Ontario Clean Water Agency
Agence Ontarienne Des Eaux

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March 28, 2024

Cathy Chisholm
District Manager
Ministry of the Environment, Conservation and Parks
Drinking Water and Environmental Compliance Division
Kingston Offices

Director
ECA.Submission@ontario.ca

Dear Cathy Chisholm;

Re: Madoc Sewage Lagoons - Annual Report for 2024

Attached please find the annual performance report for Madoc Sewage Lagoons for the operating year 2024, prepared by the Ontario Clean Water Agency on behalf of the Corporation of the Municipality of Centre Hastings.

This report is submitted in accordance with Section 11 of the Environmental Compliance Approval (ECA) 1652-BRKT58 (issued August 14, 2020) for the Madoc Sewage Lagoons. This report is also submitted in accordance with Section 8 of ECA number 7572-BQXR8E (issued August 6th, 2020) for the Madoc Hwy#7 and McDonald Pumping Stations and ECA No. ECA No. 5465-BQXPQY Section 4 Condition 2 for the Madoc Stormwater Management Facility.

The purpose of this report is to provide a performance record for future references and to provide a compliance record for all the terms and conditions outlined in the Environmental Compliance Approval.

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

Sincerely,

Brad Robinson
Process & Compliance Technician, OCWA
Kawartha Trent
Ontario Clean Water Agency

cc: Amber Coupland, Sr. Operations Manager, Ontario Clean Water Agency
Shayna Maracle, Water Compliance Officer, MECP
Moira Lake Cottager's Association

Madoc Wastewater Lagoon

Annual Report

Reporting period of January 1, 2024 – December 31, 2024

Prepared For: Corporation of the Municipality of Centre Hastings

Prepared By: Ontario Clean Water Agency
Agence Ontarienne Des Eaux

This report is submitted in accordance with Conditions 11(5)(a) through 11(5)(l) of Environmental Compliance Approval No. 1652-BRKT58 Conditions 11(4)(a) through 11(4)(l), Condition 8 of ECA No. 7572-BQXR8E and ECA No. 5465-BQXPQY Condition 4 (2)(a) through (e) .

Condition 11(4) of ECA No. 1652-BRKT58, Condition 8 of ECA number 7572-BQXR8E states and Condition 4(2) of ECA No. 5465-BQXPQY , *"The Owner shall prepare performance reports on a calendar year basis and submit to the District Manager by March 31 of the calendar year following the period being reported upon..."*

Facility Introduction

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

For the 2024 reporting period the Municipality of Centre Hastings operated the Stormwater Management Facility.

The Madoc Lagoon facility is a Class 1 Wastewater Treatment Plant.

The facility's design flow is 1008m^3/day. The average day raw flow for the year 2024 was 610.50m^3/day.

The Madoc Wastewater Lagoons, Pump Stations and Stormwater Management Facility complies with all requirements of the regulating authorities and operates under:

- Environmental Compliance Approval No. 1652-BRKT58 (issued August 14th, 2020)
- Environmental Compliance Approval No. 7572-BQXR8E (issued August 6th, 2020) for the Madoc Hwy#7 and McDonald Pumping Stations
- Environmental Compliance Approval No. 5465-BQXPQY (issued August 6th, 2020) for the Madoc Stormwater Facility
- Consolidated Linear Infrastructure Environmental Compliance Approval No. 153-W601 (issued July 28th, 2023) for the Madoc Hwy#7, McDonald and Rollins Pumping Stations

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 ECA No. 1652-BRKT58 as follows:

- Spring discharge commencing not earlier than April 1 and terminating not later than May 20
- Fall discharge commencing not earlier than November 1 and terminating not later than December 15.

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

2024 Performance Report for the Madoc Sewage Lagoons

During the 2024 reporting period the Ontario Clean Water Agency operated under the Environmental Compliance Approval (ECA) number 1652-BRKT58 (issued August 14th, 2020).

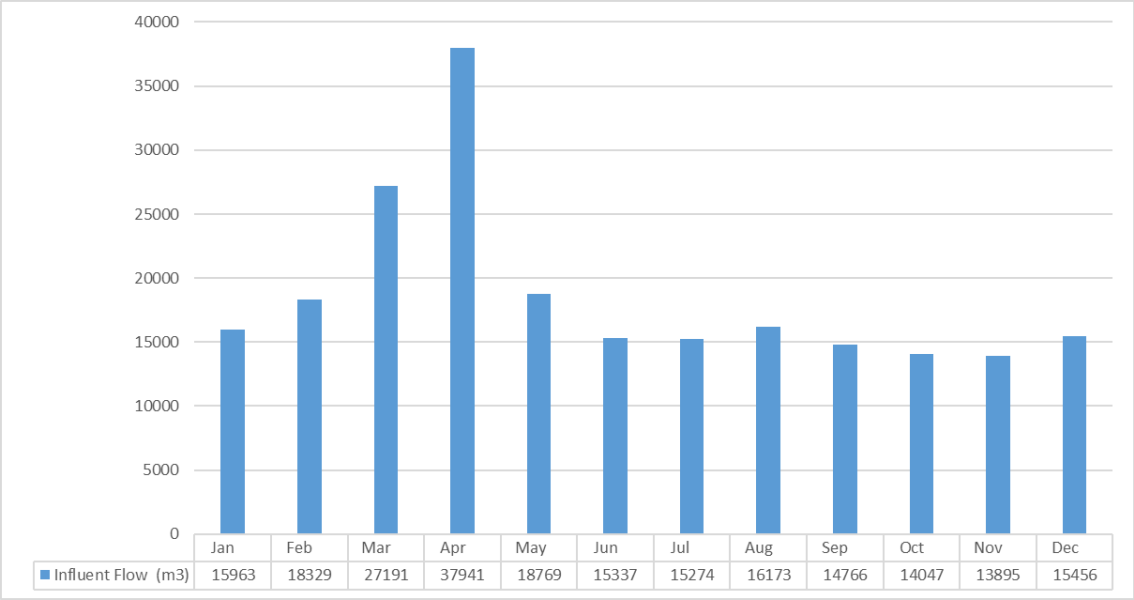
Table of Contents

ECA No. 1652-BRKT58 Condition 11(4)(a)

A summary and interpretation of all Influent, Imported Sewage monitoring data, and a review of the historical trend of the sewage characteristics and flow rates.

