ONTARIO CLEAN WATER AGENCY
AGENCE ONTARIENNE DES EAUX

SOUTHAMPTON
SEWAGE TREATMENT PLANT

ANNUAL PERFORMANCE REPORT

For the period of
JANUARY 1, 2024 TO DECEMBER 31, 2024

Prepared by the Ontario Clean Water Agency
For The Town of Saugeen Shores

1. System Description

The Southampton Sewage Treatment Plant began operating in its current configuration in 1996. The plant is a modified extended aeration activated sludge facility, which includes:

- Four (4) secondary clarifiers;
- Two (2) aeration tanks (oxidation ditches);
- Phosphorus removal (by continuous alum addition) and;
- Disinfection of final effluent by ultra-violet light.

The sludge is aerobically digested in the primary and secondary digester and stored in four aerated holding tanks. Digested sludge is land applied as farm fertilizer in accordance with the Non-Agricultural Source Materials (NASM) Guidelines. The plant has storage capability for approximately six months in the event that conditions are not favorable for land application.

An amended Environmental Compliance Approval (ECA 7640-D6FQP3) was issued on November 5, 2024 to replace C of A 3-1216-88-947. This annual report will cover all requirements for both C of A 3-1216-88-947 and ECA 7640-D6FQP3 for the time period January 1, 2024 to December 31, 2024.

An overview of Southampton Sewage Treatment Plant can be found in Table 1:

Table 1. Southampton Sewage Treatment Plant Overview

Facility Name	Southampton Sewage Treatment Plant
Facility Type	Modified Extended Aeration
Plant Classification	II WWT
Works Number	110001453
Design Capacity	3042 m^3/day
Number of Households	2,318 Residential + 162 Commercial
Receiving Water	Saugeen River
Environmental Compliance Approval / Certificate of Approval	CofA 3-1216-88-947 issued July 25, 1994 (revoked as of November 5, 2024)
	7640-D6FQP3 (Sewage Treatment Plant) (issued November 5, 2024)
	8-1070-95-006 (Air)

2. Monitoring and Compliance Reports

As per Section 17(a) of C of A 3-1216-88-947, *a summary of all monitoring and compliance reports submitted in the reporting period, including an overview of the success and adequacy of the sewage treatment program* is required.

During the reporting period, the following reports were submitted:

- Discharge Data Reports (Ministry of Environment, Conservation and Parks, MECP)
- Monitoring Reports (Government of Canada)
- Monthly Process and Compliance Reports (Town of Saugeen Shores)

2.1 Discharge Data Report (MECP)

The Ontario Clean Water Agency (OCWA) has an agreement with the MECP to submit quarterly discharge data for all OCWA operated municipal sewage treatment facilities 45 days at the end of each quarter. Monitoring data is submitted via the Ministry of Environment Wastewater System (MEWS). The MECP has these reports stored in a shared location where MECP Inspectors can obtain and review them. There are no limits/objectives for discharge for the quarterly Discharge Data Report.

2.2 Monitoring Report (WSER)

A monitoring report required under the Wastewater Systems Effluent Regulation (WSER) is submitted on a quarterly basis to the Government of Canada via the Effluent Regulatory Reporting Information System (ERRIS). The quarterly monitoring report requires that the following information be reported for the Southampton Sewage Treatment Plant:

- Number of days effluent was deposited
- Total volume of effluent deposited
- Average CBOD (limit of 25 mg/L)
- Average concentration of suspended solids (limit of 25 mg/L)

The monitoring reports can be found within the ERRIS. All results for average CBOD and concentration of suspended solids were below the limits set out in WSER. Testing is performed annually every August for Acute Lethality of the effluent to Rainbow Trout. The 2024 results showed 0% mortality.

2.3 Process & Compliance Report.

As per the Services Agreement (Saugeen Shores/OCWA Agreement) that OCWA has with the Town of Saugeen Shores, a Process and Compliance Report is to be submitted for each month of the year. The Monthly Process and Compliance Reports include the following information for the Southampton Sewage Treatment Plant:

- Rated peak flow
- Rated average daily flow
- Average daily raw sewage flow
- Maximum daily raw sewage flow
- Scheduled maintenance
- Unscheduled maintenance
- Call-ins
- Public inquiries and related issues

2.4 Adequacy of the Sewage Treatment Program

The current sewage treatment program provides effluent that meets all of the effluent requirements for the reports described in section 2.1 to 2.3. In addition to this, the effluent for 2024 was within all effluent limits set out in C of A 3-1216-88-947 and ECA 7640-D6FQP3. It was also within all effluent objectives, with the exception of Total Phosphorus in December where the monthly average produced a result above the objective but below the limit due to weather-related high flows. Based on this evidence, the current sewage treatment program is deemed adequate. OCWA will continue to stay within effluent limits and will continue to aim to meet effluent objectives during each reporting period.

3. Monitoring Data

As per Section 11, 4(a), (b) and (g) of Environmental Compliance Approval (ECA) 7640-D6FQP3, *a summary and interpretation of all Influent monitoring data, and a review of the historical trend of the sewage characteristics and flow rates; 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;* and *a summary of efforts made to achieve the design objectives in this Approval, including an assessment of the issues and recommendations for pro-active actions if any are required under the following situations: (i) when any of the design objectives is not achieved more than 50% of the time in a year, or there is an increasing trend in deterioration of Final Effluent quality; (ii) when the Annual Average Daily Influent Flow reaches 80% of the Rated Capacity*; is required.

The Southampton Sewage Treatment Plant was within all effluent objectives (with the exception of Total Phosphorus in December) and limits for the entire reporting period. Therefore, the design objectives for $CBOD_5$ were achieved 100% of the time and 96% of the time for Total Suspended Solids, Total Phosphorus and E.coli. The annual average daily influent flow for 2024 was 2,003 m^3/day and was 65.8% of the Rated Capacity of 3,042 m^3/day.

3.1 Sampling Frequency

Both raw sewage and effluent are sampled on a regular basis. The sampling types and frequencies are summarized in Table 2 and Table 3. The sampling frequencies either meet or exceed the requirements set out in ECA 7640-D6FQP3.

Table 2. Raw Sewage Monitoring - Sampling Frequencies as required by ECA 7640-D6FQP3 for Southampton Sewage Treatment Plant

Parameters	Sample Type	Minimum Frequency
BOD_5[2a]	24 hour composite	Monthly
Total Suspended Solids[2a]	24 hour composite	Monthly
Total Phosphorus[2a]	24 hour composite	Monthly
Total Kjeldahl Nitrogen[2a]	24 hour composite	Monthly
Alkalinity[2a]	24 hour composite	Monthly

[2a] *Refer to Appendix A for monthly sample results.*

Table 3. Effluent Monitoring - Sampling Frequencies as required by ECA 7640-D6FQP3 for Southampton Sewage Treatment Plant

Parameters	Sample Type	Minimum Frequency
$CBOD_5$[3a]	24 hour composite	Monthly
Total Suspended Solids[3a]	24 hour composite	Monthly
Total Phosphorus[3a]	24 hour composite	Twice per month
Total Ammonia Nitrogen[3a]	24 hour composite	Monthly
Total Kjeldahl Nitrogen[3a]	24 hour composite	Monthly
Nitrate as Nitrogen[3a]	24 hour composite	Monthly
Nitrite as Nitrogen[3a]	24 hour composite	Monthly
E.Coli[3a]	Grab	Monthly
Alkalinity	24 hour composite	Monthly
pH	Grab/Probe/Analyzer	Monthly
Temperature	Grab/Probe/Analyzer	Monthly
Un-ionized Ammonia	As Calculated	Monthly

[3a]*Refer to Appendix A for monthly sample results.*

3.2 Effluent Objectives and Effluent Limits

The effluent objectives for the Southampton Sewage Treatment Plant are:

Table 4. Effluent Objectives as required by 7640-D6FQP3 for Southampton Sewage Treatment Plant

Parameter	Averaging Calculator	Objective
$CBOD_5$	Annual Average Effluent Concentration	20.0 mg/L
Total Suspended Solids	Annual Average Effluent Concentration	20.0 mg/L
Total Phosphorus	Monthly Average Effluent Concentration	0.5 mg/L
E.Coli	Monthly Geometric Mean Density	150 CFU/100 mL
pH	Single Sample Result	6.5 – 8.5 inclusive

The effluent limits and effluent loading limits that are to be met for the Southampton Sewage Treatment Plant are found in Tables 5 and 6. Any exceedance with the limits found in Table 5 or 6 constitutes a non-compliance.

Table 5. Effluent Limits as required by ECA 7640-DFQP3 for Southampton Sewage Treatment Plant

Parameter	Averaging Calculator	Limit
$CBOD_5$	Annual Average Effluent Concentration	25.0 mg/L
Total Suspended Solids	Annual Average Effluent Concentration	25.0 mg/L
Total Phosphorus	Monthly Average Effluent Concentration	1.0 mg/L
E.Coli	Monthly Geometric Mean Density	200 CFU/100 mL
pH	Single Sample Result	6.0 – 9.5 inclusive

Table 6. Effluent Loading Limits as required by ECA 7640-DFQP3 for Southampton Sewage Treatment Plant

Parameter	Averaging Calculator	Limit
$CBOD_5$	Annual Average Daily Effluent Loading	76.1 kg/d
Total Suspended Solids	Annual Average Daily Effluent Loading	76.1 kg/d
Total Phosphorus	Monthly Average Daily Effluent Loading	3.0 kg/d

3.3 Comparison of Data to Effluent Objectives and Effluent Limits

Analytical and monitoring data for the Southampton sewage treatment is stored in OCWAs data management system (PDM). Annual and monthly averages for flows, $CBOD_5$, Total Suspended Solids, Total Phosphorus as P, Nitrogen-series and *E.coli* can be found in Appendix A. A comparison of analytical data from effluent samples to the effluent objectives and effluent limits show the following removal efficiencies:

Table 7. 2024 Effluent Annual Average Concentrations and Removal Efficiencies

Parameter	Annual Average Concentration (mg/L)	Annual Average Removal Efficiency (%)
Total Suspended Solids	11.96	90.8%
Total Phosphorus as P	0.29	90.8%

The Southampton Sewage Treatment Plant effectively provided effluent that was well within the effluent limits and effluent objectives set out in the ECA. Refer to Tables 8 and 9 for a monthly summary of analytical samples with the effluent limits and objectives for both the C of A 3-1216-88-947 and ECA 7640-DFQP3 (issued November 5, 2024).

