cao-treasurer@tweed.ca

From:	Natalie Iezzi <NIezzi@ocwa.com>
Sent:	March 27, 2023 2:47 PM
To:	Dagilis, Trevor (MECP); cao-treasurer@tweed.ca
Cc:	Karen Lorente; Amber Coupland; Young, Sarah (MECP); shayna.maracle@ontario.ca; Wesley Henneberry; Derek Chapman
Subject:	Tweed Lagoon Annual Report - 2022
Attachments:	Tweed Lagoon Annual Report 2022 FINAL 3 .pdf

Good Afternoon Trevor,

Please find attached the 2022 Annual Report for the Tweed Lagoons and Collection System.

The Tweed Lagoon report has been generated to provide an overview of the Tweed Lagoon treatment process, to provide a record of the performance of the lagoon treatment process for 2022, to demonstrate that effluent quality satisfied Ministry of the Environment guidelines, and to provide a compliance record for all the terms and conditions outlined in the Environmental Compliance Approval.

A hard copy has been mailed and will follow shortly.

Please feel free to contact me anytime if you have any questions regarding this report.

Sincerely,

Natalie Iezzi, B.Sc. (Hons)
Process & Compliance Technician
Kawartha-Trent Regional Hub
Ontario Clean Water Agency
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ONTARIO CLEAN WATER AGENCY
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March 27 2023

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

Dear Trevor Dagilis;

Re: Tweed Lagoons - Annual Report for 2022

Attached please find the annual performance report for the Tweed Lagoons for the operating year 2022, prepared by the Ontario Clean Water Agency.

Please note that a new Environmental Compliance Approval (ECA) #3047-BXASWW was issued on April 21st, 2021 and the new ECA#5173-CKLQN8 was issued November 1st, 2022. This report is submitted in accordance with Conditions 11(4)(a) through 11(5)(m) of both ECA's as they were both active regulating document during the 2022 reporting year.

This report is submitted in accordance with Section 10&11 of the Environmental Compliance Approval (ECA) #3047-BXASWW (issued April 21st, 2021) and ECA#5173-CKLQN8 (November 1st, 2022) for the Tweed Sewage Lagoons. This report is submitted in accordance with Section 8 of ECA# 6083-BZEHY9 (issued April 21st, 2022) for the Tweed Jamieson St and River St Pumping Stations and Schedule E Section 4.6 of the CLI ECA# 168-W601 for the Tweed Municipal Sewage Collection System.

The purpose of this report is to provide a performance record for future references, to ensure that the Ministry is made aware of problems as they arise, 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 contact me.

Sincerely,

Natalie Iezzi
Process and Compliance Technician
Kawartha-Trent
Ontario Clean Water Agency

cc: Amber Coupland, Senior Operations Manager, OCWA
Gloria Raybone, CAO/Clerk, Municipality of Tweed
Sarah Young, Environmental Officer, MECP

Tweed Wastewater Lagoon

Annual Report

Reporting period of January 1, 2022 – December 31, 2022

Prepared For: Municipality of Tweed

Prepared By: Ontario Clean Water Agency
Agence Ontarienne Des Eaux

This report is submitted in accordance with Conditions 11(4)(a) through 11(4)(m) of Environmental Compliance Approval (ECA) No. #3047-BXASWW and ECA #5173-CKLQN8. This report is also submitted in accordance with Environmental Compliance Approval No. # 6083-BZEHY9 Condition 8(3)(a) through 8(3)(g) for the Jamieson and River Street Pump Stations and Schedule E Section 4.6 of the CLI ECA# 168-W601 for the Tweed Municipal Sewage Collection System.

Condition 11(4) of ECA No. #3047-BXASWW, Condition 8(3) of ECA No. #6083-BZEHY9 and CLI ECA# 168-W601 states, *"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 Tweed Wastewater Treatment Plant (Tweed Lagoons) and Pumping Stations on behalf of the Municipality of Tweed.
The Tweed Lagoon facility is a Class 1 Wastewater Treatment Plant.

The facility's design flow is 1,815m^3/day post completion of construction to the works for the 2022 reporting year. The average day raw flow for the year 2022 was 670.53 m^3/day.

The Tweed Wastewater Lagoons, and Pump Stations complies with all requirements of the regulating authorities and operates under:

- Environmental Compliance Approval No. 3047-BXASWW (issued April 21, 2021)
- Environmental Compliance Approval No. 5173- CKLQN8 (issued November 1st, 2022)
- Environmental Compliance Approval No. 6083-BZEHY9 (issued April 21, 2022) for the Jamieson SPS and River St SPS
- Consolidated Linear Infrastructure Environmental Compliance Approval No. 168-W601 for the Tweed Municipal Collection System (issued November 10th, 2022)

Discharge Requirements

The Tweed 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. 5173-CKLQN8 upon completion of the proposed works is as follows:

- Spring discharge commencing not earlier than March 15th, continuing for not less than 30 days, terminating not later than April 30th and using reasonable efforts to maximize the discharge rate to coincide with the spring freshet and elevated flows in the receiver
- Fall discharge commencing not earlier than November 1st, continuing for not less than 30 days and terminating not later than December 15th
- Maximum allowable discharge rate shall not exceed 126 l/s during each seasonal discharge period
- Discharge volume shall not exceed 10,890 m3/day during each seasonal period
- In stream dilution ratio relative to the effluent must at all times be greater than 100:1

2022 Performance Report for the Tweed Sewage Lagoons

During the 2022 reporting period the Ontario Clean Water Agency operated under the Environmental Compliance Approval (ECA) 3047-BXASWW (issued April 21st, 2021) and ECA number No. 5173- CKLQN8 (issued November 1st, 2022). The Tweed Lagoon proposed works was completed in Fall 2021.

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Background

The Environmental Compliance Approval (ECA) ECA No. 3047-BXASWW issued on April 21st, 2021 was revoked and replaced by ECA No. 5173- CKLQN8 issued November 1st, 2022. Condition 11 (4) in ECA No. 5173- CKLQN8 discusses the requirements for annual performance reports. Since the reporting requirements in the new ECA satisfy the reporting requirements of ECA No. 3047-BXASWW, the 2022 performance report has been prepared following the conditions of ECA No. 5173- CKLQN8, 11 (4).

