

Carleton Place Wastewater System

Waterworks # 11000971

Annual Report

Prepared For: Town of Carleton Place

Reporting Period of January 1st – December 31st 2022

Issued: 2022-03-30

Revision: 0

Operating Authority:



This report has been prepared to meet the requirements set out in:

Document	Document #	Issue Date	Issue Number
Facility ECA	5001-7FZT4A	October 3 rd 2008	N/A
ECA for Municipal Sewage Collection System	172-W601	June 2 nd 2022	1

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1 Revision History

Date	Rev#	Revisions	Revised By
2023-03-28	0	Annual Report Issued	Alison O'Connor

2 Operations and Compliance Reliability Indices

Compliance Event	Details
Ministry of Environment Inspections	No MECP Inspection during the reporting period
Ministry of Labour Inspections	No MECP Inspection during the reporting period
Non-Compliance	# of Event: Three (3) - Details reference in report
Community Complaints	No community complaints during the reporting period
Spills	No spills during the reporting period
Overflows	No overflows during the reporting period
Bypass	No bypasses during the reporting period
Diversion (if applicable)	# of Events: Two (2) - Details reference in report

3 Process Description

The Carleton Place Water Pollution Control Plant (WPCP) is a conventional activated sludge plant with anaerobic digestion. The process consists of (include screening) consists of a grit removal system, two primary settling tanks, three 'storm' tanks for the purpose of tempering the affects of high flows during wet weather events, three biological aeration tanks, three secondary settling tanks, ultra violet disinfection system and lastly an anaerobic digester system complete with a sludge storage tank.

The Carleton Place WPCP is a Class 3 conventional activated sludge plant with anaerobic sludge digestion. Chemicals are added for phosphorus removal and alkalinity adjustment. Effluent is then UV disinfected prior to discharge to the Mississippi River.

Physical/Chemical tanks are available for use during high flows. For more details, see the Bypass, Overflow, Diversion section of this report.

Sludge at the WPCP is co- thickened and stabilized in a two stage digestion process. There is a centrifuge on-site but due to hydrogen sulphide issues the centrifuge is not in operation.

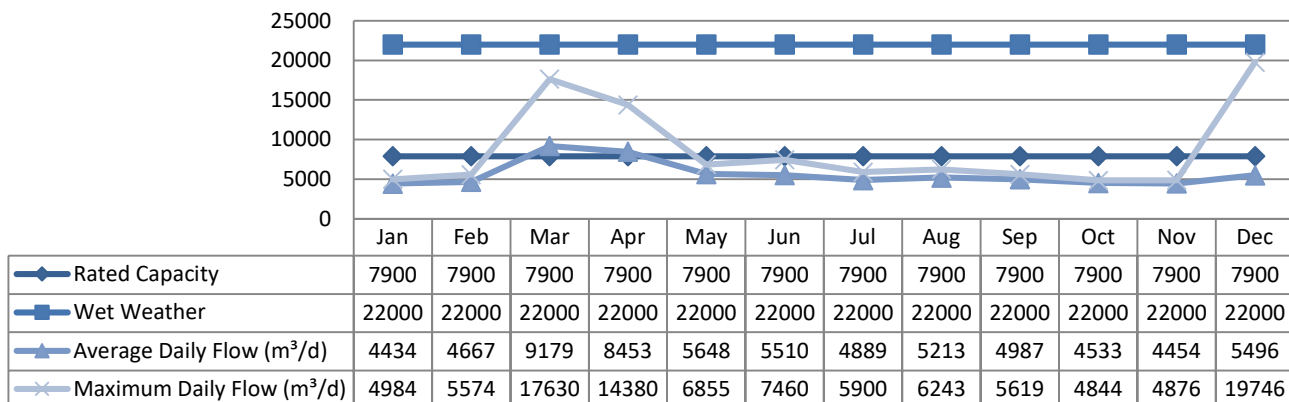
Septage can also be received at the plant and passed through the entire treatment process.

The Carleton Place WPCP is equipped with back-up power.

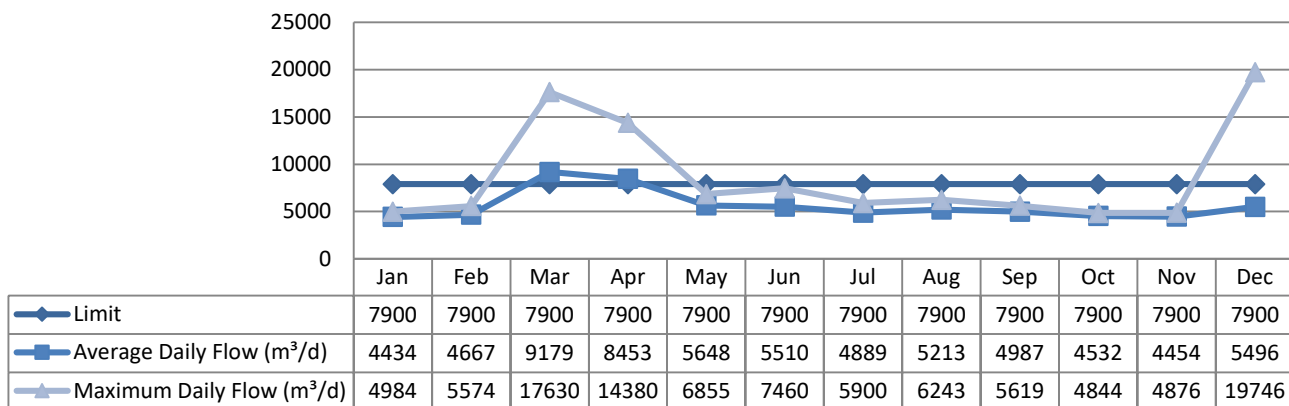
4 Treatment Flows

The annual average daily flow for 2022 was 5,622 m³/d, which represents 71% of the facility’s 7900 m³/d rated capacity.

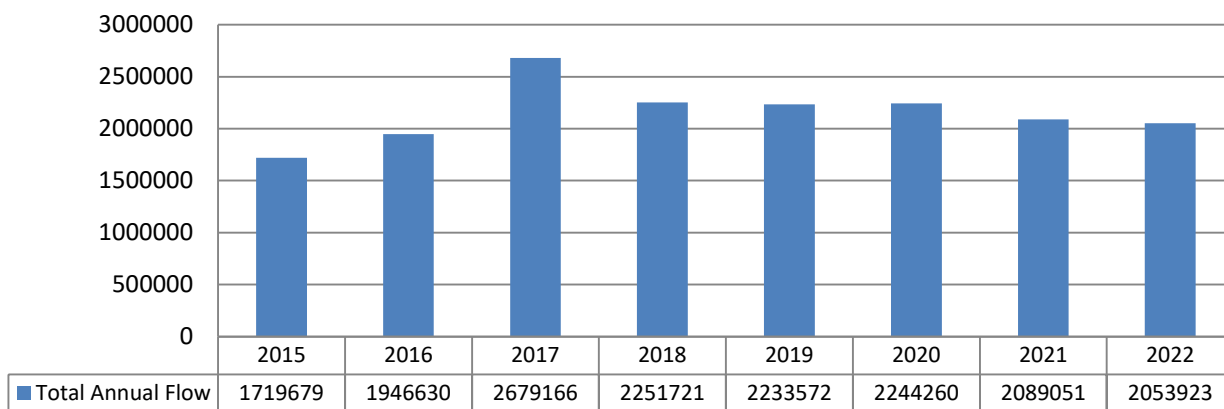
4.1 Raw Flow (m³/d)



4.2 Effluent Flow (m³/d)



4.2.1 Annual Comparison (m³)



4.3 Imported Sewage

Septage was not received in 2022 at the Carleton Place WPCP.