Table 8. Comparison of Effluent Limits and Objectives to Sampled Effluent as required by C of A 3-1216-88-947 for Southampton Sewage Treatment Plant (2024)

	BOD_5						Total Suspended Solids						Total Phosphorus						E. Coli		
	Average Annual Concentration (mg/L)	Within Objectives (20 mg/L)	Within Limits (25 mg/L)	Average Annual Loading (kg/d)	Within Objectives (60.8 kg/d)	Within Limits (76.1 kg/d)	Average Annual Concentration (mg/L)	Within Objectives (20 mg/L)	Within Limits (25 mg/L)	Average Annual Loading (kg/d)	Within Objectives (60.8 kg/d)	Within Limits (76.1 kg/d)	Average Monthly Concentration (mg/L)	Within Objectives (0.5 mg/L)	Within Limits (1 mg/L)	Average Annual Loading (kg/d)	Within Objectives (1.5 kg/d)	Within Limits (3 kg/d)	Monthly Geometric Mean Density (mg/L)	Within Objectives (150 CFU/ 100 mL)	Within Limits (200 CFU/ 100 mL)
January													0.21	Y	Y				3.17	Y	Y
February													0.19	Y	Y				<2.00	Y	Y
March													0.21	Y	Y				<2.00	Y	Y
April													0.17	Y	Y				14.70	Y	Y
May													0.14	Y	Y				2.83	Y	Y
June	3.04	Y	Y	5.70	Y	Y	11.96	Y	Y	21.4	Y	Y	0.19	Y	Y	0.53	Y	Y	<2.00	Y	Y
July													0.33	Y	Y				6.32	Y	Y
August													0.39	Y	Y				5.66	Y	Y
September													0.30	Y	Y				2.83	Y	Y
October													0.30	Y	Y				<2.00	Y	Y
November													0.28	Y	Y				3.46	Y	Y
December													0.64	**N**	Y				2.83	Y	Y

Table 9: Comparison of Effluent Limits and Objectives to Sampled Effluent as required by ECA 7640-D6FQP3 for Southampton Sewage Treatment Plant (2024)

	$CBOD_5$					**Total Suspended Solids**					**Total Phosphorus**					**E. Coli**			**pH**			
	Average Annual Concentration (mg/L)	Within Objectives (20 mg/L)	Within Limits (25 mg/L)	Average Annual Loading (kg/d)	Within Limits (76.1 kg/d)	Average Annual Concentration (mg/L)	Within Objectives (20 mg/L)	Within Limits (25 mg/L)	Average Annual Loading (kg/d)	Within Limits (76.1 kg/d)	Average Monthly Concentration (mg/L)	Within Objectives (0.5 mg/L)	Within Limits (1 mg/L)	Average Monthly Loading (kg/d)	Within Limits (3 kg/d)	Monthly Geometric Mean Density (mg/L)	Within Objectives (150 CFU/ 100 mL)	Within Limits (200 CFU/ 100 mL)	2024 Minimum	2024 Maximum	Within Objectives (6.5 - 8.5 inclusive)	Within Limits (6.0 – 9.0 inclusive)
January	2.38	Y	Y	4.51	Y	11.96	Y	Y	21.4	Y	0.21	Y	Y	0.46	Y	3.17	Y	Y	6.68	8.12	Y	Y
February											0.19	Y	Y	0.41	Y	<2.00	Y	Y				
March											0.21	Y	Y	0.44	Y	<2.00	Y	Y				
April											0.17	Y	Y	0.37	Y	14.70	Y	Y				
May											0.14	Y	Y	0.29	Y	2.83	Y	Y				
June											0.19	Y	Y	0.37	Y	<2.00	Y	Y				
July											0.33	Y	Y	0.66	Y	6.32	Y	Y				
August											0.39	Y	Y	0.76	Y	5.66	Y	Y				
September											0.30	Y	Y	0.46	Y	2.83	Y	Y				
October											0.30	Y	Y	0.42	Y	<2.00	Y	Y				
November											0.28	Y	Y	0.37	Y	3.46	Y	Y				
December											0.64	**N**	Y	1.31	Y	2.83	Y	Y				

3.4 Additional Monitoring Parameters

The following parameters do not have limits or objectives but are monitored on a regular basis (see Section 3.1 for sampling frequency) as required by ECA 7640-D6FQP3. Table 10 and 11 summarizes the monitoring data for the reporting period.

Table 10. Raw Sewage Monitoring Parameters as required for Southampton Sewage Treatment Plant, 2024

Parameters	Average	Minimum	Maximum
BOD_5[10a] (mg/L)	101.42	48.00	344.00
Total Suspended Solids[10a] (mg/L)	137.38	62.00	253.00
Total Phosphorus[10a] (mg/L)	3.00	1.76	4.36
Total Kjeldahl Nitrogen[10a] (mg/L)	24.18	16.00	35.80
Alkalinity (mg/L as $CaCO_3$)	279.77	244.00	420.00

[10a]*Refer to Appendix A for monthly sample results.*

The 2024 average results for BOD_5, TP, TKN and alkalinity are higher while TSS was slightly lower than the previous year. The 2024 minimum results for BOD_5, TKN and alkalinity are higher while TSS and TP was slightly lower than the previous year. The 2024 maximum results for BOD_5 and alkalinity were higher while TSS, TP and TKN were all lower than the previous year.

Table 11. Effluent Monitoring Parameters as required for Southampton Sewage Treatment Plant, 2024

Parameters	Average	Minimum	Maximum
Total Kjeldahl Nitrogen (mg/L)	0.75	0.50	2.00
Ammonia Nitrogen[11a] (mg/L)	0.17	0.10	1.20
Nitrite and Nitrate[11a] (mg/L)	17.71	5.13	25.90
Alkalinity (mg/L as $CaCO_3$)	99.50	39.00	159.00
Temperature (°C)	13.98	5.20	21.80

[11a]*Refer to Appendix A for monthly sample results.*

The 2024 averages for TAN was higher while TKN, Nitrite + Nitrate and alkalinity were slightly lower than the previous year. The minimum results for TKN and TAN are the same, Nitrite + Nitrate and alkalinity are lower than the previous year. The maximum results for all parameters are higher than the previous year except TAN, which is slightly lower.

3.5 Influent Flow Summary

The below table outlines the influent average monthly flow data and average monthly flowrates. Figure 1 below shows the monthly average flow rate compared to the previous 4 years.

Table 12. Influent Monthly Average Flows and Flowrates, 2024

2024	Average Influent Flow (m^3/d)	Average Influent Flowrate
January	2,218	25.94
February	2,229	26.05
March	2,206	25.40
April	2,352	27.02
May	2,135	24.97
June	1,981	23.02
July	2,113	24.42
August	2,065	23.77
September	1,659	18.94
October	1,505	17.36
November	1,405	16.46
December	2,112	24.67
2024 Annual Average	**2,003**	**23.17**

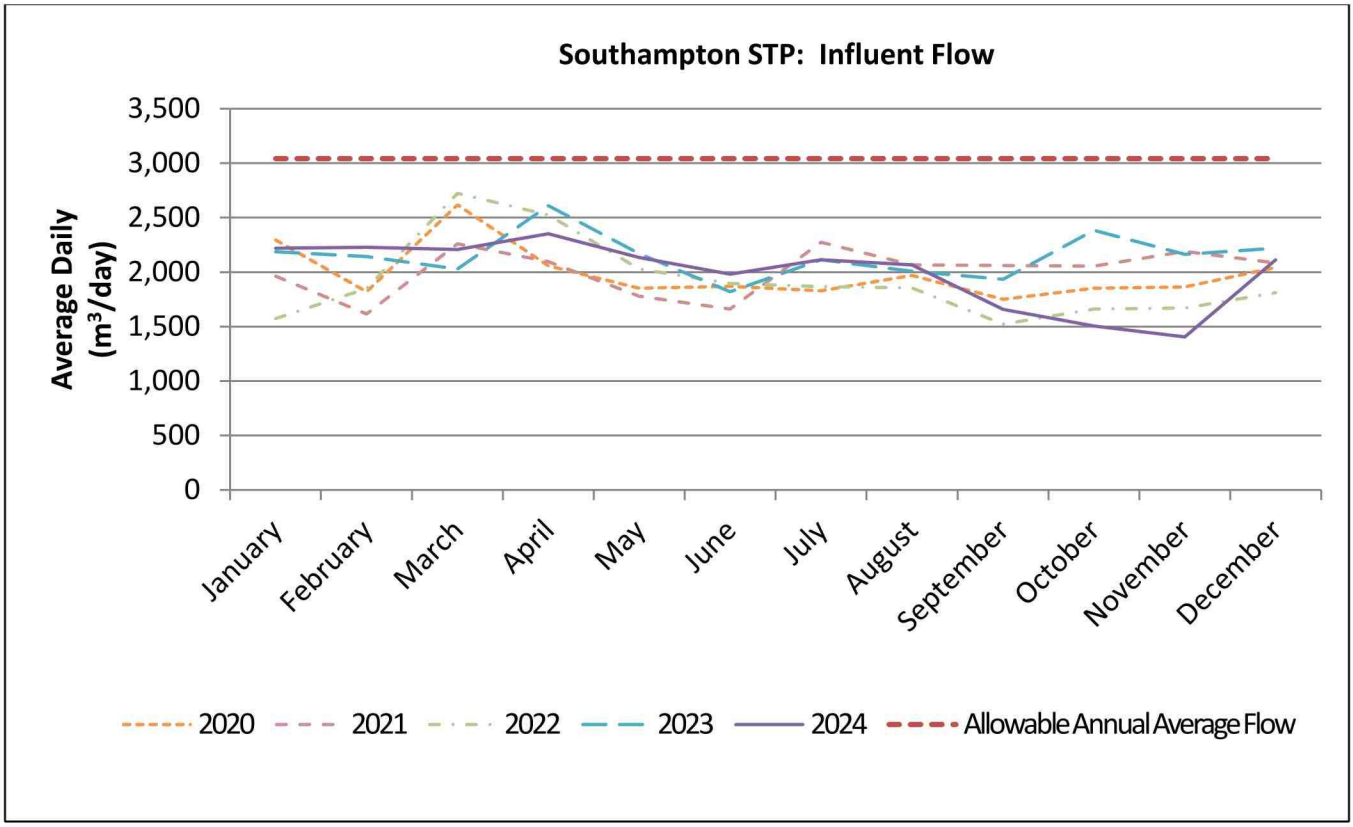

Figure 1. Southampton STP Influent Flow (2020-2025)

Table 13. Influent flows, 2024

Pump Station	Average Daily Flow (m^3/day)	Total Annual Flow (m^3)	Percentage of Rated Capacity (3,042 m^3/d)
Influent	2,003	733,115	65.8%

The 2024 influent total annual flow and average daily flow are lower when compared to the previous year.

3.6 Effluent Flow Summary

The below table outlines the effluent average monthly flow data and average monthly flowrates. Figure 2 below shows the monthly average flow rate compared to the previous 5 years.

Table 14. Effluent Monthly Average Flows and Flowrates, 2024

2024	Average Effluent Flow (m^3/d)	Average Effluent Flowrate
January	2,167	44.87[14a]
February	2,139	42.76[14a]
March	2,090	42.58[14a]
April	2,239	45.43[14a]
May	2,102	43.16[14a]
June	1,953	41.70[14a]
July	2,032	23.72
August	1,616	23.16
September	1,441	18.46
October	1,339	16.41
November	2,039	15.66
December	2,167	23.83
2024 Annual Average	**2,139**	**N/A**

[14a]Effluent Peak Flow Rate in-house readings used.

