

2024/2025 ANNUAL PERFORMANCE REPORT

ARTHUR WASTEWATER
TREATMENT PLANT



For the period of
October 1st, 2024 to May 31st, 2025

Prepared for the Township of Wellington North by the Ontario Clean Water Agency



ONTARIO CLEAN WATER AGENCY
AGENCE ONTARIENNE DES EAUX

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The enclosed 2024/2025 Annual Performance Report for the Arthur Wastewater Treatment Plant (WWTP) summarizes the performance and related activities in accordance with its Amended Environmental Compliance Approval (ECA) Number 7654-BEMKVD (issued September 10, 2019) as per Section 14(4) elements a through o during the reporting period of October 1, 2024 to May 31, 2025.

1. System Description

The Arthur Waste Water Treatment Plant (WWTP) is an extended aeration plant and is located at 160 Preston Street in Arthur, Ontario. The WWTP and its collection system are owned by the Township of Wellington North and the Operating Authority is the Ontario Clean Water Agency (OCWA). As per ECA 7654-BEMKVD, the plant’s rated capacity is 1,860 m³/d. The major process units consist of: inlet works, preliminary treatment consisting of screening and grit removal, influent flow measurement, secondary treatment systems consisting of biological treatment in aerations tanks, secondary sedimentation in one clarifier, and tertiary treatment consisting of a sand filtration system, phosphorus removal and UV disinfection. Sludge is managed through sludge digestion in a primary and secondary digester and stored in four sludge storage tanks prior to haulage. The WWTP discharges the treated effluent via its outfall into the Conestogo River.

The Arthur WWTP sewage collection system consists of a network of sewage collection pipework and maintenance access points, and two sewage Pumping Stations (PS’s). Frederick Sewage Pumping Station is located at 176 Frederick Street West and is connected via a forcemain to the inlet works at the WWTP. Well Street Sewage Pumping Station is located on Well Street and is also connected via a forcemain to the inlet works at Arthur WWTP. On January 10, 2023, The Township of Wellington North was issued its first Municipal Sewage Collection System ECA #113-W601, Issue 1. Further information regarding the performance of the 2024 Township of Wellington North Municipal Sewage Collection System, inclusive of the Arthur Sewage Collection System, can be found in the Collection System Annual Report located on the Township Website:

https://www.wellington-north.com/sites/default/files/2025-08/Wellington%20North_Municipal%20Sewage%20Collection%20System_Annual%20Report_2024.pdf

An overview of the Arthur Wastewater Treatment System can be found in the following table:

Table 1: Arthur WWTP System Overview

Facility Name	Arthur Wastewater Treatment Plant
Facility Type	Extended Aeration, Sand Filtration, Chemical Phosphorus Removal, and UV Treatment
Plant Classification	Class III WWT/Class II WWC
Works Number	110000882
Rated Capacity	1,860 m³/d
Discharge Point	Conestogo River
Environmental Compliance Approval	7654-BEMKVD (September 10, 2019)

2. Influent Monitoring

Where ECA 7654-BEMKVD, Section 13 (4)(a) requires:

“a summary and interpretation of all Influent, Processed Organic Waste monitoring data, and a review of the historical trend of the sewage characteristics and flow rates;”

2.1 Influent ECA Monitoring Program

The following tables outline the monitoring programs at the Arthur Wastewater Treatment Plant (WWTP) as required by the most current ECA for the reporting period. There are additional in-house samples taken and analyzed throughout the year in order to help with process performance monitoring, adjustment, and optimization. The parameters were analyzed by an accredited analytical laboratory (SGS (Lakefield) Canada Inc.).

Table 2: Influent Monitoring Program– Discharge of Inlet Sewer- *as per ECA 7656-BEMKVD, Schedule E*

Parameters	Sample Type	Frequency
Biochemical Oxygen Demand (BOD ₅)	24-hour Composite	Monthly
Total Suspended Solids (TSS)	24-hour Composite	Monthly
Total Phosphorous (TP)	24-hour Composite	Monthly
Total Kjeldahl Nitrogen (TKN)	24-hour Composite	Monthly

2.2 Raw Sewage (Influent) Characteristics: Summary and Interpretation of Reporting Year

The following parameters in Table 3 are not reportable as they do not have limits or objectives but are monitored as required by the ECA and used to characterize the contents of incoming sewage flow.

A summary of the influent laboratory results can be found in the following table for samples taken and analyzed during the reporting period.

Table 3: Raw Sewage (Influent) Quality Analysis – Discharge of Inlet Sewer

Month & Year	BOD ₅ (mg/L)	TSS (mg/L)	TP (mg/L)	TKN (mg/L)
October 2024	312.00	264.00	5.55	37.30
November 2024	261.00	258.00	4.98	41.20
December 2024	238.00	203.00	4.82	42.80
January 2025	312.00	177.00	6.37	53.40
February 2025	244.00	111.00	6.78	65.80
March 2025	221.00	138.00	4.57	38.60
April 2025	138.00	97.00	2.40	21.20
May 2025	199.00	170.00	5.40	30.60
Reporting Period Annual Average	238.86	172.71	5.19	42.17

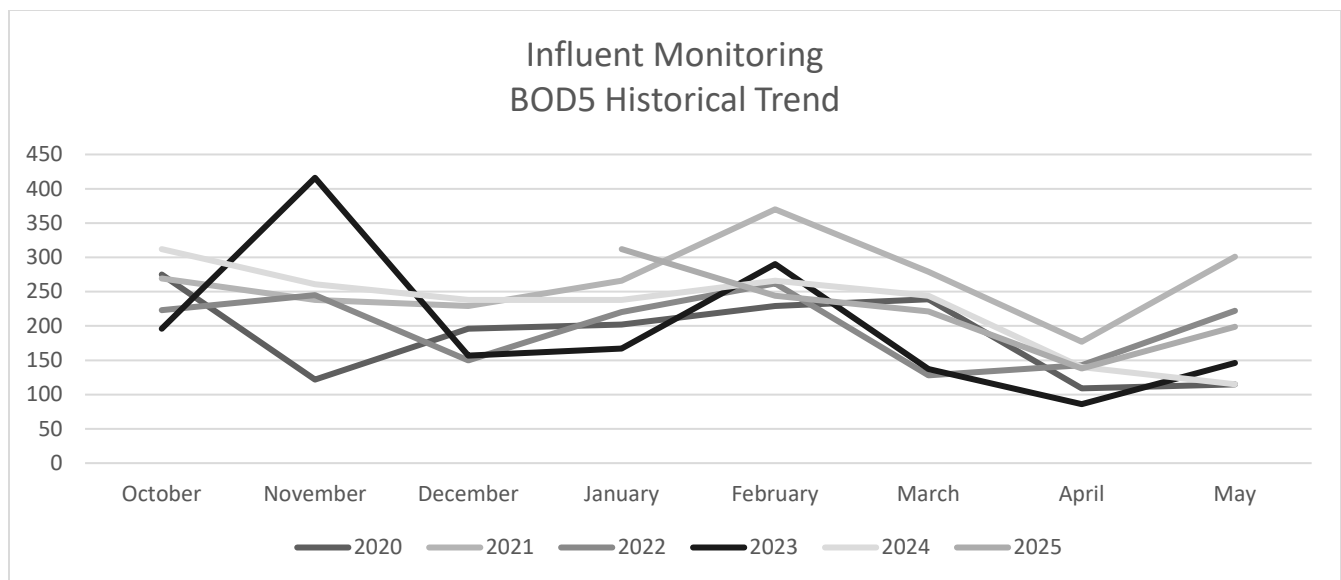
Inlet Sewer laboratory analysis throughout this reporting period averaged a Biochemical Oxygen Demand (BOD₅) concentration of 238.86 mg/L, a Total Suspended Solids (TSS) concentration of 172.71 mg/L, a Total Phosphorus (TP) concentration of 5.19 mg/L and a Total Kjeldahl Nitrogen concentration of 42.17 mg/L.

2.3 Raw Sewage (Influent) Characteristics: Review of Historical Trends

A review of historical trends of the influent sewage characteristics are shown below in the following graphs 1-4:

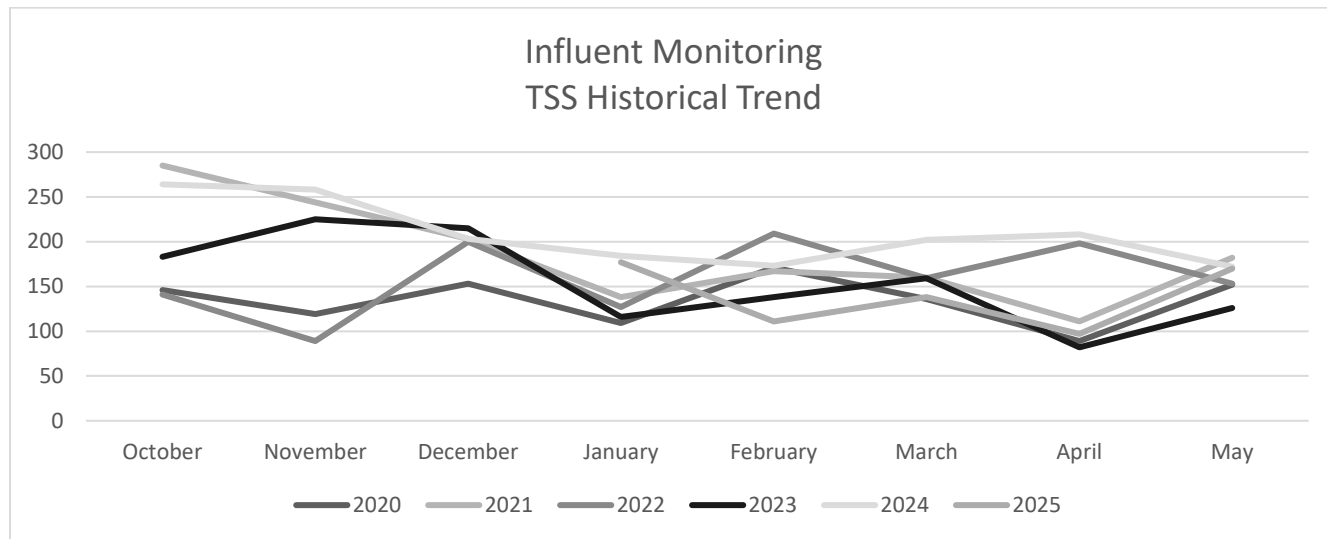
The below graph shows historical raw Biochemical Oxygen Demand (BOD₅) trending from 2020 to 2025. A review of the trends from the last 5 years for BOD₅ shows that the reporting period average BOD₅ concentration in the raw sewage has fluctuated year per year.

Graph 1: BOD₅ Historical Trending Laboratory Results (Influent) – Discharge of Inlet Sewer



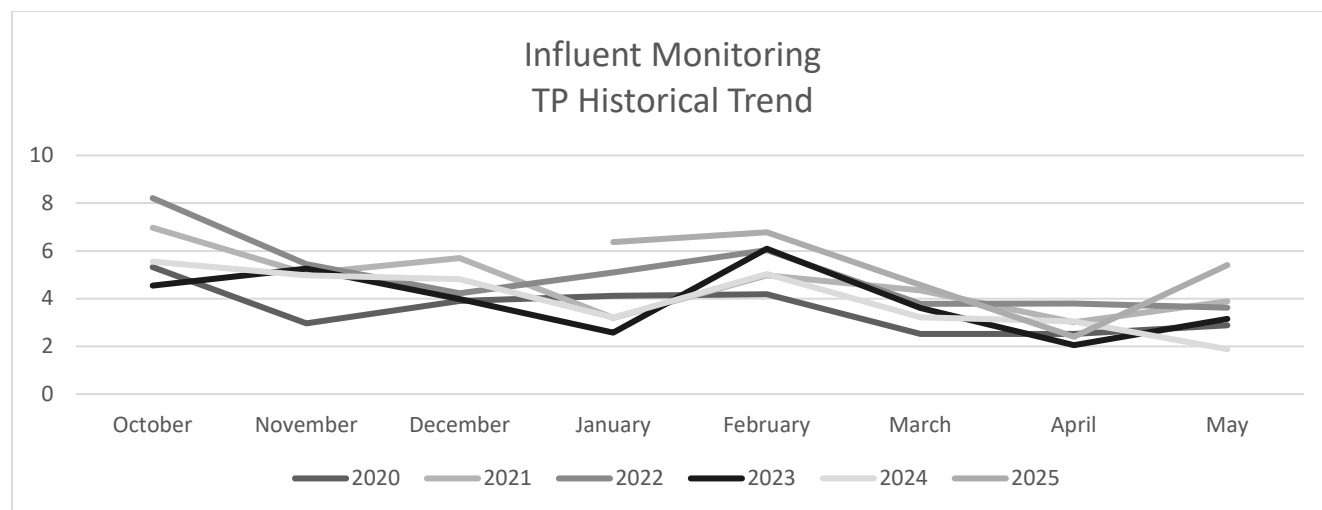
The below graph shows the historical raw Total Suspended Solids trending from 2020 to 2025. A review of the trends from the last 5 years for TSS has shown similar concentrations to previous reporting periods.

Graph 2: TSS Historical Trending Laboratory Results (Influent) – Discharge of Inlet Sewer



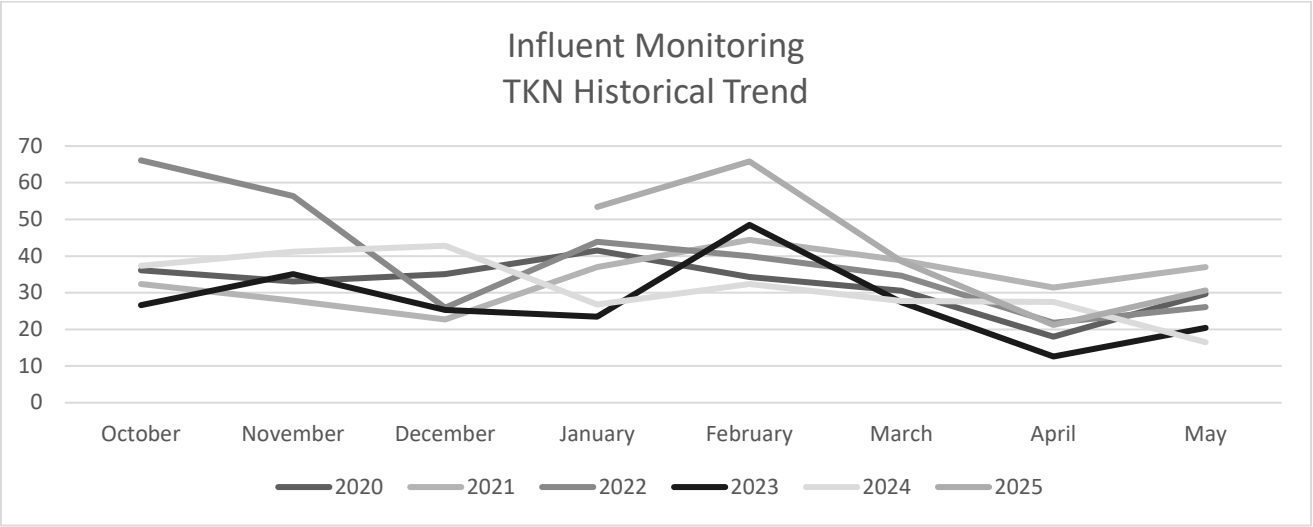
The below graph shows the historical raw Total Phosphorus trending from 2020 to 2025. A review of the trends from the last 5 years for TP has shown similar concentrations to previous reporting periods.

Graph 3: TP Historical Trending Laboratory Results (Influent) – Discharge of Inlet Sewer



The below graph shows the historical raw Total Kjeldahl Nitrogen trending from 2020 to 2025. A review of the trends from the last 5 years for TP has shown similar concentrations to previous reporting periods.