4.4 Returned Centrate

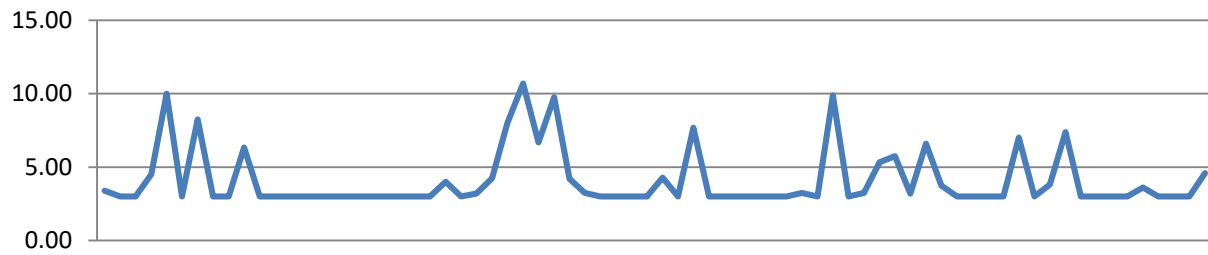
The centrifuge did not operate in 2022 at the Carleton Place WPCP.

5 Influent Quality

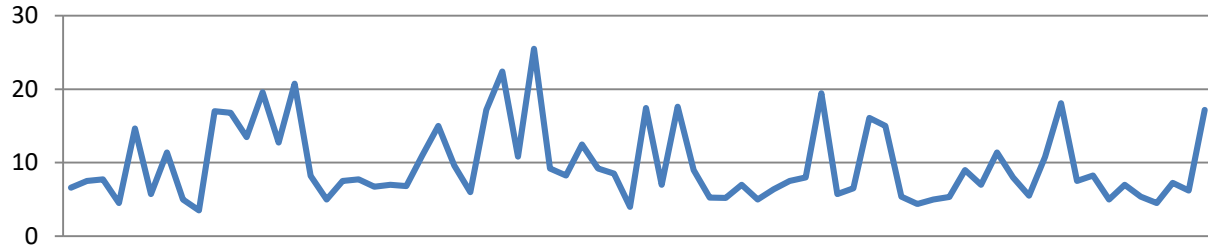
5.1 Raw Sewage

Year Average Trends for Raw Sewage Quality

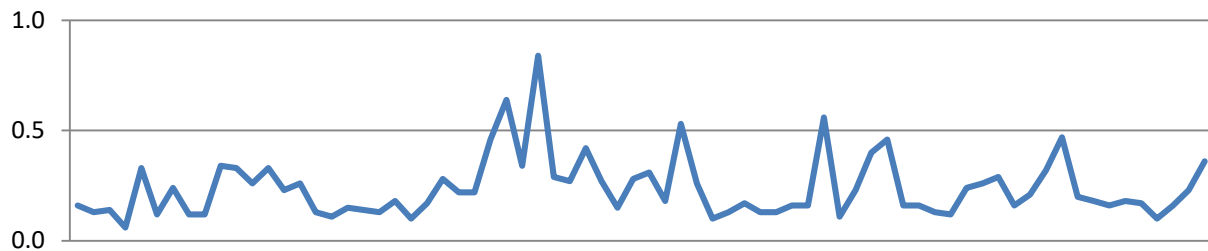
CBOD5



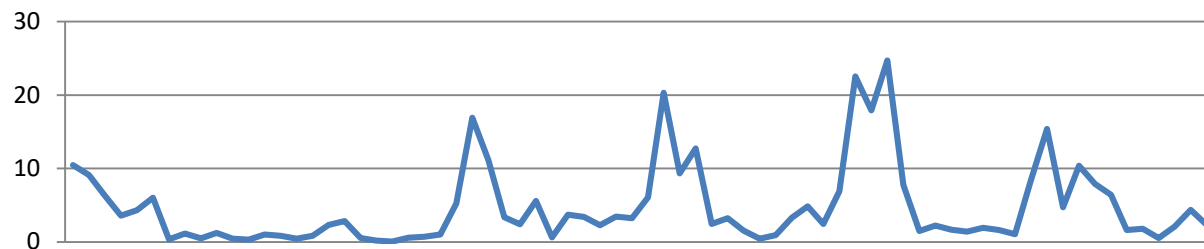
Total Suspended Solids



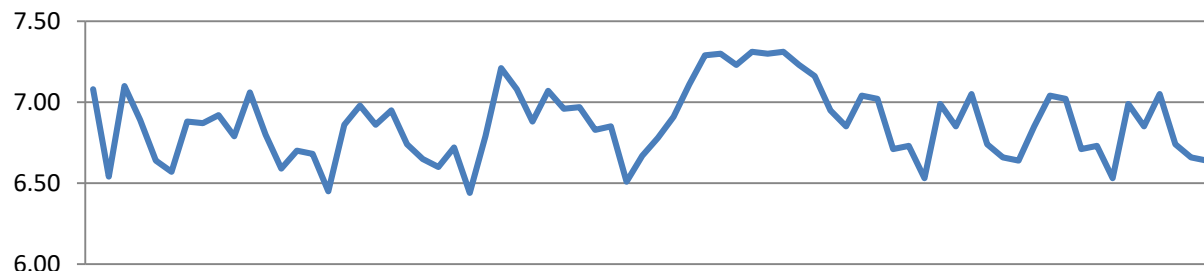
Total Phosphorus



Total Ammonia Nitrogen



pH



5.2 Imported Waste Quality

No septage received in 2022.

5.3 Centrate Quality

The centrifuge did not operate in 2022.

6 Effluent Quality

In 2022, the monthly average concentrations of the carbonaceous biochemical oxygen demand (CBOD₅) remained below the effluent objectives and limits outlined in the facility's ECA throughout the year. In addition, the effluent pH remained within the limits and objectives. The monthly average concentrations of the total suspended solids (TSS) exceeded the effluent objectives in March and December. However, TSS limits were not exceeded at any point throughout the reporting period. The monthly average concentrations of the total phosphorus (TP) remained under the facility's ECA objective and effluent limit. The monthly average concentrations of the total ammonia nitrogen (TAN) exceeded the facility's ECA objective and limit in June of 2022. The geometric mean density of *E. Coli* in the effluent exceeded the ECA objective in March and August 2022.

The Federal Government also regulates the effluent flow, the monthly average CBOD₅ and total suspended solids in the effluent under the Federal Fisheries Act. The results are submitted to Environment and Climate Change Canada's effluent regulatory reporting information system, under wastewater systems effluent regulations (WSER) on a quarterly basis.

Effluent results from the Carleton Place wastewater treatment facility for 2022 are tabulated in Appendix A of this report.

6.1 Effluent Quality Assurance and Control Measures Taken

This system is part of OCWA's Mississippi Cluster. The cluster is supported by the Eastern Regional Hub, and corporate resources. Operational Services are delivered by OCWA staff that live and work in the community. The systems are operated to meet compliance with applicable regulations. The system has comprehensive manuals detailing operations, maintenance, instrumentation, and emergency procedures. All procedures are treated as active documents and are updated as required. These documents are also part of OCWA's Quality & Environmental Management System.

The process is reviewed and maintained by certified operators. These operators complete in-house rounds and testing to monitor the process. All Sampling and analysis follow approved methods and protocols for sampling, analysis and recording as specified in the Ministry's Procedure F-10-1, "Procedures for Sampling and Analysis Requirements for Municipal and Private Sewage Treatment Works", the Ministry's publication, "Protocol for the Sampling and Analysis of Industrial/Municipal Wastewater" and the publication, "Standard Methods for the Examination of Water and Wastewater".

All final effluent samples collected during the reporting period to meet legislated sampling requirements are submitted to Caduceon Labs for analysis, with the exception of disinfection residuals and temperature. Caduceon Labs 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. The disinfection residuals and temperature parameters are analyzed in the field at the time of sample collection by certified operators, to ensure accuracy and precision of the results obtained.

OCWA uses several computer systems which include:

- Process Data Management (PDM)
 - This database program consolidates all operational data from a variety of sources including field data, online instrumentation, and electronic receipt of lab test results for reporting, tracking and analysis.
- Maximo – OCWA's Work Management System (WMS)
 - This program is used to track and schedule maintenance activities for all equipment in the system. It is also used to assign tasks for specific operational tasks.
- Wonderware (OUTPOST5)/SCADA
 - Wide-area SCADA system allows for process optimization and data logging, process trending, remote alarming.