The Environmental Compliance Approval (ECA) No. 5173- CKLQN8, for the Tweed Lagoons, Condition 11(4) states, *"...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. The reports shall contain, but shall not be limited to, the following information pertaining to the reporting period:*

a) summary and interpretation of all Influent monitoring data, and a review of the historical trend of the sewage characteristics and flow rates;

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;

c) a summary of all operating issues encountered and corrective actions taken;

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;

e) a summary of any effluent quality assurance or control measures undertaken;

f) a summary of the calibration and maintenance carried out on all Influent 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;

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;

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;

i) a summary of any complaints received and any steps taken to address the complaints;

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;

k) *a summary of all Notice of Modifications to Sewage Works completed under Paragraph 1.d. of Condition 10, including a report on status of implementation of all modification.*

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).*

m) *any changes or updates to the schedule for the completion of construction and commissioning operation of major process(es) / equipment groups in the Proposed Works.*

The above information is incorporated in the following report format and submitted to the MECP District Manager of the Kingston District Office of the Ministry of the Environment, Conservation and Parks as per the requirements of the Environmental Compliance Approval (ECA) 3047-BXASWW and ECA No. 5173-CKLQN8

During the period of 2022, the Ontario Clean Water Agency (OCWA) operated the Tweed Lagoons and the Jamieson & River Street Sewage Pumping Station (henceforth referred to as the Municipality of Tweed Collection System due to the issuance of the CLI ECA No. #168-W601 on November 10th, 2022) on behalf of the Corporation of the Municipality of Tweed. OCWA's goals have remained consistent during this period and remain consistent with the following priorities:

- provide quality assurance, safety and environmental compliance of facility operations;
- assist our clients in achieving compliance;
- provide advice on up-to-date technology in Operations and Maintenance service delivery.

This report will show that the Ontario Clean Water Agency has made every attempt to achieve its goals through its operational performance. This performance was enhanced through the use of an electronic process data collection database, an electronic maintenance and work order database, an electronic operational excellence database, a training program focused on providing the right skills to staff - also captured and tracked by the use of an electronic database and a multi-skilled, flexible workforce.

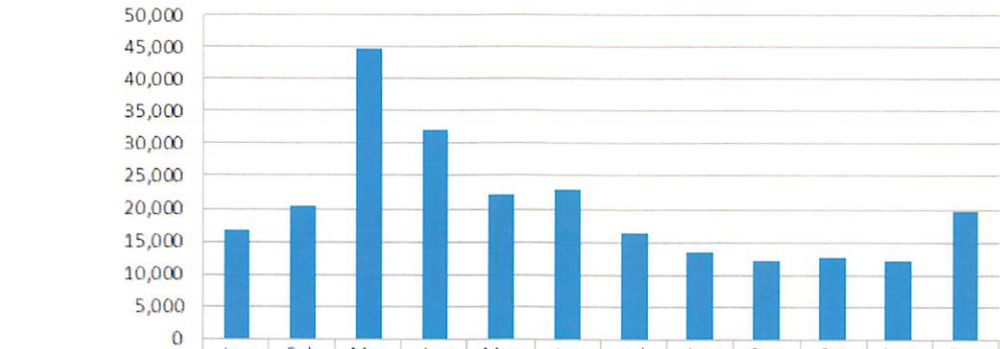
This report will show that the requirements of the facility and pumping station ECAs including effluent monitoring and reporting requirements were consistently met and that effluent quality was consistently within ECA requirements.

ECA No. 5173- CKLQN8 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.

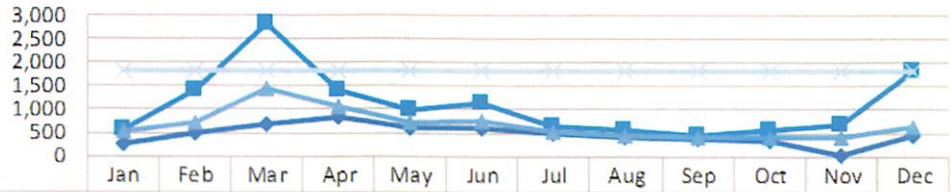
The Environmental Compliance Approvals require that everything practicable be undertaken to operate the Sewage Treatment Plant so that the annual average daily influent is within the Rated Capacity. The Rated Capacity of the Tweed Sewage Lagoons is 1,815m^3/day and the 2022 annual average daily influent flow was 670.53 m^3/day or 36.9% of the Rated Capacity. The total Influent flow in 2022 was 244,745 m^3.

Graph 1: 2022 Influent Monthly Flow Totals



	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Influent Flow (m3)	16,481	20,420	44,921	32,252	22,157	22,746	16,210	13,319	12,040	12,533	12,041	19,625

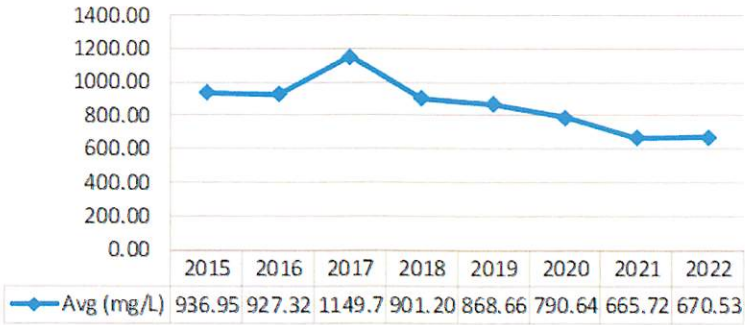
Graph 2: 2022 Influent Daily Minimum, Maximum and Average Flows



	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Min (m3/day)	240	482	663	842	582	578	463	401	374	323	17	447
Max (m3/day)	577	1,389	2,802	1,407	976	1,119	635	542	436	542	664	1,822
Avg(m3/day)	532	729	1,449	1,075	715	758	523	430	401	404	401	633
Rated Capacity (m3)	1815	1815	1815	1815	1815	1815	1815	1815	1815	1815	1815	1815

The Maximum rated capacity was exceeded in the reporting year 2022, however the Daily Annual Average remained under the rated capacity.

