Deep River Wastewater System

Waterworks # 120000612

Annual Report

Prepared For: Town of Deep River

Reporting Period of January 1st – December 31st, 2023

Revision: 0

Operating Authority:

OCWA
ONTARIO CLEAN WATER AGENCY
AGENCE ONTARIENNE DES EAUX

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

Document	Document #	Issue Date	Issue Number
Facility ECA	1655-7P8SPE	February 26, 2009	
ECA for Municipal Sewage Collection System	N/A		

Table of Contents

1 Revision History

Date	Rev #	Revisions	Revised By
26-Jan-2024	0	Template Issued	Brenda Royce

2 Operations and Compliance Reliability Indices

Compliance Event	Details
Ministry of Environment Inspections	Inspection Date: • Last Inspection was Oct 28, 2015
Ministry of Labour Inspections	Inspection Date: • None for this reporting period
Non-Compliance	# of Events • One (1) – UV Equipment Failure affecting Final Effluent Disinfection
Community Complaints	# of Events • None for this reporting period
Spills	# of Spills of Sewage • None for this reporting period # of Spills (Other) • None for this reporting period
Overflows	# of Events • None for this reporting period
Bypass	# of Events • None for this reporting period

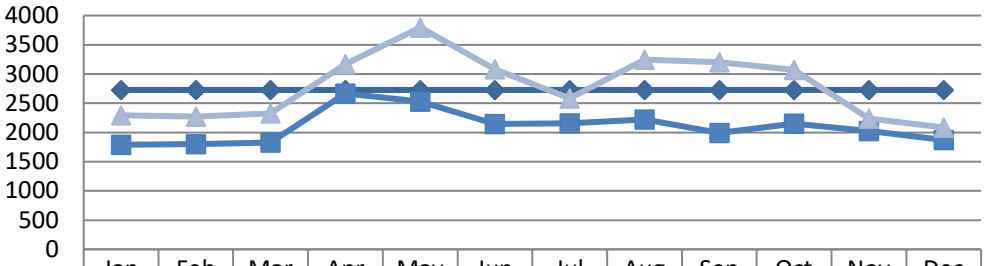
3 Process Description

Wastewater from the Town of Deep River flows directly to the Class 3 Wastewater Treatment Facility. Upon entering the facility, the incoming wastewater receives primary treatment consisting of screening and grit removal. Secondary treatment is achieved through the Sequential Batch Reactor (SBR) process with chemical addition for phosphorus removal. Disinfection is achieved by UV disinfection prior to being discharged back into the Ottawa River. Biosolids are aerobically digested, stored on site and land applied under the Nutrient Management Act.

4 Treatment Flows

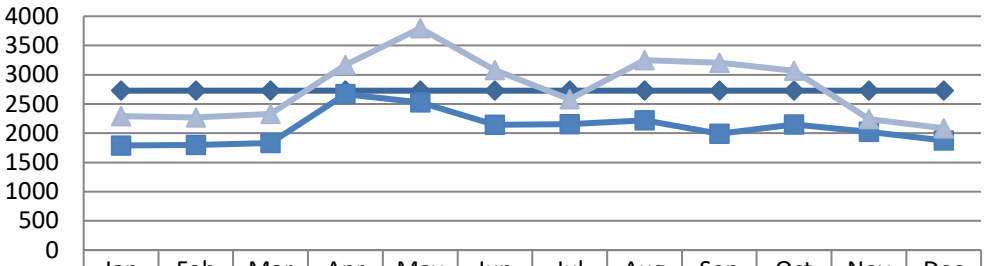
4.1 Raw Flows (m3/d)

In 2023, the average daily raw flow was approx. 77.0% of the current design capacity.



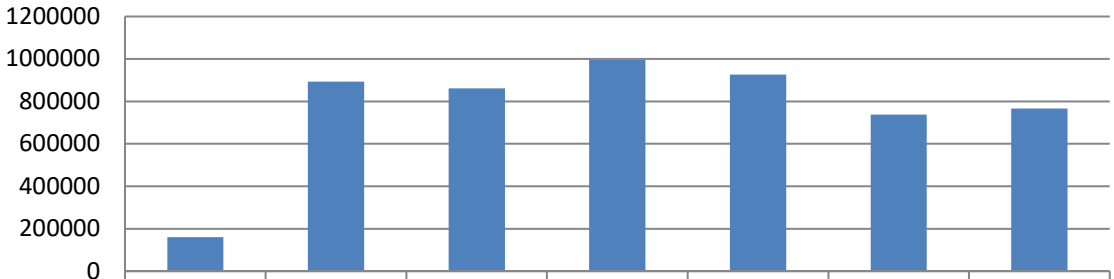
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Limit	2727	2727	2727	2727	2727	2727	2727	2727	2727	2727	2727	2727
Average Daily Flow	1790	1800	1830	2667	2527	2145	2156	2220	1989	2149	2024	1874
Maximum Daily Flow	2291	2271	2327	3167	3795	3080	2584	3247	3204	3068	2240	2084

4.2 Effluent Flow (m3/d)



	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Limit	2727	2727	2727	2727	2727	2727	2727	2727	2727	2727	2727	2727
Average Daily Flow	1790	1800	1830	2667	2527	2145	2156	2220	1989	2149	2024	1874
Maximum Daily Flow	2291	2271	2327	3167	3795	3080	2584	3247	3204	3068	2240	2084

4.2.1 Annual Comparison (m3)



	2017	2018	2019	2020	2021	2022	2023
Total Annual Flow (m3)	159739	893702	861242	995250	926170	738502	766063

4.3 Imported Waste/Sewage

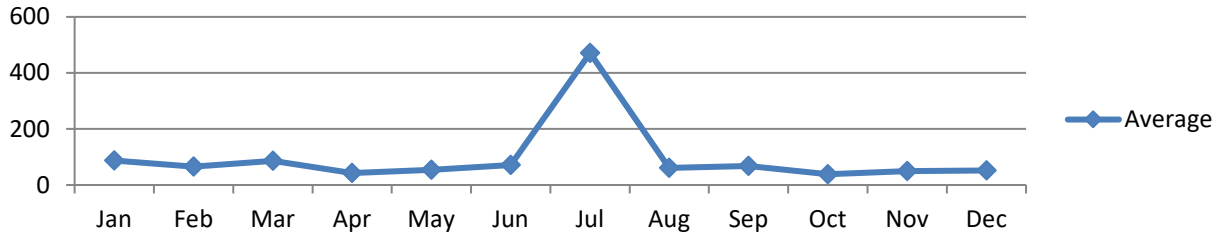
There was no imported wastes accepted at this facility.

