

**PUBLIC UTILITIES COMMISSION
FOR THE MUNICIPALITY OF CHATHAM-KENT
MITCHELL'S BAY LAGOONS**

2020 PERFORMANCE REPORT

January 1 to December 31, 2020

Amended Certificate of Approval # 1-502-77-006

Plant Description

The Mitchell's Bay Sewage Lagoon System provides treatment of wastewater for approximately 500 residents of the Mitchell's Bay community. Wastewater is collected and pumped to the sewage lagoon system from one sanitary pump station.

The Mitchell's Bay Sewage Lagoon System was built in 1977 with a maximum design flow of 509 m³/day. This sewage treatment facility consists of 3 treatment cells each 5 acres in size. Final effluent is discharged to Rankin Creek in the spring and fall if required.

REPORTING

Summary and Interpretation of Monitoring and Comparison to the Effluent Limits

The following Ministry Procedures / Guidelines apply:

Procedure F-5-1:	Minimum effluent limits BOD ₅ , Suspended Solids
Guideline F-8:	Effluent limits Phosphorus
Procedure F-10-1:	Minimum monitoring program
Table C-1:	Monitoring, recording and reporting bypasses

Table 1 on the following page outlines monthly average results of parameters tested compared to the Effluent Guidelines & Effluent Design Objectives set out in one or more of the above Ministry Procedures /Guidelines.

Success and Adequacy of the Works

During the reporting period, the annual average daily flow was 192 m³/day, which represents approximately 41% of the rated capacity of 509 m³/day.

Overall, the Mitchell's Bay Lagoons performed well for this reporting period

Table 1: Summary of Monitoring Data and Comparison to Effluent Guidelines & Effluent Design Objectives - Concentrations
as well as rated capacity to the sewage works

Rated capacity: 509 m³/day

Total sewage flow to the works during a calendar year divided by the number of days during which sewage was flowing to the works that year

Month	Total Monthly Influent Flow m ³	Avg Daily Influent Flow /Month m ³ /day	Avg Daily Influent Flow/Year m ³ /day	% of Rated Capacity	BOD ₅ mg/L	Total S.S mg/L	Total P mg/L
Limits: without batch TP removal	None	None	509	100	30	40	1.0
Objectives: without batch TP removal	None	None	509	100	25	30	0.5 - 1.0
Limits: with batch TP removal	None	None	509	100	25	25	1.0
Objectives: with batch TP removal	None	None	509	100	15	20	0.5 - 1.0
Jan	7,691	248					
Feb	4,763	164					
Mar	6,065	196					
Apr	6,584	219			2	7	0.07
May	7,709	249			2	7	0.07
Jun	6,407	214					
Jul	7,091	229					
Aug	6,315	204					
Sep	4,943	165					
Oct	3,703	119					
Nov	4,252	142			2	7	0.07
Dec	4,752	153			2	5	0.06
Year			192	41%			
	Yearly Total Flow m³	Yearly Maximums					
	70,275	249			2	7	0.07

Batch TP removal was performed for the April-May discharge period.

Batch TP removal was performed for the November-December discharge period.

Operating Problems and Corrective Action:

There were no significant operating problems encountered during this reporting period.

Summary of Maintenance Activities:

Routine maintenance was performed throughout the reporting period. Chatham-Kent PUC utilizes the electronic preventative maintenance program to track preventative maintenance. In addition to routine maintenance, the following additional maintenance activity was completed for the reporting period:

Fall Discharge Equipment Rental	\$ 47,000
Spring Discharge Equipment Rental	26,000

Quality Assurance and Control Measures:

The Chatham-Kent Public Utilities Commission followed a sampling schedule developed in accordance with the Certificate of Approval and applicable regulations for this reporting period.

Raw chemistry samples were collected and submitted monthly to an accredited laboratory for analysis of BOD₅, Total Suspended Solids, pH and Total Phosphorus.

During reporting periods where there is discharge, the following sampling program is followed: Final Effluent chemistry samples are collected and submitted during discharge periods to an accredited laboratory for analysis of Total BOD, Total Suspended Solids, Total Kjeldahl Nitrogen, Total Phosphorus, Total Ammonia as N, Alkalinity, pH, Nitrite and Nitrate.

Bacteriological samples of the effluent are collected during discharge periods according to the Sampling Program. Bacteriological samples are submitted during discharge periods to an accredited laboratory for analysis.

In house samples were analyzed by a licensed operator for pH and temperature.

Calibration and Maintenance on Monitoring Equipment

Monitoring equipment calibration/verification report(s) included for the following:

- Influent flow meter

Community Complaints:

There were no Customer Complaints received during the reporting period.

By-pass, Spill, or Abnormal Discharge Events:

There were no by-pass, spill, or abnormal discharge events for the reporting period.

Other Information the District Manager Requires:

No other information was required from the District Manager during this reporting period.

APPENDIX A

Yearly Operational Data Summary for the Reporting Period

APPENDIX B

Calibration Reports for the Reporting Period