Graph 3: 2015 – 2022 Historical Influent Flows for the Tweed Sewage Lagoons



Based on the historical flows from 2015 to 2022 the total influent flow for the Tweed Sewage Lagoons has maintained a steady downward trend with a slight peak in 2017.

Table 1 reviews the historical trend of the influent sewage characteristics for the Tweed Sewage Lagoons, as required by Environmental Compliance Approval Condition 11(4)(a) of ECA No. 5173- CKLQN8.

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

Year	BOD5 (mg/L)	TSS (mg/L)	Phosphorus (mg/L)	TKN (mg/L)
2015	169.69	179.23	2.63	---
2016	121.83	184.58	2.88	25.82
2017	89.17	130.33	1.80	19.40
2018	144.20	206.73	2.77	23.81
2019	115.00	247.17	2.56	25.35
2020	116.92	167.83	2.14	21.56
2021	180.04	380.97	2.87	26.33
2022	131.29	233.04	3.19	27.82

Table 1 shows the Biochemical Oxygen Demand, Total Suspended Solids and Total Phosphorus annual average has maintained a steady trend from 2017-2022.

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 ECA No. 3047-BXASWW issued on April 21st, 2021.

Sample Results

ECA No. 5173- CKLQN8 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 Tweed Sewage Lagoons

Year	BOD (mg/L)	TSS (mg/L)	Phosphorus (mg/L)	TKN (mg/L)
2015	--	--	--	--
2016	--	--	--	--
2017	--	--	--	--
2018	--	--	--	--
2019	--	--	--	--
2020	--	--	--	--
2021	3590	17265	114	464
2022	--	--	--	--

Table 2 shows the Biochemical Oxygen Demand, Total Suspended Solids, Phosphorus, and TKN annual average for 2019-2022. Since there was no septage received in 2022, there is no data available to provide. Previous to the issuance of ECA No. 3047-BXASWW issued on April 21st, 2021 there were no sampling parameters for septage thus there is little historical data available for comparison.

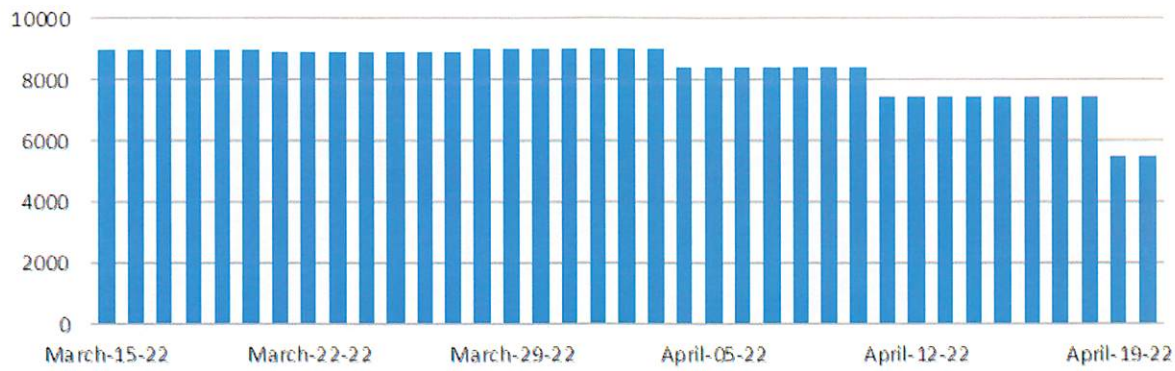
ECA No. 5173- CKLQN8 Condition 11(4)(b)

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;

2022 Spring Lagoon Discharge

The 2022 spring discharge commenced on March 15th, 2022 and was terminated on April 20th, 2022. 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 309,694m^3 was discharged during the 37 day discharge period. The Spring 2022 discharge remained in compliance with ECA No. 3047-BXASWW which was issued in April 21st, 2021 and remained the regulating document until the issuance of ECA No. 5173- CKLQN8 issued on November 1st, 2022.

Graph 4: 2022 Spring Discharge Effluent Flow Totals



All analytical effluent concentration results were below the maximum concentrations as specified in the facility ECA No. 3047-BXASWW which remained in effect for the 2022 Spring discharge as the ECA No.

5173- CKLQN8 did not come into effect until November 1st, 2022. A summary of the discharge data is provided in a table below.

Table 3: 2022 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)	Compliant (Y/N)	Average Effluent Loading Concentration **Limit** (kg)	Average Effluent Loading Concentration (kg)	Compliant (Y/N)
$CBOD_5$	**25.0**	20.0	3.25	Y	8,168	784.22	Y
Total Suspended Solids	**25.0**	20.0	6.66	Y	8,168	1,506.61	Y
Total Phosphorus	**0.30**	0.25	0.04	Y	98	9.04	Y
Total Ammonia Nitrogren	**10.0 (Spring)**	8.0 **(Spring)**	3.46	Y	3,267 **(Spring)**	782.71	Y
pH	**6.0-9.5**	6.5-8.5	8.10-8.20	Y			
Acute Lethality	**50%**	50%	0%	Y			

The results in Table 3 show that the annual average concentrations of $cBOD_5$, Total Suspended Solids, Total Phosphorus, Acute Lethality and the annual average effluent waste loadings were in compliance with ECA ECA No. 5173- CKLQN8 during the 2022 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 to no impact on the receiving stream.

Table 4: 2022 Spring Discharge Upstream & Downstream Results		
Parameters	Average Spring Concentration- **Upstream** (mg/L)	Average Spring Concentration- **Downstream** (mg/L)
$CBOD_5$	4.00	4.00
Total Suspended Solids	3.50	4.33
Total Phosphorus	0.04	0.03

2022 Fall Lagoon Discharge

The 2022 Fall discharge commenced on November 2nd, 2022 and was terminated on December 1st, 2022. 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 148,890m^3 was discharged during the 30 day discharge period. The Fall 2022 discharge remained in compliance with ECA No. 5173- CKLQN8 which was issued on November 1st, 2022.

