

Morrisburg Wastewater System

Waterworks # 120000168

Annual Report

Prepared For: Municipality of South Dundas

Reporting Period of January 1st – December 31st 2023

Issued: March 15th, 2024

Revision: 0

Operating Authority:



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

Document	Document #	Issue Date	Issue Number
Facility ECA	2147-734L2K	August 28, 2007	N/A
ECA for Municipal Sewage Collection System	165-W601	June 2, 2023	1.0

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1 Revision History

Date	Rev#	Revisions	Revised By
March 15, 2024	0	Annual Report Issued	Kurtis Winkenweder, OCWA

2 Operations and Compliance Reliability Indices

Compliance Event	# of Events
Ministry of Environment Inspections	No MECP inspections in 2023.
Ministry of Labour Inspections	No MOL inspections in 2023.
Non-Compliance	No non-compliances reported in 2023.
Community Complaints	No community complaints outside sewer main blockages in 2023.
Spills	No spills reported in 2023.
Overflows	No overflow events in 2023.
Bypass	No bypass events in 2023.
Sewer main blockages	2 sewer main blockages <ul style="list-style-type: none"> • Details referenced in Complaints section of report

3 Process Description

Morrisburg's sewage collection system is a gravity fed sanitary sewage collection system. There is one pumping station which pumps wastewater from the collection system to the wastewater treatment facility.

Morrisburg's wastewater treatment plant (WWTP) is a Class II wastewater treatment system owned and operated by the Municipality of South Dundas. Raw sewage is pumped to the WWTP from the plant pumping station which is equipped with four submersible pumps. From the pumping station, wastewater passes through the inlet works, including fine screens with a screw compactor and a grit removal and disposal system. Aluminum Sulphate is added to assist in phosphorous removal. The wastewater then moves through either of two parallel Sequencing Batch Reactors (SBRs) equipped with individual aeration systems, mixers, decanters and sludge removal pumps. Effluent decanted from the SBRs is treated by UV disinfection and subsequently passes through an outfall pipe to the St. Lawrence River.

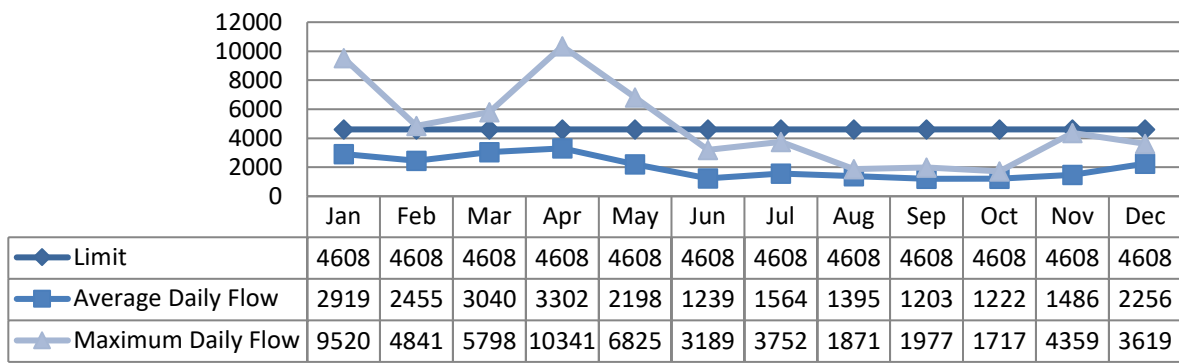
The Morrisburg WWTP can receive septage. Septage can be transferred to the influent fine screens from the onsite holding tank by two dry-pit pumps.

Sludge removed from the SBRs is transferred to a 140 m³ storage tank. From the tank, the sludge enters a gravity belt thickener. The thickened sludge is then pumped to an Autothermal Thermophilic Aerobic Digestion (ATAD) system for stabilization. The digested sludge is subsequently pumped to a 1480 m³ biosolids storage tank. From the storage tank, biosolids are hauled off site to be utilized as soil conditioner.

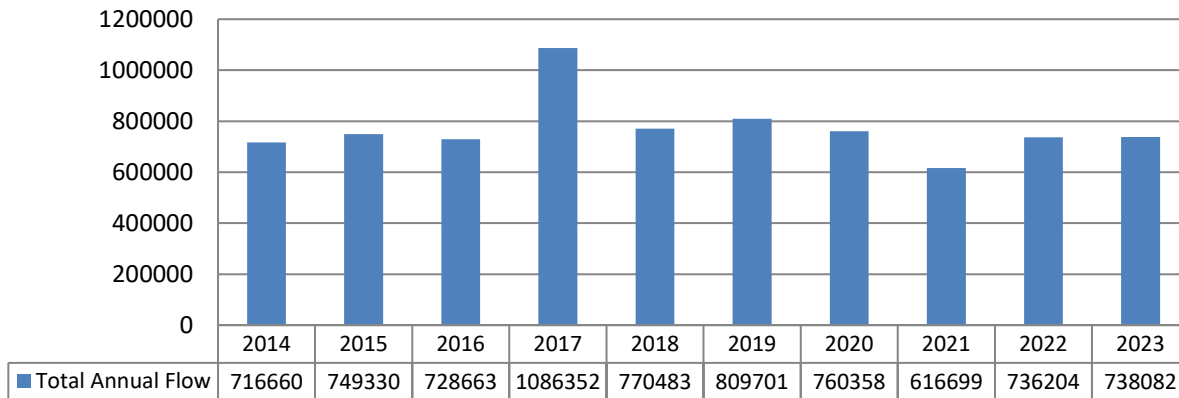
4 Treatment Flows

The hydraulic flows reaching the treatment facility in 2023 averaged 2,022 m³/day, which represents 44% of the 4,608 m³/day design.

4.1 Raw Flow (m³/d)



4.1.1 Annual Comparison (m³)



4.2 Effluent Flow

A total of 738,082 m³ of effluent was discharged from Morrisburg’s WWTP in 2023.

4.3 Imported Waste/Sewage

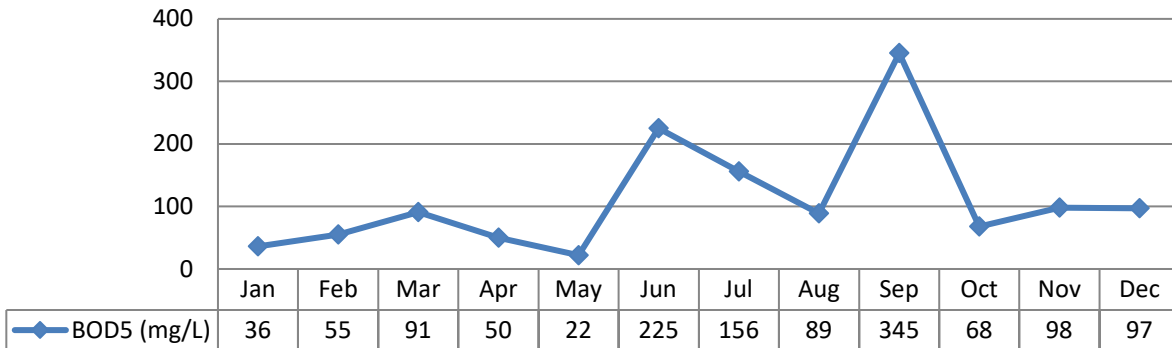
There was no imported waste or sewage accepted at this facility in 2023.