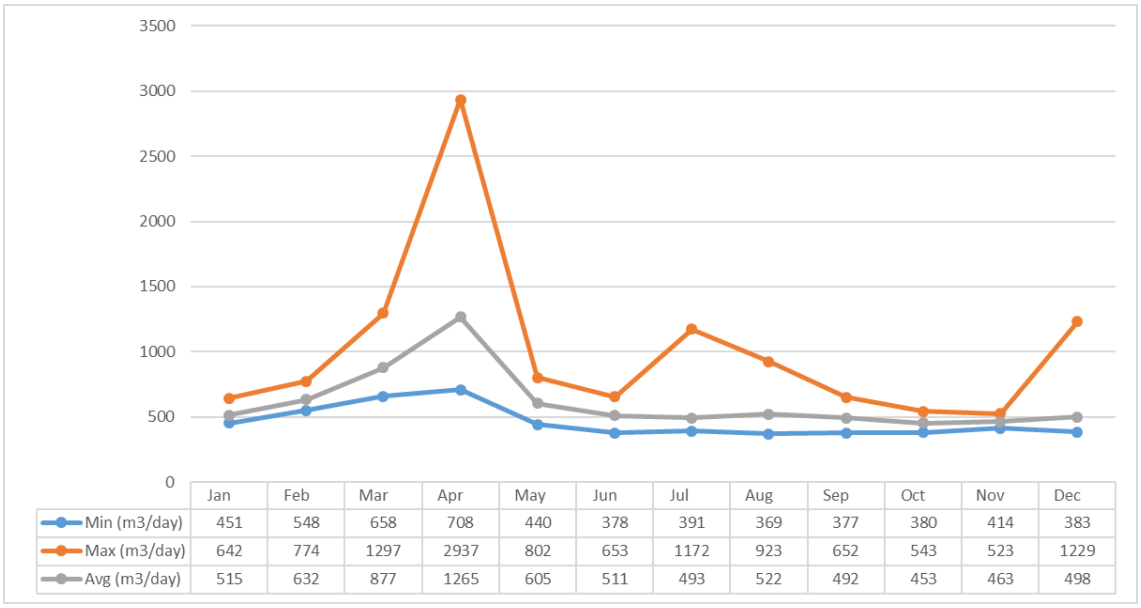
The Environmental Compliance Approvals require that everything practicable be undertaken to operate the Sewage Treatment Plant so that the annual average daily influent is within the Rated Capacity. The Rated Capacity of the Madoc Sewage Lagoons is 1008m^3/day and the 2024 annual average daily influent flow was 610.5 m^3/day or 60.6% of the Rated Capacity. The total Influent flow in 2024 was 223,141m^3.

Graph 1: 2024 Influent Monthly Flow Totals



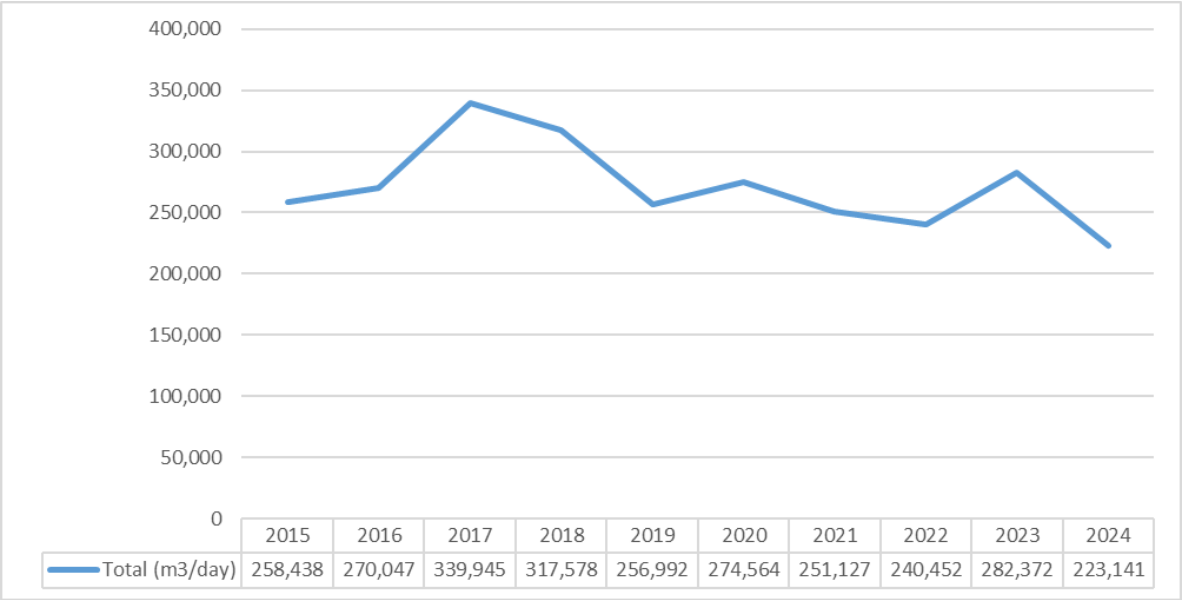
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Influent Flow (m3)	15963	18329	27191	37941	18769	15337	15274	16173	14766	14047	13895	15456

Graph 2: 2024 Influent Daily Minimum, Maximum and Average Flows



	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Min (m3/day)	451	548	658	708	440	378	391	369	377	380	414	383
Max (m3/day)	642	774	1297	2937	802	653	1172	923	652	543	523	1229
Avg (m3/day)	515	632	877	1265	605	511	493	522	492	453	463	498

Graph 3: 2015 – 2024 Historical Influent Flows for the Madoc Sewage Lagoons



Based on the historical flows from 2015 to 2024 the total influent flow for the Madoc Sewage Lagoons has maintained a steady trend.