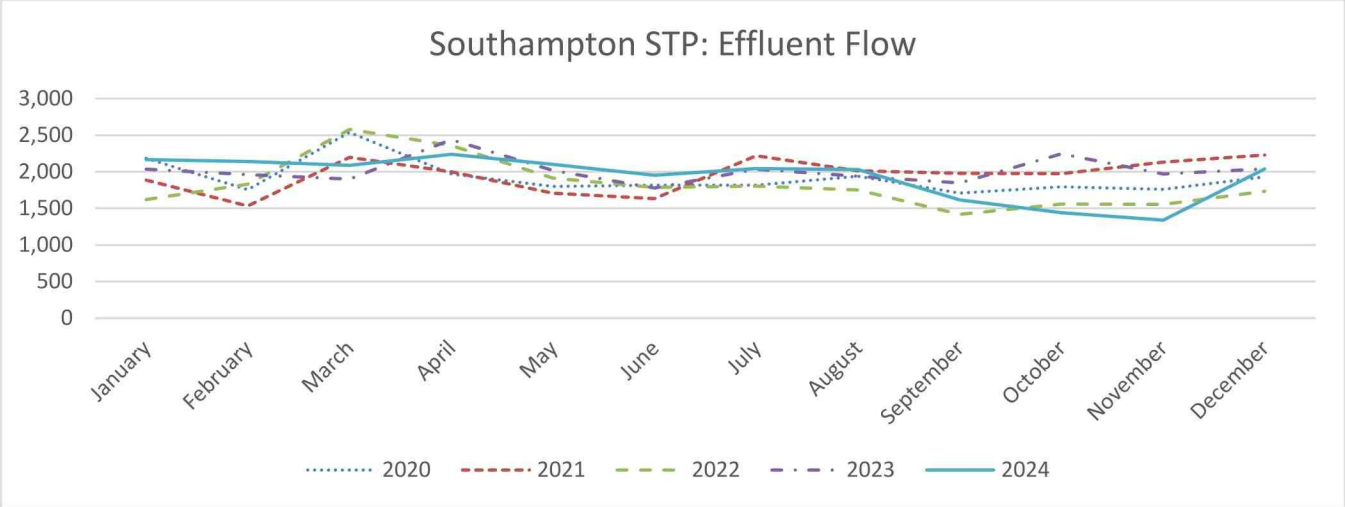

Figure 2. Southampton STP Effluent Flow (2020-2024)

3.7 Review of Historical Trends of Influent Characteristics

A review of the historical trends for influent sewage characteristics, shown in Figures 3 to 7, indicate the following:

- Alkalinity – Since 2020, Alkalinity has remained steady. The annual average concentrations were as follows: 2020 (284.85 mg/L), 2021 (282.32 mg/L), 2022 (283.44 mg/L), 2023 (274.92 mg/L) and 2024 (279.77 mg/L).
- Biochemical Oxygen Demand$_5$ (BOD_5) – Since 2020, BOD_5 has remained steady. The annual average concentrations were as follows: 2020 (97.15 mg/L), 2021 (90.44 mg/L), 2022 (84.18 mg/L), 2023 (88.29 mg/L) and 2024 (101.42 mg/L).
- Total Kjeldahl Nitrogen (TKN) – Since 2020, TKN has remained steady. The annual average concentrations were as follows: 2020 (24.25 mg/L), 2021 (24.78 mg/L), 2022 (28.36 mg/L), 2023 (22.51 mg/L) and 2024 (24.18 mg/L).
- Total Phosphorus (TP) – Since 2020, TP has remained steady. The annual average concentrations were as follows: 2020 (2.66 mg/L), 2021 (2.83 mg/L), 2022 (3.08 mg/L), 2023 (2.96 mg/L) and 2024 (3.00 mg/L).
- Total Suspended Solids (TSS) – Since 2020, TSS remained fairly steady. The annual average concentrations were as follows: 2020 (160.65 mg/L), 2021 (130.76 mg/L), 2022 (130.96 mg/L), 2023 (150.04 mg/L) and 2024 (137.38 mg/L).

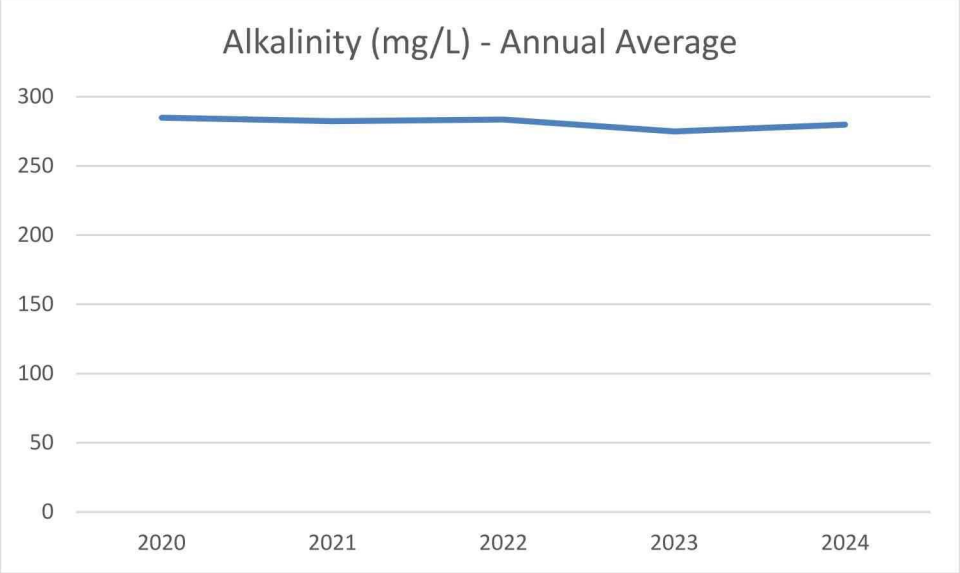

Figure 3. Southampton STP Influent Alkalinity (2020-2024)

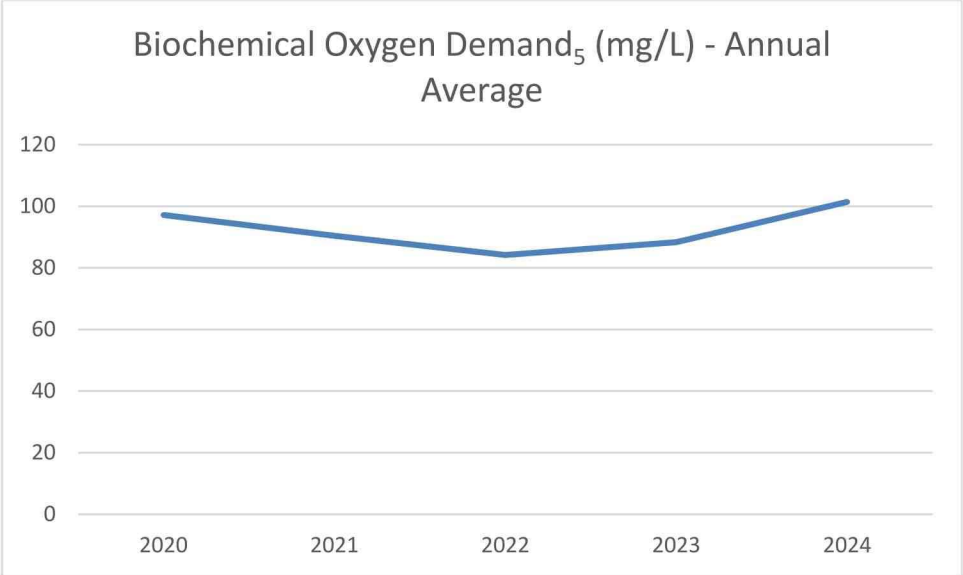

Figure 4. Southampton STP Influent BOD_5 (2020-2024)

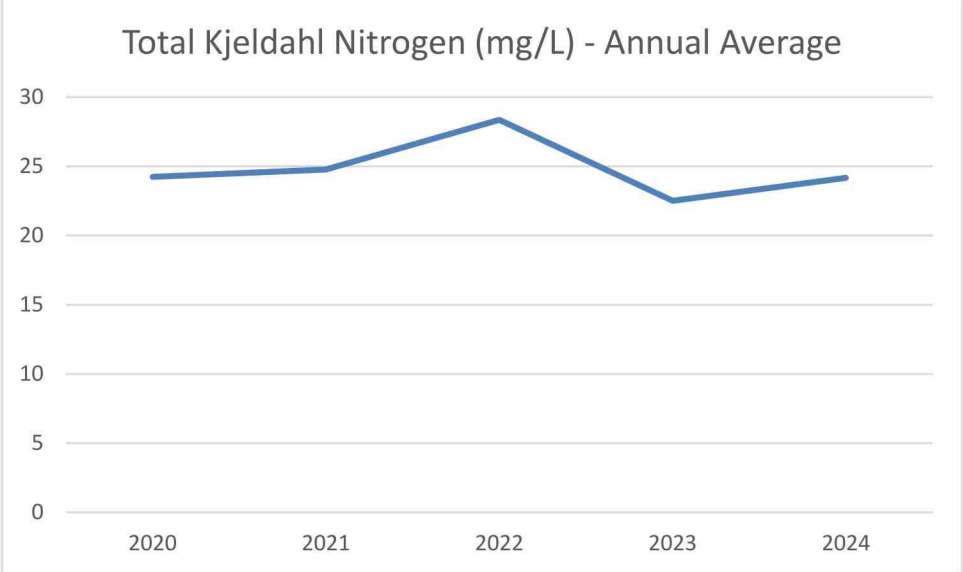

Figure 5. Southampton STP Influent Total Kjeldahl Nitrogen (2020-2024)

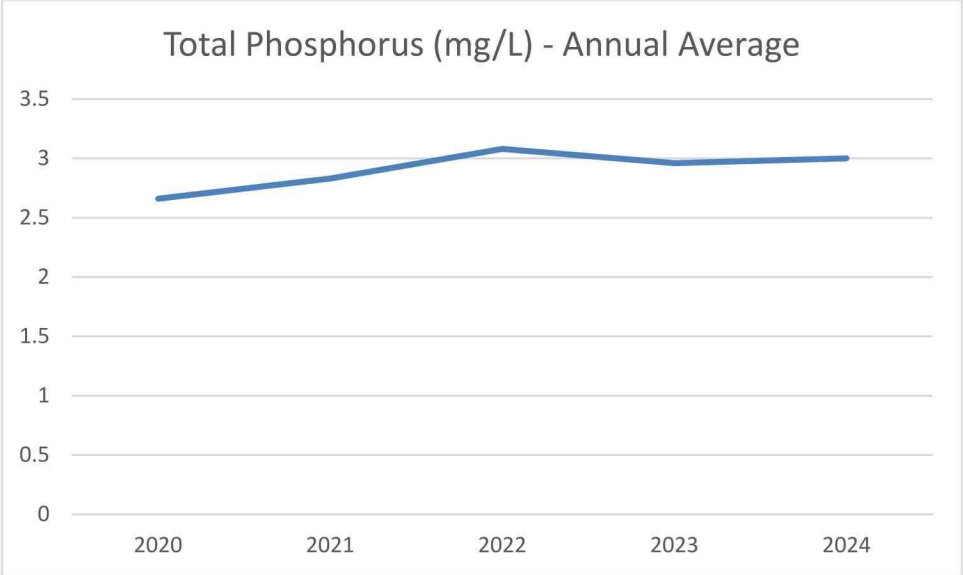

Figure 6. Southampton STP Influent Total Phosphorus (2020-2024)

