

**Ministry
of the Environment,
Conservation and Parks**
1201-54 Cedar Pointe Drive
Barrie ON L4N 5R7
Tel: (705) 739-6441
1-800-890-8511
Fax: (705) 739-6440

**Ministère
de l'Environnement de la Protection de la
nature et des Parcs**
1201-54 chemin Cedar Pointe
Barrie ON L4N 5R7
Tél: (705) 739-6441
1-800-890-8511
Télé: (705) 739-6440



September 19, 2019

The Corporation of the Township of Ramara
2297 Highway 12, PO Box 130
Brechin, ON
L0K 1B0

Attention: John Pinsent, Chief Administrative Officer

**Re: Wastewater Inspection Report
Lagoon City Water Pollution Control Plant**

Please find enclosed the Ministry of the Environment, Conservation and Parks 2019 Inspection Report for the Brechin/Lagoon City sewage works, site number 120002255. The physical inspection took place on June 10, 2019.

The primary focus of this inspection was to confirm compliance with Ministry legislation and control documents, as well as conformance with Ministry wastewater related policies for the inspection review period. The Ministry is implementing a rigorous and comprehensive approach in the inspection of wastewater treatment systems that focuses on the collection, treatment, and discharge components as well as wastewater treatment system management practices.

Two issues of non-compliance are discussed on page 14 of this report.

Best management practices are discussed on page 15 of this report.

If you have any questions or concerns regarding this inspection report, please contact the undersigned at (705) 739-6431 or laura.mary.greidanus@ontario.ca.

Sincerely,

A handwritten signature in black ink that reads "Laura Greidanus".

Laura Greidanus
Provincial Officer, Water Inspector
Barrie District Office
Ministry of Environment, Conservation and Parks

CC Medical Officer of Health, Simcoe Muskoka District Health Unit
Manager of Environmental Services, Township of Ramara
Barrie District Office File, Ministry of the Environment, Conservation and Parks



Ministry of the Environment, Conservation and Parks

**WW LAGOON CITY WPCP
Inspection Report**

Site Number:	120002255
Inspection Number:	1-KY43K
Date of Inspection:	Jun 10, 2019
Inspected By:	Laura Mary Greidanus

OWNER INFORMATION:

Company Name:	RAMARA, THE CORPORATION OF THE TOWNSHIP OF	Unit Identifier:	
Street Number:	2297		
Street Name:	HIGHWAY 12		
City:	BRECHIN	Postal Code:	L0K 1B0
Province:	ON		

CONTACT INFORMATION

Type:	Owner	Name:	John Pinsent
Phone:	(705) 484-5374 x222	Fax:	(705) 484-0441
Email:	jpinsent@ramara.ca		
Title:	Chief Administrative Officer		

Type:	Operating Authority	Name:	David Readman
Phone:	(705) 238-9092	Fax:	(705) 484-0885
Email:	dreadman@ramara.ca		
Title:	Manager of Environmental Services		

INSPECTION DETAILS:

Site Name:	WW LAGOON CITY WPCP
Site Address:	155 LAGUNA Parkway BRECHIN ON L0K 1B0
County/District:	RAMARA
MECP District/Area Office:	Barrie District
Health Unit:	SIMCOE MUSKOKA DISTRICT HEALTH UNIT
Conservation Authority:	
MNR Office:	
Site Number:	120002255
Inspection Type:	Announced
Inspection Number:	1-KY43K
Date of Inspection:	Jun 10, 2019
Date of Previous Inspection:	Jan 14, 2015

COMPONENTS DESCRIPTION

Site (Name):	Pumping Station No. 1	Sub Type:	Pumphouse
Type:	Collection System Component		

Comments:
Sewage Pumping Station No. 1 is located on the northeast corner of County Road 47 and Highway 12, consisting of a 1.8 m diameter prefabricated precast concrete wetwell complete with ultrasonic liquid level controllers and float switches backup, a high liquid level alarm complete with an autodialer, and two (2) 100 mm diameter vent pipes with gooseneck and screen, and a pump station by-pass connection, together with an above ground fibreglass reinforced plastic enclosure housing two (2) horizontal self priming pumps, (one duty and one standby), each pump rated at 12.5 L/s at 5 m TDH, associated valves and pump control panel.

Site (Name): Pumping Station No. 4
Type: Collection System Component **Sub Type:** Pumphouse

Comments:
 Pumping Station #4 consists of 3.0 metre diameter prefabricated concrete wet well, complete with ultrasonic level controllers and float switch back-up, a high liquid level alarm and A.C. fail alarm and generator run alarm, one 100 millimetre diameter vent pipe, and one 150 millimetre vent pipe with gooseneck and screens, at 5.0 metre total dynamic head.
 Enclosed pump control panel. The three 30 horsepower Barner pumps run at 137 Litres per second. Pumping Station # 4 discharges to Lagoon City Sewage Works. The pumping station is also equipped with a 80 kilowatt stand-by propane generator.