Table 1 reviews the historical trend of the influent sewage characteristics for the Madoc Sewage Lagoons, as required by Environmental Compliance Approval Condition 11(4)(a) of ECA No. 1652-BRKT58.

Table 1: Historical Average Influent Sewage Characteristics for the Madoc Sewage Lagoons

Year	BOD5 (mg/L)	TSS (mg/L)	Phosphorus (mg/L)	TKN (mg/L)
2015	179.00	183.66	4.67	--
2016	217.25	181.33	5.04	--
2017	159.41	165.91	3.48	--
2018	183.27	193.09	3.73	--
2019	209.75	204.17	4.30	38.50
2020	186.58	208.25	4.04	46.54
2021	222.42	264.75	5.06	51.78
2022	201.33	224.83	4.92	47.89
2023	166.17	201.58	4.53	45.2
2024	225.75	294.75	5.86	57.26

Table 1 shows the Biochemical Oxygen Demand, TSS and Total Phosphorus annual average has maintained a consistent trend from 2015-2024. TKN was not a required sample parameter until after the issuance of the previous ECA No. 5744-BF4RBB in 2019. TKN annual average since 2019 has maintained a consistent trend.

Imported Sewage

Imported Sewage is sewage that is hauled to the sewage lagoons by licensed waste treatment system operators.

The requirement to sample Imported Sewage monthly (when sewage is received at facility) was added as a condition of the previous ECA No. 5744-BF4RBB issued in 2019.

Sample Results

ECA No. 5744-BF4RBB require a grab sample to be collected monthly and upon receiving Imported Sewage and analyzed for BOD5, Total Suspended Solids, Total Phosphorus and Total Kjeldahl Nitrogen.

Table 2: Historical Average Septage Characteristics for the Madoc Sewage Lagoons

Year	BOD (mg/L)	TSS (mg/L)	Phosphorus (mg/L)	TKN (mg/L)
2015	--	--	--	--
2016	--	--	--	--
2017	--	--	--	--
2018	--	--	--	--
2019	654.00	226.00	27.10	361.00
2020	494.00	95.00	17.10	162.65
2021	1407.80	4459.60	64.86	507.80
2022	1583.75	2101.25	36.00	304.75
2023	--	--	--	--
2024	--	--	--	--

Table 2 shows the Biochemical Oxygen Demand, Total Suspended Solids, Phosphorus, and TKN annual average for 2019-2024. Before the issuance of ECA No. 5744-BF4RBB in 2019 there were no sampling parameters for septage thus there is little historical data available for comparison. The reporting year 2024 there was no septage received.

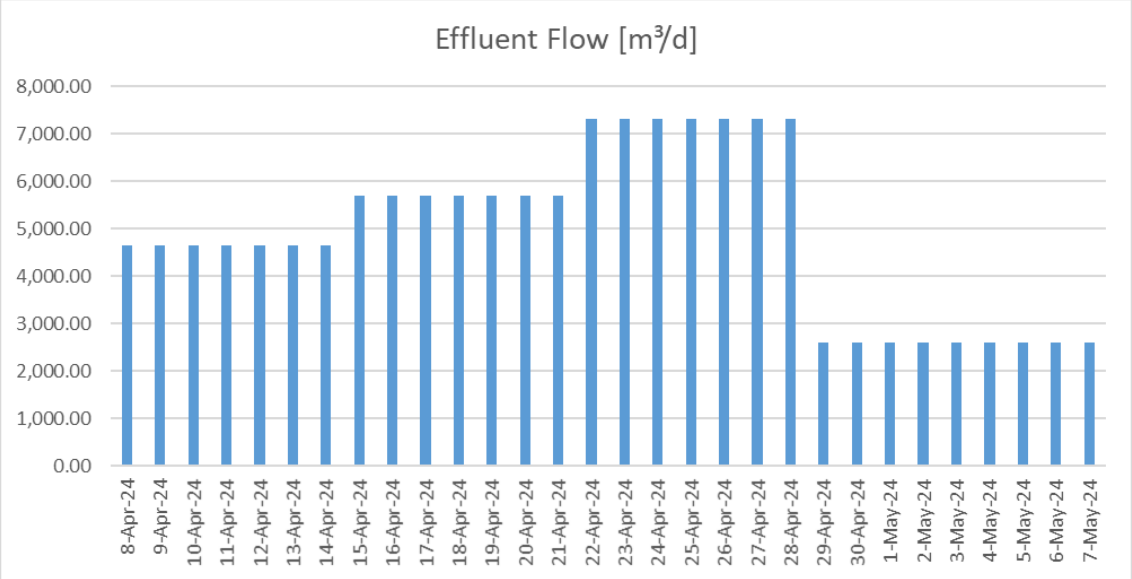
ECA No. 1652-BRKT58 Condition 11(4)(b)

A summary and interpretation of all Final Effluent monitoring data, including concentration, flow rates, loading and a comparison to the design objectives and compliance limits in this Approval, including an overview of the success and adequacy of the Works;

2024 Spring Lagoon Discharge

The 2024 spring discharge commenced on April 8th and was terminated on May 7th. The Ministry of the Environment, Conservation and Parks was notified prior to commencement of the discharge and on the day the discharge ended. A total effluent volume of 147,055m^3 was discharged during these dates. The Spring 2024 discharge remained in compliance with ECA No. 1652-BRKT58 which was issued in August 2020.

Graph 4: 2024 Spring Discharge Effluent Flow Totals



All analytical effluent concentration results were below the maximum concentrations as specified in the facility ECA No. 1652-BRKT58 which remained in effect for the 2024 Spring discharge. A summary of the discharge data is provided in a table below.

