



Ontario Clean Water Agency
Agence Ontarienne Des Eaux

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March 21, 2019

Ms. Valerie Przybilla,
CAO/Clerk
The Corporation of the Municipality of Centre Hastings,
7 Furnace Street, Box 900
Madoc ON,
K0K 2K0

Dear Ms. Przybilla,

Re: Madoc Lagoon Performance Report for 2018

Attached please find the annual performance report for the Madoc Lagoons for the operating year 2018, prepared by the Ontario Clean Water Agency.

The purpose of this report is to provide an overview of the Madoc Lagoon treatment process, to provide a record of the performance of the lagoon treatment process for 2018, to demonstrate that effluent quality satisfied the facility Certificate of Approval, and to provide a compliance record for all the terms and conditions outlined in the Certificate of Approval.

If you have any questions regarding this report, please contact me.

Sincerely,

Jessica Cronkright,
Process and Compliance Technician
Kawartha Trent
Ontario Clean Water Agency

cc: Amber Coupland, Sr. Operations Manager, Ontario Clean Water Agency
Monica Howlett, Environmental Officer, MECP
Moir Lake Cottager's Association

Madoc Wastewater Lagoon

Annual Report

Reporting period of January 1, 2018 – December 31, 2018

Prepared For: Corporation of the Municipality of Centre Hastings

Prepared By:



Ontario Clean Water Agency
Agence Ontarienne Des Eaux

Facility Introduction

The Ontario Clean Water Agency (OCWA) operates and maintains the Madoc Wastewater Treatment Plant (Madoc Lagoons) on behalf of the Municipality of Centre Hastings.

The facility is a Class 1 Wastewater Treatment Plant.

The facility's design flow is 1008m³/day. The average day raw flow for the year 2018 was 955.0m³/day.

The Madoc Wastewater Treatment Plant complies with all requirements of the regulating authorities and operates under:

- Certificate of Approval (CofA) #1-0017-66-700366 dated Aug 6, 1970, for the construction of the sewage treatment facility to serve the Village of Madoc
- Certificate of Approval #3-0144-86-006 dated Dec 2, 1986, for the construction of an effluent pumping station

Discharge Requirements

The Madoc Lagoons operate on seasonal retention and seasonal discharge cycle with continuous alum feed for phosphorous removal, discharging in Spring and Fall.

Discharge periods are defined in C of A #3-0144-86-006 as follows:

- Spring discharge commencing not earlier than March 15 and terminating not later than April 30
- Fall discharge commencing not earlier than November 1 and terminating not later than December 7

Discharge shall normally take place over a minimum of 21 days.

2018 Spring Lagoon Discharge

The 2018 spring discharge commenced on March 15th and was terminated on April 30th. The Ministry of the Environment, Conservation and Parks was notified verbally prior to commencement of the discharge and on the day the discharge ended. A total effluent volume of 160,433m³ was discharged during the 47 day discharge period.

All analytical effluent concentration results were below the maximum concentrations as specified in the facility Certificate of Approval. A summary of the discharge data is provided in a table below.

Effluent Parameter	CofA Average Effluent Seasonal Concentration Limit (mg/L)	CofA Semi-Annual Waste Loading Limit (kg)	Sample Location	2018 Average Effluent Seasonal Concentration (mg/L)	2018 Semi-Annual Waste Loadings (kg)
BOD ₅ (mg/L)	30	5520	Upstream	4.00	
			Effluent	14.4	2310
			Downstream	4.00	
Total Suspended Solids (mg/L)	30	5520	Upstream	3.50	
			Effluent	7.12	1142
			Downstream	3.75	
Total Phosphorus (mg/L)	0.5	184	Upstream	0.03	
			Effluent	0.08	12.8
			Downstream	0.03	
Fecal Coliform (cfu/100ml)	N/A		Upstream	23.0	
			Effluent	1373	
			Downstream	119	

2018 Fall Lagoon Discharge

The 2018 fall discharge commenced on November 1st and was terminated on November 28th. The Ministry of the Environment, Conservation and Parks was notified verbally prior to commencement of the discharge and on the day the discharge ended. A total effluent volume of 142,576 m³ was discharged during the 28 day discharge period. All analytical effluent concentration results were below the maximum concentrations as specified in the facility Certificate of Approval. A summary of the discharge data is provided in a table below.

Effluent Parameter	CofA Average Effluent Seasonal Concentration Limit (mg/L)	CofA Semi-Annual Waste Loading Limit (kg)	Sample Location	2018 Average Effluent Seasonal Concentration (mg/L)	2018 Semi-Annual Waste Loadings (kg)
CBOD ₅ (mg/L)	30	5520	Upstream	4.00	
			Effluent	6.60	941
			Downstream	4.00	
Total Suspended Solids (mg/L)	30	5520	Upstream	6.00	
			Effluent	6.00	855
			Downstream	3.20	
Total Phosphorus (mg/L)	0.5	184	Upstream	0.03	
			Effluent	0.06	8.55
			Downstream	0.05	
E.Coli (cfu/100ml)			Upstream	95.6	
			Effluent	8434.0	
			Downstream	84.4	

Sampling Requirements

A summary of the monitoring data collected at the Madoc Lagoons during the reporting period is attached. The Annual Summary attached to this report provides flow data, raw sewage and final effluent analytical results.

Another sampling requirement defined in the facility CofA is the requirement to collect a minimum of four (4) effluent samples during the discharge period. A total of eight (8) effluent samples were collected during the spring discharge period and a total of five (5) samples were collected during the fall discharge period.

Wastewater System Effluent Regulations

The Wastewater Systems Effluent Regulations (WSER) is a federal wastewater regulation under the Fisheries Act that was released in July 2012 but was not in effect until January 1, 2013.

These regulations apply to a wastewater system that:

- Is designed to collect an average daily volume (ADV) of 100m³ or more of influent, or
- Collects an average daily volume (ADV) of 100m³ or more of influent during any calendar year.

An owner or operator must calculate, for each calendar year, the Average Daily Volume of effluent deposited via the system's final discharge point according to the following formula:

$$\text{Sum of daily effluent volumes deposited (m}^3\text{)} \div \text{number of days in that calendar year (365 days)}$$

Note: The formula uses the number of days in the calendar year not the number of days discharging.

Sampling and reporting requirements are dependent on the system type and its annual average daily volume of effluent. In 2018 The Madoc Wastewater Treatment Lagoon deposited approximately 955.0m³ of daily effluent volumes.

The Annual Monitoring Report (due by February 14 each year) was submitted to Environment Canada in February 2019. The Madoc Lagoon met all of the quality standards in 2018.

Monitoring Report

Effluent Monitoring Data: Madoc Wastewater Treatment Lagoon

System Type: Intermittent **Reporting Period:** Annually **Avg Daily Effluent:** 955.0

Averaging Period: Annually **Reporting Period:** January - December **Reporting Year:** 2018

Was effluent deposited in this reporting period? Yes

For each month indicated, was effluent deposited?

January:	No	February:	No	March:	Yes
April:	Yes	May:	No	June:	No
July:	No	August:	No	September:	No
October:	No	November:	Yes	December:	Yes

# of days effluent was deposited? (days)	Total Volume of Effluent deposited? (m ³)	Average CBOD (mg/L)	Average SS (mg/L)
		Limits	
		25	25
74	347103	10.4	6.7