



# **Cecile's Trailer Park**

## Sewage Treatment Lagoon Sewage Collection System

**Annual Operating Report**  
January 1 to December 31, 2024



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Name of Facility: **Cecile’s Lagoon**  
 Address: **Cecile’s Trailer Park, 102 Highway 11 East,  
 Lot 20, Con X, Kendall Township, Hearst Ontario**  
 MOE Works #: **120001997**  
 Environmental Compliance Approval (ECA): **0603-7NWKDX, issued on March 24, 2009**  
 Sewage Collection System (CLI-ECA): **211-W601, issued on March 3, 2023**  
 Report Period: **January 1 to December 31, 2024**

**FACILITY DESCRIPTION:**

Capacity of Works	47 m <sup>3</sup> /day
Service Area	Cecile’s Trailer Park
Service Population	39 Trailers
Effluent Receiver	Mattawishkwia River
Major Process	Two Cell Waste Stabilization Lagoon

Cecile’s Trailer Park Lagoon is a Class 1 facility with an annual design flow of 17,155 m<sup>3</sup> and a daily design flow of 47 m<sup>3</sup>. The lagoon is fed from a sewage pumping station equipped with two submersible sewage pumps rated at 7.5 L/s each. If phosphorus removal is required, provisions for chemical treatment are available.

The lagoon itself is a two-cell stabilization pond with a 180-day retention time and a total liquid surface of 0.72 hectares; both cells (or ponds) are lowered during each discharge period. The system operates on a semi-annual discharge basis with the effluent discharge to occur between April 15<sup>th</sup> to June 15<sup>th</sup> and again from September 15<sup>th</sup> to November 1<sup>st</sup>. This discharge is directed to the Mattawishkwia River.

The Town of Hearst owns the lagoon and the owner of the trailer park, La Cooperative du Park des Maisons Mobile Cecile, owns the collection system.

**DEFINITIONS**

BOD<sub>5</sub> - Five-day biochemical oxygen demand measured in an unfiltered sample  
 (NH<sub>3</sub><sup>-</sup> + NH<sub>4</sub>) N - (Ammonia and Ammonium) Nitrogen – Total Ammonia  
 TP - Total Phosphorus  
 TKN - Total Kjeldahl Nitrogen  
 TSS - Total Suspended Solids

**EFFLUENT QUALITY ASSURANCE AND CONTROL MEASURES UNDERTAKEN**

The mechanical elements in the facility are in good repair, and each member of the operational staff possesses a high level of process knowledge and regulatory competence.

Lagoon contents were sampled and analyzed prior discharge to ensure effluent parameters met the limits specified in the ECA.

Samples are collected as required and analyzed by Testmark Laboratories Limited. Licensed operators conduct in-house tests for monitoring purposes using procedures as per Standard Methods of Water and Wastewater.

Any bypass or upset events that occur at the pumping stations or lagoon site are tested, monitored and reported to the Spills Action Center (SAC).

#### **MAINTENANCE PROCEDURES PERFORMED ON THE WORKS**

Lagoon maintenance, including non-scheduled maintenance, is monitored using OCWA's preventative maintenance software programs. All routine and preventative maintenance measures were conducted as scheduled. In addition, the following tasks were completed;

- Alum treatment was performed on the east lagoon cell prior to the spring discharge
- The wet well also underwent multiple cleanings to keep the basket empty and help prevent blockages
- Check valves were replaced on both the sewage pumps discharge piping

#### **OPERATING PROBLEMS AND CORRECTIVE ACTIONS**

There were no major operating issues during the reporting period. However, operations noticed that the remote monitoring system became unreliable due to an issue with the age of data from the outpost panel. An OCWA instrumentation technician was contacted and the antenna was replaced for the remote monitoring system, which restored full signal strength and fixed the age of data issue.

#### **ALTERATIONS, EXTENSIONS OR REPLACEMENTS TO THE WORKS**

There were no major alterations, extensions or replacements proposed in the process or operations for the reporting period. Near the end of 2024, the check valves in the sewage pumping station were successfully replaced. Immediately after the check valve replacements, the pumping stations' calculated flows have shown a reduction by over 50%. This reduction will help save energy consumption from the station and reduce the maintenance requirements of the pumps. There was no need for additional modifications to improve performance or reliability of the facility.