5 Raw Sewage Quality

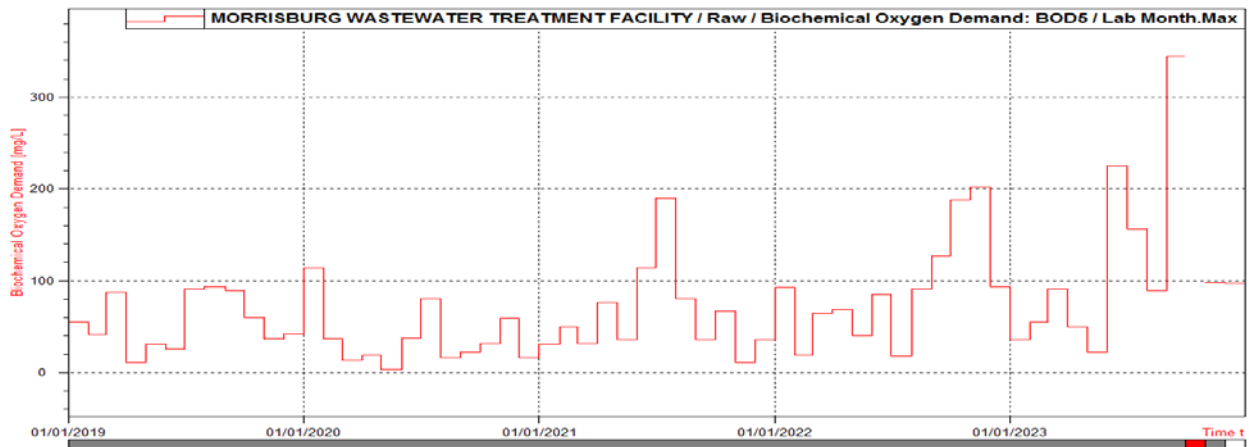
Current year minimum, maximum and averages are available in Appendix A – Performance Assessment Report.

5.1 Influent Trending

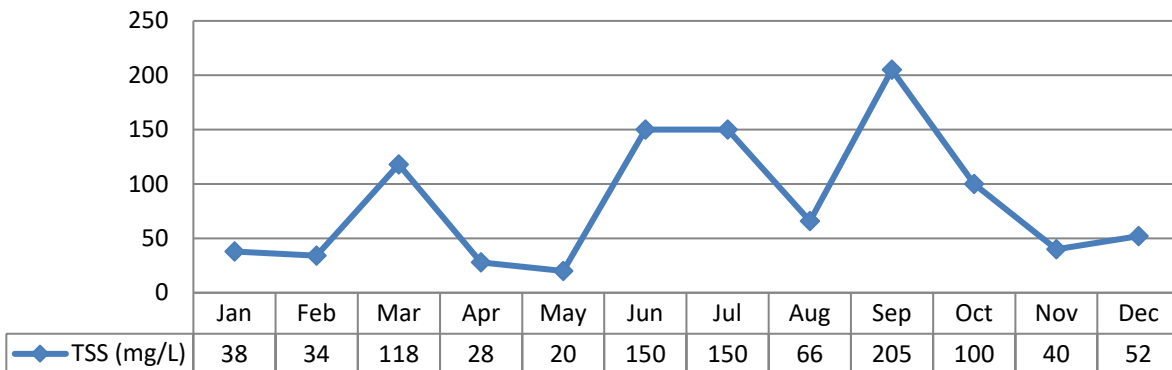
5.1.1 BOD5 (mg/L)



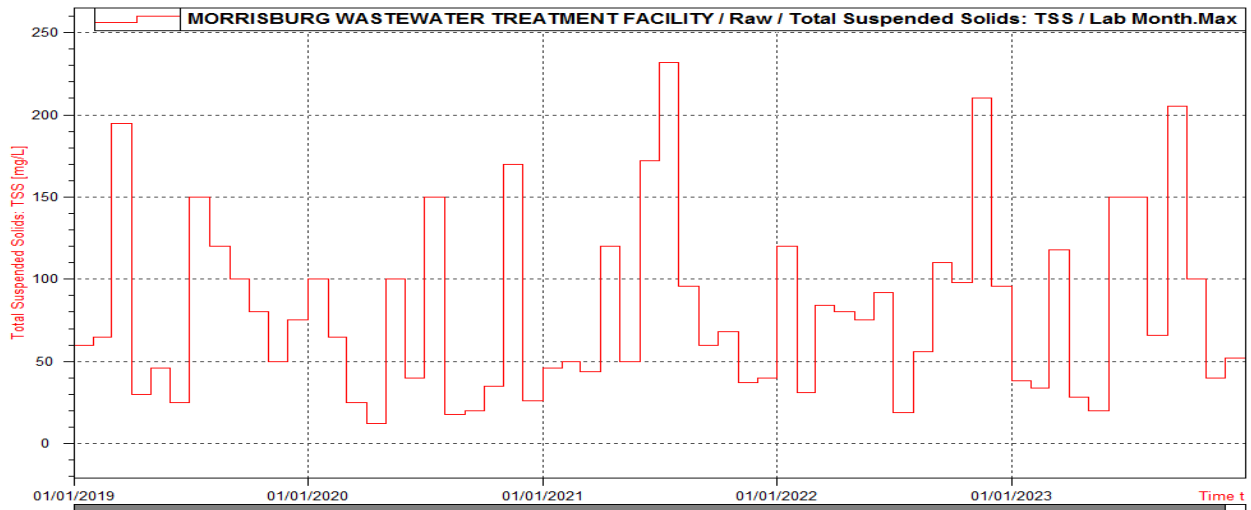
5.1.2 5-year BOD5 (mg/L)



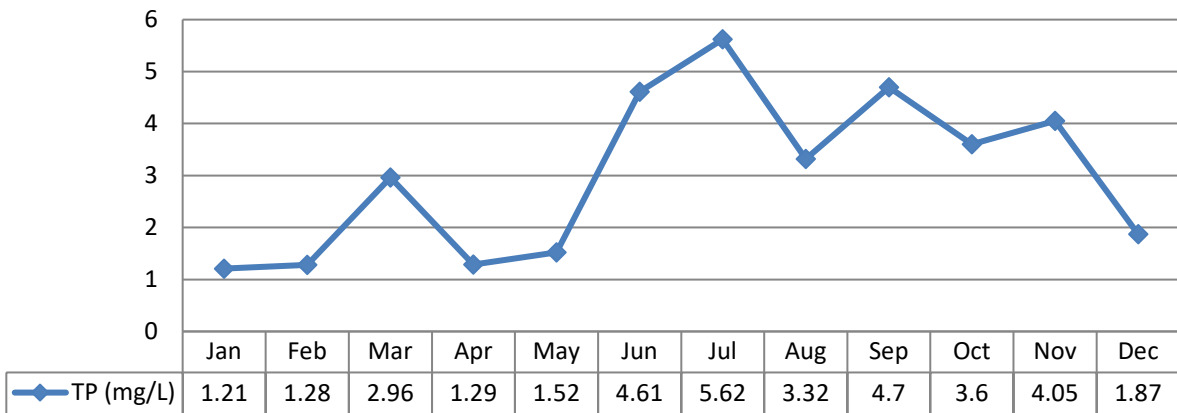
5.1.3 Total Suspended Solids (mg/L)