Table 3: 2024 Spring Discharge Final Effluent Compliance Limits

Effluent Parameters	Average Effluent Concentration **Limit** (mg/L)	Average Effluent Concentration **Objective** (mg/L)	Average Effluent Concentration (mg/L)	Average Effluent Loading **Limit** (kg/d)	Average Effluent Loading (kg/d)	Compliant (Y/N)
$CBOD_5$	**30.0**	25.0	4.8	**122**	23.4	Y
Total Suspended Solids	**30.0**	25.0	5.2	**122**	25.6	Y
Total Phosphorus	**0.50**	0.30	0.05	**4**	0.25	Y
pH	**6.0-9.5**	6.5-8.5	7.5	--	--	Y

The results in Table 3 show that the annual average concentrations of $cBOD_5$, Total Suspended Solids, Total Phosphorus, and the annual average effluent waste loadings were in compliance with the ECA No. 1652-BRKT58 during the 2024 Spring Seasonal Discharge.

Table 4 includes additional samples taken upstream and downstream during the discharge in an effort to monitor water quality further from the point of discharge. Based on the results in table 4, the lagoon discharge has little impact to no impact on the receiving stream.

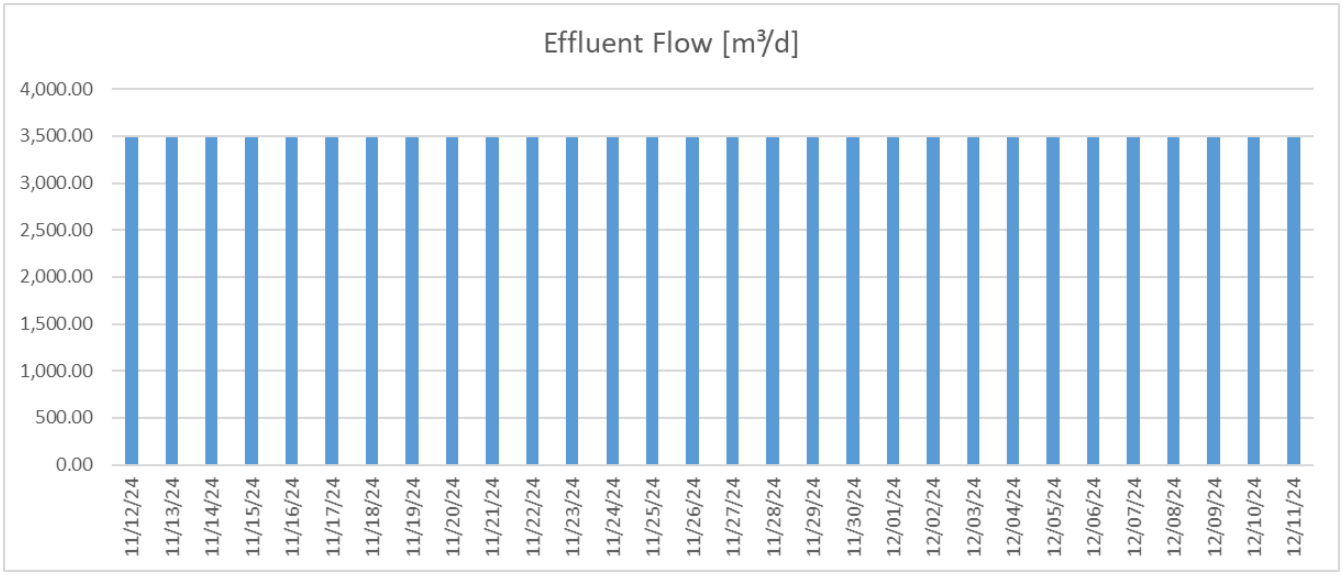
Table 4: 2024 Spring Discharge Upstream & Downstream Results

Parameters	Average Spring Concentration- **Upstream** (mg/L)	Average Spring Concentration- **Downstream** (mg/L)
$CBOD_5$	4.0	4.0
Total Suspended Solids	4.4	4.0
Total Phosphorus	0.03	0.03

2024 Fall Lagoon Discharge

The 2024 fall discharge commenced on November 12th and was terminated on December 12th. The Ministry of the Environment, Conservation and Parks was notified prior to commencement of the discharge and on the day the discharge ended. A total effluent volume of 108,159 m^3 was discharged during these dates. The 2024 Fall discharge remained in compliance with the requirements of ECA No. 1652-BRKT58 which was issued August 14th, 2020.

Graph 5: 2024 Fall Discharge Effluent Flow Totals



All analytical effluent concentration results were below the maximum concentrations as specified in the facility ECA No. 1652-BRKT58. A summary of the discharge data is provided in a table below.

Table 5: 2024 Fall Discharge - Final Effluent Compliance Limits						
Effluent Parameters	Average Effluent Concentration **Limit** (mg/L)	Average Effluent Concentration **Objective** (mg/L)	Average Effluent Concentration (mg/L)	Average Effluent Loading **Limit** (kg/d)	Average Effluent Loading (kg/d)	Compliant (Y/N)
$CBOD_5$	**30.0**	25.0	4.1	**122**	14.3	Y
Total Suspended Solids	**30.0**	25.0	5.9	**122**	20.6	Y
Total Phosphorus	**0.50**	0.30	0.05	**4**	0.18	Y
pH	6.0-9.5	6.5-8.5	7.77	--	--	Y

The results in Table 5 show that the annual average concentrations of $cBOD_5$, Total Suspended Solids, Total Phosphorus, and the annual average effluent waste loadings were in compliance with the ECA No. 1652-BRKT58 during the 2024 Fall Seasonal Discharge issued August 14th, 2020.

Table 6 includes additional samples taken downstream and upstream of the final effluent discharge in an effort to monitor water quality further from the point of discharge. Based on the results in table 6, the lagoon discharge has little impact to no impact on the receiving stream.

Table 6: 2024 Fall Discharge - Upstream and Downstream Results		
Parameters	Average Fall Concentration- **Upstream** (mg/L)	Average Fall Concentration- **Downstream** (mg/L)
$CBOD_5$	4.0	4.0
Total Suspended Solids	3.6	4.0
Total Phosphorus	0.03	0.03

Summary of Effluent Monitoring and Recording Results

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

ECA No. 1652-BRKT58 requires to collect a minimum of five (5) effluent samples during the discharge period twice per week at the beginning of the seasonal discharge, at 25%, 50%, 75% drawdown and at the end of the seasonal discharge. A total of ten (10) effluent samples were collected during the fall discharge period.