Graph 4: TKN Historical Trending Laboratory Results (Influent) – Discharge of Inlet Sewer



2.4 Influent Flows

A summary of Influent Flows during the reporting period is included in the following table:

Table 4: Influent Flows^{4A}

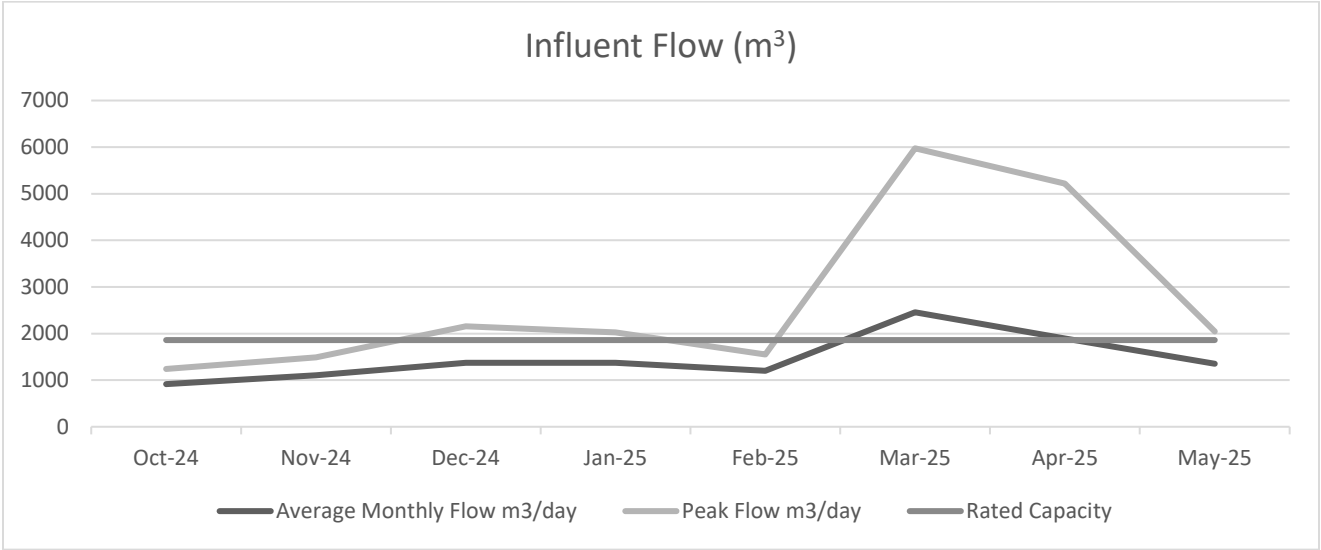
Month	Average Daily Flow (m ³ /day)	Peak Flow (m ³ /day)	Total Flow (m ³)
October 2024	915.05	1,240.40	28,366.70
November 2024	1,101.72	1,488.80	33,051.70
December 2024	1,375.33	2,152.80	42,635.20
January 2025	1,369.61	2,024.00	42,457.80
February 2025	1,198.20	1,553.80	33,549.60
March 2025	2,456.20	5,974.80	76,142.10
April 2025	1,896.26	5,214.80	56,887.90
May 2025	1,354.53	2,044.40	41,990.40
Reporting Period Average	1,662.44	-	-
Reporting Period Max	-	5,974.80	-
Reporting Period Total	-	-	355,081.40

^{4A}Influent flow is calculated based on River Discharge Flow along with Lagoon Flow as there is no Raw Flow Meter

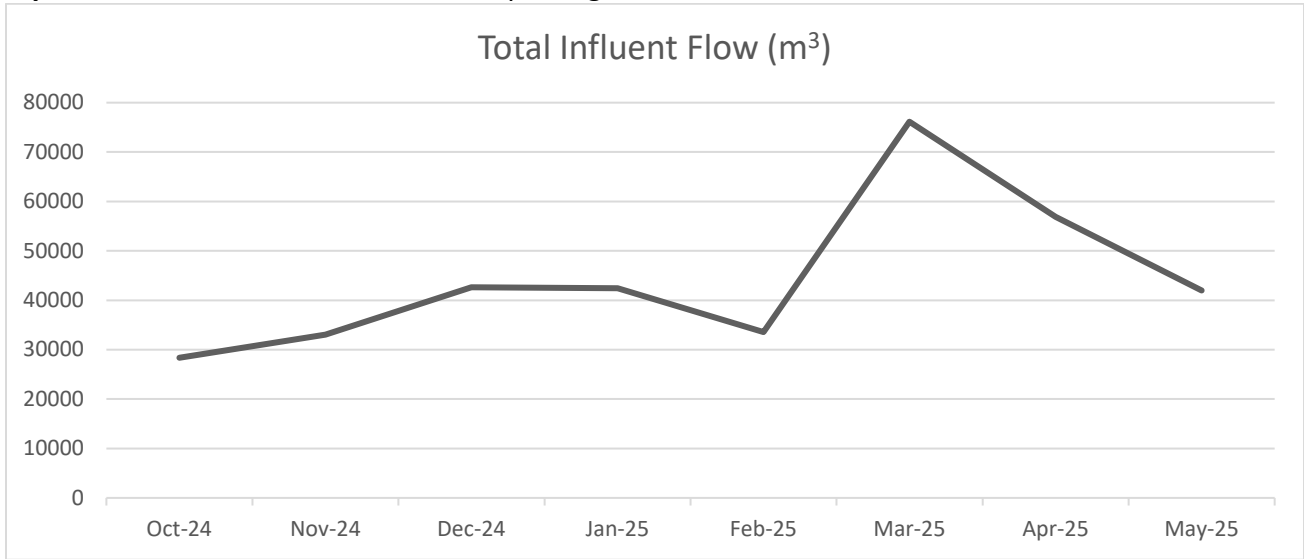
The average monthly flow for the reporting period was 1,662.44 m³, which is approximately 89.38% of the specified design flow of 1,860.00 m³/day. The highest recorded monthly average flow occurred in March 2025 at 2,456.20 m³ and was due to increased precipitation and inflows from the un-seasonal

melts during January. The total precipitation for March 2025 was one of the highest for the reporting period apart from December 2024 and April 2025 based on data from Environment Canada. Please refer to below for graphical representation of influent flows for the reporting period:

Graph 5: Influent: Average Daily Flows & Peak Flows Versus Designed Limits for Reporting Period



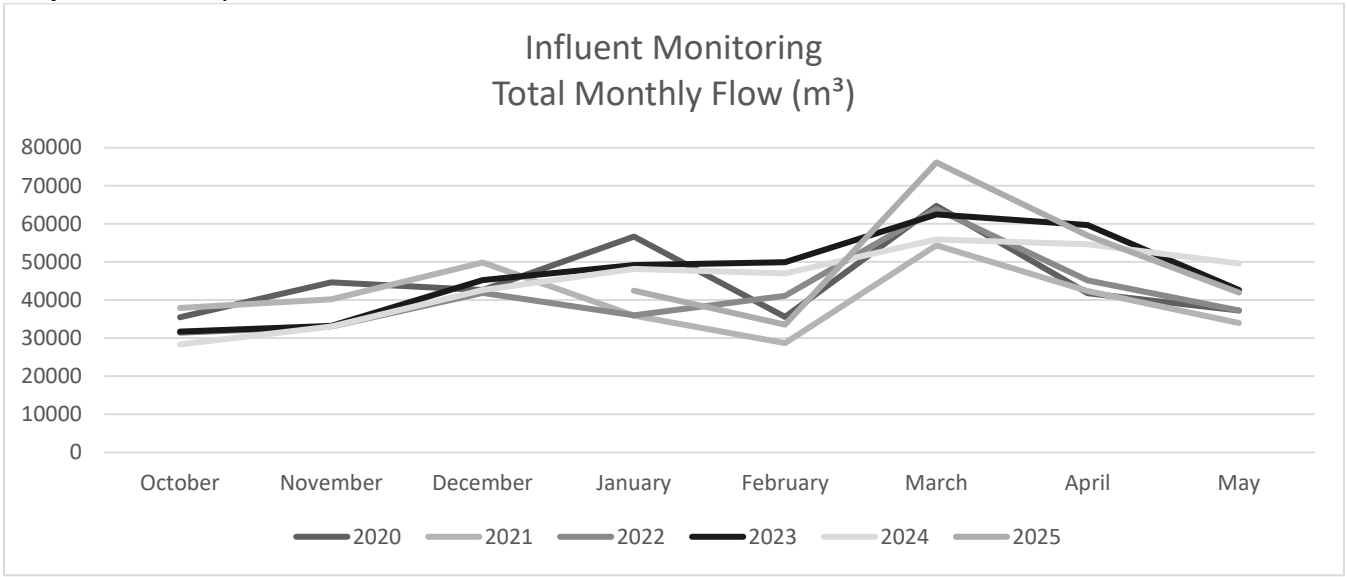
Graph 6: Influent: Total Flows for the Reporting Period



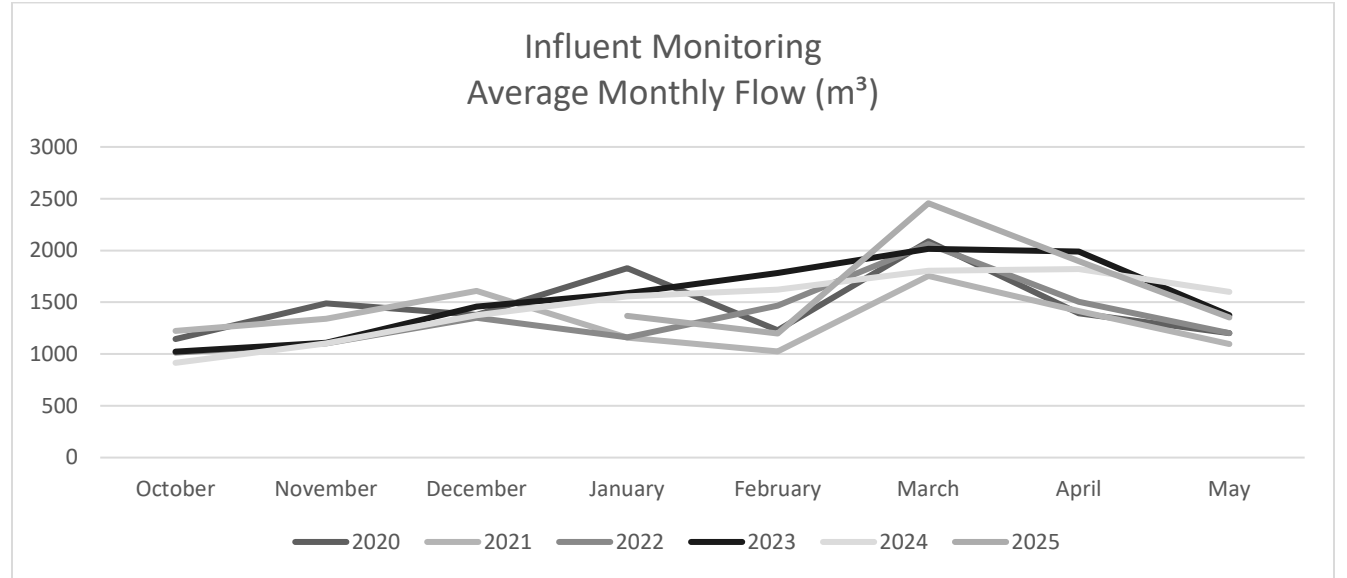
2.5 Influent Flow and Volume: Review of Historical Trends

A review of historical trend of the influent flows are shown below in the following graphs 7-9:
The below graphs (7-9) show the historical monthly influent flow trending from 2020 to 2025. A review of the trends from the last five (5) years has shown similar flows in the months of September to December and a fluctuation of flow in the months of January to May.

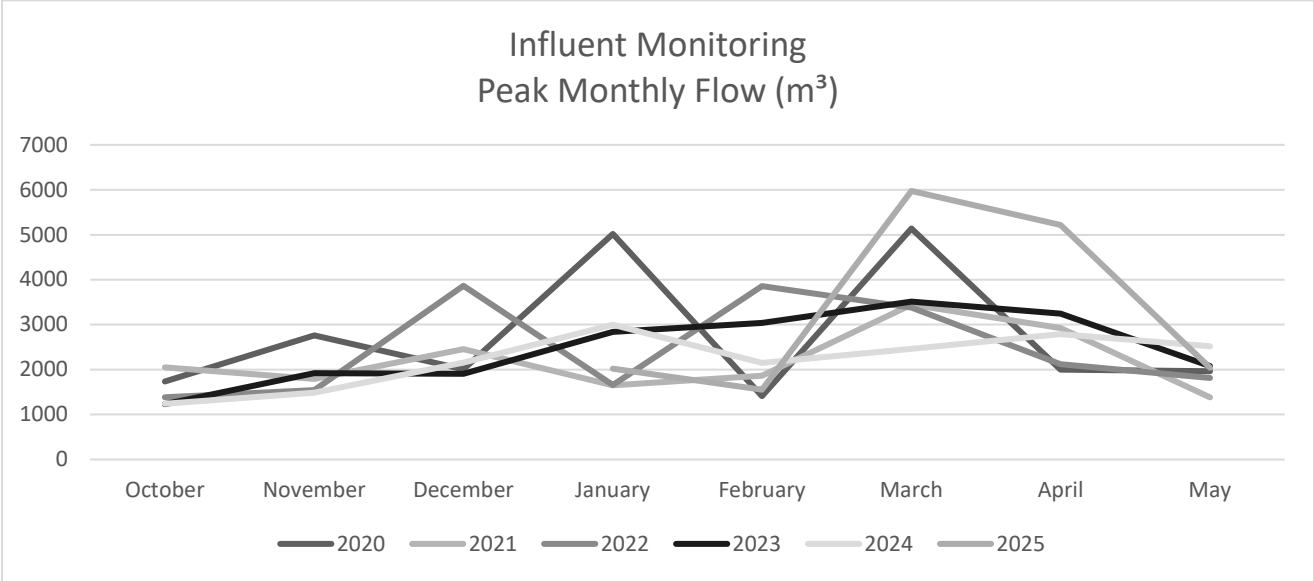
Graph 7: Monthly Total Influent Flow Historical Trend



Graph 8: Monthly Average Influent Flow Historical Trend



Graph 9: Monthly Peak Influent Flow Historical Trend



3. Effluent Monitoring

Where ECA 7654-BEMKVD, Section 13 (4)(b) requires:

“a summary and interpretation of all Final Effluent monitoring data, including concentration, flow rates, loading and a comparison to the design objectives and compliance limits in this Approval, including an overview of the success and adequacy of the Works;”

3.1 Effluent ECA Monitoring Program

The following table outlines the monitoring programs at the Arthur Wastewater Treatment Plant (WWTP) as required by the most current ECA for the reporting period. The parameters were analyzed by an accredited analytical laboratory (SGS (Lakefield) Canada Inc.). Additional in-house samples are taken and analyzed throughout the year to assist with process performance monitoring, adjustment, and optimization.

Table 5: Effluent Monitoring Program – Plant Outfall Pipe - Weekly during approved discharge period, as per ECA 7654-BEMKVD, Schedule E

Parameters	Sample Type	Frequency
Carbonaceous Biochemical Oxygen Demand (CBOD ₅)	24-hour Composite	Weekly
Total Suspended Solids (TSS)	24-hour Composite	Weekly
Total Phosphorous (TP)	24-hour Composite	Weekly
Total Ammonia Nitrogen	24-hour Composite	Weekly
Total Kjeldahl Nitrogen (TKN)	24-hour Composite	Weekly

Parameters	Sample Type	Frequency
Nitrate as Nitrogen	24-hour Composite	Weekly
Nitrite as Nitrogen	24-hour Composite	Weekly
Unionized Ammonia	As Calculated	Weekly
E.Coli	Grab	Weekly
Dissolved Oxygen	Grab/Probe	Weekly
pH ^{5A}	Grab/Probe	Weekly
Temperature ^{5A}	Grab/Probe	Weekly

^{5A}As per ECA 7654-BEMKVD- Schedule E, pH and temperature of the Final Effluent shall be determined in the field at the time of sampling for Total Ammonia Nitrogen

3.2 Monitoring Final Effluent Design Objectives, Limits and Loadings

The following tables outline the final effluent objectives, limits and loadings at the Arthur Wastewater Treatment Plant as per its most current ECA. The applicable effluent parameters are either “concentrations” expressed as milligrams per litre or “loadings” expressed as kilograms per day, and they are reportable either “Monthly” or “Seasonally.”

Table 6: Arthur WWTP Final Effluent Design Objectives and Limits upon completion of construction of all Proposed Works in Phase 1, *as per ECA 7654-BEMKVD Schedule B and Schedule C*

Source	Parameter	Objective Monthly Average Concentration (mg/L)	Limit Monthly Average Concentration (mg/L)	Limit Seasonal Average Waste Loading (Kg/d)
Final Effluent	CBOD ₅	6.0	10.0	18.6
	Total Suspended Solids	6.0	10.0	18.6
	Total Phosphorus	0.21	0.25	0.47
	Total Ammonia Nitrogen	0.6	3.5 (Jan 01-May 31) 2.8 (Oct 01-Oct 31) 3.5 (Nov 01-Dec 31)	6.5 (Jan 01-May 31) 5.2 (Oct 01-Oct 31) 6.5 (Nov 01-Dec 31)
	<i>E. coli</i> (GMD) ^{6A}	100 MPN/100 mL ^{6B}	100 MPN/100 mL	n/a
	pH	6 to 8 inclusive		

^{6A} Geometric Mean Density

^{6B}As of January 2025 SGS updated their *E.coli* method for non-drinking water sample. As of January 2025 *E.coli* are analyzed as *E.coli* MPN

3.3 Effluent Monitoring Data: Summary and Interpretation of Reporting Year and Comparison to Objectives and Limits

A review of the effluent monitoring data shows that the following parameters were within the objectives (as applicable) and limits set out in the most current ECA for the duration of the 2024/2025 reporting period:

- CBOD₅ monthly average effluent concentration
- *E.Coli* monthly geometric mean density
- pH single sample

A review of the effluent monitoring data shows that the following parameters were within the limits set out in the most current ECA during the reporting period but were unable to meet the objectives in the following instances:

- TSS monthly effluent concentration – for November 2024, March and May 2025
- TP monthly effluent concentration – for January and February 2025
- TAN monthly effluent concentration – for January, March, April and May 2025

It should be noted that as per the ECA, the objectives are non-enforceable design objectives to be used as a mechanism to trigger corrective action proactively and voluntarily before environmental impairment occurs. Exceedances of objectives are not reportable.

A review of the effluent monitoring data shows that the following parameters were not within the limits set out in the most current ECA during the reporting period in the following instances and were reportable as non-compliance events with the ECA:

- N/A - all parameters were within the limits set out in the most current ECA

The following tables (7 to 12) summarize monthly and seasonal annual data in comparison to the applicable ECA objectives and limits for the reporting period October 1, 2024 – May 31, 2025 at the Arthur WWTP.