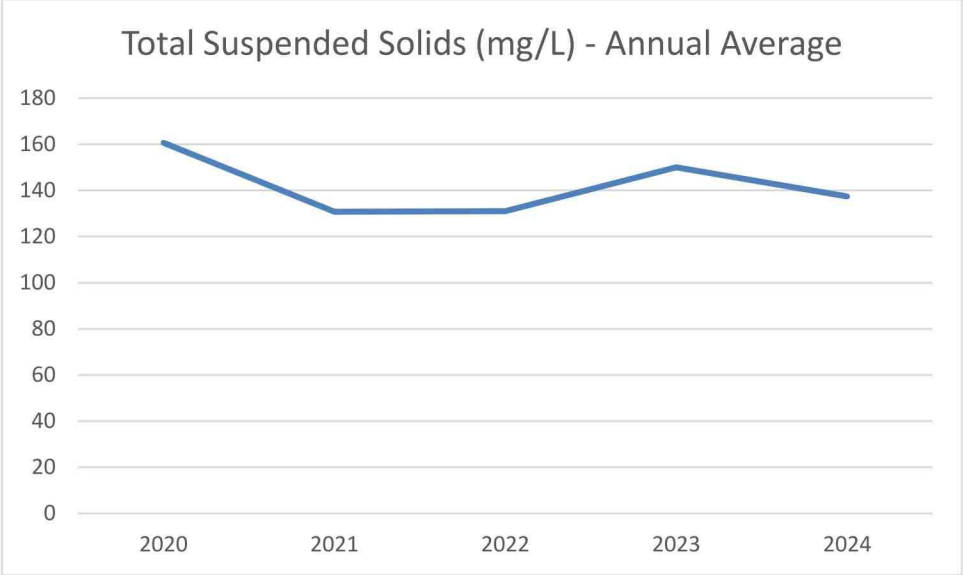

Figure 7. Southampton STP Influent Total Suspended Solids (2020-2024)

4. Operational Issues and Corrective Actions

As per Section 11,(4)(c) of Environmental Compliance Approval (ECA) 7640-D6FQP3, *a summary of all operating issues encountered and corrective actions taken* is required.

In 2024, there following operating problems were encountered:

Non-Compliance(s)	Duration	Required Actions & Corrective Actions
n/a	n/a	n/a

5. Major Maintenance Activities

As per Section 11, (4)(d) of Environmental Compliance Approval (ECA) 7640-D6FQP3*, 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;* is required.

For 2024, major maintenance activities that occurred include:

- Installed pressure gauges along sewage force main
- Replaced dialers at Turner St PS and PS3
- Replaced gear reducers and drive motors on Clarifier #2 skimmer and sludge cross collector

As per Section 11, (4)(k) of Environmental Compliance Approval (ECA) 7640-D6FQP3, *a summary of all Notice of Modifications to Sewage Works completed under Paragraph 1.d. of Condition 10, including a report on status of implementation of all modification*, is required.

There were no Notice of Modifications submitted during the reporting period.

As per Section 11, (4)(l) of Environmental Compliance Approval (ECA) 7640-D6FQP3, *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*, is required.

See above for summary of modifications completed. Southampton Sewage Treatment Plant was within all effluent objectives (with the exception of Total Phosphorus in December) and limits for the entire reporting period. However, considering the systems age and the projected growth of the municipality, modifications for increased capacity are required in the near future.

As per Section 11, (4)(l) of Environmental Compliance Approval (ECA) 7640-D6FQP3, *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,* is required.

There have not been any changes or updates to construction schedules.

6. Effluent Quality Assurance and Control

As per Section 11,(4)(e) of Environmental Compliance Approval (ECA) 7640-D6FQP3, *a summary of any effluent quality assurance or control measures undertaken,* is required.

All laboratory analyzed raw sewage and effluent samples are analyzed by SGS 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. In-house tests are conducted for monitoring purposes by licensed operators using standardized methods. The results from in-house tests are used to determine treatment efficiency and how effectively process control is maintained. Calibrations and preventative maintenance are performed on facility equipment and monitoring equipment, see Section 6 for more details. In addition to sample analysis, preventative maintenance is scheduled for equipment at the sewage treatment plant and pumping stations at

regular frequency (frequency depends on the equipment and type of maintenance). Preventative maintenance activities were scheduled within the work management system (WMS).

7. Calibration and Maintenance Procedures

As per Section 11, (4)(f) of Environmental Compliance Approval (ECA) 7640-D6FQP3, *a summary of the calibration and maintenance procedures 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;* is required.

All in-house monitoring equipment is calibrated/verified 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 (WMS), upon completion, Operators set the work order to complete. On a monthly basis, preventative work orders are reviewed for completion.

On May 15 and 16, 2024, SCG Flowmetrix performed an annual third party instrument verification of the final effluent, influent, return activated sludge discharge, waste activated sludge and pumping station flow meters. All flow meters passed the annual verification. On April 17 and October 30, 2024 SPD Sales Ltd. calibrated the gas detection equipment. On April 29 and 30, 2024, SPD Sales Ltd. calibrated spectrophotometers, portable meters, colourimeters, and DO probes, used in the Southampton Sewage Treatment Plant. The meter/probes were cleaned, parts were replaced and the devices were calibrated and verified that the devices were performing to factory specifications.

All records for the above mentioned calibrations/ verifications can be found in Appendix D.

8. Sludge Generation & Disposal

As per Section 11, (4)(h) of Environmental Compliance Approval (ECA) 7640-D6FQP3, *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* is required.

According to the sludge haulage check sheets, a total volume of 2,259 m^3 of sludge was generated from the Southampton Sewage Treatment Plant and applied to agricultural land during the reporting period. Table 15 summarizes the sludge haulage volumes for 2024. The hauling and spreading of sludge from the Southampton Sewage Treatment Plant was conducted by Bartels Environmental Services Inc.

A chemical analysis of the sludge/biosolids quality can be found in Appendix B.

Table 15. Volume of Sludge Generated from Southampton Sewage Treatment Plant

Site	Volume of Sludge Generated (m^3)	Hauler	Haulage Dates
25069	1,100	Bartel's Environmental	May 1 and 2, 2024
61280	1,159	Bartel's Environmental	October 10, 11 and 16, 2024

Based on a linear regression with an R^2 value of 68%, the anticipated volume to be generated over the next reporting period is approximately 3,033 m^3.

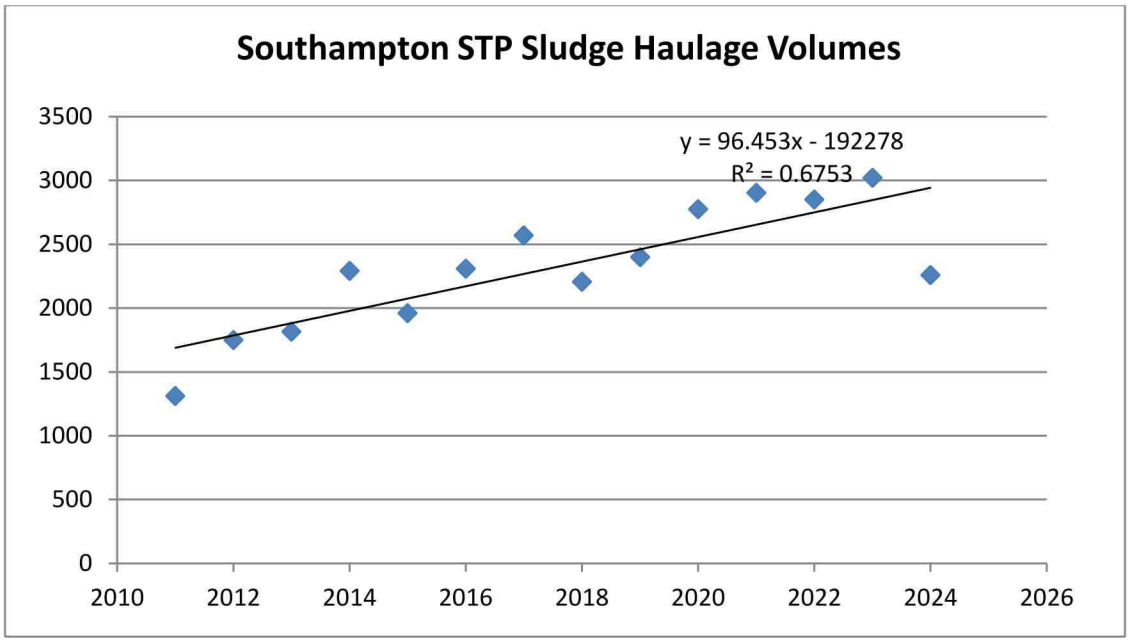

Figure 8. Southampton Sewage Treatment Plant Haulage Volumes (2011 to 2025)

In 2024 sludge was handled and hauled by Bartel's Environmental Services Inc. and applied to Ontario Ministry of Agriculture, Food and Rural Affairs (OMAFRA) approved Non-Agricultural Source Material Plans (NASM Plans) and C of As based on Ontario Regulation 338/09 made under the Nutrient Management Act, 2002. NASM Plans under the Nutrient Management Act are issued to the owner (farmer) who is responsible for managing this plan with assistance from the NASM Plan Developer. See Appendix C for Sludge Haulage Records for Southampton Sewage Treatment Plant.

Grab samples of digested (aerobic) sludge were collected as the sludge was being transferred from the digester to the hauling truck (see Appendix B for laboratory results). With the exception of total solids and volatile suspended solids, all other samples were analyzed by SGS Canada Inc. Sludge analyses showed that the sludge met the quality criteria specified in the Ontario Guidelines for the Utilization of Biosolids and Other Wastes on Agricultural Land (Guidelines). A summary of sludge haulage are attached in Appendix C and sample and quality report results are attached in Appendix B.

9. Community Complaints

As per Section 11, (4)(i) of Environmental Compliance Approval (ECA) 7640-D6FQP3, *a summary of complaints received and any steps taken to address the complaints,* is required.

During the reporting period, OCWA staff received three (3) community complaints. Typically, the Town will address complaints by verifying if there are odours in the surrounding area physically by attending the location of the complaint and creating an odour log. The sewers are flushed routinely and the operators of the plant ensure that an odour control atomizer is maintained and functional during any

facility process adjustments. See Appendix E for a record of community complaints made to OCWA during the reporting period.

10. By-passes, Spills & Discharge Events

As per Section 11, (4)(j) of Environmental Compliance Approval (ECA) 7640-D6FQP3, *a summary of all Bypasses, Overflows, other situations outside Normal Operating Conditions and spills within the meaning of Part X of EPA and abnormal discharge events;* is required.

Quarterly summary reports of Bypass and Overflow Event(s) were prepared and submitted to the MECP in accordance with the facility's most current ECA, Section 4.6 and 5.6.

The following events occurred in 2024:

Date (yyyy/mm/dd)	**Event**	**Details**
N/A	N/A	N/A

11. Monitoring Schedule

As per Section 11, (4)(n) of Environmental Compliance Approval (ECA) 7640-D6FQP3, *a summary of any deviation from the monitoring schedule and reasons for the current reporting year and a schedule for the next reporting year*, is required.

