	<0.6	ug/L	100	No
2,4,5-Trichlorophenoxy acetic acid (2,4,5-T)	<0.1	ug/L	280	No
2,4,6-Trichlorophenol	<0.5	ug/L	5	No
2,4-Dichlorophenol	<0.6	ug/L	900	No
2,4-Dichlorophenoxy acetic acid (2,4-D)	<0.08	ug/L	100	No
Alachlor	<0.5	ug/L	5	No
Aldicarb	<0.7	ug/L	9	No
Aldrin + Dieldrin	<0.004	ug/L	0.7	No
Atrazine + N-dealkylated metabolites	<0.9	ug/L	5	No
Azinphos-methyl	<0.4	ug/L	20	No
Bendiocarb	<1	ug/L	40	No
Benzene	<0.2	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
Chlordane (Total)	<0.004	ug/L	7	No
Chlorpyrifos	<0.4	ug/L	90	No
Cyanazine	<0.4	ug/L	10	No
Diazinon	<0.4	ug/L	20	No
Dicamba	<0.08	ug/L	120	No
Dichlorodiphenyl trichloroethane (DDT) + metabolites	<0.005	ug/L	30	No
Dichloromethane	<1	ug/L	50	No
Diclofop-methyl	<0.08	ug/L	9	No
Dimethoate	<0.4	ug/L	20	No
Dinoseb	<0.07	ug/L	10	No
Diquat	<7	ug/L	70	No
Diuron	<7	ug/L	150	No
Glyphosate	<20	ug/L	280	No
Heptachlor + Heptachlor Epoxide	<0.004	ug/L	3	No
Lindane (Total)	<0.001	ug/L	4	No
Malathion	<0.4	ug/L	190	No
Methoxychlor	<0.001	ug/L	900	No
Metolachlor	<0.2	ug/L	50	No
Metribuzin	<0.2	ug/L	80	No
Monochlorobenzene	<0.2	ug/L	80	No
Paraquat	<1	ug/L	10	No
Parathion	<0.2	ug/L	50	No
Pentachlorophenol	<0.6	ug/L	60	No
Phorate	<0.4	ug/L	2	No
Picloram	<0.08	ug/L	190	No
Polychlorinated Biphenyls (PCB)	<0.04	ug/L	3	No
Prometryne	<0.2	ug/L	1	No



Parameter	Result Value	Unit of Measure	MAC	Exceedance
Simazine	<0.4	ug/L	10	No
Temephos	<20	ug/L	280	No
Terbufos	<0.2	ug/L	1	No
Tetrachloroethylene	<0.2	ug/L	30	No
Triallate	<0.2	ug/L	230	No
Trichloroethylene	<0.2	ug/L	50	No
Trifluralin	<0.2	ug/L	45	No
Vinyl Chloride	<0.2	ug/L	2	No

Sample Date: April 27, 2015

Note: Sample required every 12 months.

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
April 27, 2015	1	30.1	mg/L	20	Yes

Note: Sample required every 60 months.

Most Recent Fluoride at the Water Treatment Plant

Date of Sample	Number of Samples	Result Value	Unit of Measure	MAC	Exceedance
April 27, 2015	1	<0.1	mg/L	1.5	No

Note: Sample required every 60 months.

Summary of Additional Testing Performed in Accordance with a Legal Instrument

No additional sampling and testing was required for the Latchford Drinking Water System during the 2015 reporting year.

Latchford Drinking Water System

Schedule 22

2015 SUMMARY REPORT

for MUNICIPALITIES



Schedule 22

SUMMARY REPORTS for MUNICIPALITIES

1.0 INTRODUCTION

Drinking-Water System Name	LATCHFORD DRINKING WATER SYSTEM
Municipal Drinking Water Licence (MDWL)	277-101 (issued March 11, 2011)
Drinking Water Works Permit (DWWP)	277-201 (issued March 3, 2011)
Permit to Take Water (PTTW)	4370-85SH84 (issued May 27, 2010)
Reporting Period	January 1, 2015 to December 31, 2015

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 2015 reporting period.