Table 7: Effluent Sampling Results: CBOD₅ and CBOD₅ Loading Concentrations versus ECA Objectives and Compliance Limits

	Monthly Average Concentration (mg/L)	Within Monthly Objective? (6.0 mg/L)	Within Monthly Limit? (10.0 mg/L)	Seasonal Average Loading (kg/d)	Within Seasonal Limit? (18.6 kg/d)
October 2024	2.00	Yes	Yes	0.14	N/A
November 2024	<2.25	Yes	Yes	<5.07	N/A
December 2024	<2.60	Yes	Yes	<6.79	N/A
January 2025	2.75	Yes	Yes	9.12	N/A
February 2025	<2.75	Yes	Yes	<9.45	N/A
March 2025	3.00	Yes	Yes	9.99	N/A
April 2025	<2.80	Yes	Yes	<6.64	N/A
May 2025	3.25	Yes	Yes	3.60	N/A
Seasonal Annual Average	N/A	N/A	N/A	6.35	Yes

Table 8: Effluent Sampling Results: TSS and TSS Loading Concentrations versus ECA Objectives and Compliance Limits

	Monthly Average Concentration (mg/L)	Within Monthly Average Objective? (6.0 mg/L)	Within Monthly Average Limits? (10.0 mg/L)	Seasonal Average Loading (kg/d)	Within Seasonal Limit? (18.6 kg/d)
October 2024	4.00	Yes	Yes	0.28	N/A
November 2024	7.20	No	Yes	16.22	N/A
December 2024	5.33	Yes	Yes	13.92	N/A
January 2025	4.80	Yes	Yes	15.92	N/A
February 2025	4.50	Yes	Yes	15.47	N/A
March 2025	6.75	No	Yes	22.47	N/A
April 2025	6.00	Yes	Yes	14.22	N/A
May 2025	6.25	No	Yes	6.93	N/A
Seasonal Annual Average	N/A	N/A	N/A	13.18	Yes

Table 9: Effluent Sampling Results: TP and TP Loading Concentrations versus ECA Objectives and Compliance Limits

	Monthly Average Concentration (mg/L)	Within Monthly Average Objective? (0.21 mg/L)	Within Monthly Average Limits? (0.25 mg/L)	Seasonal Average Loading (kg/d)	Within Seasonal Limit? (0.47 kg/d)
October 2024	0.12	Yes	Yes	0.01	N/A
November 2024	0.17	Yes	Yes	0.38	N/A
December 2024	0.14	Yes	Yes	0.36	N/A
January 2025	0.22	No	Yes	0.71	N/A
February 2025	0.25	No	Yes	0.87	N/A
March 2025	0.16	Yes	Yes	0.52	N/A
April 2025	0.06	Yes	Yes	0.15	N/A
May 2025	0.12	Yes	Yes	0.13	N/A
Seasonal Annual Average	N/A	N/A	N/A	0.39	Yes

Table 10: Effluent Sampling Results: TAN and TAN Loading Concentrations versus ECA Objectives and Compliance Limits

	Monthly Average Concentration (mg/L)	Within Monthly Average Objective? (0.6 mg/L)	Within Monthly Average Limits? 3.5 mg/L (Jan 1-May 31) 2.8 mg/L (Oct 1-Oct 31) 3.5 mg/L (Nov 1-Dec 31)	Seasonal Average Loading (kg/d)	Within Seasonal Limit? 6.5 mg/L (Jan 1-May 31) 5.2 mg/L (Oct 1-Oct 31) 6.5 mg/L (Nov 1-Dec 31)
October 2024	0.10	Yes	Yes	0.01	N/A
November 2024	<0.13	Yes	Yes	<0.28	N/A
December 2024	<0.36	Yes	Yes	<0.94	N/A
January 2025	1.03	No	Yes	3.40	N/A
February 2025	0.48	Yes	Yes	1.63	N/A
March 2025	0.68	No	Yes	2.25	N/A
April 2025	1.46	No	Yes	3.46	N/A
May 2025	0.78	No	Yes	0.86	N/A
Seasonal Annual Average	N/A	N/A	N/A	1.60	Yes

Table 11: Effluent Sampling Results: *E.coli* Concentrations versus ECA Compliance Limits

	Monthly Geometric Mean Density	Within Monthly Objective/Limits? (100 MPN/100mL) ^{11A}
October 2024	2.00	Yes
November 2024	16.08	Yes
December 2024	6.94	Yes
January 2025	14.32	Yes
February 2025	10.10	Yes
March 2025	24.43	Yes
April 2025	18.77	Yes
May 2025	4.26	Yes

^{11A}As of January 2025 SGS updated their *E.coli* method for non-drinking water sample. As of January 2025 *E.coli* are analyzed as *E.coli* MPN

Table 12: Effluent Sampling Results: pH versus ECA Compliance Limits

	pH Ranges	Within Objective/Limits? (6 – 8 inclusive)
October 2024	7-7	Yes
November 2024	7-7	Yes
December 2024	7-7	Yes
January 2025	7-8	Yes
February 2025	7-8	Yes
March 2025	7-8	Yes
April 2025	7-8	Yes
May 2025	7-8	Yes

3.4 Success & Adequacy of the System

The parameter CBOD₅ objective for the seasonal discharge was not exceeded during the reporting period. There were no limit exceedances.

The parameter TSS objective for the seasonal discharge was exceeded for the months of November 2024, March and May 2025. There were no limit exceedances.

The parameter TP objective for the seasonal discharge was exceeded for the month of January and February 2025. There were no limit exceedances.

The parameter TAN objective for the seasonal discharge was exceeded for January, March, April and May 2025. There were no limit exceedances.

E.Coli concentrations reached a maximum geometric mean density of 24.43 in March 2025, which did not exceed the compliance objective and limit of 100 MPN/100mL or 100 CFU/100mL. During the seasonal discharge period, there were no exceedances.

pH remained within the compliance limits for the duration of the reporting year.

Please refer to **Section 3** of this report for more details regarding the discharge period exceedances.
Refer to Appendix A for a detailed Performance Assessment Report.

3.5 Effluent Flows - Discharges

The below chart summarizes the effluent discharged during the discharge period:

Table 13: Effluent Discharge Summary

Month	Average Daily Flow (m ³ /day)	Peak Flow (m ³ /day)	Total Flow (m ³)	Max Daily Effluent Flow Limit (m ³)	Within Limit?
October 2024	68.78	907.70	2,132.30	1,400.00	Yes
November 2024	2,253.36	3,078.70	67,600.90	4,600.00	Yes
December 2024	2,610.02	3,313.10	80,910.50	3,800.00	Yes
January 2025	3,316.37	3,752.70	102,807.40	5,000.00	Yes
February 2025	3,437.29	3,641.60	96,244.20	5,000.00	Yes
March 2025	3,328.40	4,169.90	103,180.30	5,500.00	Yes
April 2025	2,370.48	3,052.10	71,114.50	3,200.00	Yes
May 2025	1,108.69	1,251.30	34,369.50	1,300.00	Yes
Reporting Period Average	1,637.43	-	-	-	-
Reporting Period Max	-	4,169.90	-	-	-
Reporting Period Total	-	-	558,359.60	-	-

During the reporting period, the average annual daily flow for final effluent to outfall (Conestogo River) was 1,637.43 m³/day. The maximum peak final effluent daily flow was 4,169.90 m³/day, which occurred on March 30, 2025 which corresponds with the max influent flow due to unseasonal snowmelts and rainfall during this timeframe.

4. Annual Update to the Stage-Discharge Curve

Where ECA 7654-BEMKVD, Section 13 (4)(c) requires:

“a summary of the annual update to the stage-discharge curve as required in Paragraph 9 (e);”

9(e). The Owner shall operate, calibrate and maintain the Conestogo River at Arthur hydrometric station (17T 536350E 4853113N) and collect and record daily streamflow measurements for that station or for any replacement gauging station approved by the District Manager.

The Conestogo River Arthur hydrometric station equipment is calibrated as per manufacturer’s recommendations. On an annual basis a third party calibrates monitoring and metering equipment. Preventative maintenance is scheduled for all equipment at the sewage treatment plant and pumping stations at regular frequency (frequency depends on the equipment and type of maintenance).

Maintenance activities are scheduled within OCWA’s work management system (Maximo) and upon completion operations staff set the work order to complete. On a monthly basis, preventative work orders are reviewed for completion.

SPD Sales Limited successfully calibrated the hydrometric station measuring equipment on August 14, 2024.

Refer to Appendix C for the Calibration Reports.

Operation staff collect and record daily streamflow measurements for the Conestogo River hydrometric station on their daily check sheets and enter it into OCWA’s PDM (WISKI7) Management System.

Table 14: Conestogo River Streamflow Measurements

Month	Monthly Minimum Daily River Height (cm)	Monthly Average Daily River Height (cm)	Monthly Max Daily River Height (cm)
October 2024	10.34	12.96	14.88
November 2024	12.77	15.37	32.12
December 2024	14.00	30.70	92.32
January 2025	19.71	30.08	51.95
February 2025	19.71	26.20	35.28
March 2025	30.59	61.88	146.65
April 2025	16.12	34.12	122.61
May 2025	14.22	26.25	59.51
Annual Minimum	10.34	-	-
Annual Average	-	29.69	-
Annual Max	-	-	146.65

Refer to Appendix E for Report of Daily Streamflow Measurements

Refer to Appendix F for the Grand River Conservation Authority Manual Discharge Measurements and TAN Concentrations

5. Monitoring Schedule

Where ECA 7654-BEMKVD, Section 13 (4)(d) requires:

“a summary of any deviation from the monitoring schedule and reasons for the current reporting year and a schedule for the next reporting year;”

Operational staff at the Arthur WWTP maintained a sampling schedule where samples were taken on Wednesdays for the majority of the 2024 reporting period. For the 2025 reporting period the sampling schedule was revised and updated to rotate the day of the week to Tuesdays as per the ECA requirement in section 11 (b). Fluctuations on the below summarized sample dates were due to training for operations and sludge haulage being completed. The 2024/2025 reporting period sampling calendar can be found in **Appendix B**

Table 15: Summary of dates deviated from the monitoring schedule

Sample	Scheduled Sample Date	Date Sample was Taken
Monthly Raw Influent/Sludge	October 2, 2024	October 16, 2024

Sample	Scheduled Sample Date	Date Sample was Taken
Monthly Raw Influent/Sludge	January 7, 2025	January 14, 2025
Monthly Raw Influent/Sludge	February 4, 2025	February 18, 2025
Weekly Effluent	March 18, 2025	March 19, 2025
Monthly Raw Influent/Sludge	April 1, 2025	April 8, 2025
Weekly Effluent	May 27, 2025	May 29, 2025

6. Operational Issues and Corrective Actions

Where ECA 7654-BEMKVD, Section 13 (4)(e) requires:

“a summary of all operating issues encountered and corrective actions taken;”

There were no operating issues encountered during the reporting period.

7. Maintenance Activities

Where ECA 7654-BEMKVD, Section 13 (4)(f) requires:

“a summary of all normal and emergency repairs and maintenance activities carried out on any major structure, equipment, apparatus or mechanism forming part of the Works;”

7.1 Work Management System

Planned maintenance, including scheduled and non-scheduled maintenance activities are scheduled using a computerized Work Management System (WMS) that allows user to:

- Enter detailed asset information
- Generate and process work orders
- Access maintenance and inspection procedures
- Plan, schedule, and document all asset related tasks and activities
- Access maintenance records and asset histories

Work Orders are automatically generated by the WMS program and are assigned to the applicable Operations staff accordingly.

7.2 Preventative Maintenance

There were a number of maintenance tasks throughout 2024/25 reporting period. They are as follows:

- Monthly lagoon inspections (May-Oct)
- Monthly panel alarm, float and generator testing
- Annual generator inspections and load testing
- Annual calibrations

- Annual lifting device inspection
- UV inspection and servicing
- Semi-annual lagoon perimeter inspection

7.3 Repairs & Improvements

There were a number of repairs and/or improvements during the reporting period. They are as follows:

- Lagoon Return Piping Repair
- Clarifier Drive Motor Replacement

8. Effluent Quality Assurance & Control

Where ECA 7654-BEMKVD, Section 13 (4)(g) requires:

“a summary of any effluent quality assurance or control measures undertaken;”

Quality assurance and control measures undertaken during the reporting period include adherence to provincial regulations, use of accredited laboratories, operation of the system by licensed Operators, scheduled sampling and analysis, in-house laboratory analysis, and calibration and preventative maintenance of equipment. The sections below provide further details of these measures.

8.1 Adherence to Provincial Regulations

The Ontario Clean Water Agency operates the Arthur WWTP in accordance with provincial regulations and the Environmental Compliance Approval.

8.2 Use of Accredited Laboratories

During the reporting period, all chemical sample analyses were conducted by SGS (Lakefield) Canada Inc.; a laboratory audited by the Canadian Association for Laboratory Accreditation Inc. (CALA) and accredited by the Standards Council of Canada (SCC). Accreditation ensures that the laboratory has acceptable laboratory protocols and test methods in place. It also requires the laboratory to provide evidence and assurances of the proficiency of the analysts performing the test methods.

8.3 Operation by Licensed Operators

The Arthur WWTP was operated and maintained by licensed Operators. The mandatory licensing program for operators of sewage treatment facilities in Ontario is regulated under the Ontario Water Resources Act (OWRA) Regulation 435/93 and Ontario Regulation 129/04. A Licensed individual has successfully passed the licensing exam and meets the education and experience requirements set out in the regulation.

8.4 Sampling and Analysis

The Ontario Clean Water Agency followed a sampling and analysis schedule that meets the requirements of the ECA.

8.5 In-house Analysis

In-house samples were collected and analyzed at the Arthur WWTP laboratory throughout the year in order to support process performance monitoring, adjustment, and optimization. In-house analysis were conducted by Licensed Operators for monitoring purposes using standard methods. The data generated from these tests is used to determine the treatment efficiency while effectively maintaining process control. All in-house monitoring equipment is calibrated based on the manufacturer's recommendations. Using their expertise, Operators of the facility make best efforts to stay within the ECA Effluent Objectives and Limits.

9. Calibration and Maintenance Procedures

Where ECA 7654-BEMKVD, Section 13 (4)(h) requires:

"a summary of the calibration and maintenance carried out on all Influent and Final Effluent monitoring equipment to ensure that the accuracy is within the tolerance of that equipment as required in this Approval or recommended by the manufacturer;"

All in-house monitoring equipment is calibrated as per manufacturer's recommendations. Monitoring and metering equipment is also calibrated by a third party on an annual basis. Preventative maintenance is scheduled for all equipment at the sewage treatment plant and pumping stations at regular frequency (frequency depends on the equipment and type of maintenance). Maintenance activities are scheduled within the work management system Maximo, upon completion, Operators set the work order to complete. On a monthly basis, preventative work orders are reviewed for completion.

SPD Sales Limited successfully calibrated flow measuring equipment on August 14, 2024. All program parameters received a passing inspection.

Refer to Appendix C for the Calibration Reports.

10. Design Objective Requirements

Where ECA 7654-BEMKVD, Section 13 (4)(i) requires:

"a summary of efforts made to achieve the design objectives in this Approval, including an assessment of the issues and recommendations for pro-active actions if any are required under the following situations":

- i. When any of the design objectives are not achieved more than 50% of the time in a year, or there is an increasing trend of deterioration of Final Effluent quality;*
- ii. When Annual Average Daily Influent Flow reaches 80% of the Rated Capacity;"*

Best efforts are being made to meet the objectives under the amended ECA #7654-BEMKVD (September 10, 2019) once Phase 1 construction onwards improves plant performance and output effluent quality. Phase 2 design is completed and currently being review by the Municipalities Engineer on Record.

The design objective for TSS was exceeded three of the eight months, TP was exceeded two out of eight months and TAN was exceeded four of the eight months for the reporting period. It is a possibility this is due to higher loadings from incoming sewage.

The average daily flow for the reporting period was 1,662.44 m³, which is approximately 89.38% of the specified design flow of 1,860.00 m³/day. The highest recorded monthly average flow occurred in March 2025 at 5,974.80 m³ and was due to increased precipitation and inflows from the un-seasonal melts in January. The total precipitation for March 2025 was one of the highest for the reporting period apart from December 2024 and April 2025 based on data from Environment Canada.

There were no instances when the daily peak of 6,500 m³ was exceeded. The highest recorded peak flow of 5,974.80 m³/day occurred in March 2025. This maximum peak flow is approximately 91.92% of the approved Peak Flow Rating for the Works.

Schedule B is imposed “to establish non-enforceable effluent quality objectives which the Owner is obligated to use best efforts to strive towards on an ongoing basis. These objectives are to be used as a mechanism to trigger corrective action proactively and voluntarily before environmental impairment occurs and before the compliances limits of Schedule C are exceeded.”

OCWA as the Operating Authority (on behalf of the Township of Wellington North) has made best efforts to stay within the Effluent Objectives in the ECA. These efforts are supported through:

- Continuous monitoring equipment
- Regular plant inspections/checks
- In-house sampling and testing
- Laboratory (3rd party) analysis of influent and effluent samples
- Data review
- Process optimization and adjustments (as required)
- Scheduled/preventative maintenance
- Repairs as necessary

A summary of the effluent quality in comparison to the effluent objectives can be found in Tables 7-12 of section 3.3 of this report. These results show that sewage treatment operations for 2024/2025 provided effluent quality that was within effluent objectives outlined in the ECA and minimized environmental impairment with the exception of Total Suspended Solids (November 2024 and March, May 2025), Total Phosphorus (January and February 2025) and Total Ammonia Nitrogen (January and February 2025). Higher loading from incoming sewage could account for some effluent objective exceedances. Minor operational changes were implemented to provide higher effluent quality in order to achieve the effluent objectives outlined in the ECA.

Refer to **Appendix A** for detailed Performance Assessment Report for the facility, including raw and final effluent discharge data and influent and effluent flow data.

11. Sludge Production and Disposal

Where ECA 7654-BEMKVD, Section 13 (4)(j) requires:

“a tabulation of the volume of sludge generated, an outline of anticipated volumes to be generated in the next reporting period and a summary of the locations to where the sludge was disposed;”

The table below shows a summary of sludge haulage for the October 1, 2024 to the May 31, 2025 reporting period:

Table 16: Sludge Haulage

Date	NASM #	Volume Hauled (m ³)	Comments
October 1, 2024	25079	336.00	Hauled by Saugeen Agri. for Land Application at Leroy May's 75 Acre Field
October 2, 2024	25079	462.00	Hauled by Saugeen Agri. for Land Application at Leroy May's 75 Acre Field
December 20, 2024		84.00	Hauled to Lystek International Inc.
December 23, 2024		40.00	
January 9, 2025		44.00	
January 10, 2025		88.00	
January 17, 2025		88.00	
January 20, 2025		44.00	
February 27, 2025		42.00	
February 28, 2025		80.00	
March 3, 2025		42.00	
March 4, 2025		84.00	
March 28, 2025		68.00	
Land Applied Total:		798.00	
Lystek Total:		704.00	
Total:		1,502.00	

Digested sludge produced at the Arthur WWTP is land-applied in accordance with the Nutrient Management Act 2002 and Ontario Regulation 267/03. Additional sludge haulage is directed towards Lystek International Inc., located in Dundalk, Ontario. This facility converts biosolids into “market ready” fertilizer products.

Grab samples of digested (aerobic) sludge are collected and tested as per the guidelines. During the reporting period, sludge sample analysis was carried out by SGS (Lakefield) Canada Inc. A summary of sludge sample results is provided in **Appendix D**.