Graph 4: 2022 Fall Discharge Effluent Flow Totals

All analytical effluent concentration results were below the maximum concentrations as specified in the facility ECA No. 5173- CKLQN8 which came into effect for the 2022 Fall discharge upon issuance on November 1st, 2022. A summary of the discharge data is provided in a table below.

Table 5: 2022 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)	Compliant (Y/N)	Average Effluent Loading Concentration **Limit** (kg/d)	Average Effluent Loading Concentration (kg/d)	Compliant (Y/N)
$CBOD_5$	**25.0**	20.0	2.77	Y	8,168	458.25	Y
Total Suspended Solids	**25.0**	20.0	3.55	Y	8,168	587.28	Y
Total Phosphorus	**0.30**	0.25	0.03	Y	98	4.96	Y
Total Ammonia Nitrogen	**8.0 (Fall)**	6.0 **(Fall)**	1.6	Y	2,614 **(Fall)**	264.69	Y
pH	**6.0-9.5**	6.5-8.5	8.10-8.20	Y			
Acute Lethality	**50%**	50%	0%	Y			

The results in Table 5 show that the annual average concentrations of $cBOD_5$, Total Suspended Solids, Total Phosphorus, Acute Lethality and the annual average effluent waste loadings were in compliance with ECA No. 5173- CKLQN8 during the 2022 Fall Seasonal Discharge.
Table 6 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 6, the lagoon discharge has little to no impact on the receiving stream.

Table 6: 2022 Fall Discharge Upstream & Downstream Results		
Parameters	Average Spring Concentration- **Upstream** (mg/L)	Average Spring Concentration- **Downstream** (mg/L)
$CBOD_5$	6.20	4.00
Total Suspended Solids	2.00	2.40
Total Phosphorus	0.03	0.03

Summary of Effluent Monitoring and Recording Results

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

ECA No. 5173- CKLQN8 Schedule D 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 eight (8) effluent samples were collected during the fall discharge period. These sampling requirements include those of ECA No. 3047-BXASWW which was in place for the Spring 2022 discharge as the newly issued ECA No. 5173- CKLQN8 was not formally received until November 1st, 2022.

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
Hydrogen Sulphide	Grab*	Once

*ECA No.3047-BXASWW and ECA No. 5173- CKLQN8 state 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. 3047-BXASWW and ECA No. 5173- CKLQN8 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
Dissolved Oxygen	Grab	Five per discharge season
Hydrogen Sulphide (if odour is present)	Grab	Five per discharge season

Table 11: Acute Lethality - Minimum Sampling Schedule		
Parameters	**Sample Type**	**Minimum Frequency**
Acute Lethality: Field pH, un-ionized ammonia, Acute lethality to Rainbow Trout and Daphnia magna	Grab*	Once at the start of each 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. 3047-BXASWW and ECA No. 5173- CKLQN8 Condition 9 (Schedule D).

ECA No. 5173- CKLQN8 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 12: 2022 Lagoon Operational Challenges	
Challenges	*Corrective Actions*
No Operating Challenges experienced for the reporting period	N/A

ECA No. 5173- CKLQN8 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	103
Operational Maintenance Work Orders Completed	27
Capital Maintenance Work Orders Completed	9

Capital projects are listed and provided to the Municipality of Tweed 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 Diesel Inspection
• Annual Wet Well Clean-outs
• Annual Flow Meter Calibrations
• Commissioning of Tweed Lagoon Third Cell

ECA No. 5173- CKLQN8 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. 5173- CKLQN8 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: June 7, 2022
Work Performed By: Tower Electronics Inc.

ECA No. 5173- CKLQN8 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 13: Efforts Made to Meet the Effluent Objectives of Condition 6
Sampling effluent as per ECA
Visually inspecting effluent when performing rounds. during spring/fall discharge
Ensuring correct alum dosage
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. 5173- CKLQN8 Condition 11(4)(h)

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

Tweed Lagoon		
Year	**Measured Volume of Sludge Accumulated (5 year intervals) (m^3)**	**Estimated Volume** (=Total influent flow*0.3% + previous estimated sludge volume)
2021		9,319
2022		10,053

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

In 2008 12,880m^3 of sludge was hauled offsite from the cells of the Tweed Lagoons. The Tweed Sewage Lagoons has approximately 10,053m^3 of sludge remaining in the existing cells.

ECA No. 5173- CKLQN8 Condition 11(4)(i)

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

During the 2022 reporting period there was no community complaints received for the Tweed Sewage Lagoons.

ECA No. 5173- CKLQN8 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 2022 reporting period there was no bypass, spills, other situations outside normal operating conditions, or abnormal discharge events for the Tweed Lagoon.

No. 5173- CKLQN8 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 2022 there were no Pre-Authorized Modifications to Municipal Sewage Works per the Limited Operational Flexibility- Protocol as per ECA No. 5173- CKLQN8 Condition 11(4)(j) .

Table 14: Summary of Modification to Sewage Works- Summary of Modifications	
Equipment	**Emergency Operational Modification**
Not Applicable for 2022	

ECA No. 5173- CKLQN8 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 2022 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 2022 reporting period for the Tweed 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 2022, the Tweed Sewage Lagoons deposited approximately 458,584 m^3 of seasonal effluent volumes.

The Monthly Monitoring Reports (due 14 days after the end of each quarter) were submitted to Environment Canada as required. The Tweed Sewage Lagoons met all of the quality standards in 2022.

Monitoring Report

Effluent Monitoring Data: *Tweed Wastewater Treatment Lagoon*

System Type: Intermittent **Reporting Period**: Annually **Avg Daily Effluent**: 1,256

Averaging Period: Annually **Reporting Period**: January - December **Reporting Year**: 2022

Was effluent deposited in this reporting period? Yes

For each month indicated, was effluent deposited?