5 Raw Sewage Quality

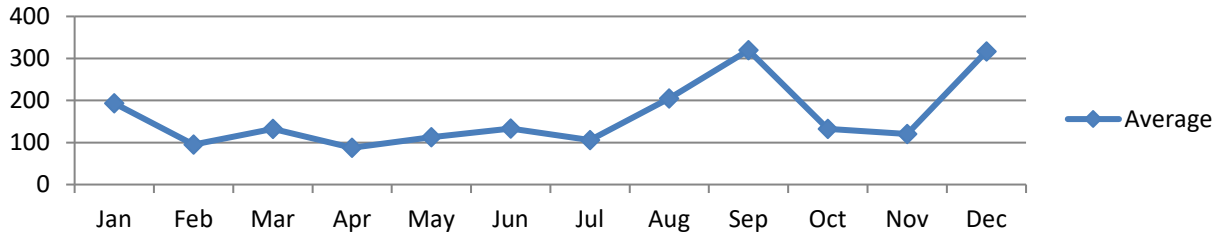
Current year minimum, maximum and averages are available in Appendix A – Performance Assessment Report.

5.1 Influent Trending

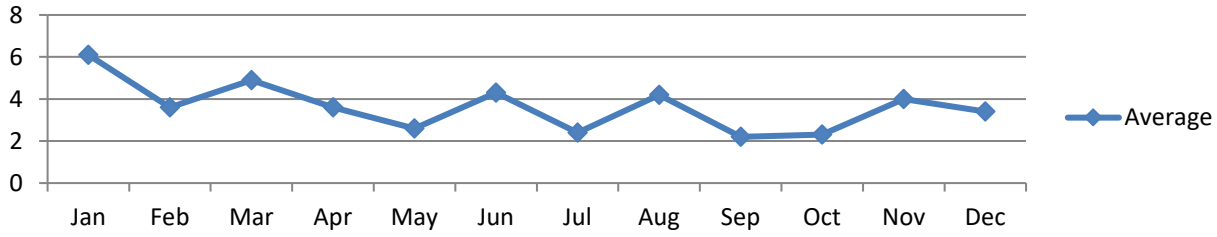
5.1.1 CBOD5 (mg/L)



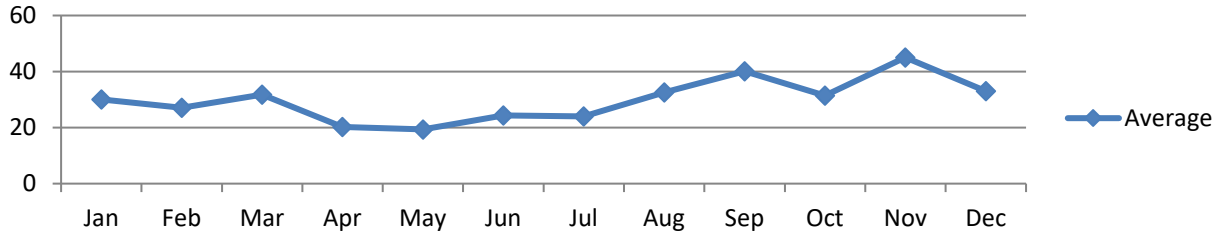
5.1.2 Total Suspended Solids (mg/L)



5.1.3 Total Phosphorus (mg/L)



5.1.4 Total Kjeldahl Nitrogen (mg/L)



5.2 Imported Waste Quality

None for this reporting year.

6 Effluent Quality

The plant performed very well in 2023, with only three (3) exceedances of the ECA objective for Total Ammonia Nitrogen (TAN) for the months of Jun, Jul and Oct. (noted in Table 7.1)

6.1 Effluent Quality Assurance and Control Measures Taken

This system is part of OCWA's Laurentian View 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 operator's 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 Eurofins laboratory in Ottawa for analysis, with the exception of disinfection residuals and temperature. Eurofins laboratory in Ottawa 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.
- 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.

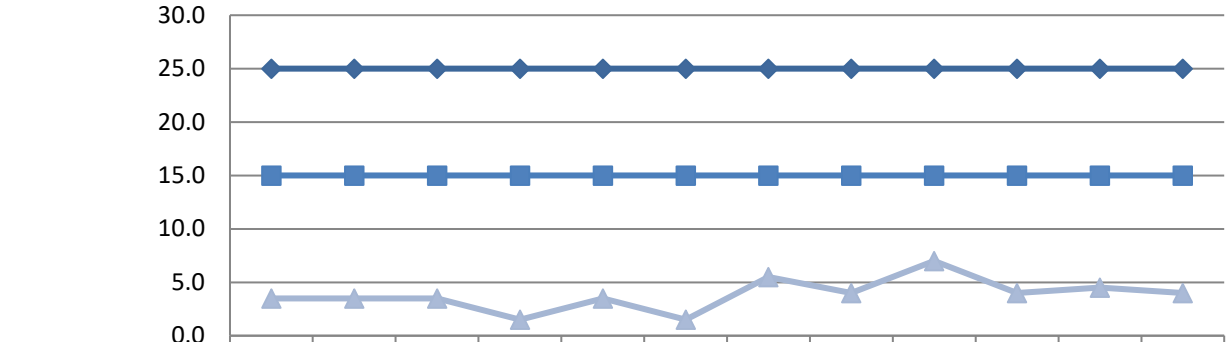
Detailed individual sample results for both raw sewage and final effluent can be requested from the operating authority.

6.2 CBOD5

Compliance concentration limit for this parameter is based on the annual average being below 25.0 mg/L. The annual average for 2023 was 3.83 mg/L indicating compliance with the limit MET.