Site (Name): Pumping Station No. 3
Type: Collection System Component **Sub Type:** Pumphouse

Comments:
 Sewage Pumping Station No. 3 is located within municipal property in Brechin Park, consisting of a 2.4 m diameter prefabricated precast concrete wetwell equipped complete with ultrasonic liquid level controllers and float switches backup, a high liquid level alarm complete with an autodialer and two (2) 100 mm diameter vent pipes with gooseneck and screen and a pump station by-pass connection, together with an above ground single storey building housing two (2) horizontal self-priming pumps, (one duty and one standby), each pump rated at 37.5 L/s at 25.22 m TDH, associated valves and pump control panel.

Site (Name): Pumping Station No. 2
Type: Collection System Component **Sub Type:** Pumphouse

Comments:
 Sewage Pumping Station No. 2 is located within municipal road allowance on Perry Avenue, consisting of a 2.4 m diameter prefabricated precast concrete wetwell equipped with two (2) submersible pumps, (one duty and one standby), each pump rated at 13 L/s at 9.2 m TDH, complete with ultrasonic liquid level controllers and float switches backup, a high liquid level alarm complete with an autodialer and two (2) 100 mm diameter vent pipes with gooseneck and screen and a pump station by-pass connection, together with an above ground fibreglass reinforced plastic enclosure associated valves and pump control panel.

Site (Name): Pumping Station No. 5
Type: Collection System Component **Sub Type:** Pumphouse

Comments:
 Pumping station No. 5 consists of a 2.6 metre diameter prefabricated precast concrete wetwell, complete with a liquid level float control, a high liquid level alarm and A.C. fail alarm, two 100 millimetre diameter vent pipes with gooseneck and screens, two alternating duty pumps, 5 horsepower Flygt pumps. Each pump rated at 45 litres per second at 4.0 metre total dynamic head, associated with valves and pump control panel.

Site (Name): Pumping Station No. 8
Type: Collection System Component **Sub Type:** Pumphouse

Comments:
 Pumping station No. 8 consists of a 2.4 metre (m) diameter prefabricated precast concrete wetwell equipped, complete with ultrasonic liquid level controllers and float switches backup, a high liquid level alarm complete with an autodialer and two 100 millimetre diameter vent pipes with gooseneck and screen and a pump station by-pass connection, together with an above ground single storey building housing two horizontal self-priming pumps, (one duty and one standby) each pump rated at 37.5 litres per second (L/s) at 25.22 m total dynamic head, associated valves and pump control panel.
 There is also an Odour Control system in place, consisting of a Bloxide treatment system, that injects Bloxide (contained in two high density polyethylene double-walled storage tanks) into the raw sewage via two peristaltic

metering pumps (one duty, one standby) each with the capacity of 64 litres a day at 175 kiloPascals.

Site (Name): Pumping Station No. 7
Type: Collection System Component **Sub Type:** Pumphouse

Comments:
 Pumping station No. 7 consists of a 2.4 metre (m) diameter prefabricated precast concrete wetwell equipped with two submersible pumps, (one duty and one standby) each pump rated at 13 litres per second (L/s) at 9.2 m total dynamic head, complete with ultrasonic liquid level controllers and float switches backup, a high liquid level alarm complete with an autodialer and two 100 millimetre diameter vent pipes with gooseneck and screen and a pump station by-pass connection, together with an above ground fibreglass reinforced plastic enclosure, associated valves and pump control panel.

Site (Name): Pumping Station No. 6
Type: Collection System Component **Sub Type:** Pumphouse

Comments:
 Pumping station No. 6 consists of a 1.8 metre diameter prefabricated precast concrete wetwell, complete with an ultrasonic liquid level controllers and float switches backup, a high liquid level alarm (complete with an autodialer) and two 100 millimetre diameter vent pipes with gooseneck and screens, and a pump station by-pass connection, together with an above ground fibreglass reinforced plastic enclosure housing two horizontal self priming pumps, (one duty and one standby) each pump rated at 12.5 litres per second (L/s) at 5 metres total dynamic head, associated valves and pump control panel.

Site (Name): Lagoon City Waste Water Control Plant
Type: Mechanical Sewage Treatment System **Sub Type:** Secondary Treatment