One hauler was used during the reporting period October 1, 2024 – May 31, 2025:

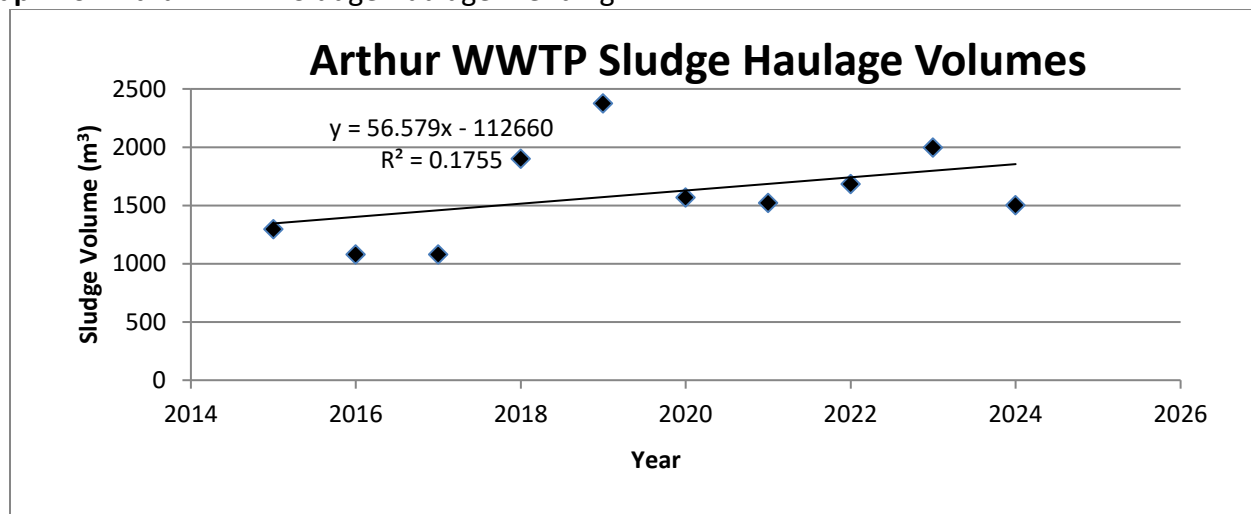
- Saugeen Agri. - Certificate of Approval: Waste Management System # 9566-6HYKC3

The Certificate of Approval for the Mount Forest Sludge Storage Facility #6134-73FHHU allows the storage of sludge from the Arthur WWTP. There was no sludge stored at the Mount Forest facility for this reporting period.

Trending sludge production can be seen in Graph 10. Please note: the reporting year noted on the X-axis is the first year of the reporting period, meaning 2024 would include the period from October 1, 2024 to May 31, 2025.

Based on the design flow, predicted sludge haulage, average wastewater quality and a linear regression with an R^2 value of 17.55%, the anticipated volume to be generated in the next reporting period is approximately 1,900 m³.

Graph 10: Arthur WWTP Sludge Haulage Trending



12. Community Complaints

Where ECA 7654-BEMKVD, Section 13 (4)(k) requires:

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

There is a standard operating procedure (SOP) in place that outlines the steps required for receiving and addressing community complaints. All complaints are to be discussed and/or investigated, and resolved as required. The community complaint is logged in detail in the facility logbook and then various details are entered into OCWA's work management system (Maximo). This database contains the history of all complaints with the relevant information enclosed.

There were no community complaints received for the Arthur WWTP during the October 1, 2024 – May 31, 2025 reporting period.

13. By-pass, Spill or Abnormal Discharge Events

Where ECA 7654-BEMKVD, Section 13 (4)(I) requires:

“a summary of all By-pass, Overflows, other situations outside Normal Operating Conditions and spills within the meaning of Part X of EPA and abnormal discharge events;”

All quarterly bypass and overflow reports, as per Section 4(6) and 5(6) of the ECA were submitted as required to the Ministry’s local office prior to or by the reporting deadlines listed in the most current ECA. There were two (2) reportable incidents during the reporting period. Refer **Appendix G** for the submitted incident reports for more details.

13.1 By-pass events

There were two (2) bypass events during the reporting period.

Table 17: Summary of Bypass Event(s)

Date	SAC Incident Number	Estimated/Measured Volume (m³)	Duration	Location	Reason	Level of Treatment Received	Samples Collection
Mar 16, 2025	1-J2EYXL	Approx. 807	16 Hours	Waste Plant	Due to high seasonal temperatures, high precipitation and snow melt.	Partially treated effluent – Effluent filters bypassed with UV disinfection	Taken according to ECA
Apr 3, 2025	1-N7P529	Approx. 604	12 Hours 40 Minutes	Waste Plant	Due to high precipitation	Partially treated effluent – Effluent filters bypassed with UV disinfection	Taken according to ECA

13.2 Overflow events

There were no overflow events during the reporting period.

13.3 Spills

There were no spills during the reporting period.

13.4 Abnormal Discharge Events

There were no abnormal discharge events during the reporting period.

14. Notice of Modifications (Limited Operational Flexibility)

Where ECA 7654-BEMKVD, Section 13 (4)(m) requires:

“a summary of all Notice of Modifications to the Sewage Works completed under Paragraph 1.d. of Condition 10, including a report on status of implementation of all modification;”

There were no Notice of Modifications under Schedule B, Section 1 submitted during this reporting period.

14.1 Modification Completion Reports

There were no modifications completed under Schedule B, Section 3 during this reporting period.

15. Conformance with Procedure F-5-1

Where ECA 7654-BEMKVD, Section 13 (4)(n) requires:

“a summary of efforts made to achieve conformance with Procedure F-5-1 including but not limited to projects undertaken and completed in the sanitary sewer system that result in overall Bypass/Overflow elimination including expenditures and proposed projects to eliminate Bypass/Overflows with estimated budget forecast for the year following that for which the report is submitted;”

Sanitary Sewage Pumping Stations

Frederick Street Pumping Station and Forcemain

Upgrade to the existing Frederick Street Pumping Station having a firm capacity of 110 L/s, located at 176 Frederick Street West, comprising;

- Construction of a new wet well having dimension of 5.5m x 5.3m x 7.2m, having an active storage volume of 90 m³, equipped with three variable speed controlled sewage pumps, two for duty and one for standby, each with a rated capacity of 55 L/s under 30m TDH, discharging through a common header to Arthur Wastewater Treatment Plant through an existing 755m long 250mm diameter forcemain, complete with a MCC, a new PLC based control system, high level floats and alarms;
- Conversion of existing wet well in to a bypass chamber, complete with one (1) sewage drain pump, located in the existing wet well, with a capacity of 10 L/s under 8m TDH, receiving sewage overflow from the inlet sewer under extreme flow events with an Emergency Overflow to the Conestogo River;

Arthur Wastewater Treatment Plant (WWTP)

Equalization Tank (to be upgraded to Extended Aeration Plant B during Phase 2)

- Construction of the equalization tank 1 (to be used as the future secondary treatment/extended aeration tank during Phase 2), having a total capacity of 2,100 m³, and operated in a manner to allow the flows entering the secondary treatment in Phase 1 to be reduced to 5,270 m³/d,

comprising of two cells and a central future secondary clarifier tank, receiving diverted peak flow through a weir located in the headworks building outlet pipe under peak flow conditions, complete with a sewer line connecting a new hopper adjacent to the existing Headworks to a new Headworks channel upstream of Plant B;

- One (1) submersible drain pump, to be located in a precast manhole (to be converted to a scum collection pit and transfer pump in Phase 2), connected to the equalization tank, with a capacity of 10 L/s under a TDH of 8m, discharging to Headworks channel;

Proposed Works - Phase 2

Inlet Works

- Diversion of existing sanitary Sewers from Preston Street to the new Headworks building of sewage treatment plant;
- Diversion of existing sanitary sewage forcemain from Frederick Street Sewage Pumping Station in to the new Headworks building of sewage treatment plant;

Headworks Building

Inlet Channels

- One (1) duty inlet channel 0.8m wide, 1.2m deep, equipped with an inclined mechanically cleaned screen with 6mm spacing, designed to handle an average daily flow of 2,300 m³/d and a maximum daily flow of 12,700 m³/d, equipped with washer/compactor conveyor for screenings, complete with diffusers for intermittent channel aeration;
- one (1) back-up channel 0.8m wide, 1.2m deep, equipped with an inclined manual bar screen having 50mm spacing, complete with diffusers for intermittent channel aeration;

Grit Removal

- A Grit removal system with by-pass capability, comprising of a Vortex Grit Tank 2.5m in diameter with a 0.37 kW vortex drive, a Vortex Grit Classifier Unit designed for a peak flow rate of 12,700 m³/d, screenings/grit disposal bin in the Screen room;

Flow Channels and Parshall Flume

- Two flow splitting channels, complete with flow control weirs and two Parshall Flume flowmeters, one in each channel, downstream of the Vortex Tank, with duty channel discharging to the existing and new treatment units (Plant A and Plant B);

The increased capacity and upgrade to the Sewage Pump Station will aid in directing influent flows to the plant more effectively and efficiently. In addition to having an additional pump and all pumps being upsized with Variable Frequency Drives (VFD) this will allow the pumps to adjust to the required pumping speeds in increments as needed, increasing overall pump efficiency. This upgrade will further reduce the chance of potential future bypass/overflow events through increased reliability and capacity.

During high flow events, the increased flows from the pump station will be split at the head of the plant and will allow part of the flow to go through treatment and a portion to be captured in the equalization tank to not overwhelm the treatment system and be pumped back to the Headworks at a later time.

There are no estimated budget forecasts at this time as the current construction upgrades has mitigated the bypass/overflow events at the plant and at the pump station.

16. Construction and Commissioning Schedule Updates

Where ECA 7654-BEMKVD, Section 13 (4)(o) requires:

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

Substantial completion of all Phase 1 construction was achieved on December 16, 2020. Letter of Substantial Completion of Phase 1 dated December 17, 2020 was completed by CIMA Engineering. Phase 2 design is completed and currently being reviewed by the Municipalities Engineer on Record.

**2024 – 2025 Annual Performance Report
Arthur Wastewater Treatment Plant
ECA 7654-BEMKVD**

Appendix A

Performance Assessment Report

5767 ARTHUR WASTEWATER TREATMENT PLANT 110000882

	10 / 2024	11/ 2024	12/ 2024	1/ 2025	2/ 2025	3/ 2025	4/ 2025	5/ 2025	6/ 2025	7/ 2025	8/ 2025	9/ 2025	<--Total-->	<--Avg-->	<--Max-->	<-Criteria-->
Flows																
Raw Flow: Total - Raw Sewage m³/d	28,366.70	33,051.70	42,635.20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	104,053.60			0.00
Raw Flow: Avg - Raw Sewage m³/d	915.05	1,101.72	1,375.33	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		1,131.02		1,860.00
Raw Flow: Max - Raw Sewage m³/d	1,240.40	1,488.80	2,152.80	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00			2,152.80	0.00
Raw Flow: Count - Raw Sewage m³/d	31.00	30.00	31.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	92.00			0.00
Eff. Flow: Total - Final Effluent m³/d	2,132.30	67,600.90	80,910.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	150,643.70			0.00
Eff. Flow: Avg - Final Effluent m³/d	68.78	2,253.36	2,610.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		1,637.43		
Eff. Flow: Max - Final Effluent m³/d	907.70	3,078.70	3,313.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00			3,313.10	0.00
Eff Flow: Count - Final Effluent m³/d	31.00	30.00	31.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	92.00			0.00
Biochemical Oxygen Demand: BOD5																
Raw: Avg BOD5 - Raw Sewage mg/L	312.00	261.00	238.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		270.33	312.00	0.00
Raw: # of samples of BOD5 - Raw Sewage mg/L	1.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.00			0.00
Carbonaceous Biochemical Oxygen Demand: CBOD																
Eff: Avg cBOD5 - Final Effluent including Bypass mg/L	2.00	2.25	2.60	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		2.20	2.60	10.00
Eff: # of samples of cBOD5 - Final Effluent including Bypass mg/L	1.00	4.00	5.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	10.00			0.00
Loading: cBOD5 - Final Effluent including Bypass kg/d	0.138	5.070	6.786	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000		3.60	6.79	18.600
Total Suspended Solids: TSS																
Raw: Avg TSS - Raw Sewage mg/L	264.00	258.00	203.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		241.67	264.00	0.00
Raw: # of samples of TSS - Raw Sewage mg/L	1.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.00			0.00
Eff: Avg TSS - Final Effluent including Bypass mg/L	4.00	7.20	5.33	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		5.33	7.20	10.00
Eff: # of samples of TSS - Final Effluent including Bypass mg/L	1.00	5.00	6.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	12.00			0.00
Loading: TSS - Final Effluent including Bypass kg/d	0.275	16.224	13.920	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000		8.73	16.22	18.600
Total Phosphorus: TP																
Raw: Avg TP - Raw Sewage mg/L	5.55	4.98	4.82	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		5.12	5.55	0.00
Raw: # of samples of TP - Raw Sewage mg/L	1.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.00			0.00
Eff: Avg TP - Final Effluent including Bypass mg/L	0.12	0.17	0.14	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.18	0.17	0.25
Eff: # of samples of TP - Final Effluent including Bypass mg/L	1.00	5.00	5.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	11.00			0.00
Loading: TP - Final Effluent including Bypass kg/d	0.008	0.379	0.355	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000		0.25	0.38	0.470
Nitrogen Series																
Raw: Avg TKN - Raw Sewage mg/L	37.30	41.20	42.80	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		40.43	42.80	0.00

Raw: # of samples of TKN - Raw Sewage mg/L			1.00			1.00			1.00			0.00			0.00			0.00			0.00			0.00			0.00			0.00			3.00					0.00
Eff: Avg TAN - Final Effluent including Bypass mg/L			0.10	<		0.13	<		0.36			0.00			0.00			0.00			0.00			0.00			0.00			0.00					0.23		0.36	3.50
Eff: # of samples of TAN - Final Effluent including Bypass mg/L			1.00			4.00			5.00			0.00			0.00			0.00			0.00			0.00			0.00			0.00			10.00					0.00
Loading: TAN - Final Effluent including Bypass kg/d			0.007	<		0.282	<		0.940			0.000			0.000			0.000			0.000			0.000			0.000			0.000					0.38		0.94	6.500
Eff: Avg NO3-N - Final Effluent mg/L			21.00			9.80			8.07			0.00			0.00			0.00			0.00			0.00			0.00			0.00					9.20		21.00	0.00
Eff: # of samples of NO3-N - Final Effluent mg/L			1.00			4.00			5.00			0.00			0.00			0.00			0.00			0.00			0.00			0.00			10.00					0.00
Eff: Avg NO2-N - Final Effluent mg/L	<		0.03	<		0.04	<		0.03			0.00			0.00			0.00			0.00			0.00			0.00			0.00				<	0.03	<	0.04	0.00
Eff: # of samples of NO2-N - Final Effluent mg/L			1.00			4.00			5.00			0.00			0.00			0.00			0.00			0.00			0.00			0.00			10.00					0.00

pH

Raw: Min pH - Raw Sewage ---			7.64			7.78			8.17			0.00			0.00			0.00			0.00			0.00			0.00			0.00			0.00			0.00
Raw: Max pH - Raw Sewage ---			7.64			7.78			8.17			0.00			0.00			0.00			0.00			0.00			0.00			0.00			8.17		0.00	
Eff: Min pH - Final Effluent ---			7.00			6.74			7.14			0.00			0.00			0.00			0.00			0.00			0.00			0.00					8.00	
Eff: Max pH - Final Effluent ---			7.00			7.35			7.38			0.00			0.00			0.00			0.00			0.00			0.00			0.00			7.38		8.00	
Eff: Min pH Field: Lab Upload - Final Effluent ---			7.00			6.74			7.14			0.00			0.00			0.00			0.00			0.00			0.00			0.00					8.00	
Eff: Max pH Field: Lab Upload - Final Effluent ---			7.00			7.25			7.38			0.00			0.00			0.00			0.00			0.00			0.00			0.00			7.38		8.00	

Disinfection

Eff: GMD E. Coli - Final Effluent cfu/100mL			2.00			16.08			6.94			0.00			0.00			0.00			0.00			0.00			0.00			0.00								100.00
Eff: # of samples of E. Coli - Final Effluent cfu/100mL			1.00			4.00			5.00			0.00			0.00			0.00			0.00			0.00			0.00			0.00			10.00					0.00

5767 ARTHUR WASTEWATER TREATMENT PLANT 110000882

	1 / 2025	2/ 2025	3/ 2025	4/ 2025	5/ 2025	6/ 2025	7/ 2025	8/ 2025	9/ 2025	10/ 2025	11/ 2025	12/ 2025	<--Total-->	<--Avg-->	<--Max-->	<-Criteria-->
Flows																
Raw Flow: Total - Raw Sewage m³/d	42,457.80	33,549.60	76,142.10	56,887.90	41,990.40	0.00	0.00	0.00	0.00	0.00	0.00	0.00	251,027.80			0.00
Raw Flow: Avg - Raw Sewage m³/d	1,369.61	1,198.20	2,456.20	1,896.26	1,354.53	0.00	0.00	0.00	0.00	0.00	0.00	0.00		1,662.44		1,860.00
Raw Flow: Max - Raw Sewage m³/d	2,024.00	1,553.80	5,974.80	5,214.80	2,044.40	0.00	0.00	0.00	0.00	0.00	0.00	0.00			5,974.80	0.00
Raw Flow: Count - Raw Sewage m³/d	31.00	28.00	31.00	30.00	31.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	151.00			0.00
Eff. Flow: Total - Final Effluent m³/d	102,807.40	96,244.20	103,180.30	71,114.50	34,369.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00	407,715.90			0.00
Eff. Flow: Avg - Final Effluent m³/d	3,316.37	3,437.29	3,328.40	2,370.48	1,108.69	0.00	0.00	0.00	0.00	0.00	0.00	0.00		2,700.11		
Eff. Flow: Max - Final Effluent m³/d	3,752.70	3,641.60	4,169.90	3,052.10	1,251.30	0.00	0.00	0.00	0.00	0.00	0.00	0.00			4,169.90	0.00
Eff Flow: Count - Final Effluent m³/d	31.00	28.00	31.00	30.00	31.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	151.00			0.00
Biochemical Oxygen Demand: BOD5																
Raw: Avg BOD5 - Raw Sewage mg/L	312.00	244.00	221.00	138.00	199.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		222.80	312.00	0.00
Raw: # of samples of BOD5 - Raw Sewage mg/L	1.00	1.00	1.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.00			0.00
Carbonaceous Biochemical Oxygen Demand: CBOD																
Eff: Avg cBOD5 - Final Effluent including Bypass mg/L	2.75	< 2.75	3.00	< 2.80	3.25	0.00	0.00	0.00	0.00	0.00	0.00	0.00		2.90	3.25	10.00
Eff: # of samples of cBOD5 - Final Effluent including Bypass mg/L	4.00	4.00	4.00	5.00	4.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	21.00			0.00
Loading: cBOD5 - Final Effluent including Bypass kg/d	9.120	< 9.453	9.985	< 6.637	3.603	0.000	0.000	0.000	0.000	0.000	0.000	0.000		7.84	9.99	18.600
Total Suspended Solids: TSS																
Raw: Avg TSS - Raw Sewage mg/L	177.00	111.00	138.00	97.00	170.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		138.60	177.00	0.00
Raw: # of samples of TSS - Raw Sewage mg/L	1.00	1.00	1.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.00			0.00
Eff: Avg TSS - Final Effluent including Bypass mg/L	4.80	4.50	6.75	6.00	6.25	0.00	0.00	0.00	0.00	0.00	0.00	0.00		5.64	6.75	10.00
Eff: # of samples of TSS - Final Effluent including Bypass mg/L	5.00	4.00	4.00	5.00	4.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	22.00			0.00
Loading: TSS - Final Effluent including Bypass kg/d	15.919	15.468	22.467	14.223	6.929	0.000	0.000	0.000	0.000	0.000	0.000	0.000		15.22	22.47	18.600
Total Phosphorus: TP																
Raw: Avg TP - Raw Sewage mg/L	6.37	6.78	4.57	2.40	5.40	0.00	0.00	0.00	0.00	0.00	0.00	0.00		5.10	6.78	0.00
Raw: # of samples of TP - Raw Sewage mg/L	1.00	1.00	1.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.00			0.00
Eff: Avg TP - Final Effluent including Bypass mg/L	0.22	0.25	0.16	0.06	0.12	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.16	0.25	0.25
Eff: # of samples of TP - Final Effluent including Bypass mg/L	4.00	6.00	4.00	5.00	4.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	23.00			0.00
Loading: TP - Final Effluent including Bypass kg/d	0.713	0.865	0.516	0.147	0.130	0.000	0.000	0.000	0.000	0.000	0.000	0.000		0.47	0.87	0.470
Nitrogen Series																
Raw: Avg TKN - Raw Sewage mg/L	53.40	65.80	38.60	21.20	30.60	0.00	0.00	0.00	0.00	0.00	0.00	0.00		41.92	65.80	0.00