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

# of days effluent was deposited? (days)	Total Volume of Effluent deposited? (m^3)	Average CBOD (mg/L)	Average SS (mg/L)
		Limits	
		25	25
67	458,584	3.05	5.33

Performance Report for the Consolidated Linear Infrastructure (CLI) Tweed Sewage Collection System

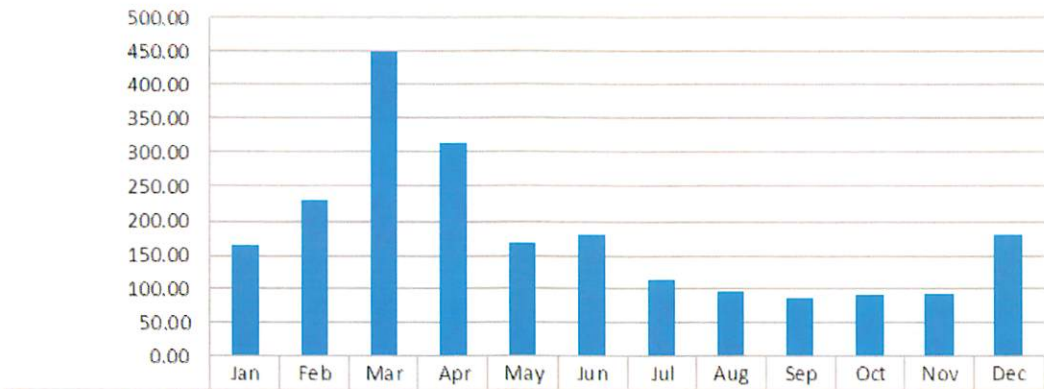
During the reporting period of 2022, the Environmental Compliance Approval (ECA) No. 6083-BZEH79 for the Tweed Jamieson and River Street Pumping Stations was issued April 21st, 2022 and the CLI ECA No. 168-W601 was issued November 10th, 2022. The CLI ECA No. 168-W601 satisfies all the requirements of ECA No. 6083-BZEH79 and thus the 2022 Annual Report will be written under the CLI ECA No. 168-W601 requirements.

CLI ECA No. 168-W601 Schedule E 4.6.3

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

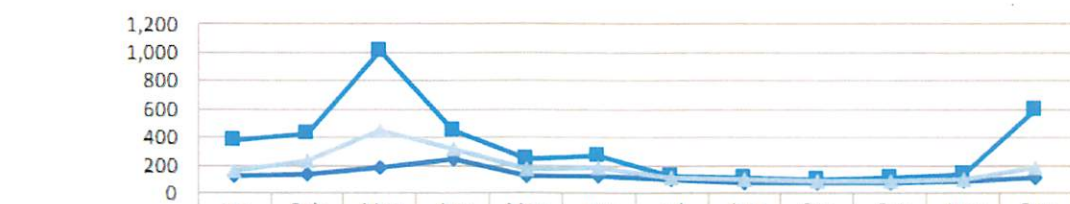
The Tweed Sewage Collection System is composed of the Jamieson Sewage Pumping Station and the River St., Pumping Station. The graphs below display the monitoring data for both sewage pumping stations for the reporting year 2022.

Graph 5: 2022 Jamieson SPS Influent Monthly Flow Totals



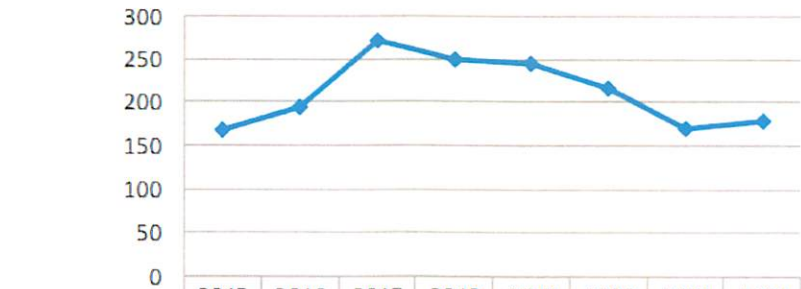
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Influent Flow (m3)	161.90	228.46	452.35	313.03	165.35	177.30	112.26	94.58	84.67	90.77	93.30	177.48

Graph 6: 2022 Jamieson SPS Influent Monthly Minimum, Maximum and Average Flows



	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Min (m3/day)	124	132	188	239	118	123	103	79	71	75	82	115
Max (m3/day)	383	430	1,015	446	240	268	126	107	102	109	139	592
Avg(m3/day)	162	228	452	313	165	177	112	95	85	91	93	177

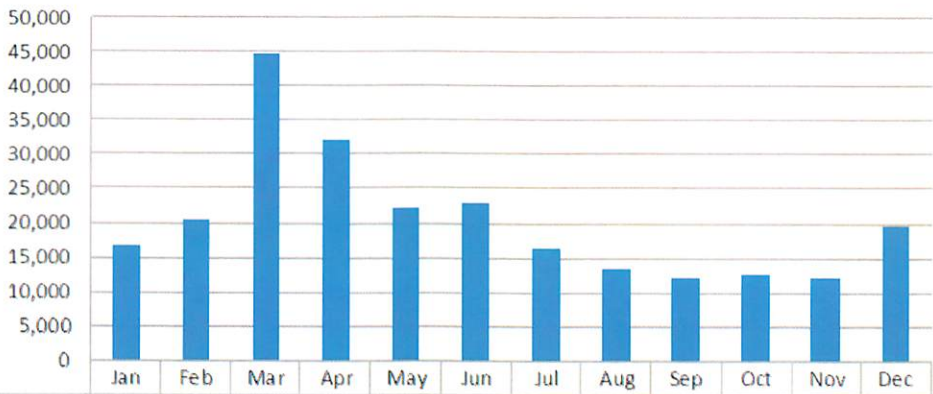
Graph 7: 2015 – 2022 Historical Influent Flows for the Jamieson SPS



	2015	2016	2017	2018	2019	2020	2021	2022
Avg (mg/L)	168	195	273	249	246	217	171	179

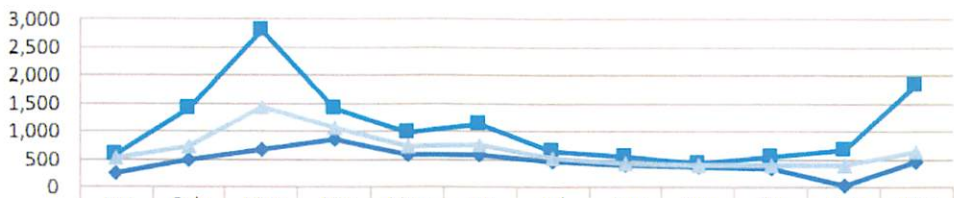
Based on the historical flows from 2015 to 2022 the total influent flow for the Jaimeson Sewage Pumping Station has maintained a steady downward trend with a slight peak in 2017 and 2022.