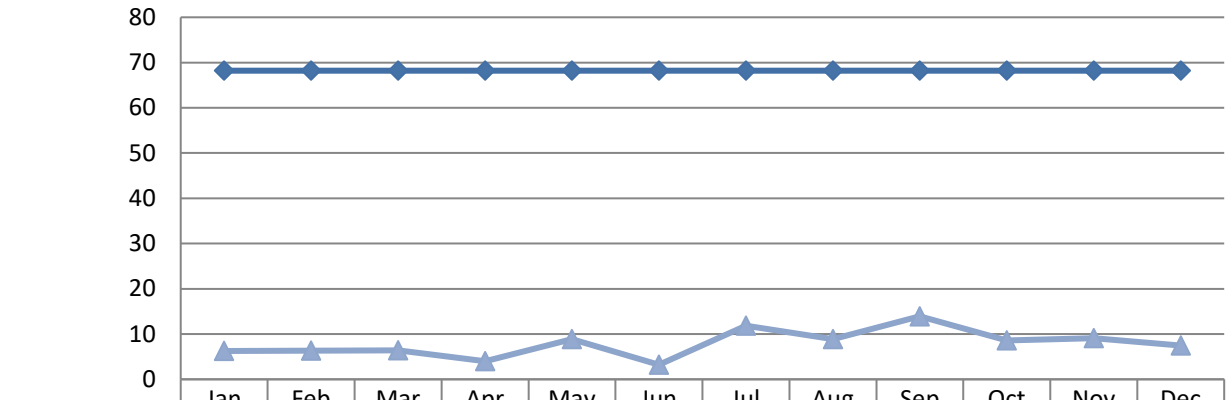
Compliance loading limit for this parameter is based on the annual average being below 68.2 kg/d. The annual average for 2023 was 8.05 kg/d indicating compliance with the limit MET.
Compliance Objective (15 mg/L) for this parameter MET.

6.2.1 Concentration (mg/L)



	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
ECA Limit	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0
ECA Objective	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0
Average	3.5	3.5	3.5	1.5	3.5	1.5	5.5	4.0	7.0	4.0	4.5	4.0

6.2.2 Loading (kg/d)



	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
ECA Limit	68.2	68.2	68.2	68.2	68.2	68.2	68.2	68.2	68.2	68.2	68.2	68.2
Average	6.3	6.3	6.4	4.0	8.8	3.2	11.9	8.9	13.9	8.6	9.1	7.5

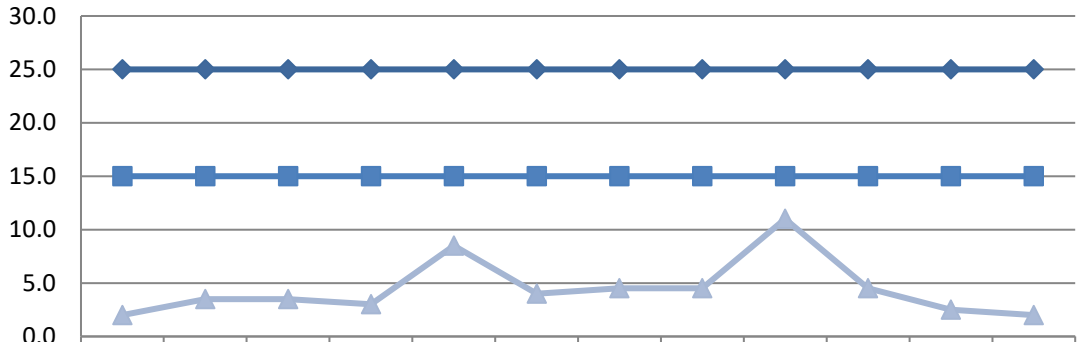
6.3 Total Suspended Solids

Compliance concentration limit for this parameter is based on the annual average being below 25.0 mg/L. The annual average for 2023 was 4.46 mg/L indicating compliance with the limit MET.

Compliance loading limit for this parameter is based on the annual average being below 68.2 kg/d. The annual average for 2023 was 9.36 kg/d indicating compliance with the limit MET.

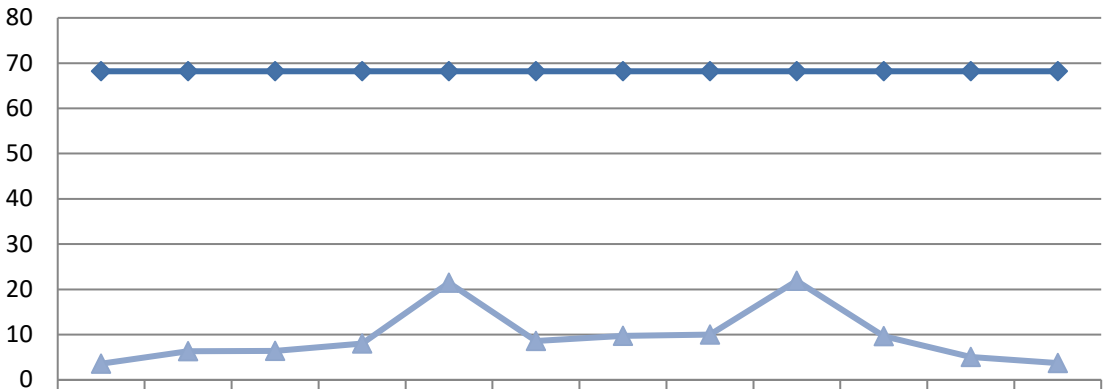
Compliance Objective (15 mg/L) for this parameter MET.

6.3.1 Concentration (mg/L)



	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
ECA Limit	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0
ECA Objective	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0
Average	2.0	3.5	3.5	3.0	8.5	4.0	4.5	4.5	11.0	4.5	2.5	2.0

6.3.2 Loading (kg/d)



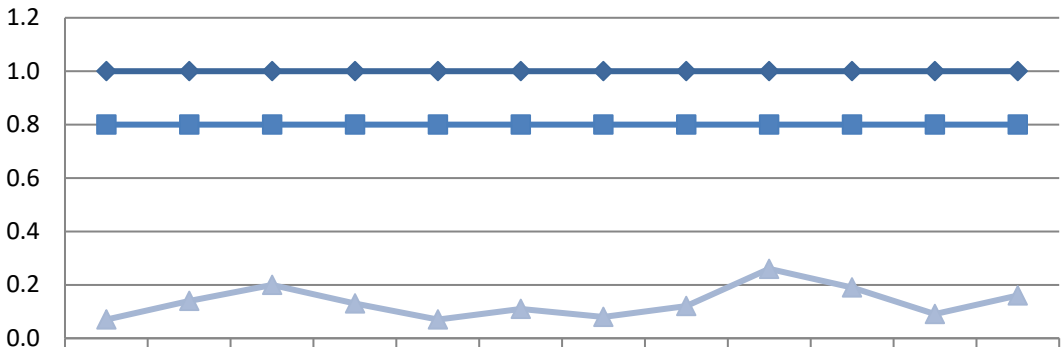
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
ECA Limit	68.2	68.2	68.2	68.2	68.2	68.2	68.2	68.2	68.2	68.2	68.2	68.2
Average	3.58	6.30	6.41	8.00	21.48	8.58	9.70	9.99	21.88	9.67	5.06	3.75

6.4 Total Phosphorus

Compliance concentration limit for this parameter is based on the monthly average being below 1.0 mg/L. The annual average for 2023 was 0.14 mg/L indicating compliance with the limit MET.