There were no deviations from the monitoring schedule during the reporting period. See Appendix F for the 2025 Monitoring Schedule.

12. Municipal Sewage Collection System – Annual Performance Report

This report was prepared in accordance with the requirements of the Environmental Compliance Approval for a Municipal Sewage Collection Systems, Schedule E, Section 4.6.1.

Municipal Sewage Collection System ECA #	093-W601, Issue 1
Sewage Works	Saugeen Shores Municipal Sewage Collection System
Collection System Owner	The Corporation of the Town of Saugeen Shores
Reporting Period	January 1, 2024 to December 31, 2024

Is the Annual Report available to the public at no charge on a website on the Internet?

Yes

Note: As per Schedule E, Section 4.7.1 of CLI-ECA #093-W601, the annual performance report must be made available, on request and without charge, to members of the public who are served by the Authorized System; and 4.7.2 must be made available, by June 1st of the same reporting year, to members of the public without charge by publishing the report on the Internet, if the Owner maintains a website on the Internet.

Location where Annual Performance Report required under CLI-ECA #093-W601 Schedule E will be available for inspection. *(CLI-ECA #093-W601, Schedule E, Section 4.7.1 & 4.7.2):*

- Town of Saugeen Shores Municipal Office, 600 Tomlinson Dr., Port Elgin, ON N0H 2C0
- https://www.saugeenshores.ca/en/town-hall/water-reports.aspx

Pursuant to Schedule E, sections 4.6.3 to 4.6.9, this Annual Performance Report shall:

a) If applicable, includes a summary of all required monitoring data along with an interpretation of the data and any conclusion drawn from the data evaluation about the need for future modifications to the Authorized System or system operations.
b) If applicable, include a summary of any operating problems encountered and corrective actions taken.
c) Includes a summary of all calibration, maintenance, and repairs carried out on any major structure, Equipment, apparatus, mechanism, or thing forming part of the Municipal Sewage Collection System.
d) Include a summary of any complaints related to the Sewage Works received during the reporting period and any steps taken to address the complaints.
e) Include a summary of all Alterations to the Authorized System within the reporting period that are authorized by this Approval including a list of Alterations that pose a Significant Drinking Water Threat.
f) Include a summary of all Collection System Overflow(s) and Spill(s) of Sewage.
g) Includes a summary of efforts made to reduce Collection System Overflows, Spills, STP Overflows, and/or STP Bypasses.

12.1 Description of the Works

The Town of Saugeen Shores Municipal Sewage Collection System consists of two separate subsystems; the Port Elgin Wastewater Collection Subsystem and the Southampton Wastewater Collection Subsystem. For the purposes of this annual report, only the Southampton Wastewater Collection Subsystem will be included. For further information on the Port Elgin Wastewater Collection System, please refer to the Port Elgin WPCP 2024 Annual Performance Report.

The Southampton Wastewater Collection Subsystem consists of sewage works for the collection and transmission of sewage, consisting of trunk sewers, separate sewers, sewage pumping stations, and forcemains, with discharge into the Southampton Water Pollution Control Plant.

The sewage pumping station in Authorized System include:

- Southampton Sewage Pumping Station #1 – located at 86 Saugeen St. Consists of drywell, control building, two pumps, a stand-by diesel generator and discharges to the Southampton Sewage Treatment Plant.
- Southampton Sewage Pumping Station #2 – located at 3 Beach Rd. Consists of wetwell, control building, two pumps, a stand-by diesel generator and discharges to a gravity sewer on Huron St and then flows to PS #1.
- Southampton Sewage Pumping Station #3 – located at 315 Clarendon St. Consists of wetwell, two pumps, a stand-by diesel generator and discharges to the Southampton Sewage Treatment Plant into the same forcemain as PS #1.
- Southampton Sewage Pumping Station #4 – located at 489 Eckford Ave. Consists of wetwell, two pumps, a stand-by diesel generator (shared with Turner St. Control Station) and discharges to a gravity sewage collection system near Blanchfield and Oak St., which is delivered to PS #5.

- Southampton Sewage Pumping Station #5 – located at 130 Shore Rd. Consists of wetwell, two pumps, a stand-by diesel generator (shared with Turner St. Control Station) and discharges to the Southampton Sewage Treatment Plant.

12.2 Summary of Monitoring Data and Interpretation

No monitoring data was required within the municipal sewage collection system for the reporting period.

12.3 Summary of Operating Problems Encountered and Corrective Actions Taken

There were no operating problems encountered within the municipal sewage collection system for the reporting period.

12.4 Summary of Calibration, Maintenance and Repairs

All in-house monitoring equipment is calibrated/verified 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.

On May 15 & 16, 2024, SCG Flowmetrix performed an annual third party instrument verification of the final effluent, influent, return activated sludge discharge, waste activated sludge and pumping station flow meters. All flow meters passed the annual verification. On April 17 and October 30, 2024 SPD Sales Ltd. calibrated the gas detection equipment. On April 29 & 30, 2024, SPD Sales Ltd. calibrated spectrophotometers, portable meters, colourimeters, and DO probes, used in the Southampton Sewage Treatment Plant. The meter/probes were cleaned, parts were replaced and the devices were calibrated and verified that the devices were performing to factory specifications.

All records for the above mentioned calibrations/ verifications can be found in Appendix D.

Major maintenance activities for the sewage pump stations can be found in section 12.6 of this report.

12.5 Community Complaints Received in Relation to the Sewage Works

During the reporting period, OCWA staff received three (3) community complaints. Typically, the Town will address complaints by verifying if there are odours in the surrounding area physically by attending the location of the complaint and creating an odour log. The sewers are flushed routinely and the operators of the plant ensure that an odour neutralizer in periodically added to the sewage collection system. See Appendix E for details on community complaints.

12.6 Alterations to the Authorized System

For 2024, major maintenance activities that occurred within the Authorized System include:

- Installed pressure gauges along sewage force main

- Replaced dialers at Turner St PS and PS3

There were no alterations performed within the Authorized System that pose a Significant Drinking Water Threat.

12.7 Summary of Collection System Overflow(s) and Spill(s) of Sewage

There were no collection system overflow or spill events that occurred during the reporting period.

12.8 Efforts Made to Reduce Collection System Overflows, Spills, STP Overflows, and/or STP Bypasses.

The sewage pump stations are equipped with alarm monitoring for high flow events. Preventative maintenance procedures are in place to ensure the sewage pump stations are operating as designed and include:

- Wet well cleanouts
- Daily inspections of pump stations
- Annual cleanouts
- Pump inspections
- Alarm testing
- Generator inspection and maintenance

ONTARIO CLEAN WATER AGENCY
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Appendix A

Performance Assessment Report

Ontario Clean Water Agency
Agence Ontarienne Des Eaux

Performance Assessment Report

From 1/1/2024 to 12/31/2024 11:59:59 PM

5613 SOUTHAMPTON WASTEWATER TREATMENT FACILITY 110001453

	1 / 2024	2/ 2024	3/ 2024	4/ 2024	5/ 2024	6/ 2024	7/ 2024	8/ 2024	9/ 2024	10/ 2024	11/ 2024	12/ 2024	<--Total-->	<--Avg-->	<--Max-->	<-Criteria->
Flows																
Raw Flow: Total - Raw Sewage m³/d	68,764.50	64,650.26	68,381.16	70,552.61	67,782.24	59,418.22	65,502.61	64,001.50	49,779.87	46,659.34	42,162.88	65,459.72	733,114.93			0.00
Raw Flow: Avg - Raw Sewage m³/d	2,218.21	2,229.32	2,205.84	2,351.75	2,186.52	1,980.61	2,112.99	2,064.56	1,659.33	1,505.14	1,405.43	2,111.60		2,003.05		6,083.00
Raw Flow: Max - Raw Sewage m³/d	2,802.43	2,796.34	2,578.77	3,131.38	2,977.43	2,357.48	2,369.12	2,586.56	2,023.91	1,646.03	1,564.10	4,050.19			4,050.19	0.00
Raw Flow: Count - Raw Sewage m³/d	31.00	29.00	31.00	30.00	31.00	30.00	31.00	31.00	30.00	31.00	30.00	31.00	366.00			0.00
Eff. Flow: Total - Final Effluent m³/d	67,162.00	62,027.00	64,775.00	67,168.00	65,157.00	58,594.00	63,120.00	61,462.00	47,381.00	43,544.00	40,179.00	63,221.00	703,790.00			0.00
Eff. Flow: Avg - Final Effluent m³/d	2,166.52	2,138.86	2,089.52	2,238.93	2,101.84	1,953.13	2,036.13	1,982.65	1,579.37	1,404.65	1,339.30	2,039.39		771.70		
Eff. Flow: Max - Final Effluent m³/d	2,676.00	2,600.00	2,520.00	3,088.00	2,605.00	2,321.00	2,249.00	2,743.00	1,820.00	1,635.00	1,510.00	4,169.00			4,169.00	0.00
Eff Flow: Count - Final Effluent m³/d	62.00	58.00	62.00	60.00	62.00	60.00	89.00	93.00	90.00	93.00	90.00	93.00	912.00			0.00
Carbonaceous Biochemical Oxygen Demand: CBOD																
Eff: Avg cBOD5 - Final Effluent mg/L	< 2.33	< 2.00	3.50	< 2.00	< 2.00	< 2.00	< 2.00	< 2.00	< 2.00	< 2.00	< 2.00	4.00		< 2.38	< 4.00	
Eff: # of samples of cBOD5 - Final Effluent	3.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	3.00	26.00			0.00
Loading: cBOD5 - Final Effluent kg/d	< 5.055	< 4.278	7.313	< 4.478	< 4.204	< 3.906	< 4.072	< 3.965	< 3.159	< 2.809	< 2.679	8.158		< 1.84	< 8.16	
Biochemical Oxygen Demand: BOD5																
Raw: Avg BOD5 - Raw Sewage mg/L	108.00	76.50	75.00	61.00	135.50	82.50	95.50	136.00	93.50	87.00	81.00	155.33		98.90	155.33	0.00
Raw: # of samples of BOD5 - Raw Sewage	3.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	3.00	26.00			0.00
Eff: Avg BOD5 - Final Effluent mg/L	3.00	< 4.50	3.00	< 2.50	< 2.00	< 2.00	< 3.00	< 2.00	< 2.00	< 2.00	< 2.00	< 6.67		3.04	6.67	25.00
Loading: BOD5 - Final Effluent kg/d	6.500	< 9.625	6.269	< 5.597	< 4.204	< 3.906	< 6.108	< 3.965	< 3.159	< 2.809	< 2.679	< 13.596		2.34	13.60	76.100
Percent Removal: BOD5 - Raw Sewage %	97.22	94.12	96.00	95.90	98.52	97.58	96.86	98.53	97.86	97.70	97.53	95.71		96.96	98.53	0.00
Total Suspended Solids: TSS																
Raw: Avg TSS - Raw Sewage mg/L	99.33	104.00	96.00	92.00	193.00	186.00	208.50	202.50	137.50	130.00	126.50	107.33		140.22	208.50	0.00
Raw: # of samples of TSS - Raw Sewage	3.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	3.00	26.00			0.00
Eff: Avg TSS - Final Effluent mg/L	9.67	9.00	11.50	8.50	6.00	6.50	12.00	5.50	7.50	12.50	12.00	33.33		11.96	33.33	25.00
Eff: # of samples of TSS - Final Effluent	3.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	3.00	26.00			0.00
Loading: TSS - Final Effluent kg/d	20.943	19.250	24.029	19.031	12.611	12.695	24.434	10.905	11.845	17.558	16.072	67.980		9.23	67.98	76.100
Percent Removal: TSS - Raw Sewage %	90.27	91.35	88.02	90.76	96.89	96.51	94.24	97.28	94.55	90.38	90.51	68.94		90.81	97.28	0.00
Total Phosphorus: TP																
Raw: Avg TP - Raw Sewage mg/L	2.43	2.20	2.20	2.68	2.90	3.36	3.58	3.93	3.52	3.42	3.20	2.95		3.03	3.93	0.00
Raw: # of samples of TP - Raw Sewage	3.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	3.00	26.00			0.00
Eff: Avg TP - Final Effluent mg/L	0.21	0.19	0.21	0.17	0.14	0.19	0.33	0.39	0.30	0.30	0.28	0.64		0.29	0.64	1.00
Eff: # of samples of TP - Final Effluent	3.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	3.00	26.00			0.00