#### **CALIBRATION AND MAINTENANCE OF ALL MONITORING EQUIPMENT**

The flow-monitoring program, maintained in the Work Management System (WMS), incorporates a calibration of all monitoring devices once a year. This helps ensure their accuracy within plus or minus 15 % of actual rate of flow.

All monitoring equipment is calibrated based on the manufactures recommendations and conducted by a trained person. The volume of raw sewage discharged to the lagoon is calculated using pump hours. The raw sewage is pumped into the lagoon influent wet well and the time of fill up is measured.

Flow rate calibration was conducted on September 26, 2024

- Pump 1 flow rate was determined to be 29.20 m<sup>3</sup>/hour
- Pump 2 flow rate was calculated to be 27.61 m<sup>3</sup>/hour

#### **BYPASS, SPILL AND ABNORMAL DISCHARGE EVENTS**

There were no abnormal discharge events in 2024.

#### **SLUDGE REMOVAL**

There was no sludge removed during the reporting period

#### **COMPLAINTS**

There were no complaints received during the reporting period

#### **PROPOSED ALTERATIONS**

There are no major proposed alterations

#### **MONITORING DATA – RAW INFLUENT**

On the raw influent, a monthly grab sample analyzed for:

- BOD<sub>5</sub>,
- TKN
- Total phosphorous and
- Total suspended solids,

Below is a summary of the raw influent sampling for the calendar year:

Parameter (mg/L)	Number of Samples	Annual Average	Maximum
BOD <sub>5</sub>	12	239.2	337
TKN Solids	12	78.3	110
Total Phosphorous	12	8.0	10.2
Total Suspended Solids	12	91.3	178

Refer to Appendix A for a summary of the monitoring and sampling analysis conducted raw influent during the reporting period.

#### MONITORING DATA - FINAL EFFLUENT

The minimum sampling requirement for the final effluent is a grab sample taken on the first day, middle and last day of the discharge.

Below is a summary of the final effluent sample results for the spring discharge. This year due to low precipitation during the summer there was no fall discharges. The spring discharge period is April 15 to June 15 and the fall discharge period is September 15 to November 1.

#### Spring Discharge (May 28 – June 10)

The results of the three samples taken are summarized below:

Parameter	Effluent Criteria	Result (mg/L)
Total Ammonia Nitrogen	No Average Limit	2.12
	No Maximum Objective	3.31
BOD <sub>5</sub>	Limit: Average* 30 mg/L	4.3
	Objective: maximum 25 mg/L	8.7
Total Phosphorous	No Average Limit	0.444
	No Maximum Objective	0.657
Total Suspended Solids	Limit: Average* 40 mg/L	5.2
	Objective: maximum 30 mg/L	7.5

**Notes:** \* Non-compliance occurs when the mean of any three (3) consecutive grab samples exceed the compliance limit.

Refer to Appendix B for a summary of the monitoring and sampling analysis conducted on the treated effluent during the reporting period.