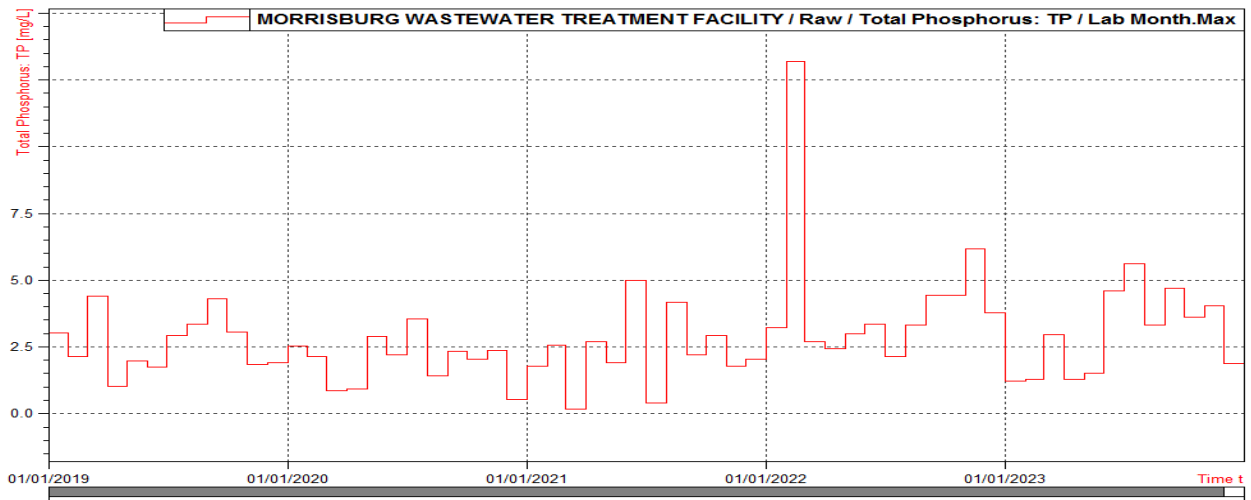
5.1.4 5-year Total Suspended Solids (mg/L)



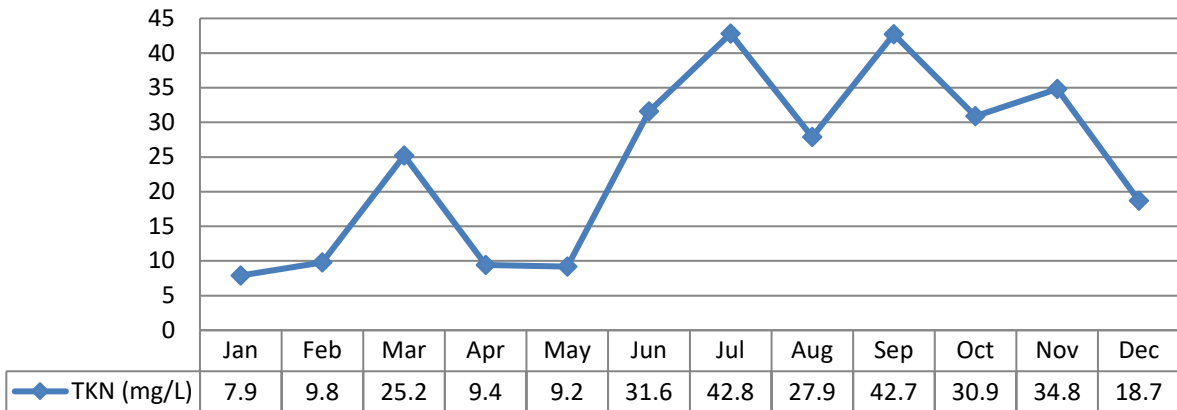
5.1.5 Total Phosphorus (mg/L)



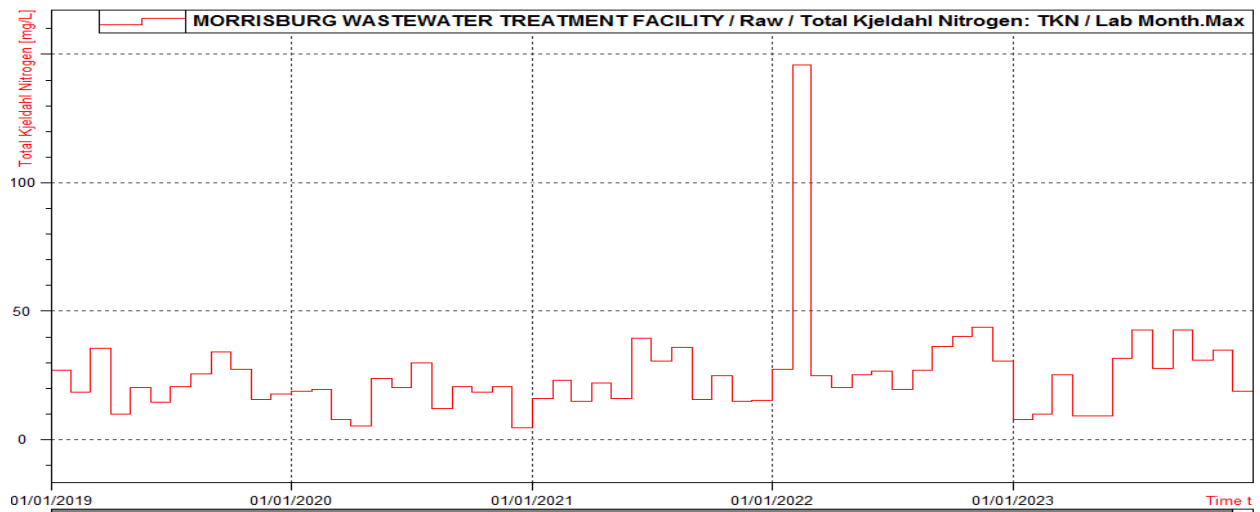
5.1.6 5-year Total Phosphorus (mg/L)