Comments:
 In Lagoon City, sewage is collected at Sewage Pumping Station (SPS) No. 4 and from SPS No. 1, SPS No. 2, SPS No. 3, SPS No. 5, and municipal sewers. Sewage is pumped from SPS No. 4 through a forcemain discharging to the grit channels at the STP. Flows are measured by a magnetic flow meter located at SPS No. 4.
 In Brechin, sewage is conveyed to SPS No. 8 via SPS No. 6, SPS No. 7, and municipal sewers. SPS No. 8 pumps sewage through a 200 millimetre (mm) diameter forcemain discharging to the grit channels at the Sewage Treatment Plant (STP). Flows are measured by a magnetic flow meter located in SPS No. 8.
 Septage is accepted at the STP at the septage receiving facility. Septage is discharged from haulage trucks to a flow splitter box, conveyed to septage holding tanks, and pumped to the grit channels. The volume of septage pumped to the inlet works is controlled manually by the operators to a target of no more than 5 percent of the total flow to the STP. In order to balance the organic loading to the plant and minimize the potential for process upsets, the addition of septage to the grit channels will be decreased as raw sewage flows from the pumping stations increase. An activated carbon odour control facility is used to clean odorous gases vented from the septage receiving facility.
 The blended raw sewage and septage flow through the grit channels to settle out sand and silt, pass through a bar screen to remove any larger solids such as rags and plastics, and enter a flow splitter box. Sewage is distributed to any three aeration basins from the flow splitter box using removable slide gates. The aeration basins are equipped with mechanical mixers and aerators to provide aerobic biological oxidation of the raw sewage. Two screw pumps lift the mixed liquor from the aeration basins to the final clarifiers.
 Phosphorus is chemically precipitated in the clarifiers by adding alum at the base of the screw pumps. Polymer is added at the entry to the final clarifiers to improve settling performance in the clarifiers. Effluent from the clarifiers spills over the effluent finger weirs and flows into the disinfection building where it is disinfected with ultraviolet (UV) light. The UV system consists of 36 low pressure UV lamps installed in a concrete channel with a UV sensor and monitoring system.
 The disinfected effluent is conveyed to the STP effluent outfall where it discharges into a wetland, and ultimately Lake Simcoe.
 The Lagoon City STP was designed to provide maximum operational flexibility by providing a significant and variable

storage volume in the aeration basins. This allows the operators to make adjustments for influent flow and quality variations, equipment downtime, and optimization of the process. The STP is usually operated as two separate process trains, namely Plant No. 1 and Plant No. 2. Plant No. 2 is operated under normal flow conditions and consists of Aeration Basins No. 2 and No. 3, Screw Pump No. 2 and Clarifiers No. 2 and No. 3. Plant No. 1 is brought on line during times of increased hydraulic loading and consists of Aeration Basin No. 1, Screw Pump No. 1 and Clarifier No. 1.

Each clarifier is equipped with a floating siphon sludge removal mechanism that traverses the length of the clarifier and removes settled activated sludge from the bottom of the tank by suction. Activated sludge from Clarifier No. 1 is returned by gravity as return activated sludge (RAS) to Aeration Basin No. 1, or is wasted as waste activated sludge (WAS) to the WAS holding tank from where it is pumped to the biosolids pumping station. Activated sludge from Clarifiers No. 2 and No. 3 flow by gravity as RAS to Aeration Basin No. 2 and/or No. 3, or are wasted as WAS to the biosolids pumping station.

Submersible transfer pumps in the biosolids pumping station pump the WAS to Stage 1 and 2 aerobic digesters. The digesters are equipped with coarse bubble non-clog diffusers and provide volatile solids reduction and pathogen destruction. The digesters operate in batch mode where aeration is shut down overnight to allow the biosolids to thicken. Supernatant from the digesters is decanted by gravity to the biosolids pumping station from where it is returned to the aeration basins.

Digested biosolids are pumped to the biosolids storage facility for onsite storage. Additional aeration and mixing with coarse bubble non-clog diffusers are provided. A blower room, located above the biosolids storage tank, houses two blowers for the biosolids storage tank, one blower for the biosolids digesters, and one standby blower.

Biosolids are thickened by decanting supernatant from the biosolids storage tank to the biosolids pumping station from where it is returned to the aeration basins. Biosolids are land applied off-site.

INSPECTION SUMMARY:

Introduction

- The primary focus of this inspection is to confirm compliance with Ministry of the Environment, Conservation and Parks (MECP) legislation as well as evaluating conformance with ministry policies and guidelines during the inspection period.

This wastewater treatment and collection system is subject to the legislative requirements of the Ontario Water Resources Act (OWRA) and the Environmental Protection Act (EPA) and regulations made therein. This inspection has been conducted pursuant to Section 15 of the OWRA and Section 156 of the EPA.

This inspection report does not suggest that all applicable legislation and regulations were evaluated. It remains the responsibility of the owner to ensure compliance with all applicable legislative and regulatory requirements.

The Lagoon City Sewage Treatment Plant serves both the Town of Brechin and Lagoon City in the Township of Ramara. This system consists of eight pumping stations, two 200 millimetre force mains, a septage receiving site, and a secondary treatment system; including an aerobic digester and biosolids storage tank.

This wastewater inspection included: a physical inspection of the works and two pumping stations, interviews with Operators and data review for the period of June 2017 to June 10, 2019, hereafter referred to as the inspection review period. The physical inspection and interviews were conducted on June 10, 2019.

The previous inspection took place on January 14, 2015.

Authorizing/Control Documents

- The owner had a valid Environmental Compliance Approval for the sewage works.
Environmental Compliance Approval (ECA) 8497-8D3TU7 was issued June 28, 2012 for the Lagoon City Sewage Treatment Plant (Site # 120002255).