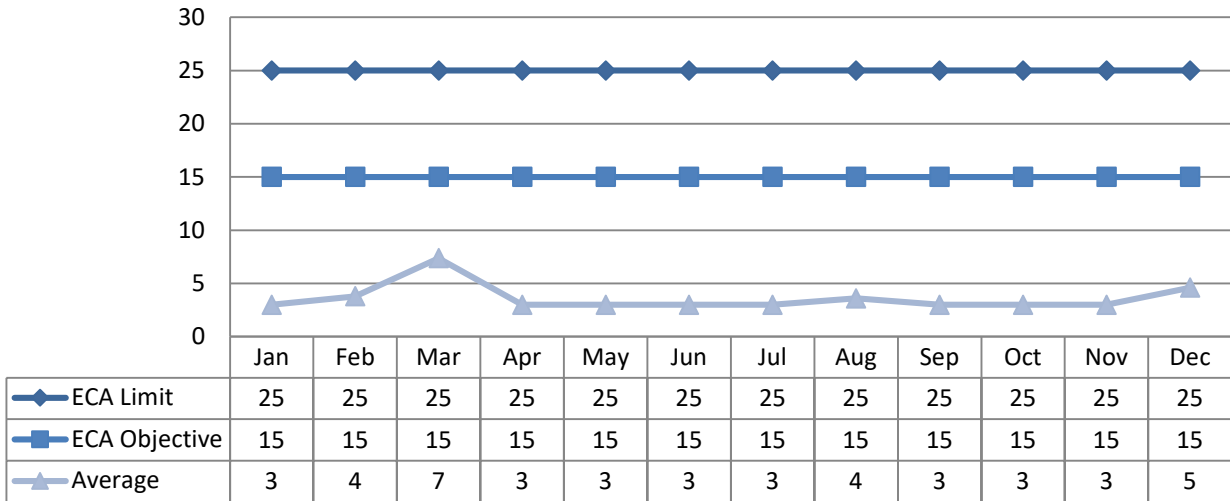
The operations team also has access to a network of operational compliance and process specialists to assist for emerging process issues. This aids in establishing additional control measures to ensure a quality effluent product.

Detailed individual sample results for both raw sewage and final effluent can be requested from the operating authority.

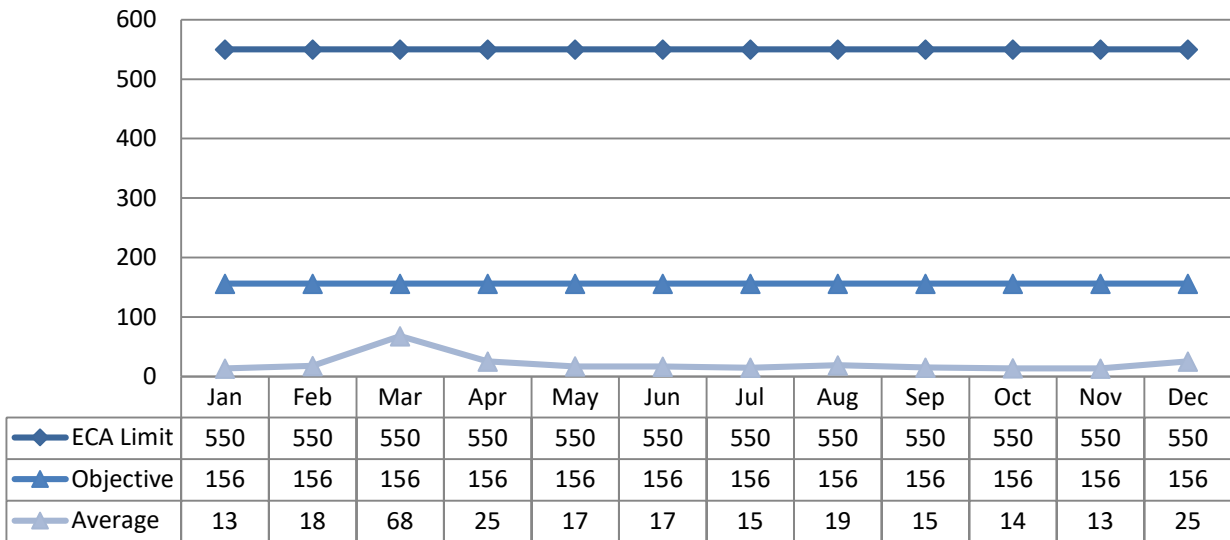
6.2 CBOD5

Compliance Limit and Objective for this parameter was MET.

6.2.1 Concentration (mg/L)



6.2.2 Loading (kg/d)

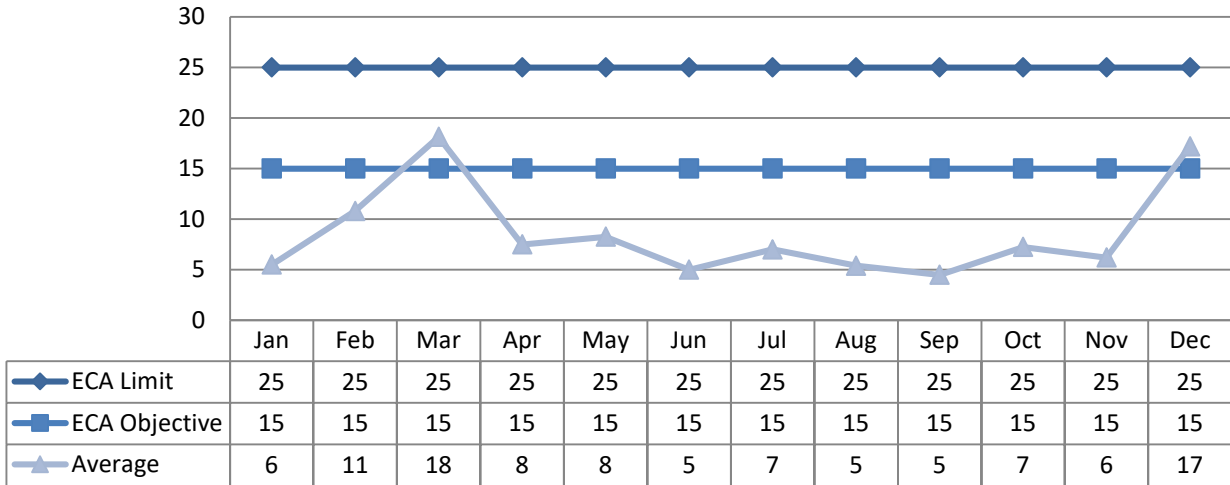


6.3 Total Suspended Solids

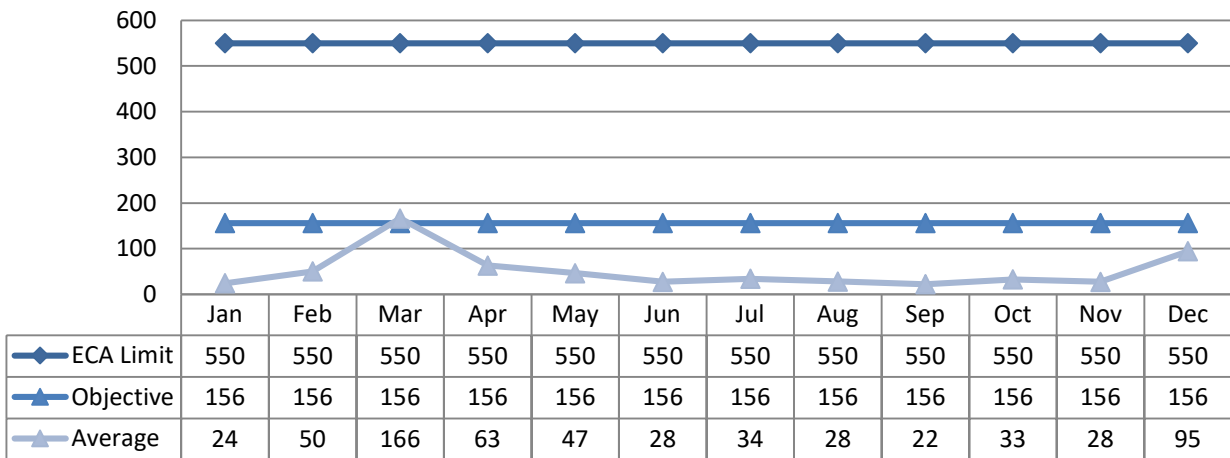
Compliance Limit for this parameter was MET.