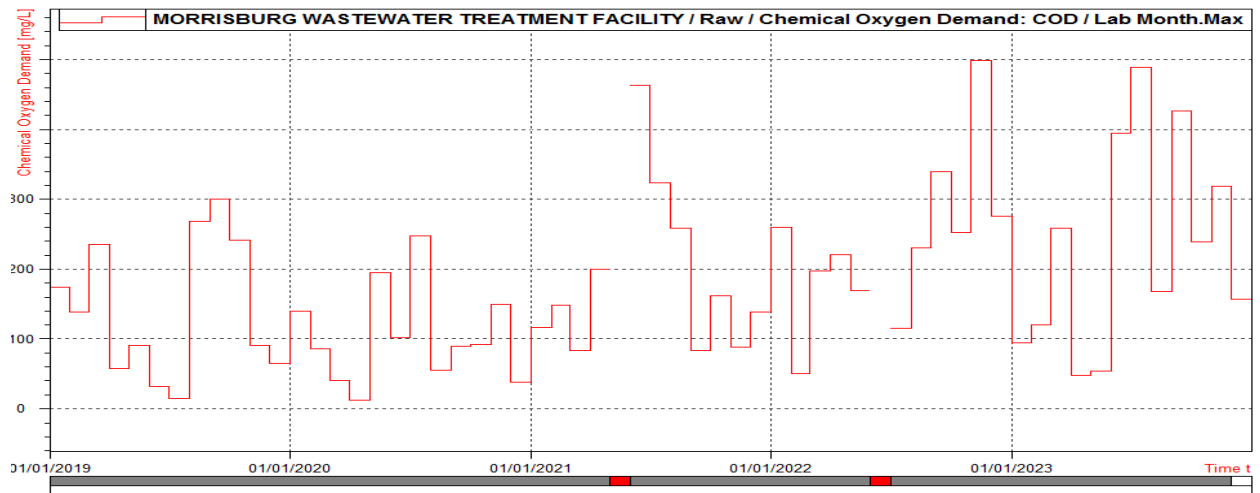
5.1.7 Total Kjeldahl Nitrogen (TKN) (mg/L)



5.1.8 5-year Total Kjeldahl Nitrogen (TKN) (mg/L)



5.1.9 5-year COD (mg/L)



5.2 Imported Waste Quality

There was no imported waste or sewage accepted at this facility in 2023.

6 Effluent Quality

The monthly average concentrations of carbonaceous biochemical oxygen demand (CBOD₅), total suspended solids (TSS), total phosphorus (TP) and total ammonia nitrogen (TAN) remained below the effluent objectives and limits outlined in the facility's Certificate of Approval during 2023. The geometric mean density of E. coli in the effluent also remained below the ECA limit and objective in 2023. In addition the effluent pH remained within the limits and objectives throughout the year.

Effluent results from the WWTP for 2023 are tabulated below. Additional data can be found in the Performance Assessment Reports attached in Appendix A.

6.1 Effluent Quality Assurance and Control Measures Taken

This system is part of the Township of South Dundas. The Township is supported by the Eastern Regional Hub of OCWA, and corporate resources. Operational Services are delivered by Town 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 Caduceon Ottawa for analysis, with the exception of pH and temperature. Caduceon 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, South Dundas is ensuring appropriate control measures are undertaken during sample analysis. The pH 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.

South Dundas uses a data management system provided by OCWA 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.

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

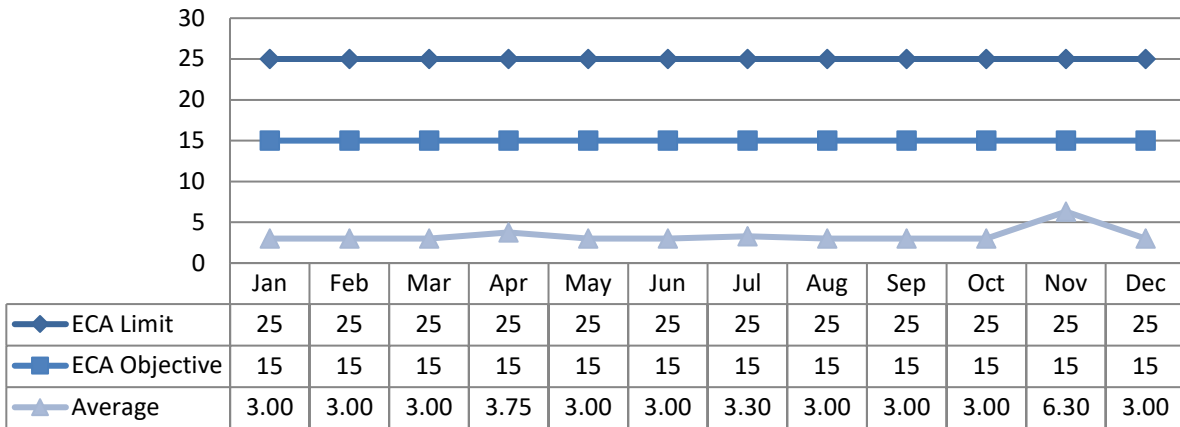
quality effluent product.

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

6.2 CBOD5 (mg/L)

Compliance Limit and Objective for this parameter was met for 2023.

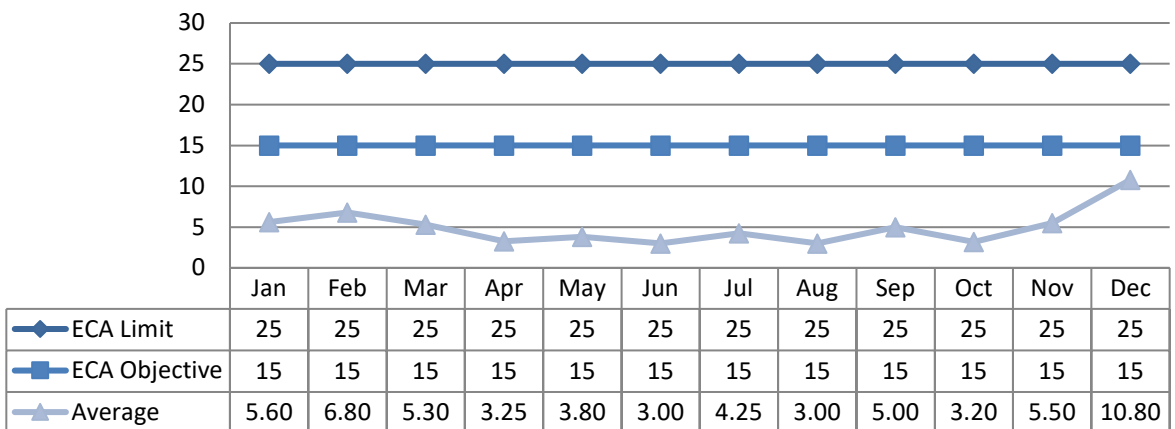
6.2.1 Concentration (mg/L)



6.3 Total Suspended Solids (mg/L)

Compliance Limit and Objective for this parameter was met in 2023.