Table 7: Influent - Minimum Sampling Schedule		
Parameters	**Sample Type**	**Minimum Frequency**
BOD5	4 hour composite	Monthly
Total Suspended Solids	4 hour composite	Monthly
Total Phosphorus	4 hour composite	Monthly
Total Kjeldahl Nitrogen	4 hour composite	Monthly

Table 8: Imported Sewage (Septage) - Minimum Sampling Schedule		
Parameters	**Sample Type**	**Minimum Frequency**
BOD5	Grab	Monthly
Total Suspended Solids	Grab	Monthly
Total Phosphorus	Grab	Monthly
Total Kjeldahl Nitrogen	Grab	Monthly

Table 9: Lagoon Content - Minimum Sampling Schedule		
Parameters	**Sample Type**	**Minimum Frequency**
cBOD5	Grab*	Once
Total Suspended Solids	Grab*	Once
Total Phosphorus	Grab*	Once
Total Kjeldahl Nitrogen	Grab*	Once
pH	Grab*	Once

*ECA No. 1652-BRKT58 states that a minimum of three (3) grab samples from the surface, middle and bottom of the liquid portion at a location representative of the cell content, collected and composited as one sample.

Note: as per ECA No. 1652-BRKT58 each cell in which the content is scheduled for discharge in the seasonal discharge period should be sampled at least seven days prior to a scheduled discharge.

Table 10: Final Effluent - Minimum Sampling Schedule		
Parameters	**Sample Type**	**Minimum Frequency**
cBOD5	Grab	Five per discharge season
Total Suspended Solids	Grab	Five per discharge season
Total Phosphorus	Grab	Five per discharge season
Total Ammonia Nitrogen	Grab	Five per discharge season
Total Kjeldahl Nitrogen	Grab	Five per discharge season
Nitrate as Nitrogen	Grab	Five per discharge season
Nitrite as Nitrogen	Grab	Five per discharge season
E. coli	Grab	Five per discharge season

The required number of raw sewage and final effluent samples were collected at the specified locations and frequencies during the reporting period as per ECA No. 1652-BRKT58 Condition 9 (Schedule D).

ECA No. 1652-BRKT58 Condition 11(4)(c)

A description of any operating problems encountered and corrective actions taken.

The following details describe all operating problems encountered during the reporting period and the corrective actions taken:

Table 11: 2024 WPCP Operational Challenges	
Challenges	*Corrective Actions*
January 2024	Rag build-up at McDonalds Lagoon Pumping Station – Pulled pump and removed rags. Pump station back to normal working order
February 2024	Sensor cable for Flow meter failed due to vermin. Sensor replaced with a spare
April 2024	Lagoon line plugged Contractor onsite to flush line from the north cell to the south cell. The line is clear and flow is going through the pipe
November 2024	Rag build-up at McDonalds Lagoon Pumping Station – Pulled pump and removed rags. Pump station back to normal working order

ECA No. 1652-BRKT58 Condition 11(4)(d)

A summary of all normal and emergency repairs and maintenance activities carried out on any major structure, equipment, apparatus or mechanism forming part of the Works;

OCWA uses a Work Maintenance System (WMS). WMS is a maintenance tracking system that can generate work orders as well as give summaries of completed and scheduled work. During the year, the operating authority at the facility generates scheduled work orders on a weekly, monthly and annual basis. The service work is recorded in the work order history. This ensures routine and preventive maintenance is carried out and assets are maintained to manufacturer's and/or industry standards. Emergency and capital repair maintenance is completed and added to the system.

Preventative Maintenance/Weekly Work Orders Completed	77
Operational Maintenance Work Orders Completed	13
Capital Maintenance Work Orders Completed	10

Capital projects are listed and provided to the Municipality of Centre Hastings in the form of a "Capital Forecast". This list is developed by facility staff and provides recommendations for facility components requiring upgrading or improvement. Annual and Emergency repair/maintenance is listed below:

• Annual Wet Well Clean-outs
• Annual Flow Meter Calibrations
• Sludge Lagoon Survey
• Electrical Replacement to Lagoon Pumping Station Contactor
• Generlink Install at Alum Building

ECA No. 1652-BRKT58 Condition 11(4)(e)

A summary of any effluent quality assurance or control measures undertaken

Effluent quality assurance is maintained in several ways. All final effluent samples collected during the reporting period to meet ECA sampling requirements were submitted to SGS Lakefield Research Ltd. laboratory for analysis. SGS Lakefield Research has been deemed accredited by the Canadian Association for Laboratory Accreditation (CALA), meeting strict provincial guidelines including an extensive quality assurance/quality control program. By choosing this laboratory, the Ontario Clean Water Agency is ensuring appropriate control measures are undertaken during sample analysis. Sampling calendars issued to the operators denoting frequency of sampling and these calendars are submitted to the Process Compliance Technician at the end of each month. Raw and effluent samples are collected as per the Environmental Compliance Approval and the results are reviewed on a regular basis to ensure compliance with the site's objectives and limits.

ECA No. 1652-BRKT58 Condition 11(4)(f)

A summary of the calibration and maintenance carried out on all Influent, Imported Sewage and Final Effluent monitoring equipment to ensure that the accuracy is within the tolerance of that equipment as required in this Approval or recommended by the manufacturer

As stated earlier, the Ontario Clean Water Agency's maintenance activities are based on a computerized Work Management System (WMS) using the Maximo application. The WMS is a proactive maintenance system, based on detailed risk assessment with respect to process.

The WMS database automatically populates work orders and schedules for the calibration and maintenance of a wide variety of equipment. The WMS also automatically tracks each individual maintenance event, calibration of all meters and certification of all devices.

Calibration and maintenance of the onsite flow measuring devices are calibrated by a certified third party qualified technician and performed on annual basis:

Flow meter and Chart Recorder

Calibration Date: May 28, 2024

Work Performed By: Tower Electronics Inc.