Compliance Objective for this parameter was exceeded in March and December of 2022 due to high flows (heavy rain/snow melt).

6.3.1 Concentration (mg/L)



6.3.2 Loading (kg/d)

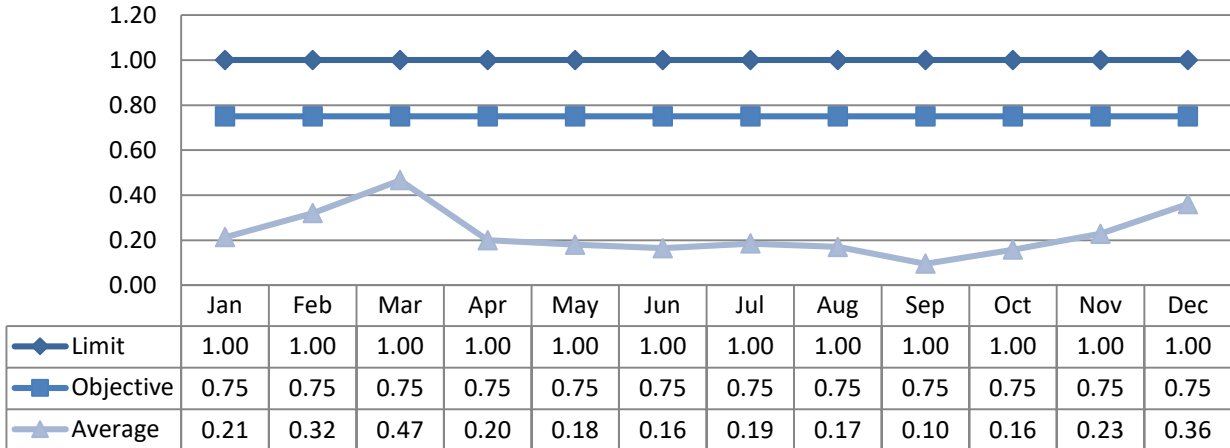


6.4 Total Phosphorus

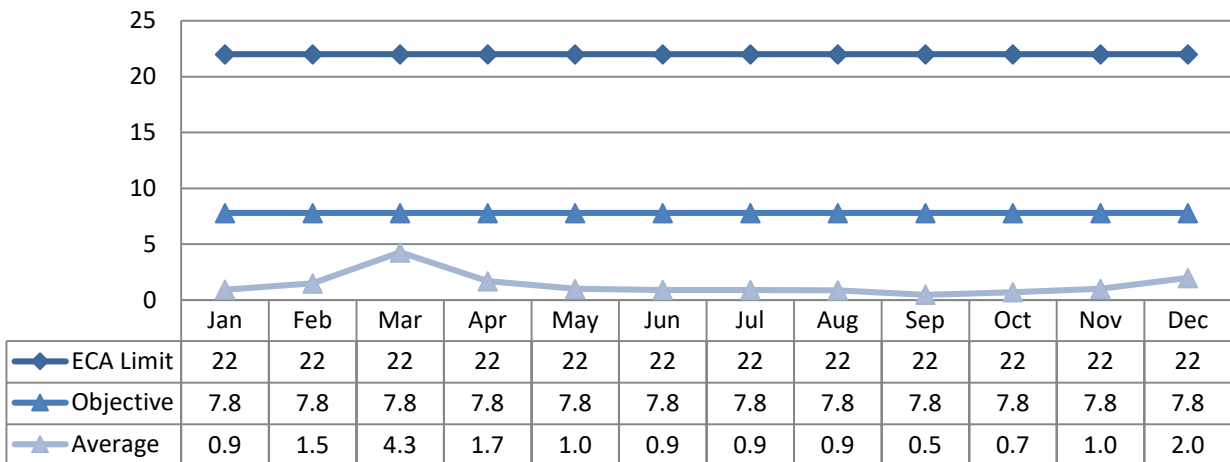
Compliance Limit for this parameter was MET

Compliance Objective for this parameter was MET

6.4.1 Concentration (mg/L)



6.4.2 Loading (kg/d)

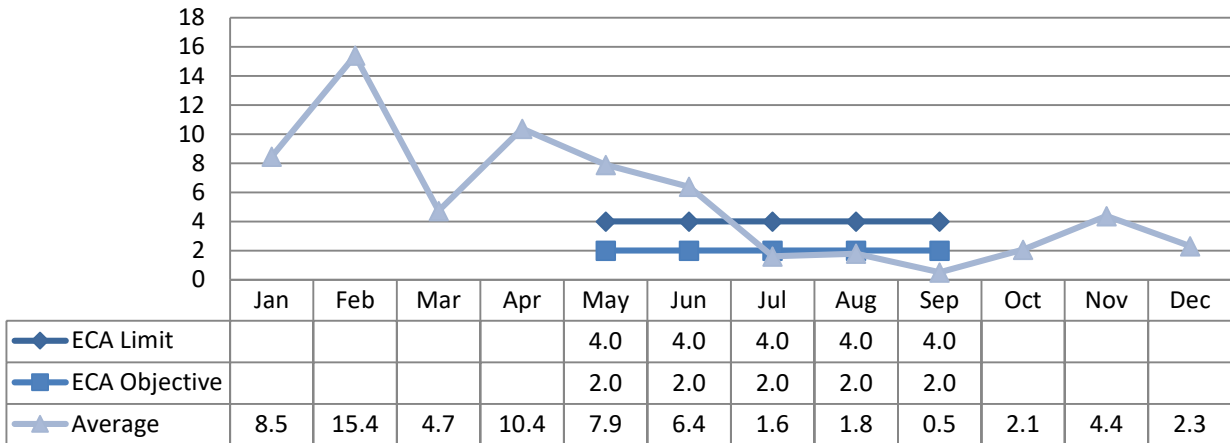


6.5 Total Ammonia Nitrogen

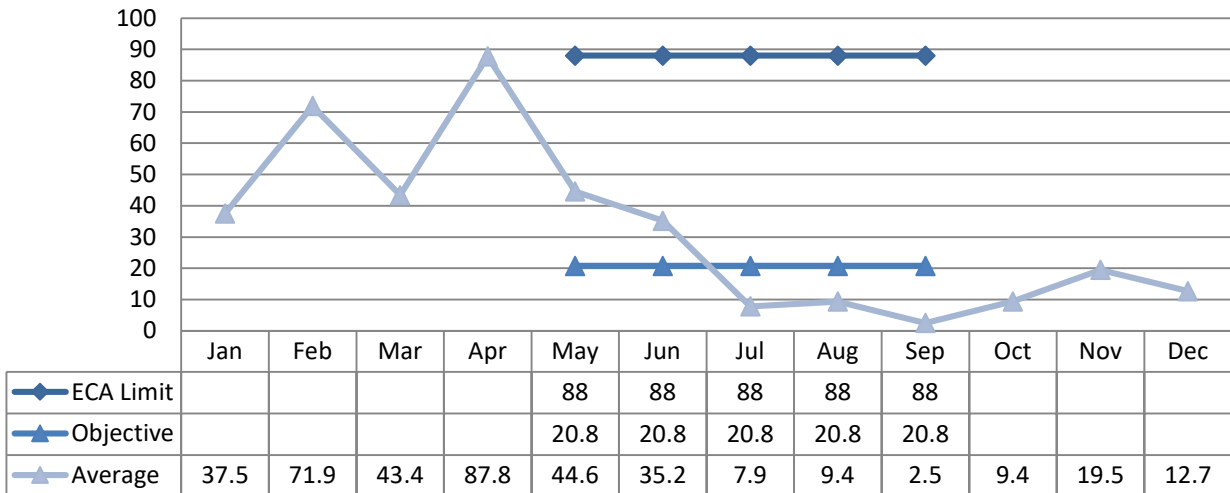
Compliance Limit and objective for this parameter was NOT MET only in June. See Operational Issues/Problems section of this report for details.