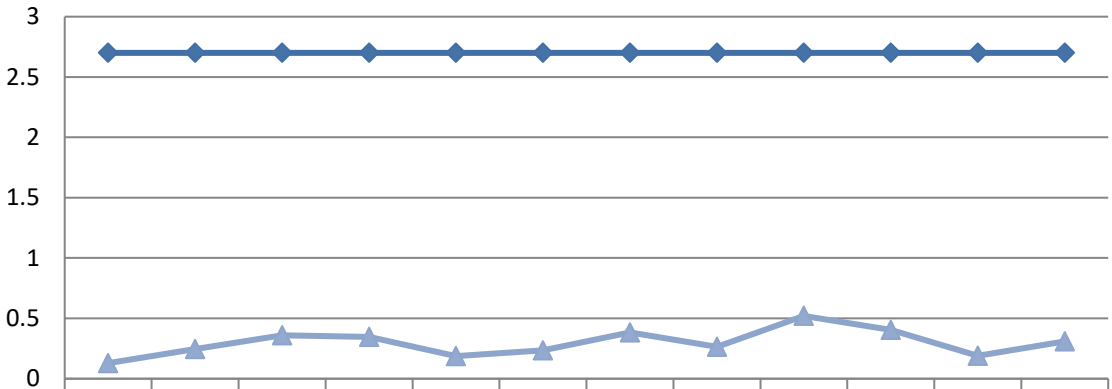
Compliance loading limit for this parameter is based on the monthly average being below 2.7 kg/d. The annual average for 2023 was 0.30 kg/d indicating compliance with the limit MET.

Compliance Objective (0.8 mg/L) for this parameter MET.



	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
ECA Limit	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
ECA Objective	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8
Average	0.07	0.14	0.20	0.13	0.07	0.11	0.08	0.12	0.26	0.19	0.09	0.16

6.4.1 Loading (kg/d)



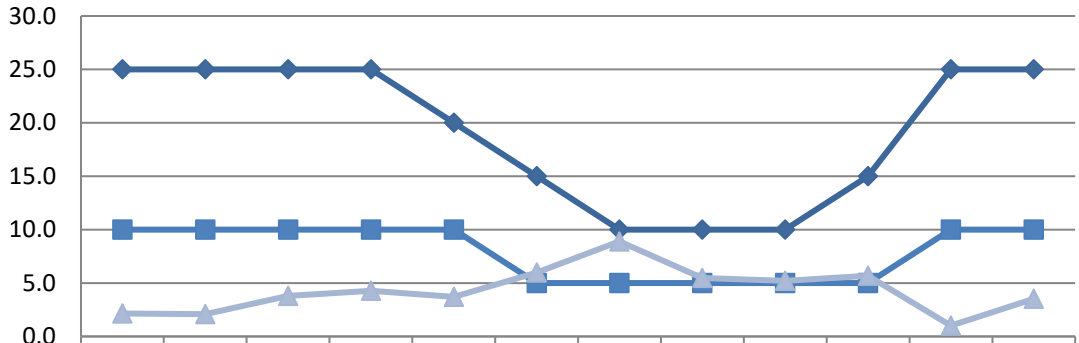
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
ECA Limit	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7
Average	0.13	0.25	0.36	0.35	0.19	0.23	0.38	0.27	0.52	0.40	0.19	0.31

6.5 Total Ammonia Nitrogen

Compliance concentration limit for this parameter is based on the differing monthly averages being below 25 mg/L. The annual average for 2023 was 4.31 mg/L indicating compliance with the limit MET.

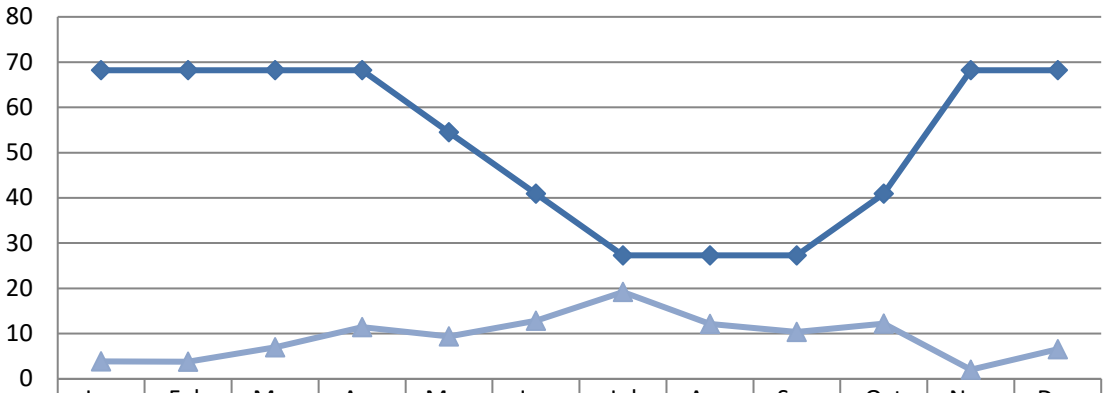
Compliance loading limit for this parameter is based on the differing monthly averages being below 27.3 kg/d. The annual average for 2023 was 9.05 kg/d indicating compliance with the limit MET.

Compliance Objectives (5 or 10 mg/L) for this parameter were not always MET. See table 7.1 for details.