Performance Assessment Report

Loading: TP - Final Effluent kg/d	0.462	0.406	0.439	0.369	0.294	0.371	0.662	0.763	0.466	0.421	0.368	1.312		0.22	1.31	3.000
Percent Removal: TP - Raw Sewage %	91.23	91.34	90.43	93.84	95.16	94.34	90.92	90.20	91.61	91.23	91.41	78.19		90.83	95.16	0.00
Nitrogen Series																
Raw: Avg TKN - Raw Sewage mg/L	20.87	18.60	16.65	20.80	26.70	24.40	28.55	30.50	27.60	27.90	27.25	22.70		24.38	30.50	0.00
Raw: # of samples of TKN - Raw Sewage	3.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	3.00	26.00			0.00
Eff: Avg TAN - Final Effluent mg/L	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.45	< 0.65	0.10	< 0.10	< 0.10	< 0.10	< 0.10		< 0.17	< 0.65	
Eff: # of samples of TAN - Final Effluent	3.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	3.00	26.00			0.00
Loading: TAN - Final Effluent kg/d	< 0.217	< 0.214	< 0.209	< 0.224	< 0.210	< 0.879	< 1.323	0.198	< 0.158	< 0.140	< 0.134	< 0.204		< 0.13	< 1.32	
Eff: Avg NO3-N - Final Effluent mg/L	13.77	15.70	16.05	17.00	19.60	8.67	19.55	14.00	23.05	24.55	24.70	17.57		17.85	24.70	0.00
Eff: # of samples of NO3-N - Final Effluent	3.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	3.00	26.00			0.00
Eff: Avg NO2-N - Final Effluent mg/L	< 0.03	< 0.03	< 0.03	< 0.03	< 0.07	< 0.06	0.11	0.07	< 0.03	< 0.03	< 0.03	< 0.03		< 0.05	< 0.11	0.00
Eff: # of samples of NO2-N - Final Effluent	3.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	3.00	26.00			0.00
Disinfection																
Eff: GMD E. Coli - Final Effluent cfu/100mL	3.17	2.00	2.00	14.70	2.83	2.00	6.32	5.66	2.83	2.00	3.46	2.83				200.00

ONTARIO CLEAN WATER AGENCY
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Appendix B

Sludge Quality Sample Analysis

C

Ontario Clean Water Agency - Request for Laboratory Services and CHAIN OF CUSTODY - SEWAGE (Hauled Sludge)

May - 12054 NP

Waterworks/Project #	**110001453**	C of C LIMS No:	
Facility Name	**Southampton STP**	Laboratory Section	Sample condition upon receipt
Org. #	**5613**	Date Rec'd: MAY 0 2 2024	Time Rec'd: ____ Initials ____
Quote # / Attached Parameter List	☐ No ☐ Yes	Temperature Upon Receipt 17x3	°C

Identification of Regulation under which the sample(s) fall: No Requirement to Report Sample Results Under Any Regulation for Wastewater Treatment

Requested Turnaround Time: App. Req'd 24-48 h ☐ X 5-7d ☐ 7-10d ☐ Other Specify:____

	Report to: Process & Compliance Technician (PCT)	Data Transfer Contact: PCT	Invoice To: Ontario Clean Water Agency	Laboratory: SGS Lakefield / London Research Ltd
Address:	18 Caroline Street Southampton, ON N0H 2L0	18 Caroline Street Southampton, ON N0H 2L0	18 Caroline Street Southampton, ON N0H 2L0	185 Concession St., Lakefield ON, K0L 2H0 657 Consortium Ct, London ON, N6E 2S8
Telephone:	519-374-5782	519-374-5782	(519) 797-2561	705-652-2000 / 519-672-4500
Fax:	(519) 797-3080	(519) 797-3080	(519) 797-3080	705-652-6365 / 519-672-0361
Email:	kyoung@ocwa.com	kyoung@ocwa.com	apwesthighlands@ocwa.com	carrie.greenlaw@sgs.com / angela.stott@sgs.com

Sample						Parameters																Comments	Upload to MOE	Upload to OCWA
Station Acronym	Station Number (Short Name)		Sample Location Name	Date & Time Collected	# of Bottles	TS	TS ASH	TS LOI	TKN	E.Coli	NH3 +NH4	Nitrite	Nitrate	Nitrite + Nitrate	TP	pH	Metals**							
BSLQ	BSLQ	-	Sludge Quality Hauled Sludge	May 1, 2024 0925	1	X	X	X	X		X	X	X	X	X	X								Yes ☒ No ☐	Yes ☒ No ☐
BSLQ	BSLQ	-	Sludge Quality Hauled Sludge	" 0925	1												X							Yes ☒ No ☐	Yes ☒ No ☐
BSLQ	BSLQ	-	Sludge Quality Hauled Sludge	" 0925	1					X PET														Yes ☒ No ☐	Yes ☒ No ☐
																								Yes ☐ No ☐	Yes ☐ No ☐
																								Yes ☐ No ☐	Yes ☐ No ☐
																								Yes ☐ No ☐	Yes ☐ No ☐
																								Yes ☐ No ☐	Yes ☐ No ☐
																								Yes ☐ No ☐	Yes ☐ No ☐

Sampler Name:	Justin Porter	Sampler Signature:	

* Station Acronym: Cell - Cell Contents, Dis - Disinfection, Down - Downstream, Eff - Final Effluent, PrBy - Primary Bypass, Raw - Raw Sewage, ScBy - Secondary Bypass, Up - Upstream, Well - Monitoring Well, Aer - Aeration, Brs - Biosolids-raw sludge, Bth - Biosolids thickening, Bpd - Biosolids primary digestion, Bsd - Biosolids sec. digestion, Bps - Biosolids pri super, Bss - Biosolids sec super, Bslq - Biosolids sludge quality, Bsoq - Biosolids soil quality, DAF - Dissolved Air Floatation, Grit - Primary Treatment/Grit, PrEf - Primary Effluent, RAS - Return Activated Sludge, SBR - Secondary Treatment/SBRs, ScEf - Secondary Effluent, TWAS - Thickened Waste Activated Sludge, WAS - Waste Activated Sludge, IndW - Industrial Wastewater, PStn - Pump Stn, Sept - Septage, Lcht - Leachate, PrTr - Primary Treatment, ReAr - Re-aeration, Tert - Tertiary Treatment, Aflo - Actiflo, TeBy - Tertiary Bypass, Hold - Holding Tank, CSO - Combined Sewer Overflow, SSO - Sanitary Sewer Overflow

608793427451 4P 10:00 HCR

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

Works #: 110001453
Project : PO#017018

10-May-2024

OCWA-Bruce (Southampton WPCP)
Attn : Karla Young

P.O. Box 760
Southampton, ON
N0H 2L0, Canada

Phone: 519-797-2561
Fax:pdf

Date Rec. : 02 May 2024
LR Report: **CA12054-MAY24**

Copy: #1

CERTIFICATE OF ANALYSIS

Final Report

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Completed Date	4: Analysis Completed Time	5: BSLQ BSLQ-Sludge Quality Hauled Sludge
Sample Date & Time					01-May-24 09:25
Temperature Upon Receipt [°C]	---	---	---	---	12.0
Total Solids [mg/L]	03-May-24	19:21	07-May-24	09:45	35600
Total Solids (ASH) [mg/L]	03-May-24	19:21	07-May-24	09:45	13600
Total Solids (LOI) [mg/L]	03-May-24	19:21	07-May-24	09:45	22000
pH [pH Units]	03-May-24	13:27	06-May-24	10:51	5.97
Total Kjeldahl Nitrogen [as N mg/L]	07-May-24	14:55	10-May-24	13:34	1160
Ammonia+Ammonium (N) [as N mg/L]	07-May-24	18:03	08-May-24	10:50	4.8
Nitrite (as N) [mg/L]	03-May-24	10:43	06-May-24	13:45	< 3
Nitrate (as N) [mg/L]	03-May-24	10:43	06-May-24	13:45	380
Nitrate + Nitrite (as N) [mg/L]	03-May-24	10:43	06-May-24	13:45	380
Arsenic [mg/L]	08-May-24	17:02	09-May-24	10:43	0.3
Cadmium [mg/L]	08-May-24	17:02	09-May-24	10:43	0.029
Cobalt [mg/L]	08-May-24	17:02	09-May-24	10:43	0.11
Chromium [mg/L]	08-May-24	17:02	09-May-24	10:43	0.59
Copper [mg/L]	08-May-24	17:02	09-May-24	10:43	18
Mercury [mg/L]	08-May-24	17:02	09-May-24	10:43	0.013
Potassium [mg/L]	08-May-24	17:02	09-May-24	10:43	100
Molybdenum [mg/L]	08-May-24	17:02	09-May-24	10:43	0.18
Nickel [mg/L]	08-May-24	17:02	09-May-24	10:43	0.54
Phosphorus (Total) [mg/L]	08-May-24	17:02	09-May-24	10:43	1200
Lead [mg/L]	08-May-24	17:02	09-May-24	10:43	0.4
Selenium [mg/L]	08-May-24	17:02	09-May-24	10:43	0.2
Zinc [mg/L]	08-May-24	17:02	09-May-24	10:43	18
E. Coli [cfu/1g dried wgt]	02-May-24	16:36	06-May-24	08:13	1404
E. Coli [cfu/100mL]	02-May-24	16:36	06-May-24	08:13	5000

Note: Metals and mercury were analyzed on the as-received sample.
The E.coli value reported in CFU/1g dried weight was calculated using Total Solids and CFU/100ml.