In May, compliance was MET as the monthly average is calculated for samples collected between May 15th and May 31st. The final effluent average was 3.84mg/L.

6.5.1 Concentration (mg/L) - Compliance Limit in effect from May 15 to September 30th



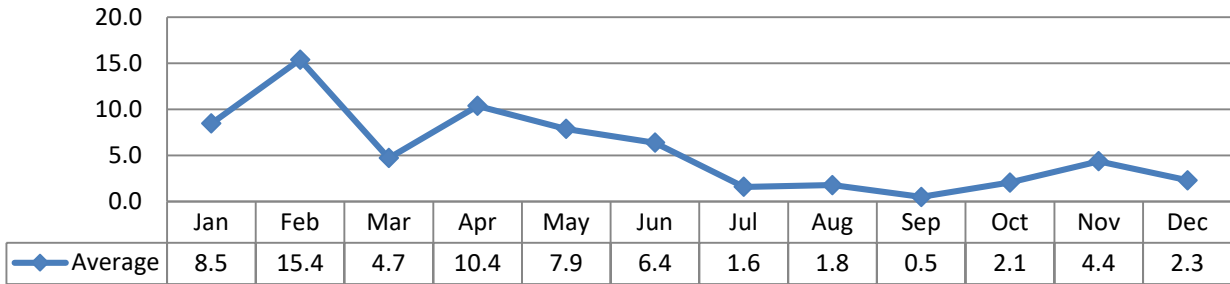
6.5.2 Loading (kg/d) - Compliance Limit in effect from May 15 to September 30



6.6 Un-Ionized Ammonia/Nitrogen/TKN

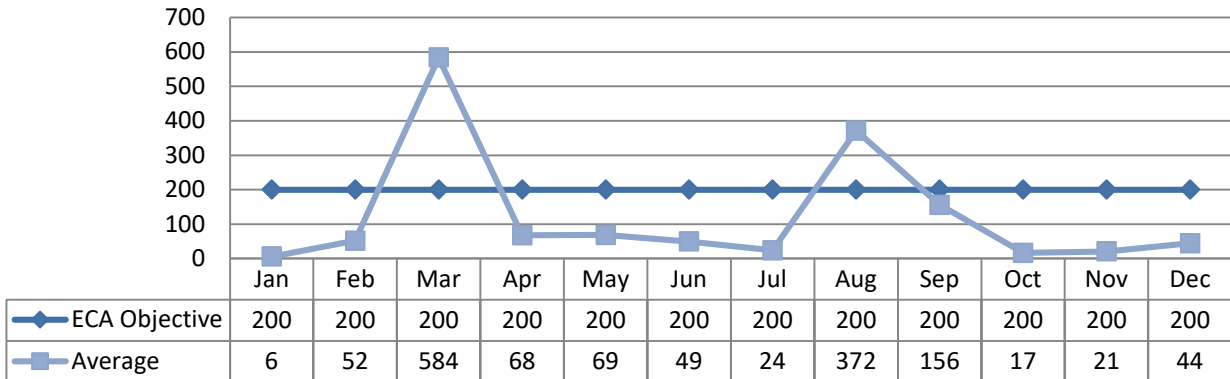
Compliance Limit for this parameter was MET

6.6.1 Concentration (mg/L)



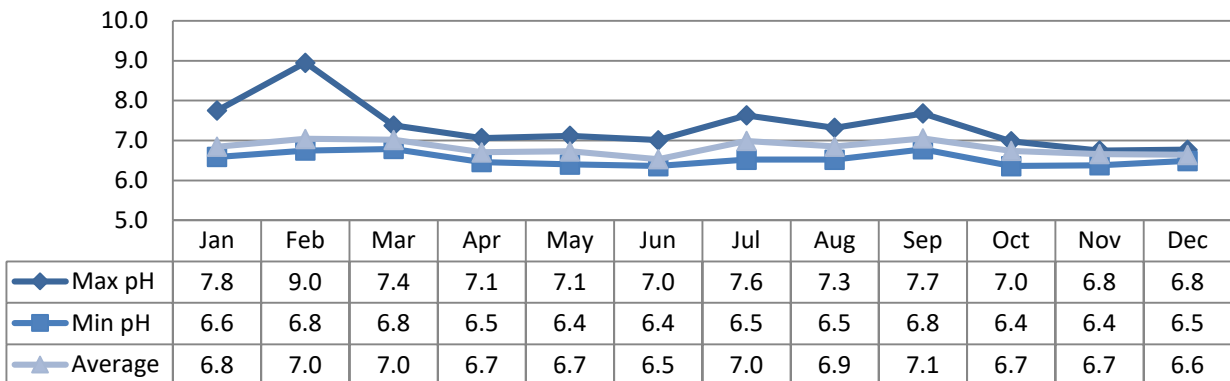
6.7 E-coli

Compliance Objective for this parameter was MET except for March and August. In March and August, there were severe weather events (snow melt/heavy rain fall) which lead to the objective exceedance.



6.8 pH

Compliance Limit for this parameter was MET. This parameter is to be maintained between 6.0 and 9.5 inclusively at all times.



6.9 Acute Lethality

There were four (4) samples collected in 2022 and tested for acute lethality (Rainbow Trout). The sampling is required both provincially and federally. Results are displayed as % mortality. An adverse result is a > 50% mortality rate.

Compliance Limit for this parameter was MET

Quarter	Rainbow Trout
1 st Quarter	0%
2 nd Quarter	0%
3 rd Quarter	0%
4 th Quarter	0%

7 Operating Issues/Problems

During the month of June 2022, the sludge storage facility was full due to wet weather conditions which rendered the fields unavailable for land application of sludge. Sludge was hauled from the facility on June 23rd, 24th, 27th and 28th this resulted in an immediate decrease in total ammonia. Additional samples were collected and submitted to the laboratory to ensure results continued to move in a downward trend. It should be noted that on June 9th, samples were collected for Acute Lethality Rainbow Trout (RBT) analysis. The sample results showed 0% Mortality in 100% Concentration (%) in RBT.

Required actions as per ECA number 5001-7FZT4A, Special Condition – Contingency Measures 11 (2). requires to an Independent Consulting Engineer be hired to review and determine the cause of the non-compliance. The reports from the previous non-compliance (May 2021) were received and submitted to the Ministry.

OCWA and the Town of Carleton Place have implemented some of the recommendations from the received reports including:

- Converting the storm tanks to full-time primary clarifiers to reduce solids loading on the primary clarifier 4 & 5.
- P.A.S-8 is now dosed at the primary influent to remove as much solids in primary treatment and ease loading on aeration.

The aeration header was modified to implement additional air to the aeration to implement an increase in dissolved oxygen (DO) Increased sampling procedures have taken place to monitor the primary effluent parameters and the supernatant quality.

7.1 Effluent Quality Non-Compliance Summary

The effluent limits are based on current requirements in the facility’s Environmental Compliance Approval (ECA). As the operating authority we shall use our best efforts to operate the facility in a manner that ensures the limits are not exceeded in the treated effluent.

Date	Exceedance of	Limit	Value	Corrective Action
March 2022	Missed Sample Monthly Raw Sewage and Final Effluent samples	N/A	N/A	The required monthly samples for the month of February was taken on February 1st 2022. The monthly sample for March was mistakenly taken on Monday February 28th 2022 instead of Tuesday March 1st 2022. The sample calendar has been reviewed and revised to ensure monthly samples are collected in Week 2 of the calendar month.
May 2022	Missed Sample Fecal Streptococci	N/A	N/A	The monthly fecal strep sample required to be resampled and the weekly chain of custody was used for the resample. The weekly chain of custody only includes the parameter E. coli and not fecal strep. A staff meeting was scheduled to review the sample calendar and the non-compliance.
June 30 2022	ECA Limit Total Ammonia Nitrogen	4.0 mg/L	6.39 mg/L	Sludge was hauled from the facility on June 23rd, 24th, 27th and 28th which resulted in an immediate decrease in total ammonia.