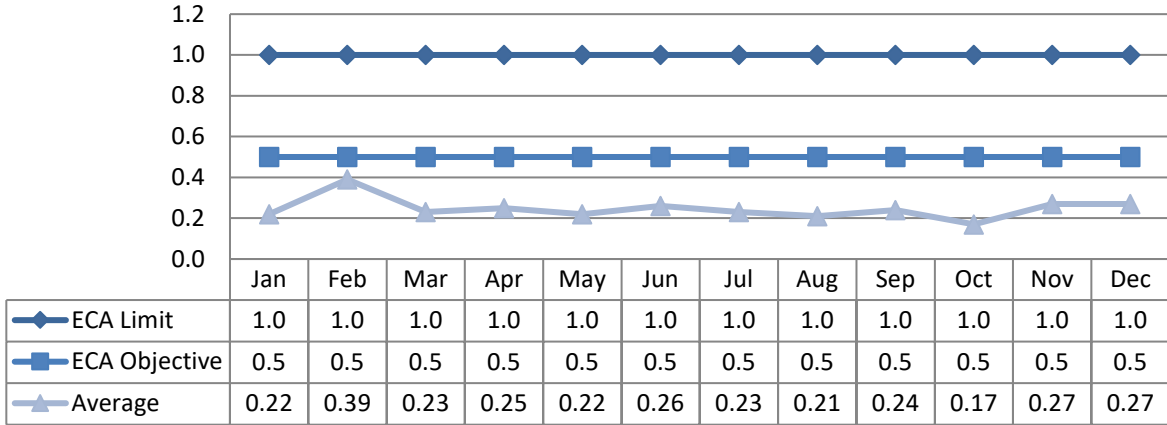
6.3.1 Concentration (mg/L)



6.4 Total Phosphorus (mg/L)

Compliance Limit and Objective for this parameter was met in 2023.

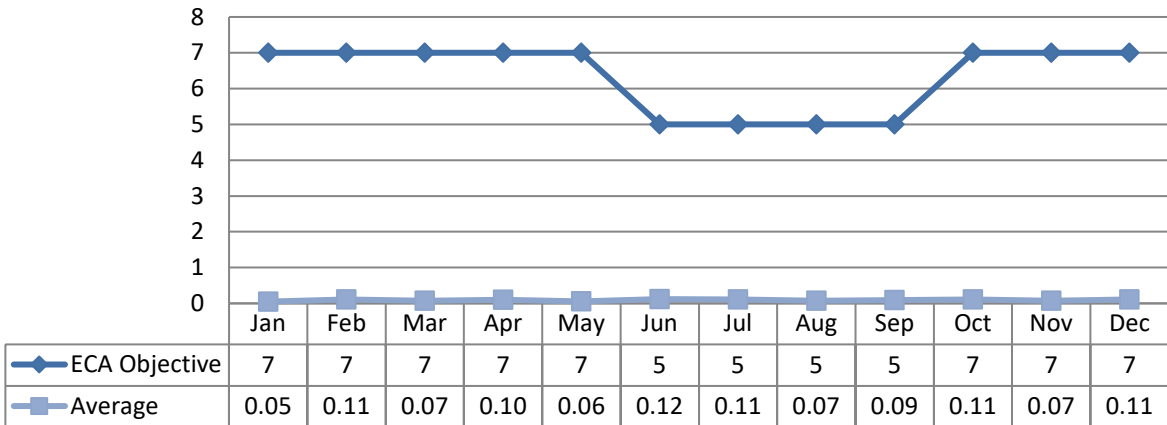
6.4.1 Concentration (mg/L)



6.5 Total Ammonia Nitrogen (mg/L)

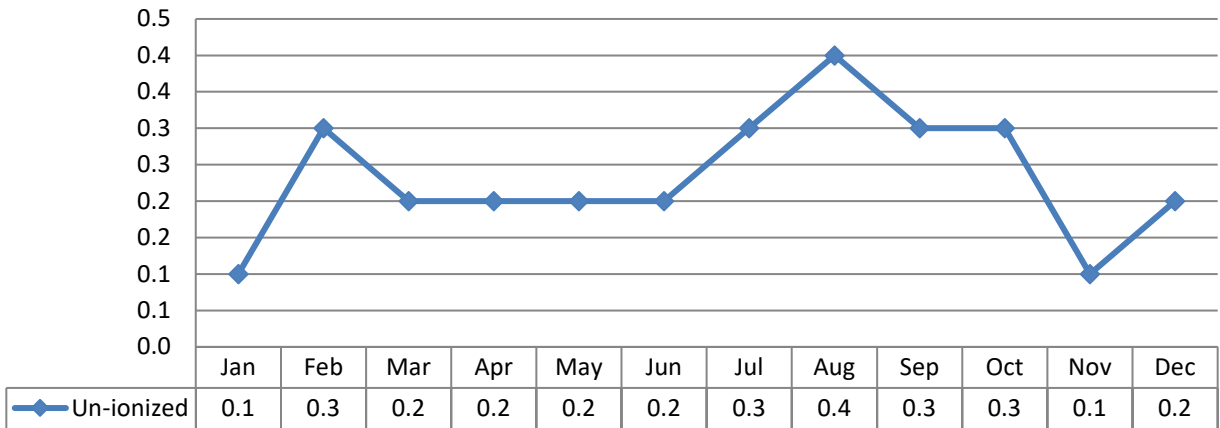
There is no Compliance Limit for this parameter. The Compliance Objective for this parameter was met in 2023.

6.5.1 Concentration (mg/L)



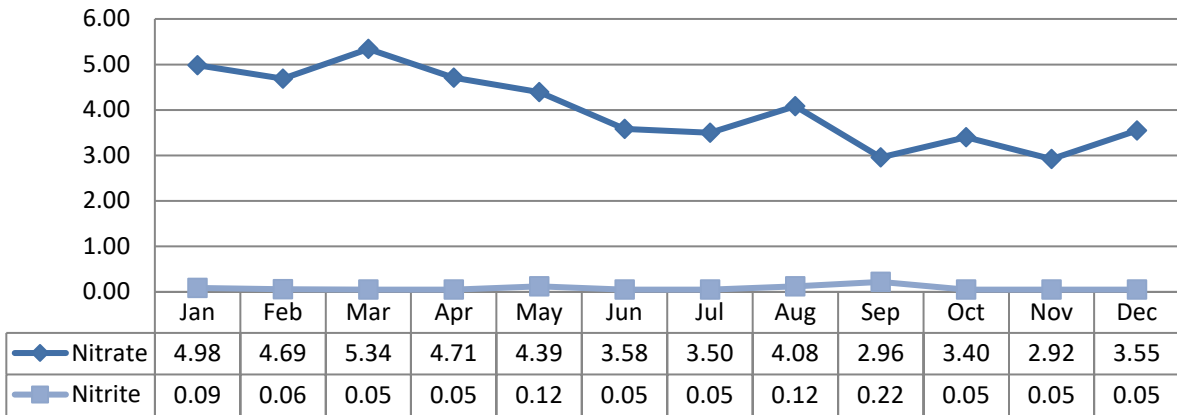
6.6 Un-Ionized Ammonia (ug/L)

There is no Compliance Limit or Objective for this parameter.