Raw: # of samples of TKN - Raw Sewage mg/L			1.00			1.00			1.00			1.00			0.00			0.00			0.00			0.00			0.00			0.00			5.00					0.00
Eff: Avg TAN - Final Effluent including Bypass mg/L			1.03			0.48			0.68			1.46			0.78			0.00			0.00			0.00			0.00			0.00					0.91		1.46	3.50
Eff: # of samples of TAN - Final Effluent including Bypass mg/L			4.00			4.00			4.00			5.00			4.00			0.00			0.00			0.00			0.00			0.00			21.00					0.00
Loading: TAN - Final Effluent including Bypass kg/d			3.399			1.633			2.247			3.461			0.859			0.000			0.000			0.000			0.000			0.000					2.46		3.46	6.500
Eff: Avg NO3-N - Final Effluent mg/L			5.32			5.11			5.66			4.72			11.78			0.00			0.00			0.00			0.00			0.00					6.43		11.78	0.00
Eff: # of samples of NO3-N - Final Effluent mg/L			4.00			4.00			4.00			5.00			4.00			0.00			0.00			0.00			0.00			0.00			21.00					0.00
Eff: Avg NO2-N - Final Effluent mg/L	<		0.04	<		0.05			0.05	<		0.06	<		0.03			0.00			0.00			0.00			0.00			0.00				<	0.04	<	0.06	0.00
Eff: # of samples of NO2-N - Final Effluent mg/L			4.00			4.00			4.00			5.00			4.00			0.00			0.00			0.00			0.00			0.00			21.00					0.00

pH

Raw: Min pH - Raw Sewage ---			8.06			8.31			7.80			7.79			7.69			0.00			0.00			0.00			0.00			0.00							0.00
Raw: Max pH - Raw Sewage ---			8.06			8.31			7.80			7.79			7.69			0.00			0.00			0.00			0.00			0.00					8.31		0.00
Eff: Min pH - Final Effluent ---			7.25			7.28			7.35			7.13			7.14			0.00			0.00			0.00			0.00			0.00							8.00
Eff: Max pH - Final Effluent ---			7.61			7.83			7.79			8.04			7.57			0.00			0.00			0.00			0.00			0.00					8.04		8.00
Eff: Min pH Field: Lab Upload - Final Effluent ---			7.25			7.28			7.35			7.13			7.14			0.00			0.00			0.00			0.00			0.00							8.00
Eff: Max pH Field: Lab Upload - Final Effluent ---			7.61			7.83			7.79			8.04			7.57			0.00			0.00			0.00			0.00			0.00					8.04		8.00

Disinfection

Eff: GMD E. Coli MPN - Final Effluent MPN			14.32			10.10			24.43			18.77			4.26			0.00			0.00			0.00			0.00			0.00							
Eff: # of samples of E. Coli MPN - Final Effluent			4.00			4.00			4.00			5.00			4.00			0.00			0.00			0.00			0.00			0.00			21.00				0.00

**2024 – 2025 Annual Performance Report
Arthur Wastewater Treatment Plant
ECA 7654-BEMKVD**

Appendix B

Sampling Schedules

2024 Sampling Calendar
ARTHUR WWTP (Org #5767)
WWT III

JANUARY						
M	T	W	TH	F	St	Su
1	2	3-W/M/BS	4	5	6	7
8	9	10-W	11	12	13	14
15	16	17-W	18	19	20	21
22	23	24-W	25	26	27	28
29	30	31-W				

FEBRUARY						
M	T	W	TH	F	St	Su
			1	2	3	4
5	6	7-W/M/BS	8	9	10	11
12	13	14-W	15	16	17	18
19	20	21-W	22	23	24	25
26	27	28-W	29			

MARCH						
M	T	W	TH	F	St	Su
				1	2	3
4	5	6-W/M/BS	7	8	9	10
11	12	13-W	14	15	16	17
18	19	20-W	21	22	23	24
25	26-ER	27-W	28	29	30	31

APRIL						
M	T	W	TH	F	St	Su
1	2	3-W/M/BS	4	5	6	7
8	9	10-W	11	12	13	14
15	16	17-W	18	19	20	21
22	23	24-W	25	26	27	28
29	30					

MAY						
M	T	W	TH	F	St	Su
		1-W/M/BS	2	3	4	5
6	7	8-W	9	10	11	12
13	14	15-W	16	17	18	19
20	21	22-W	23	24	25	26
27	28	29-W	30	31		

JUNE						
M	T	W	TH	F	St	Su
					1	2
3	4	5-M/BS/SE	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30

Stat Holiday/Weekend
Sample Day

W=Weekly Effluent/Raw; **M**=Monthly Raw; **BS**=Monthly Bio-Solids; **SE**=Secondary Effluent

Discharge Period: October 1-May 31

If you are NOT able to sample on the scheduled day, call your PCT as soon as possible

S:\WestHighlands\19 WELLINGTON NORTH (Township of)\Arthur\01 OPERATIONAL\1-1 Sampling Schedules\2024 Sampling Calendar_Arthur_Waste_2023.12.15.xlsx

2024 Sampling Calendar
ARTHUR WWTP (Org #5767)
WWT III

JULY						
M	T	W	TH	F	St	Su
1	2	3-M/BS/SE	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31				

AUGUST						
M	T	W	TH	F	St	Su
			1	2	3	4
5	6	7-M/BS/SE	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	

SEPTEMBER						
M	T	W	TH	F	St	Su
						1
2	3	4-M/BS/SE	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30						

OCTOBER						
M	T	W	TH	F	St	Su
	1	2-M/W/BS	3	4	5	6
7	8	9-W	10	11	12	13
14	15	16-W	17	18	19	20
21	22	23-W	24	25	26	27
28	29	30-W	31			

NOVEMBER						
M	T	W	TH	F	St	Su
				1	2	3
4	5	6-W/M/BS	7	8	9	10
11	12	13-W	14	15	16	17
18	19	20-W	21	22	23	24
25	26	27-W	28	29	30	

DECEMBER						
M	T	W	TH	F	St	Su
						1
2	3	4-W/M/BS	5	6	7	8
9	10	11-W	12	13	14	15
16	17	18-W	19	20	21	22
23-W	24	25	26	27	28	29
30-W	31	1				

Stat Holiday/Weekend
Sample Day

W=Weekly Effluent/Raw; M=Monthly Raw; BS=Monthly Bio-Solids;

Discharge Period: October 1-May 31

If you are NOT able to sample on the scheduled day, call your PCT as soon as possible

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2025 Sampling Calendar
ARTHUR WWTP (Org #5767)
WWT III

JANUARY						
M	T	W	TH	F	St	Su
		1	2	3	4	5
6	7 - W/M/BS	8	9	10	11	12
13	14 - W	15	16	17	18	19
20	21 - W	22	23	24	25	26
27	28 - W	29	30	31		

FEBRUARY						
M	T	W	TH	F	St	Su
					1	2
3	4 - W/M/BS	5	6	7	8	9
10	11 - W	12	13	14	15	16
17	18 - W	19	20	21	22	23
24	25 - W	26	27	28		

MARCH						
M	T	W	TH	F	St	Su
					1	2
3	4 - W/M/BS	5	6	7	8	9
10	11 - W	12	13	14	15	16
17	18 - W	19	20	21	22	23
24	25 - W	26	27	28	29	30
31						

APRIL						
M	T	W	TH	F	St	Su
	1 - W/M/BS	2	3	4	5	6
7	8 - W	9	10	11	12	13
14	15 - W	16	17	18	19	20
21	22 - W	23	24	25	26	27
28	29 - W	30				

MAY						
M	T	W	TH	F	St	Su
			1	2	3	4
5	6 - W/M/BS	7	8	9	10	11
12	13 - W	14	15	16	17	18
19	20 - W	21	22	23	24	25
26	27 - W	28	29	30	31	

JUNE						
M	T	W	TH	F	St	Su
						1
2	3 - M/BS/SE	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30						

Stat Holiday/Weekend
Sample Day

W=Weekly Effluent; **M**=Monthly Raw; **BS**=Monthly Bio-Solids; **SE**=Secondary Effluent; **LCS**=Lagoon Cell Sampling
 Discharge Period: October 1-May 31

If you are NOT able to sample on the scheduled day, call your PCT as soon as possible

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2025 Sampling Calendar
ARTHUR WWTP (Org #5767)
WWT III

JULY						
M	T	W	TH	F	St	Su
	1	2 - M/BS/SE	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31			

AUGUST						
M	T	W	TH	F	St	Su
				1	2	3
4	5 - M/BS/SE	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31

SEPTEMBER						
M	T	W	TH	F	St	Su
1	2 - M/BS/SE	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23-LCS	24	25	26	27	28
29	30					

OCTOBER						
M	T	W	TH	F	St	Su
		1- W/M/BS	2	3	4	5
6	7 - W	8	9	10	11	12
13	14 - W	15	16	17	18	19
20	21 - W	22	23	24	25	26
27	28 - W	29	30	31		

NOVEMBER						
M	T	W	TH	F	St	Su
					1	2
3	4 - W/M/BS	5	6	7	8	9
10	11	12 - W	13	14	15	16
17	18 - W	19	20	21	22	23
24	25 - W	26	27	28	29	30

DECEMBER						
M	T	W	TH	F	St	Su
1	2 - W/M/BS	3	4	5	6	7
8	9 - W	10	11	12	13	14
15	16 - W	17	18	19	20	21
22	23 - W	24	25	26	27	28
29	30 - W	31				

Stat Holiday/Weekend
Sample Day

W=Weekly Effluent; M=Monthly Raw; BS=Monthly Bio-Solids; SE=Secondary Effluent; LCS=Lagoon Cell Sampling
 Discharge Period: October 1-May 31

If you are NOT able to sample on the scheduled day, call your PCT as soon as possible

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**2024 – 2025 Annual Performance Report
Arthur Wastewater Treatment Plant
ECA 7654-BEMKVD**

Appendix C

Calibration Reports



CALIBRATION / VERIFICATION

6470 Viscount Rd., Mississauga, Ontario
L4V 1H3. Tel: (905) 678-2882
Email: service@spdsales.com
Web Site: www.spdsales.com

Customer Name:	OCWA - Highlands Hub					
Plant Name and address:	Arthur WWTP - 160 Preston Street South, Arthur					
Service Date:	14-Aug-24	Instrument Type:	FIT	W.O. Number:	240741-0001	Asset#: 205612
Due Date:	14-Aug-25	Manufacturer:	Rosemount			
Follow-Up Required:	No	Model:	Transmitter:	8712	Sensor:	-
As Left Status:	Initial Condt	Serial #:	Transmitter:	0860220959	Sensor:	-
Instrument Visual Inspection:		Range:	0-100 l/s		Output:	4-20 mA
Mechanical Inspection:	OK	Tag Information:	NA			
Electrical Inspection:	OK	Description:	Plant Effluent			
As found Display information:	OK	Process/Location Descrpition:	NA			

Instrument Information:	
Pipe Size:	6"
Cal Tube Number:	
Flow Unit:	l/s
Flow rate at 20 mA/100%:	100
Pulse rate at 100%:	NA

Input	Input %	Flow rate Ft/s	mA Out	As Found	Deviation	As Left	Deviation
0	0.00%	0.00	4.00	3.98	-0.50%	3.98	-0.50%
3	10.00%	3.00	5.60	5.57	-0.54%	5.57	-0.54%
10	33.33%	10.00	9.33	9.30	-0.32%	9.30	-0.32%
30	100.00%	30.00	20.00	19.95	-0.25%	19.95	-0.25%

Comments		Test Equipment Used		
		Name / Type	Serial No.	Due Date
Cal Number: 0916605509025005		Rosemount Simulator		
Verified Successfully with rosemount simulator.		Fluke Digital Multimeter	53600167	May-24
Other Outputs Tested:	Not tested	Technician Name	Witness Name	
Loop Check Performed:	Not tested	Vaibhav Patel	Dan	
Within Specification:	Yes	Date:	14-Aug-24	Date: 14-Aug-24



CALIBRATION / VERIFICATION

6470 Viscount Rd., Mississauga, Ontario
L4V 1H3. Tel: (905) 678-2882
Email: service@spdsales.com
Web Site: www.spdsales.com

Customer Name:	OCWA - Highlands Hub						
Plant Name and address:	Arthur WWTP - 160 Preston Street South, Arthur						
Service Date:	14-Aug-24	Instrument Type:	FIT	W.O. Number:	240741-0001	Asset#:	350654
Due Date:	14-Aug-25	Manufacturer:	E&H				
Follow-Up Required:	No	Model:	Transmitter:	Promag 400	Sensor:	-	
As Left Status:	Initial Condt	Serial #:	Transmitter:	R701CC16000	Sensor:	-	
Instrument Visual Inspection:		Range:	0-100 l/s		Output:	4-20 mA	
Mechanical Inspection:	OK	Tag Information:	NA				
Electrical Inspection:	OK	Description:	Plant Effluent to pond				
As found Display information:	OK	Process/Location Description:	NA				

Instrument Information:	
Pipe Size:	6"
K/Cal Factor:	1.0683
Zero Point:	-1.6
Flow unit:	l/s
Flow rate at 20 mA/100%:	100
Pulse rate at 100%:	-
Empty Pipe Detection:	ON

Input	Input %	Flow rate	mA Out	As Found	Deviation	As Left	Deviation
0	0.00%	0.00	4.00	3.99	-0.25%	3.99	-0.25%
25	25.00%	25.00	8.00	7.99	-0.12%	7.99	-0.12%
50	50.00%	50.00	12.00	11.99	-0.08%	11.99	-0.08%
75	75.00%	75.00	16.00	15.99	-0.06%	15.99	-0.06%
100	100.00%	100.00	20.00	19.96	-0.20%	19.96	-0.20%

Comments		Test Equipment Used			
		Name / Type		Serial No.	Due Date
verification was done using internal simulation.		Fluke Digital Multimeter		53600167	May-24
Analog output tested during internal verification.					
Other Outputs Tested:	Not tested	Technician Name		Witness Name	
Loop Check Performed:	Not tested	Vaibhav Patel		Dan	
Within Specification:	No	Date:	14-Aug-24	Date:	14-Aug-24



CALIBRATION / VERIFICATION

6470 Viscount Rd., Mississauga, Ontario
L4V 1H3. Tel: (905) 678-2882
Email: service@spdsales.com
Web Site: www.spdsales.com

Customer Name:	OCWA - Highlands Hub						
Plant Name and address:	Arthur WWTP - 160 Preston Street South, Arthur						
Service Date:	14-Aug-24	Instrument Type:	FIT	W.O. Number:	240741-0001	Asset#:	350726
Due Date:	14-Aug-25	Manufacturer:	E&H				
Follow-Up Required:	No	Model:	Transmitter:	Promag 400	Sensor:	-	
As Left Status:	Initial Condt	Serial #:	Transmitter:	M4053919000	Sensor:	-	
Instrument Visual Inspection:		Range:	0-20 l/s		Output:	4-20 mA	
Mechanical Inspection:	OK	Tag Information:	RP100-FI02				
Electrical Inspection:	OK	Description:	RAS West Flow				
As found Display information:	OK	Process/Location Description:	NA				

Instrument Information:	
Pipe Size:	6"
K/Cal Factor:	1.3323
Zero Point:	4
Flow unit:	l/s
Flow rate at 20 mA/100%:	20
Pulse rate at 100%:	-
Empty Pipe Detection:	ON

Input	Input %	Flow rate	mA Out	As Found	Deviation	As Left	Deviation
0	0.00%	0.00	4.00	3.99	-0.25%	3.99	-0.25%
25	25.00%	5.00	8.00	7.99	-0.12%	7.99	-0.12%
50	50.00%	10.00	12.00	11.99	-0.08%	11.99	-0.08%
75	75.00%	15.00	16.00	15.99	-0.06%	15.99	-0.06%
100	100.00%	20.00	20.00	19.96	-0.20%	19.96	-0.20%

Comments		Test Equipment Used			
		Name / Type		Serial No.	Due Date
verification was done using internal simulation.		Fluke Digital Multimeter		53600167	May-24
Analog output tested during internal verification.					
Other Outputs Tested:	Not tested	Technician Name		Witness Name	
Loop Check Performed:	Not tested	Vaibhav Patel		Dan	
Within Specification:	No	Date:	14-Aug-24	Date:	14-Aug-24



CALIBRATION / VERIFICATION

6470 Viscount Rd., Mississauga, Ontario
L4V 1H3. Tel: (905) 678-2882
Email: service@spdsales.com
Web Site: www.spdsales.com