7.2 Summary of Abnormal Sewage Discharge Events

Abnormal Discharge Events include Bypass', Overflows, Diversions and Spills of Sewage. Summary Details are included in Appendix D.

7.3 Spills (Other than Sewage)

Date	Location	Details	Volume (m3)	Start Date and Time	End Date and Time
No spills during the reporting period					

8 Maintenance

Routine planned maintenance activities are scheduled in WMS and include:

- Inspect, adjust and calibrate process control equipment to ensure proper operation of water distribution systems, pumps, chemical feeders, and all other equipment installed at the facilities.
- Carry out a routine maintenance program including greasing and oiling as specified in the lubrication schedule.
- Perform day-to-day maintenance duties to equipment including checking machinery and electrical equipment when required.
- Maintain an equipment inventory
- Maintain accurate records of work conducted, activities, and achievements.

Planned maintenance activities are communicated to the person responsible for completing the task through the issuance of WMS work orders. Work orders are automatically generated on a schedule as determined based on manufacturer's recommendations and site specific operational and maintenance needs and are assigned directly to the appropriate operations personnel. This schedule is set up by the designated WMS Primary. Work orders are completed and electronically entered into WMS by the person responsible for completing the task.

Unplanned maintenance is conducted as required.

8.1 Normal Maintenance and Repairs

Work Order	Details
2678891	Capital New Feed Well for Secondary clarifier #3 and installation
2678898	Capital New Feed Well for secondary clarifier #1 and installation
2818448	Capital Heat Exchanger Optimization
2820033	Capital Natural Gas Boiler Control issues
2918683	Capital Replacement Auger for Compactor
2918937	Capital Groundhog Removal
2963329	Capital Change Locks on Bridge Street SPS Generator Door
2963950	Capital New Flow Meter and Temperature probe for digester recirculation
2963951	Capital SCADA Programming Integrate New Instrumentation
3000654	Capital South East SPS Electric Chain Hoist
3016698	Capital Portable Hach Meter Servicing
3064195	Capital Findlay SPS Generator Failure
3064264	Capital Pumping Station Clean Out
3107687	Capital New Compactor Gearbox in Headwork's
3107722	Capital Westview SPS Heater Replacement
3108031	Capital New 1.5" hose
3108980	Capital pH Probe for Final Effluent Channel
2637495	Capital pH Probe Communication Issue
2638600	Capital Bridge St SPS New Alarm System Installation
2639074	Capital SCADA optimization
2677546	Capital Bridge Street Pumping Station
2679339	Capital New TIG Welder
2680318	Capital Floor Cleaning and Waxing
2681658	Capital New Submersible Utility Pump
2722806	Capital New Contactors for Pump 1&2 Mississippi Quays
2723177	Capital UPS Battery Back Up
2723699	Capital Lock changed at Bridge to fit CP sewage key
2724142	Capital Bearings and Seals for PD Blower 3
2724148	Capital Bearings and seals for PD Blower 1
2725121	Capital Removal of Roots From Outfall
2773518	Capital Mississippi Quays SPS Pump 2 Fault
2818107	Capital RAW Sewage Pump 1 Malfunction
2821506	Capital New front door refractory boiler #1
2821874	Change actuator for De-gritting actuators (Tea cups)
2822072	Capital New filters for turbo blower
2822117	Capital Bridge SPS outpost commissioning
2822291	Capital Boilers Replacement Relief Valves
2822298	Capital Transfer Pump
2822551	Capital Replacement Chimney Cap for Boiler #1
2823796	Capital Jet Pump MCC Parts
2823849	Capital Boiler 3 Malfunction
2824024	Capital Jet Pump 1 MCC parts
2869049	Capital Bridge Street SPS Generator Commissioning
2869990	Capital Boiler SCADA Malfunction
2871275	Capital Findlay SPS Rebuild Generator Coolant Pump
2871278	Capital Industrial SPS Pumper Truck
2873183	Capital UV 3000 Classic Circuit Boards

Work Order	Details
2873701	Capital New Condensate Neutralizer for Boilers
2873828	Capital New Leakage Sensors for Flygt Pump
2874354	Capital Bridge Street SPS Generator Door Alarm
2874355	Capital Bridge Street SPS Pump Failed to Start Alarm/Wet Well Level Sensor Range
2918681	Capital Southeast SPS Temperature Sensor for Pump
2923089	Capital Princess SPS Disable Exercise Timer on Generator
2962260	Capital Southeast SPS Disable Pump Sensors
2963688	Capital Findlay SPS Generator Failure
2964379	Capital Water/Oil Separator in Headwork's
2964383	Capital New Pneumatic Actuator for Tea-Cup #1
2965284	Capital UPS Power Bar
2965320	Capital Turbo Blower Temperature Sensor
3015959	Capital Automatic Pipette 0.1 - 1.0 mL
3063158	Capital Findlay SPS Generator battery replacement

8.2 Emergency Maintenance and Repairs

Work Order	Details
No emergency maintenance was required during the reporting period.	

8.3 Flow Meter Calibrations and Maintenance

Location	Date of Calibration	Additional Maintenance
Effluent Flow Meter	Dec. 7 2022	N/A
Bypass Flowmeter	Dec. 7 2022	N/A
BIO Plant Flowmeter	Dec. 7 2022	N/A
Physical Chemical Flowmeter	Dec. 7 2022	N/A
Meter Flow RAS	Dec. 7 2022	N/A
Meter Flow Raw Sewage	Dec. 7 2022	N/A
Meter Flow WAS	Dec. 7 2022	N/A
Secondary Sludge TXFR	Dec. 7 2022	N/A
Raw Sludge to Primary's	Dec. 7 2022	N/A
SPS Flow	Dec. 7 2022	N/A

8.4 Authorized Alterations in Collection System

Work Order	Details	Significant Drinking Water Threat (Y/N)
Environmental Assessment completed for the plant upgrades. Now into design phase.		

8.5 Notice of Modifications

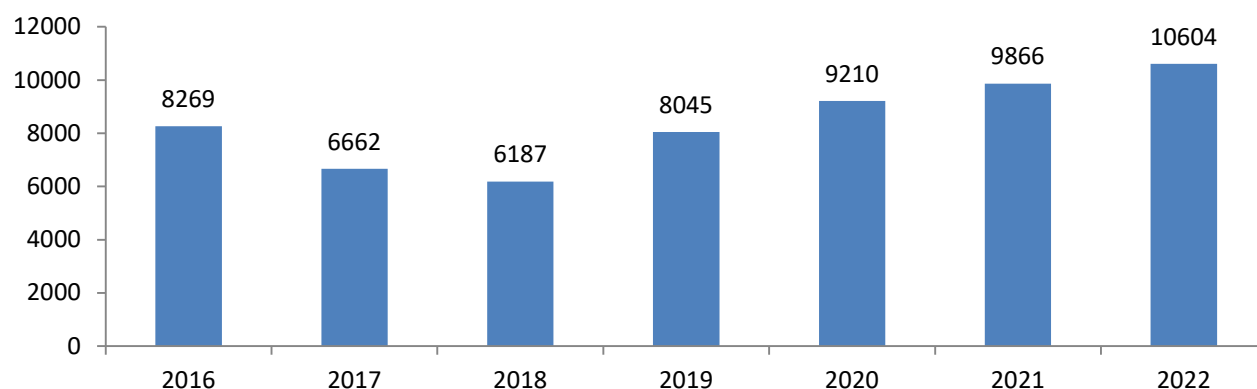
Date	Process	Modification	Status
No modifications during the reporting period			

9 Sludge Generation

9.1 Sludge Disposal Summary

Date	Disposal Location	Approval Number	Total Volume (m3)
March, 2022	THF Facility	ECA A72401310174 ECA 5948-7JRMAJ	1120
May 5-10, 2022	Sunol Farms – Amanada’s	24013	2084
June 23-28, 2022	Jockbrae Farms – Mark’s	24344	1680
August 12-18, 2022	Jockbrae Farms - North	24334	2080
September 29-30, 2022	Jockbrae Farms - North	24344	640
October 3-5, 2022	Jockbrae Farms - North	24344	1520
November 14 – 16, 2022	Sunol Farms – Amanada’s	24013	1480
		Total	10,604

9.2 Annual Comparison (m³/year)



It is anticipated that sludge volumes in 2023 will remain similar to the 2022 volumes.