6.7 Nitrate, Nitrite (mg/L)

There is no Compliance Limit of Objective for these parameters.



6.8 Acute Lethality

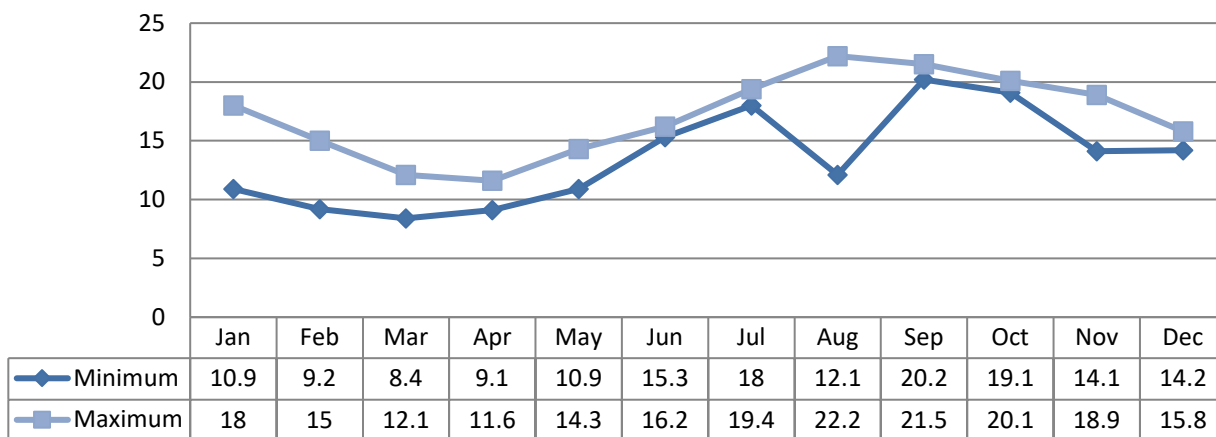
There were four (4) samples collected in 2023 and tested for acute lethality (Rainbow Trout and Daphnia Magna). This sampling is required both provincially and federally. Results are displayed as % mortality. An adverse result is a > 50% mortality rate.

Compliance Limit for this parameter was met in 2023.

Date	Rainbow Trout	Daphnia Magna
January 10 th , 2023	0%	0%
April 4 th , 2023	0%	0%
July 5 th , 2023	0%	0%
October 3 rd , 2023	0%	0%

6.11 Temperature

There are no compliance limits or objectives defined for Effluent.



7 Operating Issues

There were no operating issues to report in 2023.

7.1 Effluent Quality Non-Compliance Summary

Date	Exceedance of	Limit	Value	Corrective Action
No objective or limit exceedances in 2023				

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 B.

7.3 Spills (Other than Sewage)

Date	Location	Details	Volume (m3)	Start Date and Time	End Date and Time
No spills to report in 2023					

8 Maintenance

Routine planned maintenance activities:

- 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.

Unplanned maintenance is conducted as required.

8.1 Normal Maintenance and Repairs

Maintenance/Repair
<ul style="list-style-type: none"> - Full Vac & Clean of ATAD 610 & 620 - Routine MWWTP lift station cleaning - Changed UV lights and ballasts - Replaced three PowerFlex 40 drives in GBT panel - Replaced water solenoids in headworks - Sludge hauling

8.2 Emergency Maintenance and Repairs

Maintenance/Repair	Details
-	Emergency repair on elbow for SBR 410 decant arm.

8.3 Flow Meter Calibrations and Maintenance

Location	Date of Calibration	Additional Maintenance
FIT-370 East Influent Flow Meter	June 14 th , 2023	None.
FIT-380 West Influent Flow Meter	June 14 th , 2023	None.

8.4 Authorized Alterations in Collection System

Alteration	Details	Significant Drinking Water Threat (Y/N)
No alterations to the collection system in 2023		

8.5 Notice of Modifications

Date	Process	Modification	Status
No modifications to the collection system in 2023			

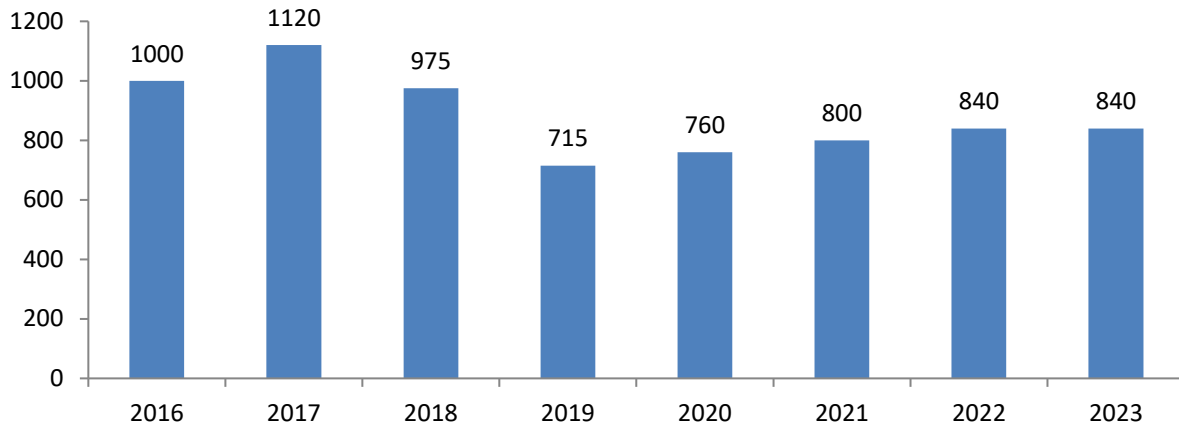
9 Sludge Generation

9.1 Sludge Disposal Summary

Date	Disposal Location	Approval Number	Total Volume (m3)
November 14/15, 2023	Township of Edwardsburgh/Cardinal Edwardsburgh, Concession: 5, Lot: 12	ECA # H480300	840

In 2023, a total of 840 m³ of liquid sludge was removed from Morrisburg's WWTP and was utilized as soil conditioner. The sludge was removed from the WWTP by GFL in November, NASM Plan # 23752. It is anticipated that approximately the same volume of sludge will be generated in 2024.

9.2 10.2 Annual Comparison (m3/year)



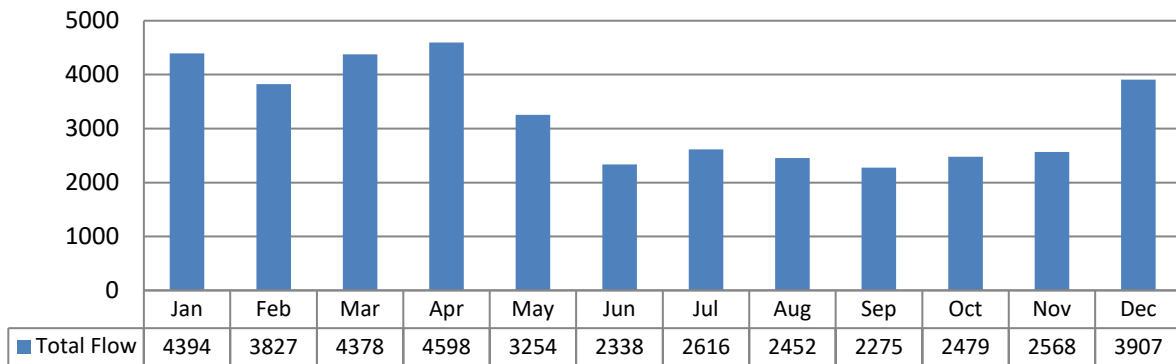
It is anticipated that sludge volumes will remain similar to the 2023 volumes.