Customer Name:	OCWA - Highlands Hub						
Plant Name and address:	Arthur WWTP - 160 Preston Street South, Arthur						
Service Date:	14-Aug-24	Instrument Type:	FIT	W.O. Number:	240741-0001	Asset#:	350726
Due Date:	14-Aug-25	Manufacturer:	E&H				
Follow-Up Required:	No	Model:	Transmitter:	Promag 400	Sensor:	-	
As Left Status:	Initial Condt	Serial #:	Transmitter:	M4053919000	Sensor:	-	
Instrument Visual Inspection:		Range:	0-25 l/s		Output:	4-20 mA	
Mechanical Inspection:	OK	Tag Information:	RP100-FI03				
Electrical Inspection:	OK	Description:	NA				
As found Display information:	OK	Process/Location Description:	NA				

Instrument Information:	
Pipe Size:	3"
K/Cal Factor:	1.0151
Zero Point:	7
Flow unit:	l/s
Flow rate at 20 mA/100%:	25
Pulse rate at 100%:	-
Empty Pipe Detection:	ON

Input	Input %	Flow rate	mA Out	As Found	Deviation	As Left	Deviation
0	0.00%	0.00	4.00	3.99	-0.25%	3.99	-0.25%
25	25.00%	6.25	8.00	7.98	-0.25%	7.98	-0.25%
50	50.00%	12.50	12.00	11.98	-0.17%	11.98	-0.17%
75	75.00%	18.75	16.00	15.99	-0.06%	15.99	-0.06%
100	100.00%	25.00	20.00	19.97	-0.15%	19.97	-0.15%

Comments		Test Equipment Used			
		Name / Type		Serial No.	Due Date
verification was done using internal simulation.		Fluke Digital Multimeter		53600167	May-24
Analog output tested during internal verification.					
Other Outputs Tested:	Not tested	Technician Name		Witness Name	
Loop Check Performed:	Not tested	Vaibhav Patel		Dan	
Within Specification:	No	Date:	14-Aug-24	Date:	14-Aug-24



CALIBRATION / VERIFICATION

6470 Viscount Rd., Mississauga, Ontario
L4V 1H3. Tel: (905) 678-2882
Email: service@spdsales.com
Web Site: www.spdsales.com

Customer Name:	OCWA - Highlands Hub						
Plant Name and address:	Arthur WWTP - 160 Preston Street South, Arthur						
Service Date:	14-Aug-24	Instrument Type:	FIT	W.O. Number:	240741-0001	Asset#:	350725
Due Date:	14-Aug-25	Manufacturer:	E&H				
Follow-Up Required:	No	Model:	Transmitter:	Promag 400	Sensor:	-	
As Left Status:	Initial Condt	Serial #:	Transmitter:	M4053819000	Sensor:	-	
Instrument Visual Inspection:		Range:	0-20 l/s		Output:	4-20 mA	
Mechanical Inspection:	OK	Tag Information:	RP100-FI03				
Electrical Inspection:	OK	Description:	NA				
As found Display information:	OK	Process/Location Description:	NA				

Instrument Information:	
Pipe Size:	4"
K/Cal Factor:	1.3156
Zero Point:	4
Flow unit:	l/s
Flow rate at 20 mA/100%:	20
Pulse rate at 100%:	-
Empty Pipe Detection:	ON

Input	Input %	Flow rate	mA Out	As Found	Deviation	As Left	Deviation
0	0.00%	0.00	4.00	3.99	-0.25%	3.99	-0.25%
25	25.00%	5.00	8.00	7.98	-0.25%	7.98	-0.25%
50	50.00%	10.00	12.00	11.98	-0.17%	11.98	-0.17%
75	75.00%	15.00	16.00	15.99	-0.06%	15.99	-0.06%
100	100.00%	20.00	20.00	19.97	-0.15%	19.97	-0.15%

Comments		Test Equipment Used			
		Name / Type		Serial No.	Due Date
verification was done using internal simulation.		Fluke Digital Multimeter		53600167	May-24
Analog output tested during internal verification.					
Other Outputs Tested:	Not tested	Technician Name		Witness Name	
Loop Check Performed:	Not tested	Vaibhav Patel		Dan	
Within Specification:	No	Date:	14-Aug-24	Date:	14-Aug-24



CALIBRATION / VERIFICATION

6470 Viscount Rd., Mississauga, Ontario
L4V 1H3. Tel: (905) 678-2882
Email: service@spdsales.com
Web Site: www.spdsales.com

Customer Name:	OCWA - Highlands Hub						
Plant Name and address:	Arthur WWTP - 160 Preston Street South, Arthur						
Service Date:	14-Aug-24	Instrument Type:	FIT	W.O. Number:	240741-0001	Asset#:	NA
Due Date:	14-Aug-25	Manufacturer:	Miltronics				
Follow-Up Required:	No	Model:	Transmitter:	OCM III	Sensor:	-	
As Left Status:	Initial Condt	Serial #:	Transmitter:	PBD/W3100009	Sensor:	-	
Instrument Visual Inspection:		Range:	0-100 l/s		Output:	4-20 mA	
Mechanical Inspection:	OK	Tag Information:	PF100-FI01				
Electrical Inspection:	OK	Description:	Plant effluent flow				
As found Display information:	OK	Process/Location Description:	NA				

Instrument Information:	
Span:	0.334
Empty Distance:	0.95
Exponent:	1.53
Max Head: (20 mA)	0.334
Max Flow: (20 mA)	100
Height Unit:	m
Flow Unit:	l/s

Input Level	Calculated Flow	Measured Flow	mA Out	As Found	Deviation	As Left	Deviation
0.000	0.000	0.000	4.00	3.99	-0.25%	3.99	-0.25%
0.084	11.991	11.900	5.92	4.49	-24.14%	4.49	-24.14%
0.167	34.628	34.526	9.54	9.81	2.83%	9.81	2.83%
0.251	64.394	64.290	14.30	11.76	-17.78%	11.76	-17.78%
0.334	100.000	99.890	20.00	19.97	-0.15%	19.97	-0.15%

Comments		Test Equipment Used		
		Name / Type	Serial No.	Due Date
Internal verification was done using level simulation.				
Analog output tested during internal verification.		Fluke Digital Multimeter	53600167	May-24
Other Outputs Tested:	Not tested	Technician Name	Witness Name	
Loop Check Performed:	Not tested	Vaibhav Patel	Dan	
Within Specification:	No	Date:	14-Aug-24	Date: 14-Aug-24



CALIBRATION / VERIFICATION

6470 Viscount Rd., Mississauga, Ontario
L4V 1H3. Tel: (905) 678-2882
Email: service@spdsales.com
Web Site: www.spdsales.com

Customer Name:	OCWA - Highlands Hub						
Plant Name and address:	Arthur WWTP - 160 Preston Street South, Arthur, ON						
Service Date:	14-Aug-24	Instrument Type:	LIT	W.O. Number:	240741-0001	Asset#:	NA
Due Date:	14-Aug-25	Manufacturer:	Siemens				
Follow-Up Required:	No	Model:	Transmitter:	Multiranger 100	Sensor:	-	
As Left Status:	Initial Cond	Serial #:	Transmitter:	PBD/U9180052	Sensor:	-	
Instrument Visual Inspection:		Range:	0-2.930 m		Output:	4-20 mA	
Mechanical Inspection:	OK	Tag Infomration:	NA				
Electrical Inspection:	OK	Description:	River Gauge				
As found Display information:	OK	Process/Location Description:	NA				

Instrument Information:	
Empty Distance:	0.2
Span:	0.1677
Unit:	m
Sensor Type:	XPS 15
Speed of Response:	Medium
No. of Relay:	0
Loss of Echo:	

Input Level	Input %	Calculated Level	mA Out	As Found	Deviation	As Left	Deviation
0.00	0.00%	0.00	4.00	3.98	-0.50%	4.00	0.00%
0.04	25.00%	0.04	8.00	7.98	-0.25%	7.98	-0.25%
0.08	50.00%	0.08	12.00	11.99	-0.08%	11.99	-0.08%
0.13	75.00%	0.13	16.00	15.98	-0.12%	15.98	-0.12%
0.17	100.00%	0.17	20.00	19.98	-0.10%	20.00	0.00%

Comments		Test Equipment Used		
		Name / Type	Serial No.	Due Date
Performed 4 mA and 20 mA trim.		Fluke Digital Multimeter	53600167	May-25
Simulated internally and verified 4-20 mA				
Other Outputs Tested:	Not Tested	Technician Name	Witness Name	
Loop Check Performed:	Not Tested	Vaibhav P	Dan	
Within Specification:	Yes	Date:	14-Aug-24	Date: 14-Aug-24

**2024 – 2025 Annual Performance Report
Arthur Wastewater Treatment Plant
ECA 7654-BEMKVD**

Appendix D

Sludge Quality Analysis

Solids & Nutrients

Period: 10/01/2024 to 05/31/2025

Works: 5767 / Digester Type: Aerobic

Solids & Nutrients	Metals & Criteria	Last 4 Samples	
Facility Works Number:	110000882	Receiver:	Conestoga River
Facility Owner:	Municipality: Township of Wellington North	Service Population:	2500
Facility Classification:	Class 3 Wastewater Treatment	Total Design Capacity:	1860 m3/day

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

Month	Hauled Vol. (m³)	Total Solids (mg/L)	Total Phosphorus (mg/L)	Total Ammonia Nitrogen (mg/L)	Nitrate as N (mg/L)	Nitrite as N (mg/L)	Total Kjeldahl Nitrogen (mg/L)	Ammonia + Nitrate (mg/L)	Potassium (mg/L)
Parameter Short Name	HauledVol	TS	TP	NH3p_NH4p_N	NO3-N	NO2-N	TKN	Calculation in Report	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	- no T/S	Lab Published Month Mean
Oct	798.00	13,500.00	343.00	8.90	5.00	3.00	522.00	6.95	51.00
Nov	0.00	21,600.00	790.00	52.30	3.00	3.00	898.00	27.65	81.00
Dec	124.00	34,300.00	1,300.00	4.00	49.00	3.00	1,290.00	26.50	109.00
Jan	264.00	27,600.00	772.00	93.60	3.00	3.00	1,410.00	48.30	74.00
Feb	122.00	23,700.00	739.00	4.60	59.00	3.00	1,380.00	31.80	90.20
Mar	194.00	31,800.00	1,130.00	15.80	14.00	3.00	1,750.00	14.90	123.00
Apr	0.00	23,800.00	804.00	92.50	3.00	3.00	1,720.00	47.75	116.00
May	0.00	37,700.00	1,030.00	268.00	9.00	3.00	2,210.00	138.50	123.00
Average	187.75	26,750.00	863.50	67.46	18.13	3.00	1,397.50	42.79	95.90
Total	1,502.00	214,000.00	6,908.00	539.70	145.00	24.00	11,180.00	342.35	767.20

Solids & Nutrients		Metals & Criteria		Last 4 Samples							
Note: all parameters in this report are derived from the Bslq Station											
Month	Arsenic (mg/L)	Cadmium (mg/L)	Cobalt (mg/L)	Chromium (mg/L)	Copper (mg/L)	Mercury (mg/L)	Molybdenum (mg/L)	Nickel (mg/L)	Lead (mg/L)	Selenium (mg/L)	Zinc (mg/L)
Parameter Short Name	As	Cd	Co	Cr	Cu	Hg	Mo	Ni	Pb	Se	Zn
T/S	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	Lab Published Month Mean	Lab Published Month Mean	Lab Published Month Mean
Oct	0.10	0.01	0.03	0.24	6.90	0.00	0.12	0.17	0.10	0.10	5.00
Nov	0.10	0.01	0.06	0.60	15.00	0.00	0.21	0.42	0.20	0.10	9.00
Dec	0.20	0.01	0.10	1.00	25.00	0.01	0.33	0.70	0.40	0.10	15.00
Jan	0.13	0.01	0.05	0.72	15.00	0.00	0.32	0.45	0.20	0.10	8.99
Feb	0.11	0.01	0.04	0.71	13.00	0.00	0.29	0.43	0.16	0.10	7.08
Mar	0.19	0.01	0.07	1.29	19.90	0.01	0.40	0.72	0.26	0.10	10.80
Apr	0.10	0.01	0.04	0.59	14.00	0.00	0.19	0.33	0.20	0.10	6.00
May	0.20	0.01	0.05	1.10	18.00	0.00	0.26	0.57	0.20	0.10	8.00
Average	0.14	0.01	0.06	0.78	15.85	0.00	0.26	0.47	0.21	0.10	8.73
Max. Permissible Metal Concentrations (mg/kg of Solids)	170.00	34.00	340.00	2,800.00	1,700.00	11.00	94.00	420.00	1,100.00	34.00	4,200.00
Metal Concentrations in Sludge (mg/kg)	5.29	0.30	2.07	29.19	592.52	0.14	9.89	17.68	8.01	3.74	326.50

Solids & Nutrients		Metals & Criteria		Last 4 Samples				
Note: all parameters in this report are derived from the Bslq Station								
Parameter Short Name	Time Series	02/18/2025	03/04/2025	04/08/2025	05/06/2025	Average	Metal Concentrations in Sludge (mg/kg)	Max. Permissible Metal Concentrations (mg/kg of Solids)
As (mg/L)	Lab Published	0.11	0.19	0.10	0.20	0.15	5.15	170
Cd (mg/L)	Lab Published	0.01	0.01	0.01	0.01	0.01	0.26	34
Co (mg/L)	Lab Published	0.04	0.07	0.04	0.05	0.05	1.71	340
Cr (mg/L)	Lab Published	0.71	1.29	0.59	1.10	0.92	31.50	2800
Cu (mg/L)	Lab Published	13.00	19.90	14.00	18.00	16.23	554.70	1700
Hg (mg/L)	Lab Published	0.00	0.01	0.00	0.00	0.00	0.12	11
Mo (mg/L)	Lab Published	0.29	0.40	0.19	0.26	0.28	9.71	94
Ni (mg/L)	Lab Published	0.43	0.72	0.33	0.57	0.51	17.47	420
Pb (mg/L)	Lab Published	0.16	0.26	0.20	0.20	0.20	6.92	1100
Se (mg/L)	Lab Published	0.10	0.10	0.10	0.10	0.10	3.42	34
Zn (mg/L)	Lab Published	7.08	10.80	6.00	8.00	7.97	272.48	4200
E.Coli Dry Wt (cfu/g)	Lab Published						E. Coli average is the GMD	
TS (mg/L)	Lab Published	23,700.00	31,800.00	23,800.00	37,700.00	29,250.00		
TP (mg/L)	Lab Published	739.00	1,130.00	804.00	1,030.00	925.75		
NO2-N (mg/L)	Lab Published	3.00	3.00	3.00	3.00	3.00		
TKN (mg/L)	Lab Published	1,380.00	1,750.00	1,720.00	2,210.00	1,765.00		
K (mg/L)	Lab Published	90.20	123.00	116.00	123.00	113.05		
NH3p_NH4p_N (mg/L)	Lab Published	4.60	15.80	92.50	268.00	95.23		
NO3-N (mg/L)	Lab Published	59.00	14.00	3.00	9.00	21.25		

**2024 – 2025 Annual Performance Report
Arthur Wastewater Treatment Plant
ECA 7654-BEMKVD**

Appendix E

Daily Streamflow Measurements

Customized Monthly Vertical Report

From 10/01/2024 to 05/31/2025

Facility Name: ARTHUR WASTEWATER
TREATMENT PLANT
Receiver: Conestoga River

Facility Org Number: 5767
Facility Owner: Municipality: Township of
Wellington North
Service Population: 2500

Works: 110000882
Facility Classification: Class 3 Wastewater Treatment
Total Design Capacity: 1860 m3/day



	Final Effluent						
	River Height - cm						
	IH Edited Count		IH Mon.Max		IH Mon.Mean		IH Mon.Min
Oct 2024		31.00		14.88		12.96	10.34
Nov 2024		30.00		32.12		15.37	12.77
Dec 2024		31.00		92.32		30.70	14.00
Total		92.00					
Avg						19.72	
Max				92.32			
Min							10.34
Jan 2025		31.00		51.95		30.08	19.71
Feb 2025		28.00		35.28		26.20	19.71
Mar 2025		31.00		146.65		61.88	30.59
Apr 2025		30.00		122.61		34.12	16.12
May 2025		31.00		59.51		26.25	14.22
Total		151.00					
Avg						35.91	
Max				146.65			
Min							14.22

**2024 – 2025 Annual Performance Report
Arthur Wastewater Treatment Plant
ECA 7654-BEMKVD**

Appendix F

Grand River Conservation Authority Manual
Discharge Measurements & TAN Concentrations

**Arthur WWTP Stream Gauge
Tentative Rating Table**

Last Updated:
Sept. 9, 2017

Level (cm)	Flow (m ³ /s)	Level (cm)	Flow (m ³ /s)	Level (cm)	Flow (m ³ /s)	Level (cm)	Flow (m ³ /s)
10.1	0.000	14.3	0.035	18.5	0.09	22.7	0.17
10.2	0.001	14.4	0.036	18.6	0.09	22.8	0.17
10.3	0.001	14.5	0.037	18.7	0.09	22.9	0.17
10.4	0.002	14.6	0.038	18.8	0.09	23.0	0.17
10.5	0.003	14.7	0.039	18.9	0.09	23.1	0.18
10.6	0.003	14.8	0.040	19.0	0.10	23.2	0.18
10.7	0.004	14.9	0.041	19.1	0.10	23.3	0.18
10.8	0.005	15.0	0.042	19.2	0.10	23.4	0.18
10.9	0.005	15.1	0.043	19.3	0.10	23.5	0.19
11.0	0.006	15.2	0.045	19.4	0.10	23.6	0.19
11.1	0.007	15.3	0.046	19.5	0.10	23.7	0.19
11.2	0.008	15.4	0.047	19.6	0.11	23.8	0.19
11.3	0.008	15.5	0.048	19.7	0.11	23.9	0.20
11.4	0.009	15.6	0.049	19.8	0.11	24.0	0.20
11.5	0.010	15.7	0.050	19.9	0.11	24.1	0.20
11.6	0.011	15.8	0.052	20.0	0.11	24.2	0.20
11.7	0.011	15.9	0.053	20.1	0.12	24.3	0.20
11.8	0.012	16.0	0.054	20.2	0.12	24.4	0.21
11.9	0.013	16.1	0.055	20.3	0.12	24.5	0.21
12.0	0.014	16.2	0.056	20.4	0.12	24.6	0.21
12.1	0.015	16.3	0.058	20.5	0.12	24.7	0.22
12.2	0.015	16.4	0.059	20.6	0.12	24.8	0.22
12.3	0.016	16.5	0.060	20.7	0.13	24.9	0.22
12.4	0.017	16.6	0.062	20.8	0.13	25.0	0.22
12.5	0.018	16.7	0.063	20.9	0.13	25.1	0.23
12.6	0.019	16.8	0.064	21.0	0.13	25.2	0.23
12.7	0.020	16.9	0.066	21.1	0.13	25.3	0.23
12.8	0.021	17.0	0.067	21.2	0.14	25.4	0.23
12.9	0.021	17.1	0.068	21.3	0.14	25.5	0.24
13.0	0.022	17.2	0.070	21.4	0.14	25.6	0.24
13.1	0.023	17.3	0.071	21.5	0.14	25.7	0.24
13.2	0.024	17.4	0.072	21.6	0.14	25.8	0.24
13.3	0.025	17.5	0.074	21.7	0.15	25.9	0.25
13.4	0.026	17.6	0.075	21.8	0.15	26.0	0.25
13.5	0.027	17.7	0.077	21.9	0.15	26.1	0.25
13.6	0.028	17.8	0.078	22.0	0.15	26.2	0.26
13.7	0.029	17.9	0.080	22.1	0.15	26.3	0.26
13.8	0.030	18.0	0.081	22.2	0.16	26.4	0.26
13.9	0.031	18.1	0.083	22.3	0.16	26.5	0.26
14.0	0.032	18.2	0.084	22.4	0.16	26.6	0.27
14.1	0.033	18.3	0.086	22.5	0.16	26.7	0.27
14.2	0.034	18.4	0.087	22.6	0.16	26.8	0.27