10 Summary of Complaints

Location	Date	Nature of Complaint	Actions Taken
No complaints for the Carleton Place WPCP during the reporting period			

11 Collection System Highlights

Collection System Highlights were provided by the Town of Carleton Place.

The Collection System is broken into four sections and is flushed in a four-year rotational cycle. This year’s quadrant was flushed from May through June by a third-party contractor with Carleton Place Public Works staff providing direct oversight.

In addition, Public Works crews also flushed known trouble areas on an intermittent basis. Staff assisted with various components of Public Works construction projects.

Public Works Staff responded to nine complaints pertaining to laterals within collection system. Issues with laterals ranged from frozen laterals to grease being present within sewer laterals. Public Works Staff did respond to only one structure which was surcharged but there was no damage or backup into any homes. The issue was identified quickly by staff and immediate action was taken. Staff will monitor this location on an annual basis going forward.

Appendix A

Appendix A – PARS Report

5672 CARLETON PLACE WASTEWATER TREATMENT FACILITY 110000971

	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-->
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Flows

Raw Flow: Total - Raw Sewage Influent m³/d	137,439.36	130,684.00	284,555.30	253,576.09	175,091.88	165,292.97	151,556.60	161,616.84	149,598.65	140,512.78	133,616.92	170,391.07	2,053,932.46			0.00
Raw Flow: Avg - Raw Sewage Influent m³/d	4,433.53	4,667.29	9,179.20	8,452.54	5,648.13	5,509.77	4,888.92	5,213.45	4,986.62	4,532.67	4,453.90	5,496.49		5,627.21		
Raw Flow: Max - Raw Sewage Influent m³/d	4,984.16	5,573.70	17,630.38	14,379.66	6,854.56	7,460.00	5,899.55	6,243.49	5,619.10	4,843.56	4,876.24	19,745.74			19,745.74	0.00
Raw Flow: Count - Raw Sewage Influent 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 - Final Effluent m³/d	137,439.35	130,684.00	284,555.30	253,576.08	175,091.88	165,292.97	151,556.59	161,616.77	149,598.65	140,503.81	133,616.92	170,391.08	2,053,923.40			0.00
Eff. Flow: Avg - Final Effluent m³/d	4,433.53	4,667.29	9,179.20	8,452.54	5,648.13	5,509.77	4,888.92	5,213.44	4,986.62	4,532.38	4,453.90	5,496.49		5,627.19		7,600.00
Eff. Flow: Max - Final Effluent m³/d	4,984.16	5,573.70	17,630.38	14,379.66	6,854.56	7,460.00	5,899.55	6,243.49	5,619.10	4,843.56	4,876.24	19,745.74			19,745.74	0.00
Eff Flow: Count - Final Effluent 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

Biochemical Oxygen Demand: BOD5

Raw: Avg BOD5 - Raw Sewage Influent mg/L	149.00	98.50	0.00	111.00	54.00	101.00	118.00	89.00	82.00	94.00	149.00	74.00		101.77		0.00
Raw: # of samples of BOD5 - Raw Sewage Influent mg/L	1.00	2.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	12.00			0.00
Eff: Avg BOD5 - Final Effluent including Bypass mg/L	4.00	< 4.50	0.00	5.00	4.00	3.00	7.00	< 3.00	< 3.00	< 3.00	5.00	< 3.00		4.08	7.00	
Eff: # of samples of BOD5 - Final Effluent including Bypass mg/L	1.00	2.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	12.00			0.00
Loading: BOD5 - Final Effluent including Bypass kg/d	17.734	< 21.003	0.000	42.263	22.593	16.529	34.222	< 15.640	< 14.960	< 13.597	22.269	< 16.489		22.98	42.26	

Carbonaceous Biochemical Oxygen Demand: CBOD

Raw: Avg cBOD5 - Raw Sewage Influent mg/L	114.00	97.00	0.00	65.00	45.00	72.00	121.00	61.00	72.00	68.00	139.00	53.00		82.45	139.00	0.00
Raw: # of samples of cBOD5 - Raw Sewage Influent mg/L	1.00	2.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	12.00			0.00
Eff: Avg cBOD5 - Final Effluent including Bypass mg/L	< 3.00	< 3.80	< 12.50	< 3.00	< 3.00	< 3.00	< 3.00	< 3.60	< 3.00	< 3.00	< 3.00	< 9.50		< 4.90	< 12.50	
Eff: # of samples of cBOD5 - Final Effluent including Bypass mg/L	4.00	5.00	12.00	4.00	4.00	5.00	4.00	5.00	4.00	4.00	5.00	6.00	62.00			0.00
Loading: cBOD5 - Final Effluent including Bypass kg/d	< 13.301	< 17.736	< 114.740	< 25.358	< 16.944	< 16.529	< 14.667	< 18.768	< 14.960	< 13.597	< 13.362	< 52.217		< 27.59	< 114.74	

Total Suspended Solids: TSS

Raw: Avg TSS - Raw Sewage Influent mg/L	225.00	157.00	0.00	205.00	52.00	130.00	295.00	68.00	100.00	382.00	68.00	62.00		158.55	382.00	0.00
Raw: # of samples of TSS - Raw Sewage Influent mg/L	1.00	2.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	12.00			0.00
Eff: Avg TSS - Final Effluent including Bypass mg/L	5.50	10.80	28.67	7.50	8.25	< 5.00	< 7.00	< 5.40	4.50	7.25	6.20	23.67		11.18	28.67	
Eff: # of samples of TSS - Final Effluent including Bypass mg/L	4.00	5.00	12.00	4.00	4.00	5.00	4.00	5.00	4.00	4.00	5.00	6.00	62.00			0.00
Loading: TSS - Final Effluent including Bypass kg/d	24.384	50.407	263.137	63.394	46.597	< 27.549	< 34.222	< 28.153	22.440	32.860	27.614	130.084		62.90	263.14	

Total Phosphorus: TP

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

Raw: Avg TP - Raw Sewage Influent mg/L	4.60	4.72	0.00	3.66	1.53	3.68	6.35	2.77	2.79	4.02	4.17	2.23		3.68	6.35	0.00
Raw: # of samples of TP - Raw Sewage Influent mg/L	1.00	2.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	12.00			0.00
Eff: Avg TP - Final Effluent including Bypass mg/L	0.21	0.32	0.73	0.20	0.18	0.16	0.19	0.17	0.10	0.16	0.23	0.53		0.29	0.73	
Eff: # of samples of TP - Final Effluent including Bypass mg/L	4.00	5.00	12.00	4.00	4.00	5.00	4.00	5.00	4.00	4.00	5.00	6.00	62.00			0.00
Loading: TP - Final Effluent including Bypass kg/d	0.942	1.494	6.686	1.691	1.017	0.904	0.904	0.886	0.474	0.714	1.015	2.922		1.64	6.69	