10 Summary of Complaints

Location	Date	Nature of Complaint	Actions Taken
Farlinger Ave	03/21/23	Sewer main blockage	Flushed with hydro jet, returned back to normal service
Carraway Crs	11/28/23	Sewer main blockage	Flushed with hydro jet, returned back to normal service

11 Groundwater Pumping Volumes

Groundwater is pumped from the WWTP Building Foundation.



Appendix A

Appendix A – Performance Assessment Report

MORRISBURG WWTP PERFORMANCE ASSESSMENT REPORT

MUNICIPALITY: SOUTH DUNDAS
 PROJECT: MORRISBURG WWTP
 WORKS NUM.: 120000168
 DESCRIPTION: TWO SEQUENTIAL BATCH REACTORS AND AEROBIC SLUDGE DIGESTION

YEAR: 2023
 WATER COURSE: ST. LAWRENCE
 DESIGN CAPACITY: 4,608 m³/d

MONTH	RAW			RAW				SEPTAGE	GROUNDWATER	SLUDGE
	Total Flow m ³	Avg Day Flow m ³	Max Day Flow m ³ /d	Raw BOD (mg/L)	Raw TSS (mg/L)	Raw PHOS. (mg/L)	Raw TKN (mg/L)	Volume Received m ³	Volume Pumped to Storm Sewer m ³	Liquid Sludge Hauled m ³
JAN	90,497	2,919	9,520	36	38	1.21	7.9	0	4394	0
FEB	68,750	2,455	4,841	55	34	1.28	9.8	0	3827	0
MAR	94,250	3,040	5,798	91	118	2.96	25.2	0	4378	0
APR	99,051	3,302	10,341	50	28	1.29	9.4	0	4598	0
MAY	68,123	2,198	6,825	22	20	1.52	9.2	0	3254	0
JUN	37,168	1,239	3,189	225	150	4.61	31.6	0	2338	0
JUL	48,469	1,564	3,752	156	150	5.62	42.8	0	2616	0
AUG	43,241	1,395	1,871	89	66	3.32	27.9	0	2452	0
SEPT	36,104	1,203	1,977	345	205	4.7	42.7	0	2275	0
OCT	37,884	1,222	1,717	68	100	3.6	30.9	0	2479	0
NOV	44,595	1,486	4,359	98	40	4.05	34.8	0	2568	840
DEC	69,950	2,256	3,619	97	52	1.87	18.7	0	3907	0
TOTAL	738,082							0	39,086	840
AVG		2,022		111	83	3.00	24.2			
MAX			10,341							
CRITERIA		4,608	18,500					8.0		
COMPLIANCE		YES	YES							

2023- MORRISBURG WWTP EFFLUENT SAMPLING MONTHLY AVERAGES

MONTH	DATE	COD (mg/L)	TSS (mg/L)	TP (mg/L)	TAN (mg/L)	E. Coll (CFU/100ml)
January	01/03/2023	< 3	7	0.23	0.03	40
	01/10/2023	< 3	3	0.12	0.04	16
	01/17/2023	< 3	5	0.22	0.11	0
	01/24/2023	< 3	6	0.25	0.03	2
	01/31/2023	< 3	7	0.26	< 0.05	9
	Monthly Average	3.0	5.6	0.22	0.05	0
Compliant?	YES	YES	YES	N/A	YES	
February	02/07/2023	< 3	6	0.19	0.11	0
	02/14/2023	< 3	10	0.92	< 0.05	16
	02/21/2023	< 3	7	0.20	0.07	5
	02/28/2023	< 3	4	0.26	0.22	0
	Monthly Average	3.0	6.8	0.39	0.11	0
	Compliant?	YES	YES	YES	N/A	YES
March	03/07/2023	< 3	4	0.22	< 0.05	3
	03/14/2023	< 3	7	0.21	0.13	3
	03/21/2023	< 3	4	0.23	< 0.05	5
	03/28/2023	< 3	6	0.24	< 0.05	8
	Monthly Average	3.0	5.3	0.23	0.07	4
	Compliant?	YES	YES	YES	N/A	YES
April	04/04/2023	6	4	0.21	< 0.05	4
	04/11/2023	< 3	3	0.23	< 0.05	4
	04/18/2023	< 3	3	0.28	0.19	11
	04/25/2023	< 3	3	0.26	0.11	3
	Monthly Average	3.75	3.25	0.25	0.10	5
	Compliant?	YES	YES	YES	N/A	YES
May	05/02/2023	< 3	3	0.16	< 0.10	21
	05/09/2023	< 3	3	0.17	< 0.05	6
	05/16/2023	< 3	3	0.19	< 0.05	1
	05/23/2023	< 3	3	0.29	< 0.05	2
	05/30/2023	< 3	7	0.3	< 0.05	3
	Monthly Average	3.0	3.8	0.22	0.06	4
Compliant?	YES	YES	YES	N/A	YES	
June	06/06/2023	< 3	3	0.32	0.24	12
	06/13/2023	< 3	3	0.28	0.13	3
	06/20/2023	< 3	3	0.25	0.07	2
	06/27/2023	< 3	3	0.17	< 0.05	1
	Monthly Average	3.0	3.0	0.26	0.12	3
	Compliant?	YES	YES	YES	N/A	YES
July	07/05/2023	4	3	0.21	< 0.05	< 2
	07/11/2023	< 3	3	0.26	0.24	2
	07/18/2023	< 3	4	0.23	0.06	5
	07/25/2023	< 3	7	0.21	0.07	1
	Monthly Average	3.3	4.25	0.23	0.11	2
	Compliant?	YES	YES	YES	N/A	YES
August	08/01/2023	< 3	3	0.21	0.1	7
	08/09/2023	< 3	3	0.20	< 0.05	< 2
	08/15/2023	< 3	3	0.19	< 0.05	1
	08/22/2023	< 3	3	0.23	0.07	0
	08/29/2023	< 3	3	0.2	0.09	1
	Monthly Average	3.0	3	0.21	0.07	0
Compliant?	YES	YES	YES	N/A	YES	
September	09/06/2023	< 3	4	0.32	0.05	3
	09/12/2023	< 3	3	0.16	0.09	2
	09/19/2023	< 3	6	0.2	0.08	1
	09/26/2023	< 3	7	0.29	0.15	0
	Monthly Average	3.0	5.0	0.24	0.09	0
	Compliant?	YES	YES	YES	N/A	YES
October	10/03/2023	< 3	4	0.16	0.35	1
	10/11/2023	< 3	3	0.16	< 0.05	108
	10/17/2023	< 3	3	0.17	< 0.05	10
	10/24/2023	< 3	3	0.18	< 0.05	3
	10/31/2023	< 3	3	0.18	< 0.05	17
	Monthly Average	3.0	3.2	0.17	0.11	9
Compliant?	YES	YES	YES	N/A	YES	
November	11/07/2023	16	3	0.28	0.08	12
	11/14/2023	< 3	10	0.27	0.07	7
	11/21/2023	< 3	3	0.31	0.09	13
	11/28/2023	< 3	6	0.21	< 0.05	84
	Monthly Average	6.3	5.5	0.27	0.07	17
	Compliant?	YES	YES	YES	N/A	YES
December	12/05/2023	< 3	4	0.15	0.06	102
	12/12/2023	< 3	3	0.15	0.08	18
	12/19/2023	< 3	6	0.64	0.22	4
	12/27/2023	< 3	30	0.12	0.06	< 2
	Monthly Average	3.0	10.8	0.27	0.11	11
	Compliant?	YES	YES	YES	N/A	YES