**Arthur WWTP Stream Gauge
Tentative Rating Table**

Last Updated:
Sept. 9, 2017

Level (cm)	Flow (m3/s)	Level (cm)	Flow (m3/s)	Level (cm)	Flow (m3/s)	Level (cm)	Flow (m3/s)
26.9	0.28	31.1	0.42	35.3	0.61	39.5	0.85
27.0	0.28	31.2	0.43	35.4	0.62	39.6	0.86
27.1	0.28	31.3	0.43	35.5	0.62	39.7	0.87
27.2	0.29	31.4	0.44	35.6	0.63	39.8	0.87
27.3	0.29	31.5	0.44	35.7	0.63	39.9	0.88
27.4	0.29	31.6	0.44	35.8	0.64	40.0	0.89
27.5	0.30	31.7	0.45	35.9	0.65	40.1	0.89
27.6	0.30	31.8	0.45	36.0	0.65	40.2	0.90
27.7	0.30	31.9	0.46	36.1	0.66	40.3	0.91
27.8	0.31	32.0	0.46	36.2	0.66	40.4	0.91
27.9	0.31	32.1	0.47	36.3	0.67	40.5	0.92
28.0	0.31	32.2	0.47	36.4	0.67	40.6	0.93
28.1	0.31	32.3	0.47	36.5	0.68	40.7	0.93
28.2	0.32	32.4	0.48	36.6	0.68	40.8	0.94
28.3	0.32	32.5	0.48	36.7	0.69	40.9	0.95
28.4	0.32	32.6	0.49	36.8	0.69	41.0	0.95
28.5	0.33	32.7	0.49	36.9	0.70	41.1	0.96
28.6	0.33	32.8	0.50	37.0	0.71	41.2	0.97
28.7	0.33	32.9	0.50	37.1	0.71	41.3	0.97
28.8	0.34	33.0	0.50	37.2	0.72	41.4	0.98
28.9	0.34	33.1	0.51	37.3	0.72	41.5	0.99
29.0	0.35	33.2	0.51	37.4	0.73	41.6	1.00
29.1	0.35	33.3	0.52	37.5	0.73	41.7	1.00
29.2	0.35	33.4	0.52	37.6	0.74	41.8	1.01
29.3	0.36	33.5	0.53	37.7	0.75	41.9	1.02
29.4	0.36	33.6	0.53	37.8	0.75	42.0	1.02
29.5	0.36	33.7	0.54	37.9	0.76	42.1	1.03
29.6	0.37	33.8	0.54	38.0	0.76	42.2	1.04
29.7	0.37	33.9	0.55	38.1	0.77	42.3	1.05
29.8	0.37	34.0	0.55	38.2	0.77	42.4	1.05
29.9	0.38	34.1	0.56	38.3	0.78	42.5	1.06
30.0	0.38	34.2	0.56	38.4	0.79	42.6	1.07
30.1	0.39	34.3	0.56	38.5	0.79	42.7	1.07
30.2	0.39	34.4	0.57	38.6	0.80	42.8	1.08
30.3	0.39	34.5	0.57	38.7	0.80	42.9	1.09
30.4	0.40	34.6	0.58	38.8	0.81	43.0	1.10
30.5	0.40	34.7	0.58	38.9	0.82	43.1	1.10
30.6	0.40	34.8	0.59	39.0	0.82	43.2	1.11
30.7	0.41	34.9	0.59	39.1	0.83	43.3	1.12
30.8	0.41	35.0	0.60	39.2	0.84	43.4	1.13
30.9	0.42	35.1	0.60	39.3	0.84	43.5	1.14
31.0	0.42	35.2	0.61	39.4	0.85	43.6	1.14

**Arthur WWTP Stream Gauge
Tentative Rating Table**

Last Updated:
Sept. 9, 2017

Level (cm)	Flow (m3/s)	Level (cm)	Flow (m3/s)	Level (cm)	Flow (m3/s)	Level (cm)	Flow (m3/s)
43.8	1.16	52.2	1.95	60.6	3.03	69.0	4.47
44.0	1.17	52.4	1.97	60.8	3.06	69.2	4.51
44.2	1.19	52.6	1.99	61.0	3.09	69.4	4.55
44.4	1.21	52.8	2.01	61.2	3.12	69.6	4.58
44.6	1.22	53.0	2.04	61.4	3.15	69.8	4.62
44.8	1.24	53.2	2.06	61.6	3.18	70.0	4.66
45.0	1.25	53.4	2.08	61.8	3.22	70.2	4.70
45.2	1.27	53.6	2.11	62.0	3.25	70.4	4.74
45.4	1.29	53.8	2.13	62.2	3.28	70.6	4.78
45.6	1.30	54.0	2.15	62.4	3.31	70.8	4.82
45.8	1.32	54.2	2.18	62.6	3.34	71.0	4.87
46.0	1.34	54.4	2.20	62.8	3.37	71.2	4.91
46.2	1.36	54.6	2.22	63.0	3.40	71.4	4.95
46.4	1.37	54.8	2.25	63.2	3.44	71.6	4.99
46.6	1.39	55.0	2.27	63.4	3.47	71.8	5.03
46.8	1.41	55.2	2.30	63.6	3.50	72.0	5.07
47.0	1.43	55.4	2.32	63.8	3.54	72.2	5.12
47.2	1.44	55.6	2.35	64.0	3.57	72.4	5.16
47.4	1.46	55.8	2.37	64.2	3.60	72.6	5.20
47.6	1.48	56.0	2.40	64.4	3.64	72.8	5.24
47.8	1.50	56.2	2.42	64.6	3.67	73.0	5.29
48.0	1.52	56.4	2.45	64.8	3.70	73.2	5.33
48.2	1.54	56.6	2.47	65.0	3.74	73.4	5.37
48.4	1.56	56.8	2.50	65.2	3.77	73.6	5.42
48.6	1.57	57.0	2.53	65.4	3.81	73.8	5.46
48.8	1.59	57.2	2.55	65.6	3.84	74.0	5.51
49.0	1.61	57.4	2.58	65.8	3.88	74.2	5.55
49.2	1.63	57.6	2.61	66.0	3.91	74.4	5.60
49.4	1.65	57.8	2.63	66.2	3.95	74.6	5.64
49.6	1.67	58.0	2.66	66.4	3.98	74.8	5.69
49.8	1.69	58.2	2.69	66.6	4.02	75.0	5.73
50.0	1.71	58.4	2.72	66.8	4.06	75.2	5.78
50.2	1.73	58.6	2.74	67.0	4.09	75.4	5.82
50.4	1.75	58.8	2.77	67.2	4.13	75.6	5.87
50.6	1.77	59.0	2.80	67.4	4.16	75.8	5.92
50.8	1.80	59.2	2.83	67.6	4.20	76.0	5.96
51.0	1.82	59.4	2.86	67.8	4.24	76.2	6.01
51.2	1.84	59.6	2.89	68.0	4.28	76.4	6.06
51.4	1.86	59.8	2.91	68.2	4.31	76.6	6.11
51.6	1.88	60.0	2.94	68.4	4.35	76.8	6.15
51.8	1.90	60.2	2.97	68.6	4.39	77.0	6.20
52.0	1.92	60.4	3.00	68.8	4.43	77.2	6.25

**Arthur WWTP Stream Gauge
Tentative Rating Table**

Last Updated:
Sept. 9, 2017

Level (cm)	Flow (m3/s)	Level (cm)	Flow (m3/s)	Level (cm)	Flow (m3/s)	Level (cm)	Flow (m3/s)
77.5	6.3	98.5	13.0	119.5	23.2	140.5	38
78.0	6.4	99.0	13.2	120.0	23.5	141.0	38
78.5	6.6	99.5	13.4	120.5	23.8	141.5	39
79.0	6.7	100.0	13.6	121.0	24.1	142.0	39
79.5	6.8	100.5	13.8	121.5	24.4	142.5	39
80.0	7.0	101.0	14.0	122.0	24.7	143.0	40
80.5	7.1	101.5	14.2	122.5	25.0	143.5	40
81.0	7.2	102.0	14.4	123.0	25.3	144.0	41
81.5	7.4	102.5	14.6	123.5	25.6	144.5	41
82.0	7.5	103.0	14.9	124.0	26.0	145.0	42
82.5	7.6	103.5	15.1	124.5	26.3	145.5	42
83.0	7.8	104.0	15.3	125.0	26.6	146.0	42
83.5	7.9	104.5	15.5	125.5	26.9	146.5	43
84.0	8.1	105.0	15.7	126.0	27.2	147.0	43
84.5	8.2	105.5	16.0	126.5	27.6	147.5	44
85.0	8.3	106.0	16.2	127.0	27.9	148.0	44
85.5	8.5	106.5	16.4	127.5	28.2	148.5	45
86.0	8.6	107.0	16.7	128.0	28.6	149.0	45
86.5	8.8	107.5	16.9	128.5	28.9	149.5	46
87.0	8.9	108.0	17.1	129.0	29.2	150.0	46
87.5	9.1	108.5	17.4	129.5	29.6	150.5	47
88.0	9.3	109.0	17.6	130.0	29.9	151.0	47
88.5	9.4	109.5	17.9	130.5	30.3	151.5	47
89.0	9.6	110.0	18.1	131.0	30.6	152.0	48
89.5	9.7	110.5	18.3	131.5	31.0	152.5	48
90.0	9.9	111.0	18.6	132.0	31.3	153.0	49
90.5	10.1	111.5	18.9	132.5	31.7	153.5	49
91.0	10.2	112.0	19.1	133.0	32.1	154.0	50
91.5	10.4	112.5	19.4	133.5	32.4	154.5	50
92.0	10.6	113.0	19.6	134.0	32.8	155.0	51
92.5	10.8	113.5	19.9	134.5	33.2	155.5	51
93.0	10.9	114.0	20.2	135.0	33.5	156.0	52
93.5	11.1	114.5	20.4	135.5	33.9	156.5	52
94.0	11.3	115.0	20.7	136.0	34.3	157.0	53
94.5	11.5	115.5	21.0	136.5	34.7	157.5	53
95.0	11.6	116.0	21.2	137.0	35.0	158.0	54
95.5	11.8	116.5	21.5	137.5	35.4	158.5	54
96.0	12.0	117.0	21.8	138.0	35.8	159.0	55
96.5	12.2	117.5	22.1	138.5	36.2	159.5	55
97.0	12.4	118.0	22.4	139.0	36.6	160.0	56
97.5	12.6	118.5	22.6	139.5	37.0	160.5	56
98.0	12.8	119.0	22.9	140.0	37.4	161.0	57

AMMONIA

NH3-N	X 1.22	X 1.29	T.A.N.
0.01	0.01220	0.0129	0.0251
0.02	0.02440	0.0258	0.0502
0.03	0.03660	0.0387	0.0753
0.04	0.04880	0.0516	0.1004
0.05	0.06100	0.0645	0.1255
0.06	0.07320	0.0774	0.1506
0.07	0.08540	0.0903	0.1757
0.08	0.09760	0.1032	0.2008
0.09	0.10980	0.1161	0.2259
0.10	0.12200	0.1290	0.2510
0.11	0.13420	0.1419	0.2761
0.12	0.14640	0.1548	0.3012
0.13	0.15860	0.1677	0.3263
0.14	0.17080	0.1806	0.3514
0.15	0.18300	0.1935	0.3765
0.16	0.19520	0.2064	0.4016
0.17	0.20740	0.2193	0.4267
0.18	0.21960	0.2322	0.4518
0.19	0.23180	0.2451	0.4769
0.20	0.24400	0.2580	0.5020
0.21	0.25620	0.2709	0.5271
0.22	0.26840	0.2838	0.5522
0.23	0.28060	0.2967	0.5773
0.24	0.29280	0.3096	0.6024
0.25	0.30500	0.3225	0.6275
0.26	0.31720	0.3354	0.6526
0.27	0.32940	0.3483	0.6777
0.28	0.34160	0.3612	0.7028
0.29	0.35380	0.3741	0.7279
0.30	0.36600	0.3870	0.7530
0.31	0.37820	0.3999	0.7781
0.32	0.39040	0.4128	0.8032
0.33	0.40260	0.4257	0.8283
0.34	0.41480	0.4386	0.8534
0.35	0.42700	0.4515	0.8785
0.36	0.43920	0.4644	0.9036
0.37	0.45140	0.4773	0.9287
0.38	0.46360	0.4902	0.9538
0.39	0.47580	0.5031	0.9789
0.40	0.48800	0.5160	1.0040
0.41	0.50020	0.5289	1.0291
0.42	0.51240	0.5418	1.0542
0.43	0.52460	0.5547	1.0793

AMMONIA

NH3-N	X 1.22	X 1.29	T.A.N.
0.44	0.54900	0.5805	1.1295
0.45	0.56120	0.5934	1.1546
0.46	0.57340	0.6063	1.1797
0.47	0.58560	0.6192	1.2048
0.48	0.59780	0.6321	1.2299
0.49	0.61000	0.6450	1.2550
0.50	0.62220	0.6579	1.2801
0.51	0.63440	0.6708	1.3052
0.52	0.64660	0.6837	1.3303
0.53	0.65880	0.6966	1.3554
0.54	0.67100	0.7095	1.3805
0.55	0.68320	0.7224	1.4056
0.56	0.69540	0.7353	1.4307
0.57	0.70760	0.7482	1.4558
0.58	0.71980	0.7611	1.4809
0.59	0.73200	0.7740	1.5060
0.60	0.74420	0.7869	1.5311
0.61	0.75640	0.7998	1.5562
0.62	0.76860	0.8127	1.5813
0.63	0.78080	0.8256	1.6064
0.64	0.79300	0.8385	1.6315
0.65	0.80520	0.8514	1.6566
0.66	0.81740	0.8643	1.6817
0.67	0.82960	0.8772	1.7068
0.68	0.84180	0.8901	1.7319
0.69	0.85400	0.9030	1.7570
0.70	0.86620	0.9159	1.7821
0.71	0.87840	0.9288	1.8072
0.72	0.89060	0.9417	1.8323
0.73	0.90280	0.9546	1.8574
0.74	0.91500	0.9675	1.8825
0.75	0.92720	0.9804	1.9076
0.76	0.93940	0.9933	1.9327
0.77	0.95160	1.0062	1.9578
0.78	0.96380	1.0191	1.9829
0.79	0.97600	1.0320	2.0080
0.80	0.98820	1.0449	2.0331
0.81	1.00040	1.0578	2.0582
0.82	1.01260	1.0707	2.0833
0.83	1.02480	1.0836	2.1084
0.84	1.03700	1.0965	2.1335
0.85	1.04920	1.1094	2.1586
0.86	0.00000	0.0000	0.0000

**2024 – 2025 Annual Performance Report
Arthur Wastewater Treatment Plant
ECA 7654-BEMKVD**

Appendix G

Bypass Incident Reports

Ontario Clean Water Agency Environmental Incident Report

Facility ID: 5767 EIncidentReport

Facility Name: Arthur Wastewater Treatment Plant, Lagoon & Collection System

Address: 160 Preston

City: Arthur

Province: Ontario

Postal Code: N1M 2W7

Date of Occurrence: 03/16/2025

Time of Occurrence: 06:20:00 AM

Nature of the Incident

☒ Level 1 Contingency ☐ Level 2 Contingency ☐ Level 3 Contingency [Click here To Show the Definitions](#)

Incident affected: ☐ Air ☒ Water ☐ Land ☐ Nothing

What was discharged or emitted?

- | | |
|--|--|
| ☐ Chlorine | ☐ Oil/Diesel/Gas |
| ☐ Sodium Hypochlorite | ☒ Untreated or partly treated sewage |
| ☐ Calcium Chloride | ☐ Odours |
| ☐ Aluminum Compounds (Specify in Other) | ☐ Water |
| ☐ Arsenic | ☐ Iron Coagulants |
| ☐ Fluoride | |

Other: _____

If this was a discharge, spill or emission...

If a liquid, approximately what quantity was released?: 807000 Litres

If a gas, approximately what quantity was released?: _____

If a solid, approximately what quantity was released?: _____ Kg

What was the source of release?:

Due to high seasonal temperatures, high precipitation and snow melt that caused high flows

Where did the release go?:

Through the regular outfall to the Conestogo River

If it entered a watercourse: ☒ Yes ☐ No

If it went off site: ☒ Yes ☐ No

Duration of the release?: 16 hours

Is the release now stopped?: ☒ Yes ☐ No

Was there any damage? (i.e. property and/or environmental): ☐ Yes ☒ No ☐ N/A

If "Yes", describe below and fill out "Insurance Claim" report

N/A

Action(s) Taken

What actions were taken to control the incident?

During the day on Saturday March 15, 2025, operations split the high flows between the EQ tank and the Plant. All flows going through the Plant were pumped up to the Lagoons via Effluent pump 2. Operations monitored how full the EQ tank was getting throughout the day. At midnight found the EQ tank was full, so closed EQ valve and directing all raw flow through the plant, and being pumped up to the lagoons. Shut air off to the Aeration cells. Set up Filter building, that once the effluent pump couldn't keep up with incoming flow, the excess would flow through the sand filters, then UV and go out to the river.