ECA No. 1652-BRKT58 Condition 11(4)(g)

A summary of efforts made to achieve the design objectives in this Approval, including an assessment of the issues and recommendations for pro-active actions if any are required under the following situations:
i) when any of the design objectives is not achieved more than 50% of the time in a year, or there is an increasing trend in deterioration of Final Effluent quality;
ii) when the Annual Average Daily Influent Flow reaches 80% of the Rated Capacity

Table 12: Efforts Made to Meet the Effluent Objectives of Condition 6
Sampling effluent as per ECA
Visually inspecting effluent when performing rounds and during spring/fall discharge
Ensuring that alum is being dosed
Ensuring proper operation of Pump Stations
Perform inspection of lagoon quality during operation
Collected lagoon pH, temp, D.O, and conductivity during discharges
Calibrating pH/DO probes during spring/fall discharge
Annual calibration of influent/effluent flow meters

ECA No. 1652-BRKT58 Condition 11(4)(h)

a tabulation of the volume of sludge generated, an outline of anticipated volumes to be generated in the next reporting period and a summary of the locations to where the sludge was disposed; a tabulation of the measured volume of sludge accumulated in the lagoon cells in five year intervals and the estimated volume in the interim years and when sludge was disposed of during the reporting period, a summary of disposal locations and volumes of sludge disposed at each location;

During the 2024 reporting period, no sludge was disposed of from the Madoc Sewage Lagoons. The volume for the next reporting period is anticipated to be similar to 2024 reporting period.

Estimated Volume

Madoc Lagoons		
Year	**Measured Volume of Sludge Accumulated (5 year intervals) (m^3)**	**Estimated Volume** (=Total influent flow*0.3% + previous estimated sludge volume)
2018 – Third party contractor removed approximately 6,400m^3 of sludge from the North Cell, estimating 1,760m^3 of sludge remaining. No Sludge was removed from the South Cell during that time.		
2020	N/A	3069

2021	N/A	3549
2022	N/A	4270
2023	N/A	5117
2024	N/A	5786

***Note that the average wastewater facility produces 0.2%-0.4% sludge annually*

ECA No. 1652-BRKT58 Condition 11(4)(i)

A summary of any complaints received and any steps taken to address the complaints

During the 2024 reporting period there was no community complaints received for the Madoc Sewage Lagoons.

ECA No. 1652-BRKT58 Condition 11(4)(j)

A summary of all Bypasses, Overflows, other situations outside Normal Operating Conditions and spills within the meaning of Part X of EPA and abnormal discharge events

During the 2024 reporting period there was no bypass, spills, other situations outside normal operating conditions, or abnormal discharge events for the Madoc Sewage Lagoons.

ECA No. 1652-BRKT58 Condition 11(4)(k)

A summary of all Notice of Modifications to Sewage Works completed under Paragraph l.d. of Condition 10, including a report on status of implementation of all modification

In the reporting year 2024 there were no Pre-Authorized Modifications to Municipal Sewage Works per the Limited Operational Flexibility- Protocol as per ECA No. 1652-BRKT58 Condition 11(4)(j) .

Table 13: Summary of Modification to Sewage Works- Summary of Modifications	
Equipment	**Emergency Operational Modification**
Not Applicable for 2024	

ECA No. 1652-BRKT58 Condition 11(4)(l)

a summary of efforts made to achieve conformance with Procedure F-5-1 including but not limited to projects undertaken and completed in the sanitary sewer system that result in overall Bypass/Overflow elimination including expenditures and proposed projects to eliminate Bypass/Overflows with estimated budget forecast for the year following that for which the report is submitted and a summary of efforts made to achieve conformance with Procedure F-5-5 and establish /maintain a Pollution Prevention and Control Plan (PPCP).

During the 2024 reporting period, there were no incidents of a bypass or overflow within the sanitary sewer system and therefore no proposed projects to eliminate bypasses or overflows are forecasted for the 2024 reporting period for the Madoc Sewage Lagoons.

Wastewater System Effluent Regulations (WSER)

The Wastewater Systems Effluent Regulations (WSER) is a federal wastewater regulation under the Fisheries Act that was released in July 2012 but 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:

Sum of daily effluent volumes deposited (m3) ÷ 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 2024, the Madoc Sewage Lagoons deposited approximately 223,141m^3 of seasonal effluent volumes.

The Monthly Monitoring Reports (due 45 days after the end of each quarter) were submitted to Environment Canada as required. The Madoc Sewage Lagoons met all of the quality standards in 2024.

Monitoring Report

Effluent Monitoring Data: *Madoc Wastewater Treatment Lagoon*

System Type: Intermittent **Reporting Period**: Annually **Avg Daily Effluent**: 611.3

Averaging Period: Annually **Reporting Period**: January - December **Reporting Year**: 2024

Was effluent deposited in this reporting period? Yes

For each month indicated, was effluent deposited?

January:	No	February:	No	March:	No
April:	Yes	May:	Yes	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
61	223,141	4.5	5.6

2024 Performance Report for the Madoc Hwy#7 and McDonald Pumping Stations

The Environmental Compliance Approval (ECA) No. 7572-BQXR8E for the Madoc Hwy#7 and McDonald Pumping Stations was issued August 6th, 2020.

The Environmental Compliance Approval (ECA) No. 153-W601 for the Madoc Sewage Collection System was issued July 28th, 2023. As per section 4.6.1 a) *"For clarity, the first report shall cover the period of January 1st 2024 to December 31st, 2024 and be submitted to the Director on or before March 31st, 2025.",* the 2024 annual report will be updated to include ECA No. 153-W601.

ECA No. 7572-BQXR8E Condition 8(3)(a)

A description of any operating problems encountered and corrective actions taken.

The following details describe all operating problems encountered during the reporting period and the corrective actions taken:

Table 14: 2024 Hwy#7 and McDonald Pumping Station Operational Challenges	
Challenges	*Corrective Actions*
Not Applicable for 2024	

ECA No. 7572-BQXR8E Condition 8(3)(b)

A summary of all normal and emergency repairs and maintenance activities carried out on any major structure, equipment, apparatus or mechanism forming part of the Works;

OCWA uses a Work Maintenance System (WMS). WMS is a maintenance tracking system that can generate work orders as well as give summaries of completed and scheduled work. During the year, the operating authority at the facility generates scheduled work orders on a weekly, monthly and annual basis. The service work is recorded in the work order history. This ensures routine and preventive maintenance is carried out and assets are maintained to manufacturer's and/or industry standards. Emergency and capital repair maintenance is completed and added to the system.