OnLine LIMS

00037028255

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

Works #: 110001453

Project : PO#017018
LR Report : **CA12054-MAY24**

Carrie Greenlaw
Project Specialist,
Environment, Health & Safety

OnLine LIMS

00037028255

Ontario Clean Water Agency - Request for Laboratory Services and CHAIN OF CUSTODY - SEWAGE (Hauled Sludge)

Waterworks/Project #	**110001453**	**C of C LIMS No:**	Oct 12403 MK
Facility Name	**Southampton STP**	**Laboratory Section**	Sample condition upon receipt: ____
Org. #	**5613**	Date Rec'd: ~~OCT 10 2024~~ OCT 11 2024	Time Rec'd: ____ Initials: ____
Quote # / Attached Parameter List	☐ No ☐ Yes	Temperature Upon Receipt	12 x 3 °C

Identification of Regulation under which the sample(s) fall: No Requirement to Report Sample Results Under Any Regulation for Wastewater Treatment

Requested Turnaround Time: **Lab App. ☐ 24-48 h ☐ X 5-7d ☐ 7-10d ☐ Other Specify: ____

	Report to: Process & Compliance Technician (PCT)	Data Transfer Contact: PCT	Invoice To: Ontario Clean Water Agency	Laboratory: SGS Lakefield / London Research Ltd
Address:	18 Caroline Street Southampton, ON N0H 2L0	18 Caroline Street Southampton, ON N0H 2L0	18 Caroline Street Southampton, ON N0H 2L0	185 Concession St., Lakefield ON, K0L 2H0 657 Consortium Ct, London ON, N6E 2S8
Telephone:	519-374-5782	519-374-5782	(519) 797-2561	705-652-2000 / 519-672-4500
Fax:	(519) 797-3080	(519) 797-3080	(519) 797-3080	705-652-6365 / 519-672-0361
Email:	kyoung@ocwa.com	kyoung@ocwa.com	apwesthighlands@ocwa.com	carrie.greenlaw@sgs.com / angela.stott@sgs.com

Sample						Parameters																Comments	Upload to MOE	Upload to OCWA
Station Acronym	Station Number (Short Name)		Sample Location Name	Date & Time Collected	# of Bottles	TS	TS ASH	TS LOI	TKN	E.Coli	NH3 +NH4	Nitrite	Nitrate	Nitrite + Nitrate	TP	pH	Metals**							
Bslq	Bslq	-	Sludge Quality Hauled Sludge	Oct 10/24 13:10	1	X	X	X	X		X	X	X	X	X	X								Yes ☒ No ☐ / Yes ☒ No ☐
Bslq	Bslq	-	Sludge Quality Hauled Sludge	" 13:10	1												X							Yes ☒ No ☐ / Yes ☒ No ☐
Bslq	Bslq	-	Sludge Quality Hauled Sludge	" 13:10	1					X														Yes ☒ No ☐ / Yes ☒ No ☐
											IEC													Yes ☐ No ☐ / Yes ☐ No ☐
																								Yes ☐ No ☐ / Yes ☐ No ☐
																								Yes ☐ No ☐ / Yes ☐ No ☐
																								Yes ☐ No ☐ / Yes ☐ No ☐
																								Yes ☐ No ☐ / Yes ☐ No ☐

Sampler Name:	Justyn Becker	Sampler Signature:	Justyn Becker

* Station Acronym: Cell - Cell Contents, Dis - Disinfection, Down - Downstream, Eff - Final Effluent, PrBy - Primary Bypass, Raw - Raw Sewage, ScBy - Secondary Bypass, Up - Upstream, Well - Monitoring Well, Aer - Aeration, Brs - Biosolids-raw sludge, Bth - Biosolids thickening, Bpd - Biosolids primary digestion, Bsd - Biosolids sec. digestion, Bps - Biosolids pri super, Bss - Biosolids sec super, Bslq - Biosolids sludge quality, Bsoq - Biosolids soil quality, DAF - Dissolved Air Floatation, Grit - Primary Treatment/Grit, PrEf - Primary Effluent, RAS - Return Activated Sludge, SBR - Secondary Treatment/SBRs, ScEf - Secondary Effluent, TWAS - Thickened Waste Activated Sludge, WAS - Waste Activated Sludge, IndW - Industrial Wastewater, PStn - Pump Stn, Sept - Septage, Lcht - Leachate, PrTr - Primary Treatment, ReAr - Re-aeration, Tert - Tertiary Treatment, Aflo - Actiflo, TeBy - Tertiary Bypass, Hold - Holding Tank, CSO - Combined Sewer Overflow, SSO - Sanitary Sewer Overflow

6089328041 64
VK HC-RTN
10:30

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

Works #: 110001453
Project : PO#017018

22-October-2024

OCWA-Bruce (Southampton WPCP)
Attn : Karla Young

P.O. Box 760
Southampton, ON
N0H 2L0, Canada

Phone: 519-797-2561
Fax:pdf

Date Rec. : 11 October 2024
LR Report: **CA12403-OCT24**

Copy: #1

CERTIFICATE OF ANALYSIS

Final Report

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Completed Date	4: Analysis Completed Time	5: BSLQ BSLQ-Sludge Quality Hauled Sludge
Sample Date & Time					10-Oct-24 13:10
Temperature Upon Receipt [°C]	---	---	---	---	12.0
Total Solids [mg/L]	15-Oct-24	21:34	17-Oct-24	09:52	35300
Total Solids (ASH) [mg/L]	15-Oct-24	21:34	17-Oct-24	09:52	15300
Total Solids (LOI) [mg/L]	15-Oct-24	21:34	17-Oct-24	09:52	20000
pH [pH Units]	15-Oct-24	15:27	16-Oct-24	11:30	6.50
Total Kjeldahl Nitrogen [as N mg/L]	15-Oct-24	08:23	17-Oct-24	14:40	607
Ammonia+Ammonium (N) [as N mg/L]	15-Oct-24	19:11	16-Oct-24	13:30	2.4
Nitrite (as N) [mg/L]	16-Oct-24	09:40	17-Oct-24	14:03	< 3
Nitrate (as N) [mg/L]	16-Oct-24	09:40	17-Oct-24	14:03	176
Nitrate + Nitrite (as N) [mg/L]	16-Oct-24	09:40	17-Oct-24	14:03	176
Arsenic [mg/L]	18-Oct-24	11:23	22-Oct-24	09:16	0.3
Cadmium [mg/L]	18-Oct-24	11:23	22-Oct-24	09:16	0.037
Cobalt [mg/L]	18-Oct-24	11:23	22-Oct-24	09:16	0.13
Chromium [mg/L]	18-Oct-24	11:23	22-Oct-24	09:16	0.72
Copper [mg/L]	18-Oct-24	11:23	22-Oct-24	09:16	21
Mercury [mg/L]	18-Oct-24	11:23	22-Oct-24	09:16	0.011
Potassium [mg/L]	18-Oct-24	11:23	22-Oct-24	09:16	93
Molybdenum [mg/L]	18-Oct-24	11:23	22-Oct-24	09:16	0.20
Nickel [mg/L]	18-Oct-24	11:23	22-Oct-24	09:16	0.60
Phosphorus (Total) [mg/L]	18-Oct-24	11:23	22-Oct-24	09:16	1400
Lead [mg/L]	18-Oct-24	11:23	22-Oct-24	09:16	0.5
Selenium [mg/L]	18-Oct-24	11:23	22-Oct-24	09:16	0.3
Zinc [mg/L]	18-Oct-24	11:23	22-Oct-24	09:16	22
E. Coli [cfu/1g dried wgt]	11-Oct-24	15:11	15-Oct-24	13:48	567
E. Coli [cfu/100mL]	11-Oct-24	15:11	15-Oct-24	13:48	2000

Note: Metals and mercury were analyzed on the as-received sample.
The E.coli value reported in CFU/1g dried weight was calculated using Total Solids and CFU/100ml.

OnLine LIMS

0003907732

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

Works #: 110001453

Project : PO#017018
LR Report : **CA12403-OCT24**

Carrie Greenlaw
Project Specialist,
Environment, Health & Safety

OnLine LIMS

0003907732

ONTARIO CLEAN WATER AGENCY
AGENCE ONTARIENNE DES EAUX

Appendix C

Check sheets of Sludge Haulage

ONTARIO CLEAN WATER AGENCY
AGENCE ONTARIENNE DES EAUX

Daily Record of Sludge Haulage

Page of

Plant/ Facility Name	Area	Date
Southampton	Saugeen Shores	May 1-24

Carrier/ Hauler	Site #
Bartels	25069

NOTE: ONLY ONE SHEET PER SITE

Load No.	Time		Load Volume (m^3)	Carrier Information		Driver Initials
	In	Out		Vehicle License #	Trailer #	
1	~~10:00~~ 10:15	10:30	44	415	T-26	DH
2	10:40	11:00	44	127	T20	BB
3	11:20	11:40	44	415	T-26	DH
4	12:~~00~~	12:30	44	127	T20	BB
5	12:55	1:15	44	415	T-26	DH
6	1:30	1:50	44	127	T20	BB
7	2:10	2:30	44	415	T-26	DH
8	2:45	3:10	44	127	T20	BB
9	3:20	3:40	44	415	T-26	DH
10	4:00	4:20	44	127	T20	BB
11	4:35	4:55	44	415	T-26	DH
12	5:15	5:40	44	127	T20	BB
13						
14						
15						
16						
17						
18						
19						
20						

Daily Total 528 m^3

REMARKS

Date May 1-24

OCWA Rep. Signature JB

Carrier/ Hauler Signature BBartels

White Copy = OCWA Yellow Copy = Carrier Pink Copy = Facility

ONTARIO CLEAN WATER AGENCY
AGENCE ONTARIENNE DES EAUX

Daily Record of Sludge Haulage

Plant/ Facility Name	Area	Date
Southampton, ON	Saugeen Shores	May 2-24

Carrier/ Hauler	Site #
Bartels Environmental	25069

NOTE: ONLY ONE SHEET PER SITE

Load No.	Time		Load Volume (m^3)	Carrier Information		Driver Initials
	In	Out		Vehicle License #	Trailer #	
1	7:00	7:30	44	415	T26	DH
2	7:30	8:30	44	127	T20	BB
3	8:45	9:05	44	415	T-26	DH
4	9:30	10:00	44	127	T20	BB
5	10:15	10:35	44	415	T-26	DH
6	10:55	11:20	44	127	T20	BB
7	11:30	11:50	44	415	T-26	DH
8	12:10	12:35	44	127	T20	BB
9	12:50	1:10	44	415	T-26	DH
10	1:20	1:45	44	127	T20	BB
11	2:10	2:30	44	415	T-26	DH
12	2:40	3:10	44	127	T20	BB
13	3:30	3:40	44	415	T-26	DH
14						
15						
16						
17						
18						
19						
20						

Daily Total 572 m^3

REMARKS

Date May 2/24

OCWA Rep. Signature JB

Carrier/ Hauler Signature

White Copy = OCWA Yellow Copy = Carrier Pink Copy = Facility

ONTARIO CLEAN WATER AGENCY
AGENCE ONTARIENNE DES EAUX

Daily Record of Sludge Haulage

Plant/ Facility Name	Area	Date
Southampton	Saugeen Shores	Oct 10/24

Carrier/ Hauler	Site #
Bartels Environmental	61280

NOTE: ONLY ONE SHEET PER SITE

Load No.	Time		Load Volume (m^3)	Carrier Information		Driver Initials
	In	Out		Vehicle License #	Trailer #	
1	1:15	1:45	44	344	T27	MG
2	1:45	2:15	44	127	T20	BB
3	2:30	2:00	44	344	T-27	MG
4	3:00	3:30	44	127	T20	BB
5	3:40	4:10	44	344	T-27	MG
6	4:10	4:40	44	127	T20	BB
7						
8						
9						
10						
11						
12						
13						
14						
15						
16						
17						
18						
19						
20						