**FLOWS SUMMARY AND COMPARISON**
**Raw Influent Flow**

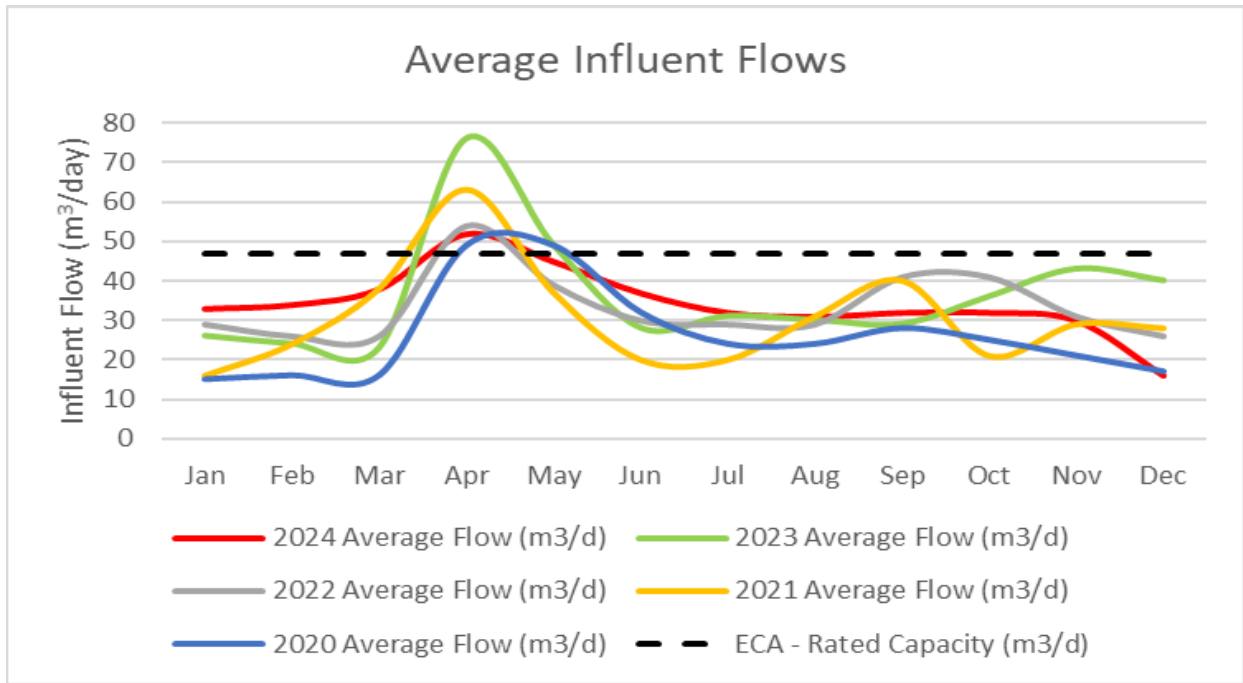
<b>Month</b>	<b>Total Flow (m<sup>3</sup>)</b>	<b>Average Flow (m<sup>3</sup>/day)</b>	<b>Maximum Flow (m<sup>3</sup>/day)</b>
January	1,019	33	37
February	989	34	37
March	1,188	38	48
April	1,556	52	60
May	1,399	45	51
June	1,101	37	46
July	980	32	35
August	961	31	32
September	960	32	34
October	1,001	32	35
November	914	30	34
December	508	16	47

**Summary of Influent Flow**

Total Volume of Influent (m <sup>3</sup> )	12,576
Maximum Annual Flow (m <sup>3</sup> /day)	60
Average Annual Flow (m <sup>3</sup> /day)	34
Rated Capacity (m <sup>3</sup> /day)	47
Percent of Capacity (%)	73.2
Exceedance? (Yes/No)	No

**Historical Average Influent Flow**

	<i>Jan</i>	<i>Feb</i>	<i>Mar</i>	<i>Apr</i>	<i>May</i>	<i>Jun</i>	<i>Jul</i>	<i>Aug</i>	<i>Sep</i>	<i>Oct</i>	<i>Nov</i>	<i>Dec</i>
<i>2024</i>	33	34	38	52	45	37	32	31	32	32	30	16
<i>2023</i>	26	24	23	76	49	28	31	30	29	36	43	40
<i>2022</i>	29	26	26	54	39	30	29	29	41	41	31	26
<i>2021</i>	16	24	38	63	37	20	20	31	40	21	29	28
<i>2020</i>	15	16	16	49	49	32	24	24	28	25	21	17



**Summary of Effluent Flow**

Discharge Period	Average Flow (m³/d)	Maximum Flow (m³/d)	Total Flow (m³)
Spring	127.9	170	1,790
Fall	0	0	0

Refer to Appendix C for a summary of the monitoring of the raw influent and treated effluent flows during the reporting period.

**ANNUAL LOADINGS (EFFLUENT)**

As defined in the ECA, the "Annual Average Loading" means the value obtained by multiplying the average concentration of a contaminant by the *Average Daily Flow* over the same period of twelve (12) consecutive calendar months. *Average Daily Flow* means the total sewage flow to the sewage works twelve consecutive calendar months, or during the period of operation upon which the report is based, divided by the number of days during the same period of time.

Parameter	Final Effluent Loadings (kg/year)	Compliance
BOD <sub>5</sub>	7.64	515
Total Suspended Solids	9.25	686

Refer to Appendix D for calculation details.

### SEWAGE TREATMENT PROGRAM SUCCESS AND ADEQUACY

The table below details the efficiency of the lagoon's performance demonstrating pollutant removal rates from raw sewage concentrations through to final effluent for BOD<sub>5</sub> suspended solids and total phosphorus.