Capacity Assessment

- The annual average daily flow was not approaching the rated capacity of the sewage works.
ECA 8497-8D3TU7 states that the rated capacity of the Lagoon City Sewage Treatment Plant is 2,273 m³/day. The 2017 Annual Report indicates that the STP treated an overall average daily flow of 1,566 m³/day, and operated on average at 69% of its rated capacity. The 2018 Annual Report indicates that the STP treated an overall average daily flow of 1,430 m³/day, and operated on average at 63% of its rated capacity. In 2019 the average daily flow for the first four months of the year was 1,799 m³, or 79% of the rated capacity. The flows during the month of April 2019 were on average above the rated capacity, with a daily average of 2330.19 m³. The Operating Authority is aware that infiltration accounts for a significant portion of the flow to the plant.
- The owner was in compliance with the conditions associated with maximum flow rate or the rated capacity prescribed by the Environmental Compliance Approval.
ECA 8497-8D3TU7 states that the rated capacity of the Lagoon City Sewage Treatment Plant is 2,273 m³/day. The 2017 Annual Report indicates that the STP treated an overall average daily flow of 1,566 m³/day, and operated on average at 69% of its rated capacity. The 2018 Annual Report indicates that the STP treated an overall average daily flow of 1,430 m³/day, and operated on average at 63% of its rated capacity. In 2019 the average daily flow for the first four months of the year was 1,799 m³, or 79% of the rated capacity. The flows during the month of April 2019 were on average above the rated capacity, with a daily average of 2330.19 m³. The Operating Authority is aware that infiltration accounts for a significant portion of the flow to the plant.

Capacity Assessment

- **Flow measuring devices were installed, calibrated and maintained in accordance with the requirements of the Environmental Compliance Approval.**

Condition 7. (6) of ECA 8497-8D3TU7 states that the Owner shall operate and maintain continuous flow measuring device(s), to measure the flowrate of the raw sewage to the Works and effluent from the Works with an accuracy to within plus or minus 15 per cent (+/- 15%) of the actual flowrate for the entire design range of the flow measuring device(s), and record the flowrate at a daily frequency. The Owner shall ensure that the flow measuring equipment is calibrated a minimum of once each year to ensure the accuracy of the flow data measured.

There are three flow meters installed for the Lagoon City Water Pollution Control Plant. One measures the effluent flow, one measures the flow from Pump Station #4 which is the flow from Lagoon City and one measures the flow from Pump Station # 8 which is the flow from Brechin.

The Operating Authority has the flow meters calibrated annually. The most recent calibrations were performed on June 4, 2019. All three flow meters passed the calibration.

- **Flow rates were recorded at a frequency prescribed by the Environmental Compliance Approval.**

Condition 7. (6) of ECA 8497-8D3TU7 requires that the flowrate is recorded at a daily frequency.

The Operating Authority uses a Daily Summary spreadsheet to record flow data. Each day a record is made of the influent and effluent flows. The Operating Authority is working towards having the flow data captured by software that would allow for continuous recording of flow data, similar to what is used in the drinking water systems.

Treatment Processes

- **All monitoring equipment other than flow monitoring devices were installed, calibrated and maintained in accordance with any Environmental Compliance Approval.**

Condition 6. (2) (d) of Environmental Compliance Approval 8497-8D3TU7 requires that the procedures for the inspection and calibration of monitoring equipment be included in the Operations Manuals.

The Lagoon City Sewage Treatment Plant Operations and Maintenance Manual includes descriptions of each component of the treatment process, how it operates under normal operations, in a bypass operation and overflow and the maintenance required.

The pH probes are serviced by a technician annually, with the most recent calibration performed in June 2019.

- **The owner had ensured that all equipment/components associated with the works was installed in accordance with the Environmental Compliance Approval.**

Based on the observations made during the inspection the equipment and components are installed in accordance with the ECA.

- **The works, related equipment and appurtenances were being operated and maintained to achieve compliance prescribed by the Environmental Compliance Approval.**

Based on observations made at the time of inspection, maintenance records and sample results, the works are being operated and maintained to achieve compliance prescribed by ECA 8497-8D3TU7.

- **The operator-in-charge had ensured that all equipment used in the processes was monitored, maintained, inspected, tested and evaluated.**

Daily sheets are used to record information for the sewage works, including settling testing and any adjustments or activities performed in the plant. The Operations Manual outlines the maintenance activities that are to be performed for the equipment.

- **The owner/operating authority was able to demonstrate that best efforts were used to achieve the objectives listed in the Environmental Compliance Approval conditions.**

The Operating Authority performs regular checks and maintenance to ensure that the plant performance is optimized and the objectives are met.

Treatment Processes

- **The sewage works effluent was essentially free of foreign substances on the day of the inspection.**
At the time of inspection the effluent appeared clear and free of particulate.