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
No facility bypass' to report in 2023								

Facility Overflow

Date	Location	Details	Volume (m3)	Start Time	End Time	Duration (h)	Discharge Receiver	Disinfection Provided
No facility overflows to report in 2023								

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
No spills of sewage to report in 2023								

Appendix C

Appendix C – Biosolids Quality Report

2023 - MORRISBURG WWTP MONTHLY AEROBIC BIOSOLIDS CONCENTRATION RATIO

	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec
Ammonia	1200	1000	940	1390	60	653	1000	1640	1	1120	1350	1350
Nitrate	1.5	0.1	0.9	1.2	1.2	0.4	0.1	0.6	1.3	7.8	0.1	0.5
Ammonia + Nitrate	1202	1000	941	1391	61	653	1000	1641	2	1128	1350	1351
Total Phosphorus	1150	990	1000	1090	773.0	1130	860	1140	1280	1200	1290	1510
Total Solids	48000	32000	28200	36500	25500	39000	31400	29800	20000	24000	39700	37200
Aluminum	1020	171	184	800	845	560	735	985	1230	1280	1230	1380
Arsenic	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.1	0.1	0.1	0.1	0.1
Cadmium	0.03	0.03	0.03	0.03	0.0	0.03	0.03	0.03	0.03	0.03	0.03	0.03
Chromium	1.42	0.24	0.25	1.44	1.47	0.85	1.10	1.26	2.29	2.33	2.37	2.62
Cobalt	0.16	0.03	0.03	0.13	0.14	0.05	0.10	0.09	0.12	0.12	0.16	0.19
Copper	38.8	6.3	5.4	23.7	24.7	17.6	22.1	27.2	38.3	36.9	36.3	42.4
Lead	0.60	0.10	0.10	0.70	0.50	0.30	0.40	0.5	0.6	0.7	0.6	0.7
Mercury	0.017	0.026	0.016	0.086	0.026	0.023	0.028	0.022	0.036	0.041	0.056	0.059
Molybdenum	0.27	0.18	0.18	0.24	0.24	0.18	0.18	0.22	0.33	0.3	0.3	0.4
Nickel	2.32	0.30	0.23	1.14	1.11	0.65	0.84	0.82	1.24	1.1	1.2	1.2
Selenium	0.20	0.10	0.20	0.20	0.20	0.10	0.10	0.2	0.2	0.2	0.2	0.2
Zinc	13	2.44	2.11	10.4	11.0	6.95	8.7	11.8	14.9	15.6	16.5	19.1

Metals ratio = mg metals/kg solids

	Metal/Solids Ratio (Sludge)												Limit
	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec	
Arsenic	2.08	3.13	3.55	2.74	3.92	2.56	3.18	3.36	5.00	4.17	2.52	2.69	170
Cadmium	0.63	0.94	1.06	0.82	1.18	0.77	0.96	1.01	1.50	1.25	0.76	0.81	34
Chromium	29.6	7.5	8.9	39.5	57.6	21.8	35.0	42.3	114.5	97.1	59.7	70.4	2800
Cobalt	3.33	0.94	1.06	3.56	5.49	1.28	3.18	3.02	6.00	5.00	4.03	5.11	340
Copper	808	196	192	649	969	451	704	913	1915	1538	914	1140	1700
Lead	12.5	3.1	3.5	19.2	19.6	7.7	12.7	16.8	30.0	29.2	15.1	18.8	1100
Mercury	0.35	0.81	0.57	2.36	1.02	0.59	0.89	0.74	1.80	1.71	1.41	1.59	11
Molybdenum	5.63	5.63	6.38	6.58	9.41	4.62	5.73	7.38	16.50	13.75	7.30	9.41	94
Nickel	48.3	9.4	8.2	31.2	43.5	16.7	26.8	27.5	62.0	46.7	29.0	32.8	420
Selenium	4.17	3.13	7.09	5.48	7.84	2.56	3.18	6.71	10.00	8.33	5.04	5.38	34
Zinc	265	76	75	285	431	178	275	396	745	650	416	513	4200

Sludge is Acceptable	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	FALSE	TRUE	TRUE	TRUE
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Appendix D

Appendix D - ECA Annual Report Requirements

Facility ECA # 2147-734L2K Section 12(6)	Section in Report
a) a summary and interpretation of all monitoring data and comparison to the effluent limits outlined in Condition 7, including an overview of success and adequacy	Treatment Flows, Raw Sewage and Effluent Quality
b) a description of any operating problems encountered and corrective actions taken	Operating Issues and Problems
c) summary of all maintenance carried out on any major structure, equipment, apparatus, mechanism or thing forming part of the Works	Maintenance
d) summary of any effluent quality assurance or control measures undertaken in the reporting period	Effluent Quality
e) summary of the calibration and maintenance carried out on all effluent monitoring equipment	Maintenance
f) description of efforts made and results achieved in meeting the Effluent Objectives of Condition 6	Effluent Quality
g) tabulation of the quantity of septage added to the Works for co-treatment during the reporting period	Treatment Flows
h) summary of chemical characterization data for samples of septage collected in accordance with Table 4 in Condition 11 during the reporting period	Raw Sewage Quality
i) 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	Sludge Generation
j) tabulation of the quantity of groundwater pumped from the WWTP Building foundation drainage system to the storm sewer system	Groundwater Pumping Volumes
k) summary of any complaints received during the reporting period and any steps taken to address the complaints	Summary of Complaints
l) summary of all By-pass, overflow, spill or abnormal discharge events	Operating Issues and Problems
m) any other information the District Manager requires from time to time	N/A

Collection ECA # 165-W601 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 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 and Problems Appendix D

<p>Collection ECA # 165-W601 Schedule E</p>	
<p>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.</p>	
<p>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.</p>	<p>Maintenance Operating Issues and Problems</p>