Graph 8: 2022 River St SPS Influent Monthly Flow Totals



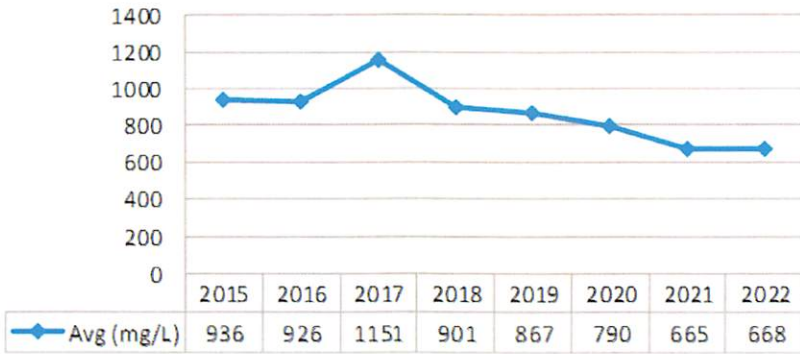
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Influent Flow (m3)	16,481	20,420	44,921	32,252	22,157	22,746	16,210	13,319	12,040	12,533	12,041	19,625

Graph 9: 2022 River St SPS Influent Daily Minimum, Maximum and Average Flows



	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Min (m3/day)	240	482	663	842	582	578	463	401	374	323	17	447
Max (m3/day)	577	1,389	2,802	1,407	976	1,119	635	542	436	542	664	1,822
Avg(m3/day)	532	729	1,423	1,075	715	758	523	430	401	404	401	633

Graph 10: 2015 – 2022 Historical Influent Flows for the River St SPS



Based on the historical flows from 2015 to 2022 the total influent flow for the Tweed River St Pumping Station has maintained a steady downward trend with a slight peak in 2017.

CLI ECA No. 168-W601 Schedule E 4.6.4

Includes a summary 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 15: 2022 Hwy#7 and McDonald Pumping Station Operational Challenges	
Challenges	*Corrective Actions*
Not Applicable for 2022	

CLI ECA No. 168-W601 Schedule E 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

Table 16: Jamieson and River Street SPS - Flow Meter Calibration Results – 2022				
Flow Meter Description and Location		Date of Calibration Report	Tag ID	Passed Calibration Y/N
Flowmeter Raw Sewage	Jamieson SPS	June 6 2022	A605EC16000	Y
Flowmeter Raw Sewage	River Street SPS	June 6 2022	193014	Y
Chart Recorder Flow/Wet Well	River Street SPS	June 6 2022	172131	Y

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	0
Operational Maintenance Work Orders Completed	2
Capital Maintenance Work Orders Completed	1

Capital projects are listed and provided to the Municipality of Tweed 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 Calibration
- Annual Diesel Inspection

CLI ECA No. 168-W601 Schedule E 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.

During the 2022 reporting period there was no community complaints received for the Tweed Jamieson and River Street Pumping Stations.

CLI ECA No. 168-W601 Schedule E 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

In the reporting year 2022 there were no Pre-Authorized Modifications to Municipal Sewage Works per the Limited Operational Flexibility- Protocol as per ECA No. 6083-BZEH79 Condition 8(3)(f).

Table 17: Summary of Modification to Sewage Works- Summary of Modifications	
Equipment	**Emergency Operational Modification**
Not Applicable for 2022	

CLI ECA No. 168-W601 Schedule E 4.6.8

Includes a summary of all Collection System Overflow(s) and Spill(s) of Sewage, including:

A) Dates
B) Volumes & 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;
E) Any adverse impact(s) and corrective actions, if applicable

During the 2022 reporting period there was a spill at the River St., Pumping Station in the Tweed Sewage Collection System on March 1st. The small leak was located at the pumping station on March 3rd. The leak occurred while the pump was running. Approximately 5000L of raw sewage was released. The location of the spill was repaired on March 3rd, 2022. Mumby Septic was brought on-site with a vacuum truck to

remove any residual sewage. This spill occurred prior to the issuance of the CLI ECA #168-W601. Spill Notification report provided in Appendix III.

Lab results from March 3rd, the discovery of the leak:

Date	*Parameter*	*Results*
March 3rd, 2022	BOD5	159 mg/L
	TSS	329 mg/L
	Phosphorus	2.68 mg/L
	pH	7.16

CLI ECA No. 168-W601 Schedule E 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.

During the 2022 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 2022 reporting period for the Tweed Jamieson and River Street Pumping Stations.