Parameter (mg/L)	Influent	Effluent	% Removal
BOD <sub>5</sub>	239.2	4.3	98.2
Total Suspended Solids	91.3	5.2	94.3
Total Phosphorous	8.0	0.444	94.4

*Note: percent removal calculations are based on the annual average values*

### INTERPRETATION OF MONITORING AND ANALYTICAL DATA

The raw sewage (influent) flow is a measurement based on the total volume of sewer water taken in each day. Table *Influent Flow Data* summarizes the flow data for 2024. The average flows and the maximum daily flows are presented for each month. Compliance is achieved when the average flow for the year does not exceed 47 m<sup>3</sup>/day.

The average influent flow for 2024 was 34 m<sup>3</sup>/day, which represents 73.2% of the design capacity with a maximum annual daily flow of 60 m<sup>3</sup>/day.

The effluent quality is based on the biochemical oxygen demand and total suspended solids levels.

The Biochemical Oxygen Demand (BOD<sub>5</sub>) is the amount of oxygen used by micro-organisms as they decompose organic matter in the effluent sample for five days. High BOD<sub>5</sub> in effluent means a large quantity of oxygen was needed to break down the organic matter and identifies a large amount of organic matter in the effluent indicating inadequate treatment.

Total Suspended Solids (TSS) in effluent are composed of settable solids and non-settable solids depending on the size, shape and weight of the solid particles. Settable solids are large sized particles that tend to settle more rapidly in a given period of time.

Compliance is determined by comparing the average of three consecutive grab samples to the limits of 30 mg/L BOD<sub>5</sub> and 40 mg/L of TSS. During the spring discharge, the sampled effluent had an average BOD<sub>5</sub> of 4.3 mg/L and an average TSS of 5.2 mg/L, which were within compliance limits for the spring discharge period.

Cecile's Sewage Treatment Lagoon operated within its required capacity and produced quality treated wastewater that met the limits specified in Condition 3 of the facility's ECA.

**CLI-ECA ADDITIONAL DATA**

The Cecile sewage collection system consist of one sewage pumping station (SPS) identified as PS 8 – Cecile Trailer Park Pumping Station. This SPS does not contain any overflow location. The repair of the SPS check valves issue may help alleviate the exceedances of the rated capacity value in the months of April, and occasionally May. The new check valves will reduce the overall demand on pumping station. This will also be reflected in a lowered calculated influent flow due to the pumps running less. There are no immediate concerns for the collection system or pumping station.

**APPENDIX A: Monthly Summary of Raw Influent Sampling and Monitoring Data**

Raw Sewage Parameters	11-Jan-24	05-Feb-24	05-Mar-34	05-Apr-24	06-May-24	04-Jun-24	04-Jul-24	21-Aug-24	16-Sep-24	02-Oct-24	04-Nov-24	03-Dec-24
BOD5 (mg/L)	250	230	200	120	130	210	329	250	321	337	313	180
TKN (mg/L)	80.6	105	77	70	37.5	29.9	63.4	86.6	80	106	110	94.1
Total Phosphorus (mg/L)	7.67	9.37	7.76	6.41	5.38	6.44	6.59	9.39	8.76	10.2	9.54	8.35
Suspended Solids (mg/L)	178	101	102	72	83	70	60	87	76	89	83	94

**APPENDIX B: Summary of Final Effluent Sampling and Monitoring Data**

<b>Combined Effluent</b>	28-May-24	4-Jun-24	10-Jun-24
NH3 + NH4 as N	2.350	0.7	3.31
BOD5	3.60	< 0.5	8.7
Suspended Solids	1.5	7.5	6.5
Total Phosphorus	0.410	0.264	0.657
Field pH (units)	7.46	7.99	7.13
Field Temperature C	15	19	13.5

**APPENDIX C: Summary of Raw Influent and Final Effluent Flow Monitoring Data**

	Jan-24	Feb-24	Mar-24	Apr-24	May-24	Jun-24	Jul-24	Aug-24	Sep-24	Oct-24	Nov-24	Dec-24
Average Flow (m <sup>3</sup> /day)	33	34	38	52	45	37	32	31	32	32	30	16
Maximum Flow (m <sup>3</sup> /day)	37	37	48	60	51	46	35	32	34	35	34	47
Total	1,019	989	1,188	1,556	1,399	1,101	980	961	960	1,001	914	508
<i>Effluent Flow - Avg (m3/d)</i>					149	120						
<i>Effluent Flow - Max (m3/d)</i>					170	170						
<i>Effluent Flow - Total (m3)</i>					595	1,196						
<i>Days Discharging</i>					4	10						