What actions have been taken to remediate the incident?

One effluent pump onsite to pump effluent up to the lagoons. On March 20, 2025 picked up the new (second) effluent pump, and is scheduled to be installed on March 26th.

Was this a reportable spill or discharge?: ☒ Yes ☐ No

If "Yes", at what time was it first reported to the MOE?

March 16, 2025 at 1030 Dwight Hallahan (OCWA) notified Sophia Bobryk (SAC).

Was it reported to the MOE district office?: ☐ Yes ☒ No

If "Yes", which office/location and who was the contact?:

Was it reported to MOE SAC?: ☒ Yes ☐ No

If "Yes", at what time was it reported to MOE SAC?:

March 16, 2025 at 1030 Dwight Hallahan (OCWA) notified Sophia Bobryk (SAC).

Was it reported to Municipality?: ☒ Yes ☐ No

If "Yes", at what time was it reported to Municipality?:

March 16, 2025 at 1050 Dwight Hallahan (OCWA) notified Cory Schmidt (Owner)

External Assistance/Involvement

Was corporate or area office assistance requested?: ☐ Yes ☒ No

If "Yes", was it received?: ☐ Yes ☐ No

Was external emergency assistance requested?: ☐ Yes ☒ No

If "Yes", from who?: ☐ Fire Department ☐ Equipment Suppliers ☐ Canutec
☐ Ambulance or Hospital ☐ MOE ☐ Coast Guard
☐ Police ☐ Municipality

Other: _____

Was there any media involvement?: ☐ Yes ☒ No

If "Yes", who?: _____

Was the public affected?: ☐ Yes ☒ No

If "Yes", how?: _____

Updated By: **Melissa Cortes** 03/26/2025 12:47:14 PM

Comments:

Regarding: Written Notification concerning the Arthur WWTP Tertiary Bypass on March 16, 2025.

SAC Reference Number: 1-J2EYXL

Date: March 16, 2025

Facility: Arthur WWTP

Location: 160 Preston St., Arthur, ON

Treatment Processes bypassed: Effluent Filters

Time Bypass Started: March 16, 2025 6:20 AM

Time Bypass Ended: March 16, 2025 22:20 PM

Duration of Incident: 16 hrs (as per trending)

Bypass Contents: Partially Treated Effluent

Volume: Approx. 807m3

Location of Release: Through the regular outfall to the Conestogo River

Description of Incident/Reason for Tertiary Bypass: Due to high seasonal temperatures, high precipitation and snow melt that caused high flows.

Actions Taken: During the day on Saturday March 15, 2025, operations split the high flows between the EQ tank and the Plant. All flows going through the Plant were pumped up to the Lagoons via Effluent pump 2. Operations monitored how full the EQ tank was getting throughout the day. At midnight found the EQ tank was full, so closed EQ valve and directing all raw flow through the plant, and being pumped up to the lagoons. Shut air off to the Aeration cells. Set up Filter building, that once the effluent pump couldn't keep up with incoming flow, the excess would flow through the sand filters, then UV and go out to the river. One effluent pump onsite to pump effluent up to the lagoons. On March 20, 2025 picked up the new (second) effluent pump, and is scheduled to be installed on March 26th. Samples were taken according to ECA #7654-BEMKVD. On March 16, 2025 at 2220hrs when flows decreased bypass was ended/complete.

Samples Collected: Samples were taken according to ECA #7654-BEMKVD on March 16, 2025

Reporting:

March 16, 2025 at 1030 Dwight Hallahan (OCWA) notified Sophia Bobryk (SAC).

March 16, 2025 at 1040 Dwight Hallahan (OCWA) called WDG Health Unit with no answer and left message for Danny Martin (Public Health Inspector).

March 16, 2025 at 1050 Dwight Hallahan (OCWA) notified Cory Schmidt (Owner)

March 17, 2025 at 1415 Steve Miller (OCWA) notified/updated Elaine Gold (SAC)
bypass ended and volume

Page of

(C of C) LMS No. : 2000

Sample Condition upon Receipt:

Time Rec'd:

Temperature Upon Receipt: 6 °C

Temperature upon Receipt: 0

Specify:

Laboratory: SGS Lakeland Research Ltd.

103 COLLECTION Ct.
Lakefield, ON

KOL 2H0

705 653 2030

9507-769-001

705-652-6441

greenlaw@lakefield.com

Parameters

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[illegible]

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Cash No.

Grab DO:

Grab DO:

Grab DO:

Rev: #3
Issued: 01-14-2021

**SGS Canada Inc.**

P.O. Box 4300 - 185 Concession St.
Lakefield - Ontario - K0L 2H0
Phone: 705-652-2000 FAX: 705-652-6365

Works #: NR-110000882**Project :** PO#017844

24-March-2025

OCWA-Highlands North (Arthur WPCP)

Attn : Jenna Porter

136 Main St. E.
Shelburne, ON
L9V 3K5, Canada

Date Rec. : 18 March 2025
LR Report: CA13661-MAR25
Reference: Bypass Samples

Copy: #1

Phone: 519 848-5595, 519-925-1938 ext. 225
Fax:

CERTIFICATE OF ANALYSIS

Final Report

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Completed Date	4: Analysis Completed Time	7: Eff Eff-Final Effluent
Sample Date & Time					16-Mar-25 11:05
Temperature Upon Receipt [°C]	---	---	---	---	6.0
Carbonaceous Biochemical Oxygen Demand [(CBOD5) mg/L]	19-Mar-25	15:50	24-Mar-25	13:20	12
Total Suspended Solids [mg/L]	19-Mar-25	10:27	21-Mar-25	12:15	52
pH@temp15 [pH Units]	20-Mar-25	12:38	21-Mar-25	12:00	7.70
Phosphorus (total) [mg/L]	19-Mar-25	15:42	20-Mar-25	13:38	0.58
Total Kjeldahl Nitrogen [as N mg/L]	19-Mar-25	20:15	20-Mar-25	10:27	4.3
Ammonia+Ammonium (N) [as N mg/L]	19-Mar-25	17:41	20-Mar-25	11:34	3.4
Unionized Ammonia @temp15 [mg/L as N]	20-Mar-25	12:38	21-Mar-25	12:00	0.046
Nitrite (as N) [mg/L]	20-Mar-25	00:40	20-Mar-25	15:00	0.05
Nitrate (as N) [mg/L]	20-Mar-25	00:40	20-Mar-25	15:00	4.87
Nitrate + Nitrite (as N) [mg/L]	20-Mar-25	00:40	20-Mar-25	15:00	4.92
Ecoli [mpn/100mL]	18-Mar-25	13:13	20-Mar-25	08:36	435

Note: Federal unionized ammonia at 15 °C calculated using lab pH results performed at this temperature.

*E.Coli was received/processed after the recommended holding time of 48 hours. Result maybe unreliable.


Carrie Greenlaw
Project Specialist,
Environment, Health & Safety

Ontario Clean Water Agency Environmental Incident Report

Facility ID: 5767 EIncidentReport

Facility Name: Arthur Wastewater Treatment Plant, Lagoon & Collection System

Address: P.O. Box 749

City: Arthur

Province: Ontario

Postal Code: N1M 2W7

Date of Occurrence: 04/03/2025

Time of Occurrence: 05:20:00 AM

Nature of the Incident

☒ Level 1 Contingency ☐ Level 2 Contingency ☐ Level 3 Contingency [Click here To Show the Definitions](#)

Incident affected: ☐ Air ☒ Water ☐ Land ☐ Nothing

What was discharged or emitted?

- | | |
|--|--|
| ☐ Chlorine | ☐ Oil/Diesel/Gas |
| ☐ Sodium Hypochlorite | ☒ Untreated or partly treated sewage |
| ☐ Calcium Chloride | ☐ Odours |
| ☐ Aluminum Compounds (Specify in Other) | ☐ Water |
| ☐ Arsenic | ☐ Iron Coagulants |
| ☐ Fluoride | |

Other: _____

If this was a discharge, spill or emission...

If a liquid, approximately what quantity was released?: 604000 Litres

If a gas, approximately what quantity was released?: _____

If a solid, approximately what quantity was released?: _____ Kg

What was the source of release?:

Due to significant weather-related high flows (high precipitation and snow melt)

Where did the release go?:

Through the regular outfall to the Conestogo River

If it entered a watercourse: ☒ Yes ☐ No

If it went off site: ☒ Yes ☐ No

Duration of the release?: 12 hours 40 minutes

Is the release now stopped?: ☒ Yes ☐ No

Was there any damage? (i.e. property and/or environmental): ☐ Yes ☒ No ☐ N/A

If "Yes", describe below and fill out "Insurance Claim" report

Action(s) Taken

What actions were taken to control the incident?

: April 3, 2025 02:35 started getting alarms for high flows, found two pumps running at Frederick St PS and high flows through the plant. Operations started effluent pump 2 to begin pumping up to lagoons. High flows continuing because of precipitation, effluent pump struggling to keep up and bypass to river began at 05:20. Operations monitored plant and EQ tank was full.

What actions have been taken to remediate the incident?

The EQ tank is used to handle peak flow demand and it is always emptied after these events, ready for use in the future.

Was this a reportable spill or discharge?: ☒ Yes ☐ No

If "Yes", at what time was it first reported to the MOE?

April 3, 2025 at 09:39 Melissa Cortes (OCWA) notified Carola Serwotka (MECP).

Was it reported to the MOE district office?: ☒ Yes ☐ No

If "Yes", which office/location and who was the contact?: Guelph District Office April 3, 2025 at 09:39 Melissa Cortes (OCWA) notified Carola Serwotka (MECP).

Was it reported to MOE SAC?: ☒ Yes ☐ No

If "Yes", at what time was it reported to MOE SAC?:

April 3, 2025 Steve Miller (OCWA) notified Grace Sutcliffe (SAC).

Was it reported to Municipality?: ☒ Yes ☐ No

If "Yes", at what time was it reported to Municipality?:

April 3, 2025 at 08:57 Jenna Porter (OCWA) notified Cory Schmidt (Owner)

External Assistance/Involvement

Was corporate or area office assistance requested?: ☐ Yes ☒ No

If "Yes", was it received?: ☐ Yes ☐ No

Was external emergency assistance requested?: ☐ Yes ☒ No

If "Yes", from who?: ☐ Fire Department ☐ Equipment Suppliers ☐ Canutec
☐ Ambulance or Hospital ☐ MOE ☐ Coast Guard
☐ Police ☐ Municipality

Other: _____

Was there any media involvement?: ☐ Yes ☒ No

If "Yes", who?: _____

Was the public affected?: ☐ Yes ☒ No

If "Yes", how?: _____

Updated By: **Melissa Cortes** 04/08/2025 03:15:32 PM

Comments:

SAC Reference Number: 1-N7P529

Date: April 3, 2025

Facility: Arthur WWTP

Location: 160 Preston St., Arthur, ON

Treatment Processes bypassed: Effluent Filters

Time Bypass Started: April 3, 2025 5:20

Time Bypass Ended: April 3, 2025 18:00

Duration of Incident: 12 hrs. 40 min.

Bypass Contents: Partially Treated Effluent

Volume: Approx. 604m3

Location of Release: Through the regular outfall to the Conestogo River

Description of Incident/Reason for Tertiary Bypass: Due to high precipitation causing high flows.

Actions Taken: April 3, 2025 02:35 started getting alarms for high flows, found two pumps running at Frederick St PS and high flows through the plant. Operations started effluent pump 2 to begin pumping up to lagoons. High flows continuing because of precipitation, effluent pump struggling to keep up and bypass to river began at 05:20. Operations monitored plant and EQ tank was full.

Samples Collected: Samples were taken according to ECA #7654-BEMKVD on April 3, 2025

Reporting:

April 3, 2025 Steve Miller (OCWA) notified Grace Sutcliffe (SAC).

April 3, 2025 Steve Miller (OCWA) called WDG Health Unit with no answer and left message, Alivia Jenkins (WDG Health Unit) returned call and confirmed receipt of notification.

April 3, 2025 at 08:57 Jenna Porter (OCWA) notified Cory Schmidt (Owner)

April 3, 2025 at 09:03 Melissa Cortes (OCWA) notified Cameron Irvine (GRCA).

April 3, 2025 at 09:39 Melissa Cortes (OCWA) notified Carola Serwotka (MECP).

April 4, 2025 at 11:07 Steve Miller (OCWA) notified SAC bypass ended and

volume.



Ontario Clean Water Agency - Request for Laboratory Services and CHAIN OF CUSTODY - SEWAGE

Page ____ of ____

Waterworks/Project #: 110000882

Project Name: Arthur WPCP

Org. No.: 5767

Quote #: _____

Attached Parameter List: ☐ No ☐ Yes

(C of C) LIMS No.: APR 13222 UA

Laboratory Section

Sample Condition upon Receipt:

Date Rec'd: APR 4 2025

Time Rec'd: _____

Initials: _____

Temperature Upon Receipt: 10 x 3 °C

Requested Turnaround Time:	**Lab App. Req'd	**24-48h ☐ 5-7d ☐ 7-10d ☐ Other: ☐	Specify: _____
Report to: Don Irvine	Data Transfer Contact: Don Irvine	Invoice to:	Laboratory: SGS Lakeland Research Ltd.
Highlands Hub Office 300 Centennial Road Shelburne, ON L9V 2Z4	Highlands Hub Office 300 Centennial Road Shelburne, ON L9V 2Z4	Highlands Hub Office 300 Centennial Road Shelburne, ON L9V 2Z4	185 Concession St. Lakeland, ON K0L 2H0
Telephone: 519-925-1938	519-925-1938	519-925-1938	705-652-2116
Fax: 519-925-0322	519-925-0322	519-925-0322	705-652-6365
E-mail: dirvine@ocwa.com	dirvine@ocwa.com	apwesthighlands@ocwa.com	Carrie.greenlaw@sgs.com

Sample		Parameters										Comments	Upload to OCWA
Control Point* (Sample Type)	Tag Group (up to 4 characters as in PDC)	Sample Location Name	Date/Time	# of Bottles	CBOD5	TSS	TAN	TP	TKN	Nitrite & Nitrate	E-coli		
PrBy	PrBy	Primary Treatment Bypass	<u>Apr 3/25</u>	3	X	X	X	X	X	X	X	Yes ☒ No ☐	Yes ☒ No ☐
ScBy	ScBy	Secondary Treatment Bypass	<u>0730 28</u>	2	X	X	X	X	X	X	X	Yes ☒ No ☐	Yes ☒ No ☐
TeBy	TeBy	Tertiary Treatment Bypass		3	X	X	X	X	X	X	X	Yes ☒ No ☐	Yes ☒ No ☐
		<u>Secondary Bypass</u>	<u>0730</u>	1							X	Yes ☒ No ☐	Yes ☒ No ☐

Sampler Name: <u>Shelby Taylor</u>	Grab Temp: <u>9.60C</u> Grab pH: <u>7.80</u>
Sampler Signature: _____	

* Control Point: **Cell** - Cell Contents, **Dis** - Disinfection, **Down** - Downstream, **Eff** - Final Effluent, **PrBy** - Primary Bypass, **Raw** - Raw Sewage, **RBC** - Rotating Biological Contactor, **ScBy** - Secondary Bypass, **Up** - Upstream, **Well** - Monitoring Well, **Aer** - Aeration, **Brs** - Biosolids-Raw Sludge, **Bth** - Biosolids Thickening, **Bpd** - Biosolids Primary Digestion, **Bsd** - Biosolids secondary digestion, **Bss** - Biosolids primary super, **Bsq** - Biosolids secondary super, **Bslq** - Biosolids sludge quality, **Bsoq** - Biosolids soil quality, **Bst** - Biosolids treatment/raw sludge, **Clar** - Sedimentation/Clarification effluent, **DAIR** - Dissolved Air Flotation, **Grit** - Primary Treatment/Grit, **PrEI** - Primary Effluent, **RAS** - Return Activated Sludge, **RRBC** - Raw Sewage/RBC Effluent, **SBR** - Secondary Treatment/SBRs, **ScEI** - Secondary Effluent, **TWAS** - Thickened Waste Activated Sludge, **WAS** - Waste Activated Sludge

Rev: #3
Issued: 02-25-2022

not needed
MCR-72: 609030816290
9:30 as

**SGS Canada Inc.**

P.O. Box 4300 - 185 Concession St.
Lakefield - Ontario - KOL 2H0
Phone: 705-652-2000 FAX: 705-652-6365

Works #: 110000882**Project :** PO#017844

14-April-2025

OCWA-Highlands North (Arthur WPCP)

Attn : Jenna Porter

136 Main St. E.
Shelburne, ON
L9V 3K5, Canada

Date Rec. : 04 April 2025**LR Report:** CA13222-APR25**Copy:** #1

Phone: 519 848-5595, 519-925-1938 ext. 225

Fax:

CERTIFICATE OF ANALYSIS

Final Report

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Completed Date	4: Analysis Completed Time	7: ScEf ScEf-Secondary Treatment Bypass
Sample Date & Time					03-Apr-25 07:30
Temperature Upon Receipt [°C]	---	---	---	---	10.0
Field Temperature [celcius]	---	---	---	---	9.6
Field pH [no unit]					7.80
Carbonaceous Biochemical Oxygen Demand [(CBOD5) mg/L]	07-Apr-25	16:15	14-Apr-25	08:28	8
Total Suspended Solids [mg/L]	07-Apr-25	10:00	07-Apr-25	15:50	51
Phosphorus (total) [mg/L]	07-Apr-25	19:37	08-Apr-25	12:55	0.74
Total Kjeldahl Nitrogen [as N mg/L]	04-Apr-25	16:34	07-Apr-25	13:39	3.0
Ammonia+Ammonium (N) [as N mg/L]	04-Apr-25	17:41	07-Apr-25	14:34	1.7
Nitrite (as N) [mg/L]	10-Apr-25	00:14	11-Apr-25	14:52	0.20
Nitrate (as N) [mg/L]	10-Apr-25	00:14	11-Apr-25	14:52	6.29
Nitrate + Nitrite (as N) [mg/L]	10-Apr-25	00:14	11-Apr-25	14:52	6.49
Ecoli [mpn/100mL]	04-Apr-25	11:49	07-Apr-25	10:40	68670

Carrie Greenlaw
Project Specialist,
Environment, Health & Safety