Appendix I

Annual Summary
for the
Tweed Sewage Lagoons

2022

Ontario Clean Water Agency
Agence Ontarienne Des Eaux

Performance Assessment Report

From 1/1/2022 to 12/31/2022

5062 TWEED WASTEWATER TREATMENT LAGOON 120000952

	1 / 2022	2/ 2022	3/ 2022	4/ 2022	5/ 2022	6/ 2022	7/ 2022	8/ 2022	9/ 2022	10/ 2022	11/ 2022	12/ 2022	<--Total-->	<--Avg-->	<--Max-->	<-Criteria->
Flows																
Raw Flow: Total - Raw m³/d	16,481.00	20,420.00	44,921.00	32,252.00	22,157.00	22,746.00	16,210.00	13,319.00	12,040.00	12,533.00	12,041.00	19,625.00	244,745.00			0.00
Raw Flow: Avg - Raw m³/d	531.65	729.29	1,449.06	1,075.07	714.74	758.20	522.90	429.65	401.33	404.29	401.37	633.06		670.53		
Raw Flow: Max - Raw m³/d	577.00	1,389.00	2,802.00	1,407.00	976.00	1,119.00	635.00	542.00	436.00	542.00	664.00	1,822.00			2,802.00	0.00
Raw Flow: Count - Raw m³/d	31.00	28.00	31.00	30.00	31.00	30.00	31.00	31.00	30.00	31.00	30.00	31.00	365.00			0.00
Eff. Flow: Total - Effluent Combined m³/d	0.00	0.00	152,592.00	157,102.00	0.00	0.00	0.00	0.00	0.00	0.00	143,927.00	4,963.00	458,584.00			0.00
Eff. Flow: Avg - Effluent Combined m³/d	0.00	0.00	8,976.00	7,855.10	0.00	0.00	0.00	0.00	0.00	0.00	4,963.00	4,963.00		6,844.54		
Eff. Flow: Max - Effluent Combined m³/d	0.00	0.00	9,052.00	9,052.00	0.00	0.00	0.00	0.00	0.00	0.00	4,963.00	4,963.00			9,052.00	0.00
Eff Flow: Count - Effluent Combined m³/d	0.00	0.00	17.00	20.00	0.00	0.00	0.00	0.00	0.00	0.00	29.00	1.00	67.00			0.00
Carbonaceous Biochemical Oxygen Demand: CBOD																
Eff: Avg cBOD5 - Effluent Combined mg/L	0.00	0.00 <	2.67	3.83	0.00	0.00	0.00	0.00	0.00	0.00	2.75	3.00		< 3.05	< 3.83	25.00
Eff: # of samples of cBOD5 - Effluent Combined	0.00	0.00	6.00	6.00	0.00	0.00	0.00	0.00	0.00	0.00	8.00	1.00	21.00			0.00
Loading: cBOD5 - Effluent Combined kg/d	0.000	0.000 <	23.936	30.111	0.000	0.000	0.000	0.000	0.000	0.000	13.648	14.889		< 20.65	< 30.11	0.000
Biochemical Oxygen Demand: BOD5																
Raw: Avg BOD5 - Raw mg/L	110.00	80.00	131.50	95.00	71.00	71.00	134.00	46.00	316.00	277.00	118.00	126.00		131.29	316.00	0.00
Raw: # of samples of BOD5 - Raw	1.00	1.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	13.00			0.00
Total Suspended Solids: TSS																
Raw: Avg TSS - Raw mg/L	131.00	197.00	222.50	120.00	144.00	141.00	228.00	137.00	400.00	667.00	211.00	198.00		233.04	667.00	0.00
Raw: # of samples of TSS - Raw	1.00	1.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	13.00			0.00
Eff: Avg TSS - Effluent Combined mg/L	0.00	0.00 <	6.83	6.50	0.00	0.00	0.00	0.00	0.00	0.00 <	3.63	3.00		< 5.33	< 6.83	25.00
Eff: # of samples of TSS - Effluent Combined	0.00	0.00	6.00	6.00	0.00	0.00	0.00	0.00	0.00	0.00	8.00	1.00	21.00			0.00
Loading: TSS - Effluent Combined kg/d	0.000	0.000 <	61.336	51.058	0.000	0.000	0.000	0.000	0.000	0.000 <	17.991	14.889		< 36.32	< 61.34	0.000
Percent Removal: TSS - Effluent Combined %	0.00	0.00	96.93	94.58	0.00	0.00	0.00	0.00	0.00	0.00	98.28	98.48			98.48	0.00
Total Phosphorus: TP																
Raw: Avg TP - Raw mg/L	2.33	3.18	2.31	1.91	1.67	1.75	2.98	1.98	5.66	7.30	4.22	2.99		3.19	7.30	0.00
Raw: # of samples of TP - Raw	1.00	1.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	13.00			0.00
Eff: Avg TP - Effluent Combined mg/L	0.00	0.00 <	0.04 <	0.04	0.00	0.00	0.00	0.00	0.00	0.00 <	0.03 <	0.03		< 0.04	< 0.04	0.50
Eff: # of samples of TP - Effluent Combined	0.00	0.00	6.00	6.00	0.00	0.00	0.00	0.00	0.00	0.00	8.00	1.00	21.00			0.00
Loading: TP - Effluent Combined kg/d	0.000	0.000 <	0.374 <	0.301	0.000	0.000	0.000	0.000	0.000	0.000 <	0.149 <	0.149		< 0.24	< 0.37	0.000
Percent Removal: TP - Effluent Combined %	0.00	0.00	98.19	97.99	0.00	0.00	0.00	0.00	0.00	0.00	99.29	99.00			99.29	0.00
Nitrogen Series																
Raw: Avg TKN - Raw mg/L	19.70	32.30	16.60	14.60	18.30	15.90	26.30	21.50	46.30	57.20	36.90	28.20		27.82	57.20	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 - Effluent Combined mg/L	0.00	0.00	3.42	3.52	0.00	0.00	0.00	0.00	0.00	0.00 <	1.34	3.70		2.67	3.70	8.00
Eff: # of samples of TAN - Effluent Combined	0.00	0.00	6.00	6.00	0.00	0.00	0.00	0.00	0.00	0.00	8.00	1.00	21.00			0.00
Loading: TAN - Effluent Combined kg/d	0.000	0.000	30.668	27.624	0.000	0.000	0.000	0.000	0.000	0.000 <	6.638	18.363		20.82	30.67	0.000
Eff: Avg NO3-N - Effluent Combined mg/L	0.00	0.00	0.76	1.07	0.00	0.00	0.00	0.00	0.00	0.00 <	0.73	1.20		0.94	1.20	0.00
Eff: # of samples of NO3-N - Effluent Combined	0.00	0.00	6.00	6.00	0.00	0.00	0.00	0.00	0.00	0.00	8.00	1.00	21.00			0.00
Eff: Avg NO2-N - Effluent Combined mg/L	0.00	0.00 <	0.03	0.08	0.00	0.00	0.00	0.00	0.00	0.00 <	0.07	0.14		< 0.08	< 0.14	0.00
Eff: # of samples of NO2-N - Effluent Combined	0.00	0.00	6.00	6.00	0.00	0.00	0.00	0.00	0.00	0.00	8.00	1.00	21.00			0.00
Disinfection																
Eff: GMD E. Coli - Effluent Combined cfu/100mL	0.00	0.00	67.71	7.42	0.00	0.00	0.00	0.00	0.00	0.00	64.04	2,000.00				200.00
Eff: # of samples of E. Coli - Effluent Combined	0.00	0.00	6.00	6.00	0.00	0.00	0.00	0.00	0.00	0.00	8.00	1.00	21.00			0.00