Effluent Quality and Quantity

- **The sewage works effluent limits were prescribed by the Environmental Compliance Approval.**
ECA 8497-8D3TU7 contains effluent limits for CBOD5, total suspended solids, total phosphorus and E-Coli. Limits are also prescribed for Lake Simcoe Phosphorus Reduction Strategy Effluent Limits for phosphorus baseline concentration and phosphorus baseline load.
- **The sewage works effluent sample results demonstrated compliance with BOD5 or CBOD5 limits prescribed by the Environmental Compliance Approval.**
Condition 5. (1) of Environmental Compliance Approval (ECA) 8497-8D3TU7 states that the Owner shall operate and maintain the Works such that the concentrations and loadings of the materials named as effluent parameters in Table 3 are not exceeded in the effluent from the Works. Table 3 states that the monthly average concentration effluent limit for CBOD5 is 10 mg/L.
During the inspection review period the monthly average concentration for CBOD5 of the effluent from Lagoon City Sewage Works was below 10 mg/L each month. The maximum monthly average concentration during the inspection review period was 5.4 mg/L.
- **The sewage works effluent sample results demonstrated compliance with total suspended solids limits prescribed by the Environmental Compliance Approval.**
Condition 5. (1) of Environmental Compliance Approval (ECA) 8497-8D3TU7 states that the Owner shall operate and maintain the Works such that the concentrations and loadings of the materials named as effluent parameters in Table 3 are not exceeded in the effluent from the Works. Table 3 states that the monthly average concentration effluent limit for total suspended solids (TSS) is 15 mg/L.
During the inspection review period the monthly average concentration for TSS of the effluent from Lagoon City Sewage Works was below 15 mg/L each month. The maximum monthly average concentration of TSS during the inspection review period was 6.8 mg/L.
- **The sewage works effluent sample results demonstrated compliance with total phosphorous limits prescribed by the Environmental Compliance Approval.**
Condition 5. (1) of Environmental Compliance Approval (ECA) 8497-8D3TU7 states that the Owner shall operate and maintain the Works such that the concentrations and loadings of the materials named as effluent parameters in Table 3 are not exceeded in the effluent from the Works. Table 3 states that the monthly average concentration effluent limit for total phosphorus is 0.3 mg/L, and the total annual loadings for total phosphorus is 249 kg/year.
During the inspection review period the monthly average concentration for total phosphorus of the effluent from Lagoon City Sewage Works was below 0.3 mg/L each month. The maximum monthly average concentration of total phosphorus during the inspection review period was 0.09 mg/L.
The annual loadings for total phosphorus reported for 2017 was 36.6 kg and 30.2 kg for 2018.
- **The sewage works effluent sample results demonstrated compliance with microbiological parameter limits prescribed by the Environmental Compliance Approval.**
Condition 5. (1) of Environmental Compliance Approval (ECA) 8497-8D3TU7 states that the Owner shall operate and maintain the Works such that the concentrations and loadings of the materials named as effluent parameters in Table 3 are not exceeded in the effluent from the Works. Table 3 states that the monthly limit for E-coli is 200 organisms/100 ml for the monthly geometric mean density.
During the inspection review period the monthly geometric mean density for E-coli in the effluent from Lagoon City Sewage Works was below 200 organisms/100 ml each month. The maximum monthly geometric mean density of

Effluent Quality and Quantity

E-coli during the inspection review period was 40 organisms/100 ml. In instances where the result was below the method detection limit, the method detection limit was used to calculate the geometric mean density.

- **The sewage works effluent sample results did not demonstrate compliance with pH limits prescribed by the Environmental Compliance Approval.**

Table 3 - Effluent Limits of ECA 8497-8D3TU7 states that the pH of the effluent is to be maintained between 6.0 and 9.5 inclusive.

The STP met all the effluent objectives and limits during the inspection review period with the exception of two days in October 2018.

On October 14 and 15, 2018 pH was observed outside of the acceptable range of 6.0 and 9.5. A pH of 5.6 was measured on both days. The problem was rectified and the plant returned to regular operations on the 16th of October, 2018.

- **The sewage works effluent sample results met the effluent objectives stated in the Environmental Compliance Approval.**

Condition 4. (1) of Environmental Compliance Approval (ECA) 8497-8D3TU7 states that the Owner shall use best efforts to meet the objectives set out in Table 1 by designing, constructing and operating the Works in such a way that the concentrations of the materials named below as effluent parameters are not exceeded in the effluent from the Works.

Table 1 states the concentration objective for CBOD5 as 8 mg/L. The concentration objective for Total Suspended Solids is stated as 12 mg/L. The concentration objective for Total Phosphorus is stated as 0.24 mg/L. The concentration objective for E-Coli is stated as 100 organisms/ 100 ml (monthly geometric mean density). The Lagoon City Sewage Works met all of the objectives during the inspection review period.

Table 2 of Environmental Compliance Approval (ECA) 8497-8D3TU7 states that the Lake Simcoe Phosphorus Reduction Strategy Effluent Objectives are an annual average concentration of Phosphorus Baseline Concentration of 0.15 mg/L and a total annual loading of 124 kg/year for the Phosphorus Baseline Load.

The Lagoon City Sewage Works met all of the objectives during the inspection review period.