Requirement Failure #1 – Missed Distribution Chlorine Residuals

Legislation	O. Reg. 169/03,
Requirement(s) the System Failed to Meet	Sodium Exceedance 30.1 mg/L on April 27, 2015
Corrective Action	Resample taken, result = 35.8 mg/L
Status	Resolved

Requirement Failure #4 – Late Sampling

Legislation	O. Reg. 170/03,
Requirement(s) the System Failed to Meet	Schedule 23, 24 sampling should have been completed within 30 days of February 4
Corrective Action	Samples taken on April 27, 2015 and a sampling schedule was created
Status	Resolved

Requirement Failure #5 – Rated Capacity Exceedances

Legislation	Permit To Take Water 4370-85SH84
Requirement(s) the System Failed to Meet	The system exceeded the rated capacity of 6.32 L/s on 42 occasions. January 7 th = 10.31, 23 rd = 6.79, 24 th = 6.61, 25 th = 6.74, 26 th = 6.77, 27 th = 6.53, 28 th = 6.65, 30 th = 6.69, 31 st = 6.68 February 1 st = 6.57, 3 rd = 6.42, 4 th = 6.49, 6 th = 7.53, 10 th = 6.41 May 5 th = 10.31, 6 th = 10.31, 30 th = 6.72, 31 st = 6.74 June 1 st = 7.38, 2 nd = 7.14, 3 rd = 6.52, 4 th = 6.53, 5 th = 6.49, 6 th = 6.52, 7 th = 6.4,



	8 th = 6.83, 9 th = 6.56, 10 th = 6.5, 11 th = 9.39 September 5 th = 6.54, 9 th = 6.55, 11 th = 6.63, 12 th = 6.89, 15 th = 6.43, 16 th = 6.42, 19 th = 6.57, 30 th = 6.42 October 1 st = 7.08, 3 rd = 6.39, 5 th = 6.60, 12 th = 6.57 November 10 th = 6.34
Corrective Action	Monitor and determine if there is a need to apply for an amendment
Status	Investigating occurrences to determine if they are spikes on start up.

Flow Monitoring

Municipal Drinking Water Licence (MDWL) #277-101 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 Latchford drinking water system has two flow meters as listed in the MDWL; one installed to monitor raw water entering the treatment plant and one installed to monitor treated water entering the distribution system. Flow metering devices were calibrated in accordance to manufacturers’ specifications in November and are operating as required.

Rated Capacity & Flow Rates Approved in the Systems Licence and Permit

Latchford DWS’ Permit to Take Water (PTTW) #4370-85SH84 (issued May 27, 2010 allows the Town of Latchford to withdraw water at a maximum flow rate of 379 L/minute and a maximum total daily volume of 545.76 m³/day from Bay Lake. The flow rate was exceeded on 42 instances. The maximum volume taken was 292 m³/day which is within the compliance limits.

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 500 m³/day. This rate was not exceeded during the reporting period. The maximum recorded volume was 241.2 m³/day which represents approximately 48.2 % of the rated capacity.

The above information is based on data provided to OCWA.

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)	500 m ³ /day	
Average Daily Flow for 2015	139 m ³ /day	27.8 % of the rated capacity
Maximum Daily Flow for 2015	241 m ³ /day	48.2 % of the rated capacity
Total Treated Water Produced in 2015	50,192 m ³	

The above information is based on data provided to OCWA.

4.0 CONCLUSION

The Latchford Drinking Water System encountered a few incidents of non-compliance and did not meet all of the regulatory requirements of the Safe Drinking Water Act and its Regulations.

According to the information provided to OCWA, the system was able to operate in accordance with the terms and conditions of the Permit to Take Water, with the exception of the flow rate exceedances, the drinking water works permit and municipal drinking water licence during the reporting period. It also operated in accordance with the rate capacity of the approval and licence while meeting the community's demand for water use.