Preventative Maintenance/Weekly Work Orders Completed	11
Operational Maintenance Work Orders Completed	0
Capital Maintenance Work Orders Completed	0

Capital projects are listed and provided to the Municipality of Centre Hastings in the form of a "Capital Forecast". This list is developed by facility staff and provides recommendations for facility components requiring upgrading or improvement. Annual and Emergency repair/maintenance is listed below:

- Annual Wet Well Clean-outs
- Sewage Pumping Station Panel Inspections

ECA No. 7572-BQXR8E Condition 8(3)(c)

A summary of the calibration and maintenance carried out on all monitoring equipment

Table 15: McDonalds SPS - Flow Meter Calibration Results – 2024				
Flow Meter Description and Location		Date of Calibration Report	Tag ID	Passed Calibration Y/N
Flowmeter Raw Sewage	McDonalds SPS	May 28 2024	F9099316000	Y

ECA No. 7572-BQXR8E Condition 8(3)(d)

A summary of any complaints received and any steps taken to address the complaints

During the 2024 reporting period there was no community complaints received for the Madoc Hwy#7 and McDonald Pumping Stations.

ECA No. 7572-BQXR8E Condition 8(3)(e)

A summary of all Bypasses, Overflows, other situations outside Normal Operating Conditions and spills within the meaning of Part X of EPA and abnormal discharge events

During the 2024 reporting period there was no bypass, spills, other situations outside normal operating conditions, or abnormal discharge events for the Madoc Hwy#7 and McDonald Pumping Stations.

ECA No. 7572-BQXR8E Condition 8(3)(f)

A summary of all Notice of Modifications to Sewage Works completed under Paragraph l.d. of Condition 10, including a report on status of implementation of all modification

In the reporting year 2024 there were no Pre-Authorized Modifications to Municipal Sewage Works per the Limited Operational Flexibility- Protocol as per ECA No. 7572-BQXR8E Condition 8(3)(f).

Table 16: Summary of Modification to Sewage Works- Summary of Modifications	
Equipment	**Emergency Operational Modification**
Not Applicable for 2024	

ECA No. 7572-BQXR8E Condition 8(3)(g)

a summary of efforts made to achieve conformance with Procedure F-5-1 including but not limited to projects undertaken and completed in the sanitary sewer system that result in overall overflow elimination including expenditures and proposed projects to eliminate overflows with estimated budget forecast for the year following that for which the report is submitted.

During the 2024 reporting period there were no incidents of a bypass or overflow within the sanitary sewer system and therefore no proposed projects to eliminate bypasses or overflows are forecasted for the 2024 reporting period for the Madoc Hwy#7 and McDonald Pumping Stations.

2024 Performance Report for the Madoc Stormwater Management Facility

During the reporting period of 2024, the Environmental Compliance Approval (ECA) No. 5465-BQXPQY for the Stormwater Management Facility was issued August 6th, 2020. The Madoc Stormwater Management Facility was operated by the Municipality of Centre Hastings for the annual reporting year 2024.

ECA No. 5465-BQXPQY Condition 4(2)(a)

A description of any operating problems encountered and corrective actions taken.

The following details describe all operating problems encountered during the reporting period and the corrective actions taken:

Table 17: 2024 Stormwater Management Facility Operational Challenges	
Challenges	*Corrective Actions*
None to report for the 2024 reporting year.	

ECA No. 5465-BQXPQY Condition 4(2)(b)

A summary of all maintenance carried out on any major structure, equipment, apparatus, mechanism or thing forming part of the Works, including an estimate of the quantity of any materials removed from the Works;

In the reporting year of 2024, the following maintenance was performed on any major structure, equipment, apparatus or mechanism as part of the works. During the annual inspection it was determined that there was no requirement for the catch basin to be cleaned out for the year 2024.

- Annual Inspection of the works

ECA No. 5465-BQXPQY Condition 4(2)(c)

A summary of any complaints received and any steps taken to address the complaints

During the 2024 reporting period there was no community complaints received for the Madoc Stormwater Management Facility.

ECA No. 5465-BQXPQY Condition 4(2)(d)

A summary of all spill or abnormal discharge events

During the 2024 reporting period there was spills or abnormal discharge events for the Madoc Stormwater Management Facility.

ECA No. 5465-BQXPQY Condition 4(2)(e)

Any other information the District Manager requires from time to time

During the 2024 reporting period there was no further information required for the District Manager for the Madoc Stormwater Management Facility.