- **The inspector did not collect audit samples during the inspection.**

Monitoring Requirements

- **The sampling requirements were prescribed by the Environmental Compliance Approval.**

- **All sewage works effluent sampling requirements prescribed by the Environmental Compliance Approval were met.**

Table 6 of Environmental Compliance Approval (ECA) 8497-8D3TU7 states that effluent monitoring shall be done at the sampling point at the outlet of the sewage treatment plant or at the sewage outfall as close as possible to the sewage treatment plant. The effluent monitoring Table states that CBOD5, Total Suspended Solids, Total Phosphorus, Total Ammonia Nitrogen and Nitrates are to be sampled weekly as a 24-hour composite sample. Temperature and pH are to be weekly grab/probe samples and E. Coli is to be a weekly grab sample. During the inspection review period the samples were collected for the effluent monitoring of the Lagoon City Sewage Works as required.

- **All sewage works influent (raw sewage) sampling requirements prescribed by the Environmental Compliance Approval were met.**

Table 5 of Environmental Compliance Approval (ECA) 8497-8D3TU7 states that raw sewage monitoring shall be undertaken from the sampling point at the inlet of the sewage treatment plant. BOD5, Total Suspended Solids, Total Phosphorus and Total Kjeldahl Nitrogen are to be sampled monthly and the samples are to be 8 hour daytime composite samples.

Monitoring Requirements

During the inspection review period raw sewage monitoring was completed as required.

- **The owner had maintained the monitoring records for the period prescribed by the Environmental Compliance Approval.**
- **The owner had maintained the monitoring records since the date of the last inspection.**
- **All exceedances of any prescribed parameters were not reported in accordance with the Environmental Compliance Approval.**

During the inspection review period there were two consecutive days when the pH was outside of the prescribed range of 6.0 to 9.5 in ECA 8497-8D3TU7. Condition 9. (2) of ECA 8497-8D3TU7 requires that the Owner shall report to the District Manager or designate, any exceedance of any parameter specified in Condition 5 orally, as soon as reasonably possible, and in writing within seven (7) days of the exceedance. On October 14 and 15, 2018 pH was observed outside of the acceptable range of 6.0 and 9.5. A pH of 5.6 was measured on both days. The problem was rectified and the plant returned to regular operations on the 16th of October, 2018.

A verbal report was not made to the District Manager. The Ministry was made aware of the exceedance in the 2018 Annual Report for Lagoon City Sewage Works. The Inspector spoke with the Operating Authority, and a report was made to the District Manager on April 11, 2019. There were no other exceedances during the inspection review period.

Reporting Requirements

- **The reporting requirements were prescribed by an Environmental Compliance Approval.**
- **The annual performance reports met the submission and contents requirements of the Environmental Compliance Approval.**

Condition 9. (5) of ECA 8497-8D3TU7 requires that the Owner shall prepare and submit to the District Manager a performance report, on an annual basis, within ninety (90) days following the end of the period being reported upon. The first such report shall cover the first annual period following the commencement of operation of the Works and subsequent reports shall be submitted to cover successive annual periods following thereafter. The reports shall contain, but shall not be limited to, the following information:

- (a) a summary and interpretation of all monitoring data and a comparison to the effluent limits outlined in Condition 5, including an overview of the success and adequacy of the Works;
- (b) a description of any operation problems encountered and corrective actions taken;
- (c) a summary of all maintenance carried out on any major structure, equipment, apparatus, mechanism or thing forming part of the Works;
- (d) a summary of effluent quality assurance or control measures undertaken in the reporting period;
- (e) a summary of the calibration and maintenance carried out on all effluent monitoring equipment;
- (f) a description of efforts made and results achieved in meeting the Effluent Objectives of Condition 4;
- (g) a tabulation of the volume of sludge generated in the reporting period, an outline of anticipated volumes to be generated in the next reporting period and a summary of the location where the sludge was disposed;
- (h) a summary of any complaints received during the reporting period and any steps taken to address the complaints;
- (i) a summary of all By-pass, spill or abnormal discharge events;
- (j) status update of the initial effluent characterization as per Condition 8 subsection (1) until it has been completed and the required report has been submitted; and
- (k) any other information the District Manager requires from time to time.

The 2017 and 2019 Annual Reports met the requirements of the ECA. The sampling has been completed for the initial effluent monitoring study required under Condition 8, but the report has not yet been completed.

Reporting Requirements

Bypasses and Overflows

- **Bypasses/overflows had not occurred at the sewage works during the inspection period.**

Wastewater Collection Systems

- **A Pollution Prevention and Control Plan (PPCP) is not being implemented.**

Currently there is not a Pollution Prevention Control Plan for the Lagoon City Water Pollution Control Plant. The facility did not have any bypasses or overflows during the inspection review period, and has historically not needed to bypass treatment components or overflow the system, therefore a Pollution Prevention Control Plan is not required.

- **A characterization study had been undertaken.**

Condition 8. of ECA 8497-8D3TU7 requires that the Owner shall conduct an initial characterization of the effluent from the Works, as specified below, within five (5) years of the date of issuance of this Approval. All samples shall be collected at the following sampling points, at the frequency specified, by means of the specified sample type and be analyzed for each parameter listed and all results recorded.