Nitrogen Series

Raw: Avg TKN - Raw Sewage Influent mg/L	33.60	40.45	0.00	29.60	22.70	34.90	33.60	28.90	28.50	38.70	35.20	33.40		32.69	40.45	0.00
Raw: # of samples of TKN - Raw Sewage Influent mg/L	1.00	2.00	0.00	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 - Final Effluent including Bypass mg/L	8.47	15.40	4.73	10.38	7.90	6.39	1.61	1.80	0.51	2.08	4.37	2.32		5.66	15.40	
Eff: # of samples of TAN - Final Effluent including Bypass mg/L	4.00	5.00	4.00	4.00	4.00	8.00	4.00	5.00	4.00	4.00	5.00	4.00	55.00			0.00
Loading: TAN - Final Effluent including Bypass kg/d	37.541	71.876	43.395	87.758	44.592	35.207	7.859	9.374	2.543	9.405	19.481	12.724		31.86	87.76	
Eff: Avg NO3-N - Final Effluent mg/L	20.10	8.05	0.00	6.20	4.00	3.10	8.10	4.40	11.20	19.60	7.30	17.50		9.96	20.10	0.00
Eff: # of samples of NO3-N - Final Effluent mg/L	1.00	2.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	12.00			0.00
Eff: Avg NO2-N - Final Effluent mg/L	0.30	< 0.20	0.00	0.70	0.30	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10		0.20	0.70	0.00
Eff: # of samples of NO2-N - Final Effluent mg/L	1.00	2.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	12.00			0.00

Disinfection

Eff: GMD E. Coli - Final Effluent cfu/100mL	5.57	51.80	583.87	67.78	68.60	49.47	23.86	371.60	155.69	16.57	20.64	44.21				200.00
Eff: # of samples of E. Coli - Final Effluent cfu/100mL	4.00	5.00	8.00	4.00	4.00	5.00	4.00	5.00	4.00	4.00	5.00	5.00	57.00			0.00

Appendix B

Appendix B - Biosolids Quality Report

Ontario Clean Water Agency
 Biosolids Quality Report - Liquid
 Digester Type: AEROBIC
Solids and Nutrients

Facility: CARLETON PLACE WASTEWATER TREATMENT FACILITY
 Works: 5672
 Period: 01/01/2022 to 12/01/2022

Facility Works Number: 1.1000971E7
 Facility Name: CARLETON PLACE WASTEWATER TREATMENT FACILITY
 Facility Owner: Municipality: Town of Carleton Place
 Facility Classification: Class 3 Wastewater Treatment
 Receiver: Mississippi River
 Service Population: ---
 Total Design Capacity: ---
 Period Being Reported: 01/01/2022 12/01/2022

Note: all parameters in this report will be derived from the Bslq Station

Month	Total Sludge Hauled (m3)	Avg. Total Solids (mg/L)	Avg. Volatile Solids (mg/L)	Avg. Total Phosphorus (mg/L)	Ammonia (mg/L)	Nitrate (mg/L)	Nitrite (mg/L)	TKN (mg/L)	Ammonia + Nitrate (mg/L)	Potassium (mg/L)
Site	CARLETON PLACE WASTEWATER TREATMENT FACILITY									
Station	Bslq Station only									
Parameter Short Name	HauledVol	TS	VS	TP	NH3p_NH4p_N	NO3-N	NO2-N	TKN	calculation in report - no T/S	K
T/s	IH Month.Total	Lab Published Month Mean	Lab Published Month Mean	Lab Published Month Mean	Lab Published Month Mean	Lab Published Month Mean	Lab Published Month Mean	Lab Published Month Mean		Lab Published Month Mean
Jan		32,800.000	18,300.000	770.000	595.000	2.700	1.000	1,350.000	298.850	64.000
Feb		30,850.000	17,000.000	865.000	521.000	1.300	1.000	1,505.000	261.150	62.000
Mar		23,500.000	11,500.000	915.000	618.000	1.000	1.000	1,610.000	309.500	52.400
Apr		31,150.000	17,400.000	965.500	856.500	1.000	1.000	1,625.000	428.750	58.350
May		34,850.000	19,550.000	938.000	808.000	1.300	1.000	1,515.000	404.650	70.000
Jun		48,800.000	25,100.000	633.000	907.000	1.000	1.000	1,210.000	454.000	75.600
Jul		31,350.000	16,500.000	967.000	1,074.500	1.000	1.000	1,625.000	537.750	60.300
Aug		35,850.000	18,000.000	1,074.000	879.500	1.000	1.000	1,675.000	440.250	49.850
Sep		25,400.000	15,700.000	792.000	545.500	1.000	1.000	1,385.500	273.250	37.450

Appendix C

Appendix C - Details of Abnormal Sewage Discharge Events

Event Details Summary

Facility Diversion

Date	Location	Details	Volume (m ³)	Start Time	End Time	Duration (h)	Discharge Receiver	Disinfection Provided
March 19 2022	Carleton Place WPCP	Heavy rain fall	22,203	12:06	11:45	~96	Mississippi River	Yes
December 31 2022	Carleton Place WPCP	Heavy rain fall	43,111	14:00	14:40	~168	Mississippi River	Yes

Facility Bypass

Date	Location	Details	Volume (m ³)	Start Time	End Time	Duration (h)	Discharge Receiver	Disinfection Provided
There were no facility bypass' in 2022								

Collection Overflow

Date	Location	Details	Volume (m ³)	Start Time	End Time	Duration (h)	Discharge Receiver	Disinfection Provided
There were no events in 2022								

Spills of Sewage

Date	Location	Details	Volume (m ³)	Start Time	End Time	Duration (h)	Discharge Receiver	Disinfection Provided
There were no events in 2022								

Collection System Monitoring Data

Event Date	Event Location	Volume (m3)	Parameter	mg/L	Source Loading	Any Adverse Impacts & Corrective Actions
There were no events to collect samples			BOD			
			Total Suspended Solids			
			Total Phosphorus			
			Total Kjeldahl Nitrogen (TKN)			
			E.Coli			

Appendix D

Appendix D - ECA Annual Report Requirements

Facility ECA # 5001-7FZT4A Section 12(6)	Section in Report
(a) a summary and interpretation of all monitoring data and a comparison to the effluent limits outlined in Condition 7, including an overview of the success and adequacy of the Works;	4 Treatment Flows 6 Effluent Quality
(b) a description of any operating problems encountered and corrective actions taken;	7 Operating Issues/Problems
(c) a summary of all maintenance carried out on any major structure, equipment, apparatus, mechanism or thing forming part of the Works;	8 Maintenance
(d) a summary of any effluent quality assurance or control measures undertaken in the reporting period;	6 Effluent Quality
(c) a summary of the calibration and maintenance carried out on all effluent monitoring equipment;	8 Maintenance
(l) a description of efforts made and results achieved in meeting the Effluent Objective of Condition 6;	6 Effluent Quality
(g) a tabulation of the quantity of centrate returned to the headwork of the Works during the reporting period;	4 Treatment Flows
(h) a summary of chemical characterization data for samples of centrate collected in accordance with Table 7 of Condition 9 during the reporting period;	5 Influent Quality
(i) a summary of the contaminant mass loadings associated with centrate return during the reporting period, based on the corresponding monitoring results in accordance with Table 7, and an assessment of the impacts on the available treatment capacity and nitrification performance of the STP;	5 Influent Quality
(j) a tabulation of the quantity of septage added to the works for co-treatment during the reporting period;	4 Treatment Flows
(k) a summary of chemical characterization data for samples of septage collected in accordance with Table 6 of Condition 9 during the reporting period;	5 Influent Quality
(l) a summary of the contaminant mass loadings associated with septage additions during the reporting period based on the corresponding monitoring results in accordance with Table 6. and an assessment of the impacts on the available treatment capacity and nitrification performance of the STP;	5 Influent Quality
(m) 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 locations to where the sludge was disposed;	9 Sludge Generation Appendix B
(n) a summary of any complaints received during the reporting period and any steps taken to address the complaints;	10 Summary of Complaints
(o) a summary of all bypass, spill or abnormal discharge events;	7 Operating Issues/Problems Appendix C
(p) any other information the District Manager requires from time to time;	Spill Approval from MECP required before Digester Flame Arrestor maintenance.
Collection ECA # Schedule E	
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	Operating Issues and Problems

operations.	
4.6.4 Includes a summary of any operating problems encountered and corrective actions taken.	Operating Issues and Problems
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.	Maintenance
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.	Summary of 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.	Maintenance
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.	Operating Issues and Problems Appendix D
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.	Maintenance Operating Issues and Problems