Appendix II

Cell Content Lab Results
for the
Tweed Sewage Lagoons

2022

SGS Canada Inc.
P.O. Box 4300 - 185 Concession St.
Lakefield - Ontario - KOL 2HO
Phone: 705-652-2000 FAX: 705-652-6365

Works #: 120000952
Project : PO#017018

15-March-2022

OCWA-Trent Valley (Tweed Lagoon)
Attn : Amber Coupland

P.O. Box 20157, 131 St. Paul St.
Belleville, ON
K8N 5V1, Canada

Phone: 613-472-2131
Fax:

Date Rec. : 08 March 2022
LR Report: **CA13334-MAR22**

Copy: #1

CERTIFICATE OF ANALYSIS
Final Report

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Completed Date	4: Analysis Completed Time	5: Cell CelS-South Cell Contents
Sample Date & Time					08-Mar-22 10:20
Temperature Upon Receipt [°C]	---	---	---	---	9.0
Field pH [no unit]	---	---	---	---	7.8
Field Temperature [celcius]	---	---	---	---	2.2
Field Dissolved O2 [mg/L]	---	---	---	---	13.1
Carbonaceous Biochemical Oxygen Demand [(CBOD5) mg/L]	10-Mar-22	15:20	15-Mar-22	13:07	5
Total Suspended Solids [mg/L]	08-Mar-22	19:14	10-Mar-22	08:52	5
Phosphorus (total) [mg/L]	08-Mar-22	18:19	09-Mar-22	12:28	0.04
Ammonia+Ammonium (N) [as N mg/L]	09-Mar-22	16:19	10-Mar-22	13:18	1.6
Hydrogen Sulphide [mg/L]	10-Mar-22	11:24	11-Mar-22	09:09	< 0.02
Sulphide [mg/L]	10-Mar-22	11:24	11-Mar-22	09:09	< 0.02

Note: Hydrogen Sulphide (H2S) results(s) reported below reporting limit based on corresponding Sulphide analysis.

Carrie Greenlaw
Project Specialist,
Environment, Health & Safety

OnLine LIMS

00028301-49

SGS Canada Inc.
P.O. Box 4300 - 185 Concession St.
Lakefield - Ontario - KOL 2HO
Phone: 705-652-2000 FAX: 705-652-6365

Works #: 120000952
Project : PO#017018

20-October-2022

OCWA-Trent Valley (Tweed Lagoon)
Attn : Amber Coupland

Date Rec. : 14 October 2022
LR Report: **CA13545-OCT22**

P.O. Box 20157, 131 St. Paul St.
Belleville, ON
K8N 5V1, Canada

Copy: #1

Phone: 613-472-2131
Fax:

CERTIFICATE OF ANALYSIS

Final Report

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Completed Date	4: Analysis Completed Time	5: Cell CelS-South Cell Contents
Sample Date & Time					13-Oct-22 10:00
Temperature Upon Receipt [°C]	---	---	---	---	14.0
Field pH [no unit]	---	---	---	---	8.2
Field Temperature [celcius]	---	---	---	---	13.7
Field Dissolved O2 [mg/L]	---	---	---	---	11.2
Carbonaceous Biochemical Oxygen Demand [(CBOD5) mg/L]	14-Oct-22	17:35	19-Oct-22	16:12	< 4
Total Suspended Solids [mg/L]	17-Oct-22	17:38	19-Oct-22	09:17	4
Phosphorus (total) [mg/L]	18-Oct-22	15:20	19-Oct-22	12:34	0.03
Ammonia+Ammonium (N) [as N mg/L]	17-Oct-22	22:27	18-Oct-22	10:32	< 0.1
Hydrogen Sulphide [mg/L]	17-Oct-22	13:00	18-Oct-22	11:32	< 0.02
Sulphide [mg/L]	17-Oct-22	13:00	18-Oct-22	11:32	< 0.02

Note: Hydrogen Sulphide (H2S) results(s) reported below reporting limit based on corresponding Sulphide analysis.

Hawley Anderson

Hawley Anderson, Hon.B.Sc
Project Specialist,
Environment, Health & Safety

OnLine LIMS

0003090557

Appendix III

Spill Notification
for the
Tweed Sewage Lagoons

2022

Ontario Clean Water Agency
Agence Ontarienne Des Eaux

Kawartha-Trent Region
131 St. Paul Street PO Box 20157
Belleville, Ontario K8N 5V1
Tel: (613) 962-5454
Fax: (613) 962-1966www.ocwa.com

District Manager
Ministry of Environment and Climate Change
Trevor.Dagilis@ontario.ca

March 7th, 2022

Re: Notification of Spill – Tweed Lagoons

This is a written notification of Spill submitted in accordance with terms and conditions the Ontario Water Resources Act, Environmental Protection Act and the current Environmental Compliance Approval Number #047-BXASWW, Section 11(2).

This written notice confirms the verbal notifications provided to Blake Durner at the Spills Action Center on March 1, 2022, REF# 1-1N927K.

Details:

The spill that occurred on March 1, 2022 at the Tweed Lagoons, was located East of Alexander St. and North of the rail tracks due to the odour of sewage. It was determined that there was a small leak coming out of a joint when the pump was running. It is approximated that 5000L of partially treated sewage was released. OCWA Management Amber Coupland was notified on March 1, 2022 that there was a leak and the location was confirmed on March 3,2022. Mumby Septic was brought onsite with a vacuum truck to remove any residual sewage and the leak was repaired March 3, 2022.

If you have any questions or concerns, do not hesitate to contact me.

Sincerely,

Natalie Iezzi
Process and Compliance Technician

CC:

Gloria Raybone, CAO/Clerk-Treasurer, Municipality of Tweed
Amber Coupland, Sr. Operations Manager, OCWA
Sarah Young, Environmental Officer, MECP Belleville
Karen Lorente, Regional Hub Manager, OCWA
Wes Henneberry, Safety, Process & Compliance Manager, OCWA