Appendix I

Annual Summary
for the
Madoc Sewage Lagoons

2024

Performance Assessment Report

From 1/1/2024 to 12/31/2024 11:59:59 PM

5829 MADOC WASTEWATER TREATMENT LAGOON 110001051

	1 / 2024	2/ 2024	3/ 2024	4/ 2024	5/ 2024	6/ 2024	7/ 2024	8/ 2024	9/ 2024	10/ 2024	11/ 2024	12/ 2024	<--Total-->	<--Avg-->	<--Max-->	<-Criteria->
Flows																
Raw Flow: Total - Raw m³/d	15,963.00	18,329.00	27,191.00	37,941.00	18,769.00	15,337.00	15,274.00	16,173.00	14,766.00	14,047.00	13,895.00	15,456.00	223,141.00			0.00
Raw Flow: Avg - Raw m³/d	514.94	632.03	877.13	1,264.70	605.45	511.23	492.71	521.71	492.20	453.13	463.17	498.58		609.67		1,008.00
Raw Flow: Max - Raw m³/d	642.00	774.00	1,297.00	2,937.00	802.00	653.00	1,172.00	923.00	652.00	543.00	523.00	1,229.00			2,937.00	0.00
Raw Flow: Count - Raw m³/d	31.00	29.00	31.00	30.00	31.00	30.00	31.00	31.00	30.00	31.00	30.00	31.00	366.00			0.00
Eff. Flow: Total - Eff m³/d	0.00	0.00	0.00	128,855.00	18,200.00	0.00	0.00	0.00	0.00	0.00	97,691.00	41,868.00	286,614.00			0.00
Eff. Flow: Avg - Eff m³/d	0.00	0.00	0.00	5,602.39	2,600.00	0.00	0.00	0.00	0.00	0.00	5,141.63	3,489.00		4,698.59		
Eff. Flow: Max - Eff m³/d	0.00	0.00	0.00	7,317.00	2,600.00	0.00	0.00	0.00	0.00	0.00	34,889.00	3,489.00			34,889.00	0.00
Eff Flow: Count - Eff m³/d	0.00	0.00	0.00	23.00	7.00	0.00	0.00	0.00	0.00	0.00	19.00	12.00	61.00			0.00
Carbonaceous Biochemical Oxygen Demand: CBOD																
Eff: Avg cBOD5 - Eff mg/L	0.00	0.00	0.00	< 5.00	< 4.00	0.00	0.00	0.00	0.00	0.00	< 4.00	< 4.25		< 4.42	< 5.00	30.00
Eff: # of samples of cBOD5 - Eff	0.00	0.00	0.00	7.00	2.00	0.00	0.00	0.00	0.00	0.00	6.00	4.00	19.00			0.00
Loading: cBOD5 - Eff kg/d	0.000	0.000	0.000	< 28.012	< 10.400	0.000	0.000	0.000	0.000	0.000	< 20.567	< 14.828		< 20.77	< 28.01	122.000
Biochemical Oxygen Demand: BOD5																
Raw: Avg BOD5 - Raw mg/L	223.00	254.00	249.00	104.00	108.00	208.00	314.00	191.00	328.00	148.00	498.00	84.00		225.75	498.00	0.00
Raw: # of samples of BOD5 - Raw	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	12.00			0.00
Total Suspended Solids: TSS																
Raw: Avg TSS - Raw mg/L	167.00	245.00	167.00	146.00	336.00	224.00	554.00	163.00	272.00	190.00	400.00	673.00		294.75	673.00	0.00
Raw: # of samples of TSS - Raw	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	12.00			0.00
Eff: Avg TSS - Eff mg/L	0.00	0.00	0.00	5.14	5.50	0.00	0.00	0.00	0.00	0.00	6.50	5.00		5.58	6.50	30.00
Eff: # of samples of TSS - Eff	0.00	0.00	0.00	7.00	2.00	0.00	0.00	0.00	0.00	0.00	6.00	4.00	19.00			0.00
Loading: TSS - Eff kg/d	0.000	0.000	0.000	28.812	14.300	0.000	0.000	0.000	0.000	0.000	33.421	17.445		26.21	33.42	122.000
Percent Removal: TSS - Raw %	0.00	0.00	0.00	96.48	98.36	0.00	0.00	0.00	0.00	0.00	98.38	99.26		98.12	99.26	0.00
Total Phosphorus: TP																
Raw: Avg TP - Raw mg/L	5.42	4.90	4.08	2.91	4.27	6.10	8.50	5.03	7.38	6.12	7.38	8.20		5.86	8.50	0.00
Raw: # of samples of TP - Raw	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	12.00			0.00
Eff: Avg TP - Eff mg/L	0.00	0.00	0.00	< 0.05	< 0.04	0.00	0.00	0.00	0.00	0.00	< 0.04	0.06		< 0.05	< 0.06	0.50
Eff: # of samples of TP - Eff	0.00	0.00	0.00	7.00	2.00	0.00	0.00	0.00	0.00	0.00	6.00	4.00	19.00			0.00
Loading: TP - Eff kg/d	0.000	0.000	0.000	< 0.296	< 0.104	0.000	0.000	0.000	0.000	0.000	< 0.223	0.218		< 0.24	< 0.30	4.000
Percent Removal: TP - Raw %	0.00	0.00	0.00	98.18	99.06	0.00	0.00	0.00	0.00	0.00	99.41	99.24		98.97	99.41	0.00
Nitrogen Series																
Raw: Avg TKN - Raw mg/L	70.10	58.40	37.50	24.00	48.40	59.60	80.00	45.90	68.50	57.40	68.30	69.00		57.26	80.00	0.00
Raw: # of samples of TKN - Raw	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	12.00			0.00
Eff: Avg TAN - Eff mg/L	0.00	0.00	0.00	12.73	12.00	0.00	0.00	0.00	0.00	0.00	4.13	18.30		11.11	18.30	
Eff: # of samples of TAN - Eff	0.00	0.00	0.00	7.00	2.00	0.00	0.00	0.00	0.00	0.00	6.00	4.00	19.00			0.00
Loading: TAN - Eff kg/d	0.000	0.000	0.000	71.310	31.200	0.000	0.000	0.000	0.000	0.000	21.252	63.849		52.20	71.31	
Eff: Avg NO3-N - Eff mg/L	0.00	0.00	0.00	0.31	< 0.06	0.00	0.00	0.00	0.00	0.00	0.78	0.14		0.32	0.78	0.00
Eff: # of samples of NO3-N - Eff	0.00	0.00	0.00	7.00	2.00	0.00	0.00	0.00	0.00	0.00	6.00	4.00	19.00			0.00
Eff: Avg NO2-N - Eff mg/L	0.00	0.00	0.00	< 0.05	< 0.03	0.00	0.00	0.00	0.00	0.00	< 0.04	< 0.03		< 0.04	< 0.05	0.00
Eff: # of samples of NO2-N - Eff	0.00	0.00	0.00	7.00	2.00	0.00	0.00	0.00	0.00	0.00	6.00	4.00	19.00			0.00
Disinfection																
Eff: GMD E. Coli - Eff cfu/100mL	0.00	0.00	0.00	136.29	34.47	0.00	0.00	0.00	0.00	0.00	149.97	76.79				
Eff: # of samples of E. Coli - Eff	0.00	0.00	0.00	7.00	2.00	0.00	0.00	0.00	0.00	0.00	6.00	4.00	19.00			0.00