**APPENDIX D: Loading Calculations**

Loading Calculations

$$\boxed{\frac{\text{Annual average result}}{\text{L}} \frac{\text{mg}}{\text{L}}} \times \boxed{\frac{1000 \text{ L}}{1 \text{ m}^3} \times \frac{1 \text{ g}}{1000 \text{ mg}} \times \frac{1 \text{ kg}}{1000 \text{ g}}} \times \boxed{\frac{\text{annual average flow}}{\text{year}} \frac{\text{m}^3}{\text{year}}} = \boxed{\frac{\text{Loading}}{\text{year}} \frac{\text{kg}}{\text{year}}}$$

*convert from mg/L to kg/m<sup>3</sup>*

**Annual Loading Calculation**

BOD<sub>5</sub> Loading Calculation

$$\frac{4.3 \text{ mg}}{1 \text{ L}} \times \frac{1000 \text{ L}}{1 \text{ m}^3} \times \frac{1 \text{ g}}{1000 \text{ mg}} \times \frac{1 \text{ kg}}{1000 \text{ g}} \times \frac{1,790 \text{ m}^3}{\text{a}} = \frac{7.64 \text{ kg}}{\text{a}}$$

Total Suspended Solids (TSS) Loading Calculation

$$\frac{5.2 \text{ mg}}{1 \text{ L}} \times \frac{1000 \text{ L}}{1 \text{ m}^3} \times \frac{1 \text{ g}}{1000 \text{ mg}} \times \frac{1 \text{ kg}}{1000 \text{ g}} \times \frac{1,790 \text{ m}^3}{\text{a}} = \frac{9.25 \text{ kg}}{\text{a}}$$

**APPENDIX E: CLI-ECA Reporting Sections**

Collection ECA # 211-W601 Schedule E	Section in Report
4.6.3 If applicable, includes a summary of all required monitoring data along with an interpretation of the data and any conclusion drawn from the data evaluation about the need for future modifications to the Authorized System or system operations.	(3) BYPASS, SPILL AND ABNORMAL DISCHARGE EVENTS (3) PROPOSED ALTERATIONS (6) HISTORICAL AVERAGE INFLUENT FLOW (9) CLI-ECA ADDITIONAL DATA
4.6.4 Includes a summary of any operating problems encountered and corrective actions taken.	(2) OPERATING PROBLEMS AND CORRECTIVE ACTIONS (3) BYPASS, SPILL AND ABNORMAL DISCHARGE EVENTS
4.6.5 Includes a summary of all calibration, maintenance, and repairs carried out on any major structure, Equipment, apparatus, mechanism, or thing forming part of the Municipal Sewage Collection System.	(2) CALIBRATION AND MAINTENANCE OF ALL MONITORING EQUIPMENT (2) MAINTENANCE PROCEDURES PERFORMED ON THE WORKS
4.6.6 Includes a summary of any complaints related to the Sewage Works received during the reporting period and any steps taken to address the complaints.	(3) COMPLAINTS
4.6.7 Includes a summary of all Alterations to the Authorized System within the reporting period that are authorized by this Approval including a list of Alterations that pose a Significant Drinking Water Threat.	(2) ALTERATIONS, EXTENSIONS OR REPLACEMENTS TO THE WORKS
4.6.8 Includes a summary of all Collection System Overflow(s) and Spill(s) of Sewage, including: a) Dates; b) Volumes and durations; c) If applicable, loadings for total suspended solids, BOD, total phosphorus, and total Kjeldahl nitrogen, and sampling results for E.coli; d) Disinfection, if any; and e) Any adverse impact(s) and any corrective actions, if applicable.	(3) BYPASS, SPILL AND ABNORMAL DISCHARGE EVENTS

4.6.9 Includes a summary of efforts made to reduce Collection System Overflows, Spills, STP Overflows, and/or STP Bypasses, including the following items, as applicable:

- a) A description of projects undertaken and completed in the Authorized System that result in overall overflow reduction or elimination including expenditures and proposed projects to eliminate overflows with estimated budget forecast for the year following that for which the report is submitted.
- b) Details of the establishment and maintenance of a PPCP, including a summary of project progresses compared to the PPCP's timelines.
- c) An assessment of the effectiveness of each action taken.
- d) An assessment of the ability to meet Procedure F-5-1 or Procedure F-5-5 objectives (as applicable) and if able to meet the objectives, an overview of next steps and estimated timelines to meet the objectives.
- e) Public reporting approach including proactive efforts.

(9) CLI-ECA ADDITIONAL DATA