	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
ECA Limit	25.0	25.0	25.0	25.0	20.0	15.0	10.0	10.0	10.0	15.0	25.0	25.0
ECA Objective	10.0	10.0	10.0	10.0	10.0	5.0	5.0	5.0	5.0	5.0	10.0	10.0
Average	2	2	4	4	4	6	9	5	5	6	1	4

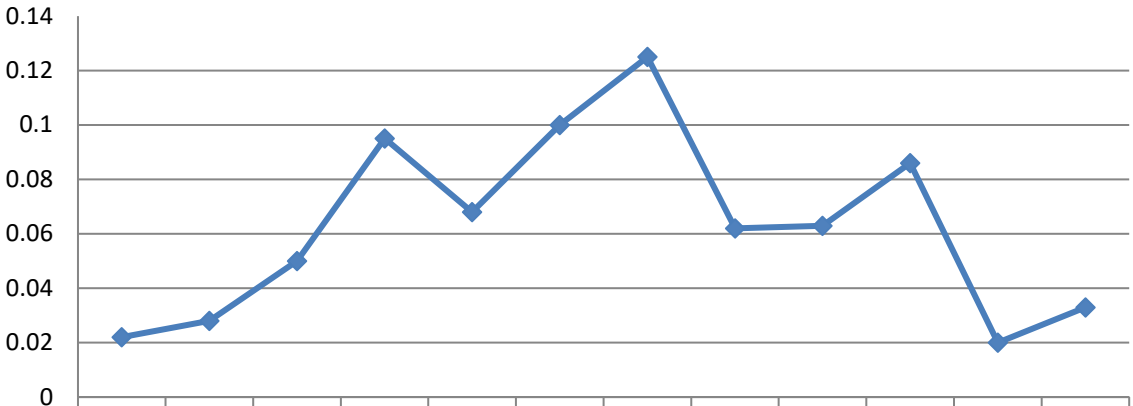
6.5.1 Loading (kg/d)



	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
ECA Limit	68.2	68.2	68.2	68.2	54.5	40.9	27.3	27.3	27.3	40.9	68.2	68.2
Average	3.9	3.8	6.9	11.4	9.4	12.8	19.2	12.1	10.4	12.2	2.0	6.6

6.6 Un-ionized Ammonia

There are no compliance limits for this parameter.



	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Average	0.022	0.028	0.05	0.095	0.068	0.1	0.125	0.062	0.063	0.086	0.02	0.033

6.7 Acute Lethality

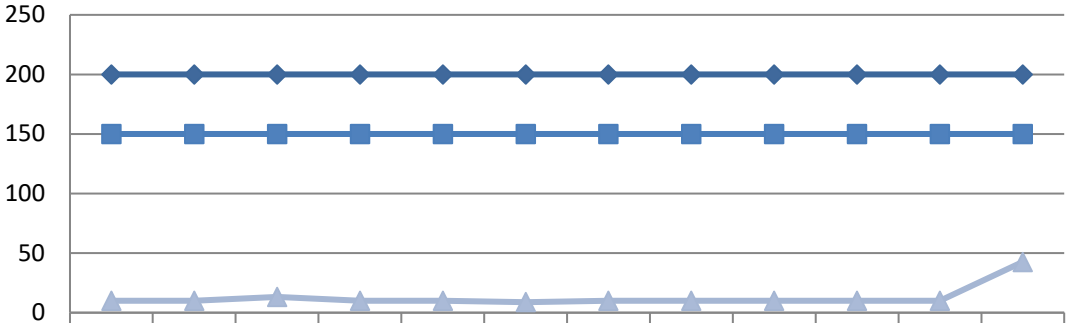
There was one (1) sample collected in 2023 and tested for acute lethality for both Rainbow Trout and Daphnia magna. This sampling is required annually, both provincially and federally. Results are displayed as % mortality. An adverse result is a > 50% mortality rate.

Date	Rainbow Trout	Daphnia Magna
Aug 29, 2023	0	0

6.8 E-coli

Compliance Limit for this parameter MET.
Compliance Objective for this parameter MET.

Geometric Mean (cfu/100mL)

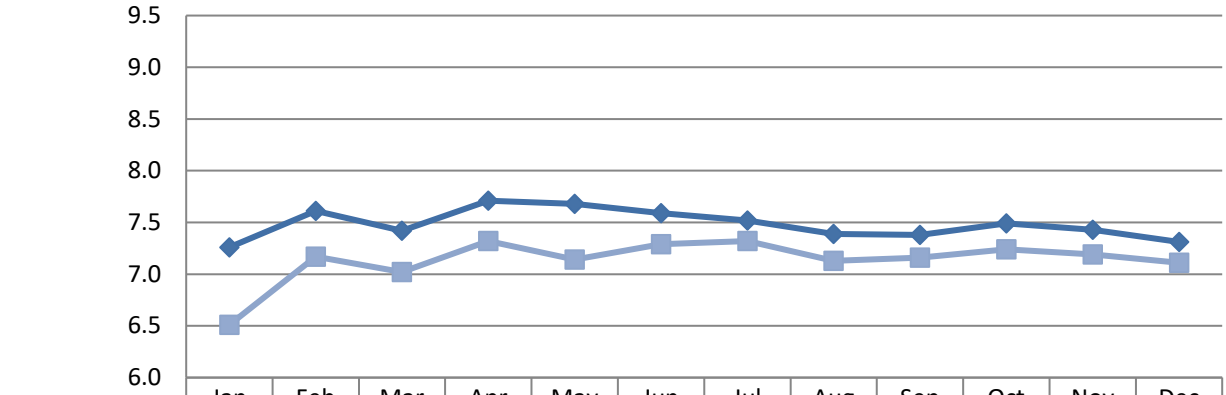


	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
ECA Limit	200	200	200	200	200	200	200	200	200	200	200	200
ECA Objective	150	150	150	150	150	150	150	150	150	150	150	150
Average	10.0	10.0	13.2	10.0	10.00	8.8	10.0	10.0	10.0	10.0	10.0	42.6

6.9 pH

Compliance Limit range for this parameter is 6.0 – 9.5. The parameter MET. Each instance the pH is outside of that range, it is reported as a non-compliance.