The sampling has been undertaken, but the report has not yet been completed.

Subsection (3) of Condition 8. States that the Owner shall prepare and submit a report to the Director, Regional Director and District Manager within 6 months of the completion of the initial effluent characterization. The report shall contain, but not be limited to a summary and interpretation of the monitoring data from the initial effluent characterization outlined in subsection (1).

Biosolids Management

- **Records confirm that biosolids were transferred to a Ministry approved facility for disposal or utilization.**

All approved NASM plans are submitted to the Township of Ramara Clerk for land within the Municipality. Only approved lands are used for application.

- **Records confirm that biosolids were transported for disposal or utilization by Ministry approved haulers.**

Wessuc Inc. does all hauling of biosolids from Lagoon City Sewage Treatment Plant.

- **The owner of the facility did not have written contingency plans or other management methods in place to be used in the event that the facility's sludge storage capacity was not sufficient.**

The Lagoon City Sewage Treatment Plant Contingency Emergency Plan states that in all cases of abnormal operational conditions or when an emergency situation arises, Operators are to contact the Manager of Environmental Services. The Operations Manual states that an Operator is to inspect the biosolids storage tank daily to prevent major plant problems and to optimize performance. There is 180 days of Solids Retention Time (SRT), with 28 days being provided in the aerobic digesters and 152 days provided in the aerobic biosolids storage tank.

There has not been an issue of inadequate sludge storage capacity for the Lagoon City Sewage Treatment Plant. The recommended amount of storage capacity is 240 days. The Owner should consider documenting a written contingency plan to be implemented in the event that the sludge storage capacity was not sufficient.

- **There was a process in place to ensure biosolids sample results are reviewed and interpreted by the Municipality.**

- **Testing for biosolids required by legislation was conducted by accredited laboratories.**

Biosolids Management

Samples are submitted to SGS Canada Inc. laboratories.

Certification and Training

- **The classification certificates of the subsystems were conspicuously displayed at the workplace or at premises from which the subsystem was managed.**
The Lagoon City Wastewater Treatment Plant is classified as a Wastewater Treatment Facility Class II and Wastewater Collection Class II.
- **Operator licences were displayed in a conspicuous location at the workplace or at the premises from which the subsystem was managed.**
- **The overall responsible operator had been designated for the wastewater treatment and collection works.**
- **An adequately licensed operator was designated to act in place of the overall responsible operator when the overall responsible operator was unable to act.**
- **All operators had the appropriate level of licences for the wastewater treatment and collection works.**
- **All operators have the appropriate level of training and or experience for the wastewater treatment and collection facilities in accordance with the requirements of the Environmental Compliance Approval.**
- **Only licenced operators made adjustments to the treatment equipment.**
- **Operators-in-charge were designated for the wastewater treatment plant and all associated collection works.**
- **The operator-in-charge ensured that records were maintained of all adjustments made to the processes within his or her responsibility.**
Daily logsheets are used to record information regarding all activities performed at the Plant.

Logbooks

- **The logs and other record keeping mechanisms complied with the record keeping requirements.**
The Owner is required to record all sample results and record the flowrate into and out of the sewage works at a daily frequency.
A review of the records for the inspection review period confirmed compliance.
- **Logs and other record keeping mechanisms were available for at least two (2) years.**

Operations Manuals

- **The operations and maintenance manuals met the requirements of the Environmental Compliance Approval.**
Condition 6. (2) of ECA 8497-8D3TU7 requires that the Owner shall update the operations manual for the works, that includes, but not necessarily limited to, the following information:
(a) operating procedures for routine operation of the Works;
(b) inspection programs, including frequency of inspection, for the Works and the methods or tests employed to detect when maintenance is necessary;

Operations Manuals

- (c) repair and maintenance programs, including the frequency of repair and maintenance for the Works;
- (d) procedures for the inspection and calibration monitoring equipment;
- (e) a spill prevention control and countermeasures plan, consisting of contingency plans and procedures for dealing with equipment breakdowns, potential spills and any other abnormal situations, including notification of the District manager; and
- (f) procedures for receiving, responding and recording public complaints, including recording any followup actions taken.

The Lagoon City Sewage Treatment Plant Operations and Maintenance Manual meets the requirements of the ECA.

- **Operators and maintenance personnel had ready access to operations and maintenance manuals.**
- **The operations and maintenance manuals contained up-to-date plans, drawings and process descriptions sufficient for the safe and efficient operation of the system.**

The available manuals appear to provide sufficient information/guidance for the safe and efficient operation of the subsystem. The documents and regulatory references in the Operations and Maintenance manuals appear to be up-to-date. The Operating Authority regularly reviews the manuals. The most recent review and update was undertaken in May 2019. Operators are expected to review the Manual annually.

Contingency/Emergency Planning

- **Spill containment was provided for the process chemicals and/or standby power generator fuel.**

A spill response kit is housed at the Lagoon City Sewage Works and is readily available in the event of a spill within the facility. A 250 kilowatt diesel powered generator exists in the generator building to supply essential power for the sewage treatment plant during emergency situations. The Township has a portable generator that can be connected to any pumping station requiring power.