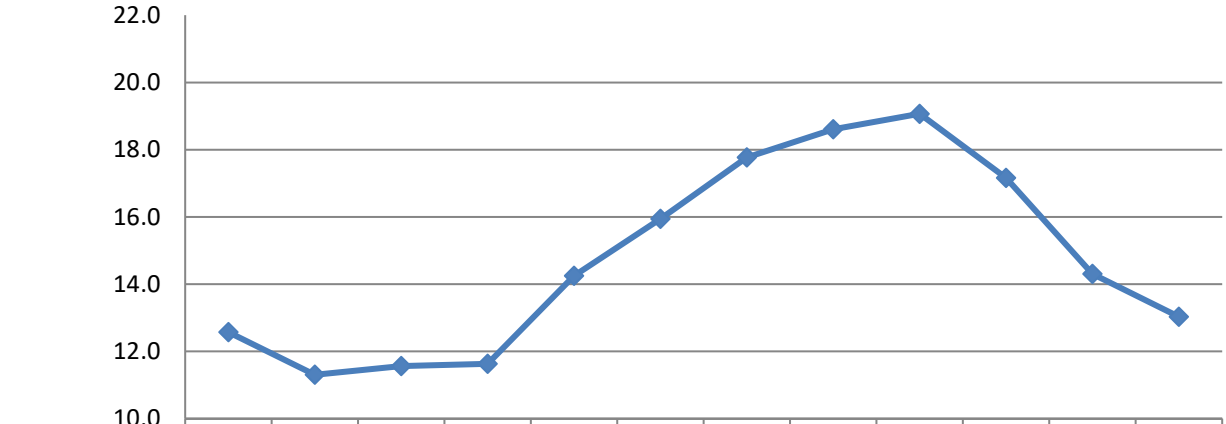
Compliance Objective range for this parameter is 6.5-9.0. The parameter MET.



	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Maximum	7.3	7.6	7.4	7.7	7.7	7.6	7.5	7.4	7.4	7.5	7.4	7.3
Minimum	6.5	7.2	7.0	7.3	7.1	7.3	7.3	7.1	7.2	7.2	7.2	7.1

6.10 Temperature

There are no compliance limits or objectives defined for Effluent.



	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Average C	12.6	11.3	11.6	11.6	14.2	15.9	17.8	18.6	19.1	17.2	14.3	13.0

7 Operating Issues/Problems

There were no major operating issues during 2023 at the Deep River sewage plant.

There was one Notification of Non-Compliance that was reported to MECP SAC and the local MECP Water Inspector in Ottawa. This notification was due to an UV equipment failure. On May 10, 2023 at

approx. 3:13 pm, operators from the plant reported that the UV disinfection system had shut down and that they were setting up the portable chlorination system to provide disinfection to the final effluent (FE). All the FE was diverted to the EQ tank and was being disinfected there with sodium hypochlorite. The diverted flow received approx. 2.5 L of sodium hypo. The effluent that was held overnight in the EQ tank, was tested the following morning to determine if a chlorine residual existed and the result was 0 mg/L. The held effluent was then pumped into the UV channel, so no effluent left the plant without being disinfected by the UV system. It was noticed by the operators that the high water level in the UV channel could have been the cause of the UV system shutting down.

7.1 Effluent Quality Non-Compliance Summary

Date	Exceedance of	Limit	Value	Corrective Action
Jun 2023	ECA Objective - TAN	5.0	6.0	Checked SBR aeration rates, sludge blanket depths, and monitored DO performance.
Jul 2023	ECA Objective - TAN	5.0	9.0	
Oct 2023	ECA Objective - TAN	5.0	6.0	

7.2 Summary of Abnormal Sewage Discharge Events

There were no Abnormal Discharge Events (Bypass', Overflows, Diversions and Spills of Sewage) during 2023 for the Deep River STP.

7.3 Spills (Other than Sewage)

Date	Location	Details	Volume (m3)	Start Date and Time	End Date and Time
None to report for this year					

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
3194630	Diesel engine annual maintenance and monthly checks.
3194662	Clean and calibrate DO analyzers for all three SBR's.
3194668	Test alarm/dialer in electrical service room.
3224263	Monthly H&S Equipment checks.
3288988	Annual inspection for the SBR blowers.
3289012	Maintenance for digester blowers.
3332316	Inspection of the SBR tanks.
3332335	Annual inspection of the sludge mixing pump.
3335759	Inspection of HYAC systems and replace parts, as needed.
3377840	Annual service on SBR mixing pumps.
3377849	Service on comminutor grinder.
3377869/3377879	Annual service on the final and raw sewage samplers.
3425324	Service on the submersible basement sump pump.
3517767	Annual service on separator grit teacup.
3565559	Annual service on compressor.
3584132/3584142	Testing on backflow valve preventers from the basement waterline to teacup, and from the basement sludge decant flush line.
3614863	Annual inspection and flushing of the natural gas hot water storage tank.

8.2 Emergency Maintenance and Repairs

Work Order	Details
3245600	Troubleshooting SCADA with float issues with digester and sludge holding tank.
3289936	CL2 maintenance by pulling check valves and cleaning, then test ran pump.
3338306	Rebuild spare and replaced existing SBR #2 mixing pump due to mechanical seal leaking.
3339731/3339732	Replace worn rubber on SBR blower #3.
3339738	Installed new sludge pump in sludge holding tank.
3340343	Steamed Imhoff #3 transfer line since frozen.
3340344	Pulled sludge holding tank load pump to inspect impeller.
3340345	SBR #3 blower change and cleaning.
3385347	Drained, flushed and cleaned actiflo turbidity meter #3, due to alarm received.
3385348	High water level in the UV channel due to high river levels not allowing the effluent to flow through the outfall sufficiently caused the UV system to shut down. Flow was diverted quickly to the isolated EQ tank. The chlorine system was set up to dose 0.5 mg/L, but was not needed. Reported to MECP.
3386167	Power failure caused wet well high-level alarm due to pump #2 non-operational.

Work Order	Details
3434734	UV bank #5 lost being submerged in water due to high flows – replaced communication board.
3434735	VFD faulted on digester blower, as fuse had blown due to one plugged aeration lateral.
3481372	Annual service on alum pumps - pulled apart and cleaned wet end, checked valves and changed oil.
3524717	Manhole inspections.

8.3 Flow Meter Calibrations and Maintenance

Location	Date of Calibration	Additional Maintenance
Influent Flow Meter	Oct. 19, 2023	N/A
Effluent Flow Meter	Oct. 19, 2023	N/A
Collection Flow Meters	No collection flow meters	

8.4 Authorized Alterations in Collection System

Work Order	Details	Significant Drinking Water Threat (Y/N)
No authorized alterations were made to the collection system in this reporting period.		

8.5 Notice of Modifications

Date	Process	Modification	Status
No notifications provided in this reporting period.			

9 Sludge Generation

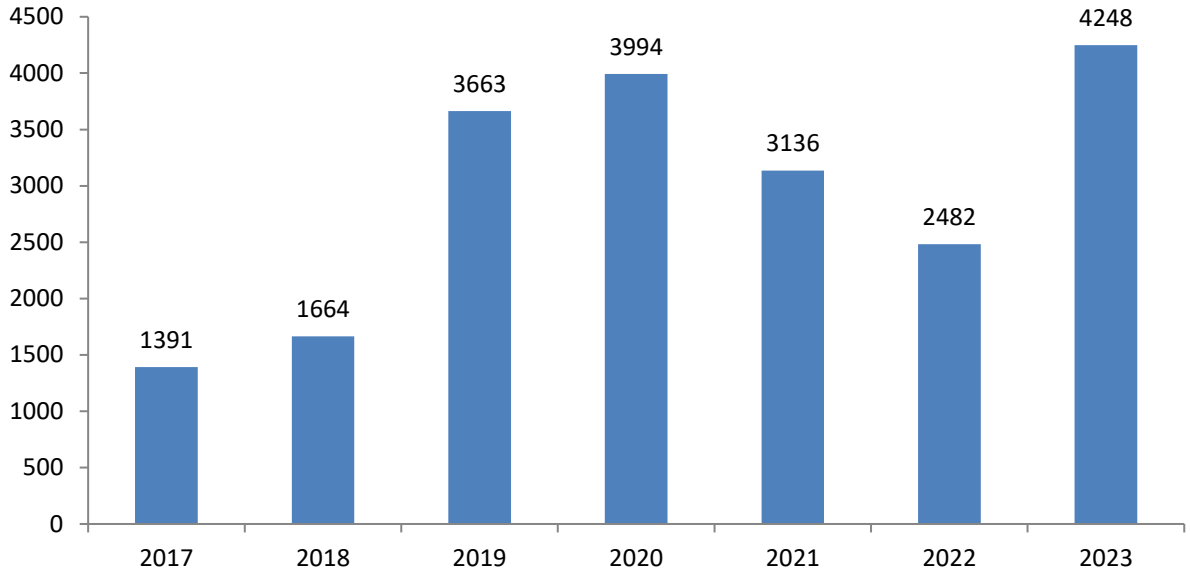
9.1 Sludge Volume Generation Summary

Month	Volume m3
January	
February	
March	
April	
May	1935
June	
July	
August	
September	
October	2313
November	
December	
TOTAL	**4248**

9.2 Sludge Disposal Summary – NASM Land Applications

Date	Disposal Location	NASM Approval Number	Total Volume (m3)
May 23-26	Biggs Farm, Field 2	25039	1018
May 24-27	Biggs Farm, Field 3	25039	917
Oct 20-25	Christink Farm, Field 2	60287	2313
		Total Sludge	4248

9.3 Annual Comparison (m3/year)



It is anticipated that sludge volumes will be similar in the 2024 season, as in 2023.

10 Summary of Complaints

Location	Date	Nature of Complaint	Actions Taken
There were no complaints in this reporting year.			

Appendix A

Appendix A - Performance Assessment Report (PAR)

Ontario Clean Water Agency
Agence Ontarienne Des Eaux

Performance Assessment Report

From 1/1/2023 to 12/31/2023

5853 DEEP RIVER WASTEWATER TREATMENT FACILITY 120000612

	1 / 2023	2/ 2023	3/ 2023	4/ 2023	5/ 2023	6/ 2023	7/ 2023	8/ 2023	9/ 2023	10/ 2023	11/ 2023	12/ 2023	<--Total-->	<--Avg-->	<--Max-->	<-Criteria->
Flows																
Raw Flow: Total - Raw Sewage m³/d	55,493.58	50,391.88	56,733.74	79,997.83	78,351.11	64,346.95	66,822.00	68,811.91	59,681.68	66,624.33	60,711.75	58,096.55	766,063.31			0.00
Raw Flow: Avg - Raw Sewage m³/d	1,790.12	1,799.71	1,830.12	2,666.59	2,527.46	2,144.90	2,155.55	2,219.74	1,989.39	2,149.17	2,023.73	1,874.08		2,098.80		
Raw Flow: Max - Raw Sewage m³/d	2,291.07	2,271.21	2,327.36	3,166.58	3,795.39	3,080.28	2,583.87	3,246.79	3,203.51	3,067.88	2,240.00	2,084.03			3,795.39	0.00
Raw Flow: Count - Raw Sewage 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	55,493.58	50,391.88	56,733.74	79,997.83	78,351.11	64,346.95	66,822.00	68,811.91	59,681.68	66,624.33	60,711.75	58,096.55	766,063.31			0.00
Eff. Flow: Avg - Final Effluent m³/d	1,790.12	1,799.71	1,830.12	2,666.59	2,527.46	2,144.90	2,155.55	2,219.74	1,989.39	2,149.17	2,023.73	1,874.08		2,098.80		2,727.00
Eff. Flow: Max - Final Effluent m³/d	2,291.07	2,271.21	2,327.36	3,166.58	3,795.39	3,080.28	2,583.87	3,246.79	3,203.51	3,067.88	2,240.00	2,084.03			3,795.39	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
Carbonaceous Biochemical Oxygen Demand: CBOD																
Raw: Avg cBOD5 - Raw Sewage mg/L	87.50	65.00	86.50	42.50	54.00	71.00	71.00	61.50	67.50	38.50	49.50	52.00		62.21	87.50	0.00
Raw: # of samples of cBOD5 - Raw Sewage	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	24.00			0.00
Eff: Avg cBOD5 - Final Effluent mg/L	3.50	3.50	3.50	< 1.50	3.50	< 1.50	5.50	4.00	7.00	< 4.00	4.50	4.00		3.83	7.00	25.00
Eff: # of samples of cBOD5 - Final Effluent	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	24.00			0.00
Loading: cBOD5 - Final Effluent kg/d	6.265	6.299	6.405	< 4.000	8.846	< 3.217	11.856	8.879	13.926	< 8.597	9.107	7.496		8.05	13.93	
Total Suspended Solids: TSS																
Raw: Avg TSS - Raw Sewage mg/L	193.00	95.00	132.50	87.50	112.50	133.00	105.50	205.00	319.50	132.50	120.00	316.50		162.71	319.50	0.00
Raw: # of samples of TSS - Raw Sewage	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	24.00			0.00
Eff: Avg TSS - Final Effluent mg/L	< 2.00	< 3.50	< 3.50	< 3.00	8.50	< 4.00	4.50	4.50	11.00	4.50	< 2.50	< 2.00		< 4.46	< 11.00	25.00
Eff: # of samples of TSS - Final Effluent	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	24.00			0.00
Loading: TSS - Final Effluent kg/d	< 3.580	< 6.299	< 6.405	< 8.000	21.483	< 8.580	9.700	9.989	21.883	9.671	< 5.059	< 3.748		< 9.36	< 21.88	
Percent Removal: TSS - Raw Sewage %	98.96	96.32	97.36	96.57	92.44	96.99	95.73	97.80	96.56	96.60	97.92	99.37		96.89	99.37	0.00
Total Phosphorus: TP																
Raw: Avg TP - Raw Sewage mg/L	3.68	2.72	3.44	2.20	2.31	3.59	2.99	4.00	7.36	3.38	3.30	4.49		3.62	7.36	0.00
Raw: # of samples of TP - Raw Sewage	5.00	4.00	4.00	4.00	5.00	4.00	4.00	5.00	4.00	5.00	4.00	4.00	52.00			0.00
Eff: Avg TP - Final Effluent mg/L	< 0.07	0.14	0.20	0.13	0.07	0.11	0.18	0.12	0.26	0.19	< 0.09	0.16		< 0.14	< 0.26	1.00
Eff: # of samples of TP - Final Effluent	5.00	4.00	4.00	4.00	5.00	4.00	4.00	5.00	4.00	5.00	4.00	4.00	52.00			0.00
Loading: TP - Final Effluent kg/d	< 0.129	0.246	0.359	0.345	0.186	0.234	0.384	0.265	0.520	0.404	< 0.191	0.308		< 0.30	< 0.52	
Percent Removal: TP - Raw Sewage %	98.04	94.98	94.30	94.12	96.81	96.96	94.05	97.01	96.45	94.44	97.13	96.33		95.89	98.04	0.00
Nitrogen Series																