- **The owner had provided security measures for the facility.**

The Lagoon City Sewage Works buildings are vinyl, steel and brick clad buildings with locking steel doors. "No Trespassing" signage and the Township's contact information are prominently displayed on the building doors and access gates. There did not appear to be any easily accessible points of entry to these locations. The buildings are equipped with an unauthorized entry security alarm on all the exterior doors. The facility and associated works are encompassed by a permanent fence.

The pumping stations in the distribution system are locked. No other part of the collection system appears to be at risk due to inadequate security.

- **All source protection requirements prescribed by the Environmental Compliance Approval were met.**

Environmental Compliance Approval 8497-8D3TU7 was issued on June 28, 2012 and contains objectives and limits for Lake Simcoe Phosphorus Reduction Strategy.

During the inspection review period the Lagoon City Sewage Plant met both the objectives and the limits for phosphorus.

NON-COMPLIANCE WITH REGULATORY REQUIREMENTS AND ACTIONS REQUIRED

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

1. **The sewage works effluent sample results did not demonstrate compliance with pH limits prescribed by the Environmental Compliance Approval.**

Table 3 - Effluent Limits of ECA 8497-8D3TU7 states that the pH of the effluent is to be maintained between 6.0 and 9.5 inclusive.

The STP met all the effluent objectives and limits during the inspection review period with the exception of two days in October 2018.

On October 14 and 15, 2018 pH was observed outside of the acceptable range of 6.0 and 9.5. A pH of 5.6 was measured on both days. The problem was rectified and the plant returned to regular operations on the 16th of October, 2018.

Action(s) Required:

The Owner and Operating Authority of Lagoon City Sewage Treatment Plant shall continue to take efforts to ensure that the pH is within the range required by Table 3 - Effluent Limits of ECA 8497-8D3TU7.

2. **All exceedances of any prescribed parameters were not reported in accordance with the Environmental Compliance Approval.**

During the inspection review period there were two consecutive days when the pH was outside of the prescribed range of 6.0 to 9.5 in ECA 8497-8D3TU7. Condition 9. (2) of ECA 8497-8D3TU7 requires that the Owner shall report to the District Manager or designate, any exceedance of any parameter specified in Condition 5 orally, as soon as reasonably possible, and in writing within seven (7) days of the exceedance.

On October 14 and 15, 2018 pH was observed outside of the acceptable range of 6.0 and 9.5. A pH of 5.6 was measured on both days. The problem was rectified and the plant returned to regular operations on the 16th of October, 2018.

A verbal report was not made to the District Manager. The Ministry was made aware of the exceedance in the 2018 Annual Report for Lagoon City Sewage Works. The Inspector spoke with the Operating Authority, and a report was made to the District Manager on April 11, 2019.

There were no other exceedances during the inspection review period.

Action(s) Required:

The Owner shall report any exceedances as required by Condition 9. (2) of ECA 8497-8D3TU7.

SUMMARY OF RECOMMENDATIONS AND BEST PRACTICE ISSUES

This section provides a summary of all recommendations and best practice issues identified during the inspection period. Details pertaining to these items can be found in the body of the inspection report. In the interest of continuous improvement in the interim, it is recommended that owners and operators develop an awareness of the following issues and consider measures to address them.

1. A Pollution Prevention and Control Plan (PPCP) is not being implemented.

Currently there is not a Pollution Prevention Control Plan for the Lagoon City Water Pollution Control Plant. The facility did not have any bypasses or overflows during the inspection review period, and has historically not needed to bypass treatment components or overflow the system, therefore a Pollution Prevention Control Plan is not required.

Recommendation:

It is recommended that the Owner and Operating Authority for the Lagoon City Water Pollution Control Plant continue to monitor the facility performance. In the event that bypasses or overflows become necessary for plant integrity, a Pollution Prevention Control Plan should be generated and adhered to.

2. The owner of the facility did not have written contingency plans or other management methods in place to be used in the event that the facility's sludge storage capacity was not sufficient.

The Lagoon City Sewage Treatment Plant Contingency Emergency Plan states that in all cases of abnormal operational conditions or when an emergency situation arises the Manager of Environmental Services. The Operations Manual states that an Operator is to inspect the biosolids storage tank daily to prevent major plant problems and to optimize performance. There is 180 days of Solids Retention Time (SRT), with 28 days being provided in the aerobic digesters and 152 days provided in the aerobic biosolids storage tank.

There has not been an issue of inadequate sludge storage capacity for the Lagoon City Sewage Treatment Plant. The recommended amount of storage capacity is 240 days.

Recommendation:

The Owner should consider documenting a written contingency plan to be implemented in the event that the sludge storage capacity was not sufficient.

SIGNATURES

Inspected By:

Laura Mary Greidanus

Signature: (Provincial Officer)



Reviewed & Approved By:

Sheri Broeckel

Signature: (Supervisor)



Review & Approval Date:

Sept 19, 2019

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