Raw: Avg TKN - Raw Sewage mg/L	30.06	27.08	31.78	20.25	19.36	24.30	23.95	32.56	40.05	31.42	45.03	32.98		29.90	45.03	0.00
Raw: # of samples of TKN - Raw Sewage	5.00	4.00	4.00	4.00	5.00	4.00	4.00	5.00	4.00	5.00	4.00	4.00	52.00			0.00
Eff: Avg TAN - Final Effluent mg/L	< 2.16	2.09	3.80	4.28	3.72	5.99	8.90	5.46	5.21	5.67	1.01	3.52		< 4.31	< 8.90	25.00
Eff: # of samples of TAN - Final Effluent	5.00	4.00	4.00	4.00	5.00	4.00	4.00	5.00	4.00	5.00	4.00	4.00	52.00			0.00
Loading: TAN - Final Effluent kg/d	< 3.874	3.761	6.945	11.420	9.412	12.837	19.190	12.115	10.365	12.194	2.034	6.587		< 9.05	< 19.19	

Disinfection

Eff: GMD E. Coli - Final Effluent cfu/100mL	10.00	10.00	13.16	10.00	10.00	8.80	10.00	10.00	10.00	10.00	10.00	42.62				200.00
Eff: # of samples of E. Coli - Final Effluent	5.00	5.00	4.00	4.00	5.00	4.00	4.00	5.00	4.00	5.00	4.00	4.00	53.00			0.00

Appendix B

Appendix B - Details of Abnormal Sewage Discharge Events

Event Details Summary

Facility Bypass

Date	Location	Details	Volume (m3)	Start Time	End Time	Duration (h)	Discharge Receiver	Disinfection Provided
N/A								

Facility Overflow

Date	Location	Details	Volume (m3)	Start Time	End Time	Duration (h)	Discharge Receiver	Disinfection Provided
N/A								

Collection Overflow

There are no authorized overflow locations in this system.

Spills of Sewage

Date	Location	Details	Volume (m3)	Start Time	End Time	Duration (h)	Discharge Receiver	Disinfection Provided
N/A								

Collection System Monitoring Data

Event Date	Event Location	Volume (m3)	Parameter	mg/L	Source Loading	Any Adverse Impacts & Corrective Actions
N/A			BOD			
			Total Suspended Solids			
			Total Phosphorus			
			Total Kjeldahl Nitrogen (TKN)			
			E.Coli			

Appendix C

Appendix C - ECA Annual Report Requirements

Facility ECA #1655-7P8SPE **Section 10(6)**	**Section in Report**
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;	Treatment Flows Effluent Quality
A description of any operating problems encountered and corrective actions taken;	Operating Issues/Problems
A summary of all maintenance carried out on any major structure, equipment, apparatus, mechanism or thing forming part of the works;	Maintenance
A summary of any effluent quality assurance or control measures undertaken in the reporting period;	Effluent Quality
A summary of the calibration and maintenance carried out on all effluent monitoring equipment; and	Maintenance
A description of efforts made and results achieved in meeting the Effluent Objectives of Condition 6	Effluent Quality
A tabulation of the volumes to be generated in the next reporting period and a summary of the location to where the sludge was disposed;	Sludge Generation
A summary of any complaints received during the reporting period and any steps taken to address the complaints	Summary of Complaints
A summary of all By-pass, spill or abnormal discharge events; and	Operating Issues/Problems
Any other information the District Manager requires from time to time;	N/A

Collection ECA # **Schedule E**	**Section in Report**
4.6.3 If applicable, includes a summary of all required monitoring data along with an interpretation of the data and any conclusion drawn from the data evaluation about the need for future modifications to the Authorized System or system operations.	Operating Issues and Problems
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:	Operating Issues/Problems

Collection ECA # **Schedule E**	**Section in Report**
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.	
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