Daily Total 264 m^3

REMARKS

Date Oct 10/24

OCWA Rep. Signature JB

Carrier/ Hauler Signature BBartels

White Copy = OCWA Yellow Copy = Carrier Pink Copy = Facility

ONTARIO CLEAN WATER AGENCY
AGENCE ONTARIENNE DES EAUX

Daily Record of Sludge Haulage

Page of

Plant/ Facility Name	Area	Date
Southampton	Saugeen Shores	Oct 11/24

Carrier/ Hauler	Site #
Bartels Environmental	61280

NOTE: ONLY ONE SHEET PER SITE

Load No.	Time		Load Volume (m^3)	Carrier Information		Driver Initials
	In	Out		Vehicle License #	Trailer #	
1	7:15	7:45	44	344	T27	MG
2	7:45	8:15	44	127	T20	BB
3	8:25	8:53	44	344	T-27	MG
4	8:55	9:25	44	127	T20	BB
5	9:30	10:00	44	344	T27	MG
6	10:00	10:30	44	127	T20	BB
7	10:40	11:10	44	344	T-27	MG
8	11:10	11:40	44	127	T20	BB
9	11:45	12:15	44	344	T-27	MG
10	12:15	12:45	44	127	T20	BB
11	12:50	1:20	44	344	T-27	MG
12	1:30	2:00	44	127	T20	BB
13						
14						
15						
16						
17						
18						
19						
20						

Daily Total 528 m^3

REMARKS

Date Oct 11/24

OCWA Rep. Signature

Carrier/ Hauler Signature

White Copy = OCWA Yellow Copy = Carrier Pink Copy = Facility

ONTARIO CLEAN WATER AGENCY
AGENCE ONTARIENNE DES EAUX

Daily Record of Sludge Haulage

Page of

Plant/ Facility Name	Area	Date
SOUTHAMPTON WWTP	Saugeen Shores	OCT 16/24

Carrier/ Hauler	Site #
Bynnels	C1280

NOTE: ONLY ONE SHEET PER SITE

Load No.	Time		Load Volume (m^3)	Carrier Information		Driver Initials
	In	Out		Vehicle License #	Trailer #	
1	8:50	9:20	44	415	T-26	DH
2	9:25	9:55	44	344	T-27	MG
3	10:05	10:30	44	415	T-26	DH
4	10:35	11:00	44	344	T-27	MG
5	11:10	11:35	44	415	T-26	DH
6	11:40	12:05	44	344	T-27	MG
7	12:10	12:35	44	415	T-26	DH
8	12:45	1:15	44	344	T-27	MG
9	1:20	1:50	~~44~~ 15	415	T-26	DH
10						
11						
12						
13						
14						
15						
16						
17						
18						
19						
20						

Daily Total [initials]

REMARKS

Date Oct 16/24

OCWA Rep. Signature JB

Carrier/ Hauler Signature [signature]

White Copy = OCWA   Yellow Copy = Carrier   Pink Copy = Facility

ONTARIO CLEAN WATER AGENCY
AGENCE ONTARIENNE DES EAUX

Appendix D
Calibration Reports

VeriMaster - Flow Meter Verification Report

Customer Information	
Customer	OCWA-Southampton STP
Verification Download	Wed, May 15, 2024

Meter Information	
Meter Owner	Was/Scum Flow
Meter Type	WaterMaster
Sensor Size	DN150
Pipe Status	Fluid Present
Sensor Type	Fullbore
Sensor Serial No	3K672023081436
Transmitter Serial No	3K672023081436
Tag	WAS/Scum Flow
Location	Port Elgin STP

Overall Status: Pass

The flowmeter has passed its internal continuous verification and automatic self calibration. It is working within +/-1% of its original factory calibration

Summary of Results	
Coil Group	Passed
Electrode Group	Passed
Sensor Group	Passed
Transmitter Signal	Passed
Transmitter Driver	Passed
Output Group	Passed
Configuration	Passed

Verification History	
OIML Accuracy Alarms	0

Totaliser Information	
Forward	7087.53 m3
Reverse	1237.75 m3
Net	5849.78 m3

Sensor Information	
Q3	175.00 l/s
Calibration Accuracy	OIML Class 2
Sensor Calibration Factors	138.9%; -2.16 mm/s; 11
Date of Manufacture	30 Jan 2023
Run Hours	49days 21hrs 6404mins

Sensor Data	
Coil Current	179.9 mA
Coil Inductance	162.5 mH
Coil Inductance Shift	-0.1%
Coil / Loop Resistance	33.1 ohm

Transmitter Information	
Application Version	V01.07.00 03/02/17
MSP Version	00.00.04
Date of Manufacture	30 Jan 2023
Run Hours	99days 21hrs 24064mins

Transmitter Data	
Tx Gain - Adjustment	0.1%

VeriMaster Information	
Version	01.00.01
Limit Version	01.00.01

Current Output	
4mA Value	Pass : 3.999 mA ; 0.02%
12mA Value	Pass : 11.984 mA ; 0.13%
20mA Value	Pass : 19.997 mA ; 0.02%

Pulse Output	
Output 1: 100.0Hz	Not tested
Output 1: 50.0Hz	Not tested
Output 2: 250Hz	Not available for testing
Output 2: 125Hz	Not available for testing

Installation Comments / Equipment used:

DMM-20 used for mA Output Checks

Configuration Settings	
Mains Frequency	60 Hz
Qmax	20.00 l/s
Pulses/Unit	1.000000
Pulses Limit Frequency	100.0 Hz
Sensor User Span/Zero	100.0%; 0.00 mm/s
User Flow Cutoff/Hysterisis	0.00%; 20%
Meter Mode	Normal operation

Date Wed, May 15, 2024 Operator Signature Print Name

ABB Instrumentation World Flow Technology

ABB Limited
Oldends Lane, Stonehouse
Gloucestershire, GL10 3TA UK
Tel: +44(0) 1453 826661
Fax: +44(0) 1453 821121
instrumentation@gb.abb.com

ABB Automation Inc.
125 East County Line Road
Warminster, PA 18974 USA
Tel: +1 215 674 6000
Fax: +1 215 674 6394
instrumentation@gb.abb.com

ABB Australia Pty Ltd.
Bapaune Rd
Moorebank, NSW 2170
Tel: +61-2-982 1-0111
Fax: +61-2-9821-0950

ABB Automation GmbH
Dransfelder Str.2
37079 Gottingen, GERMANY
Tel: +49 (0) 551 905212
Fax: +1 (215) 674 6394

Krohne
Verification Report

AS FOUND CERTIFICATION

FORWARD FLOW DIRECTION

PASS

CLIENT DETAIL

CUSTOMER OCWA - Georgian Highlands - Southampton
CONTACT Dan MacLeod
Senior Operations Manager
18 Caroline Street West
Southampton, ON N0H 2L0
Ph: 519-379-0431
E: DMacleod@ocwa.com

VER. BY - FM Travis Krayetski

Quality Management Standards Information - Reference equipment and instrumentation used to conduct this verification test is found in our AC-QMS document at the time this test was conducted.

EQUIPMENT DETAIL

[MUT] MANUFACTURER	Krohne
MODEL	IFC 100W
SERIAL NUMBER	C12501984
FUSE	Wall switch to right of unit
PLANT ID	Southampton WWTP
METER ID	Return Activated Sludge #1 (West Side)
FIT ID	N/A
CLIENT TAG	N/A
OTHER	ORG #5613
GPS COORDINATES	N44 30.103 W081 21.236
VERIFICATION DATE	May 16th 2024
CAL. FREQUENCY	Annual
CAL. DUE DATE	May 2025

PROGRAMMING PARAMETERS

DIAMETER (DN)	mm	150
F.S. FLOW - MAG	LPS	172.6
F.S. RANGE - O/P	LPS	63.09
CAL. k-FACTOR	GKL	6.4107
Zero Offset Flow	LPS	0.0000

FORWARD TOTALIZER INFORMATION

AS FOUND	5919153.59	M3
AS LEFT	5919159.25	M3
DIFFERENCE	5.66	M3

TEST CRITERIA

AS FOUND CERTIFICATION TEST	Yes
FORWARD FLOW DIRECTION	Yes
ALLOWABLE [%] ERROR	5

COMPONENTS TESTED

CONVERTER DISPLAY	yes
mA OUTPUT	yes
TOTALIZER	Yes
ACCURACY BASED ON [% o.r.]	yes

ERROR DOCUMENTED IN THIS REPORT; BASED ON % o.r.

FLOW TUBE SIMULATION

			0.0		**0.5**	**1.0**	**2.0**	**m/s**
			0.0		**5.0**	**10.0**	**20.0**	**% F.S. Flow**
			0.0		**13.7**	**27.4**	**54.7**	**% F.S. Range**
REF. FLOW RATE			**0.0**		**8.6**	**17.3**	**34.5**	LPS
MUT [Reading]			0.0		8.6	17.2	34.5	LPS
MUT [Difference]			0.0		0.0	-0.1	0.0	LPS
MUT [% Error]			n/a		-0.38	-0.38	-0.09	%
mA OUTPUT			**4.000**		**6.189**	**8.378**	**12.757**	mA
MUT [Reading]	min.	4.000 mA	3.994		6.173	8.360	12.757	mA
MUT [Difference]	max.	20.000 mA	-0.006		-0.016	-0.018	0.000	mA
MUT [% Error]			-0.15		-0.26	-0.22	0.00	%
TOTALIZER - REF. FLOW RATE							**34.530**	LPS
TOTALIZER [MUT]							3	M3
TEST TIME							86.68	SECONDS
CALC. TOTALIZER							2.993	M3
ERROR							0.23	%

COMMENTS

QUALITY MANAGEMENT STANDARDS INFO.

[QMS] INFORMATION	IDENT.	ID #
[REFERENCE] FTS	KRO	3
PROCESS METER	PM	20
ANALOG METER	AM	N/A
STOP WATCH	SW	Yes

RESULTS

TEST	AVG % o.r.	PASS FAIL
DISPLAY	-0.28	PASS
mA OUTPUT	-0.16	PASS
TOTALIZER	0.23	PASS

This report reflects the test results of the overall accuracy for the above flow converter using the specified manufacturers flow tube simulator to within the specified tolerance as identified within this report.

Krohne
Verification Report

AS FOUND CERTIFICATION

FORWARD FLOW DIRECTION

PASS

CLIENT DETAIL

CUSTOMER OCWA - Georgian Highlands - Southampton
CONTACT Dan MacLeod
Senior Operations Manager
18 Caroline Street West
Southampton, ON N0H 2L0
Ph: 519-379-0431
E: DMacleod@ocwa.com

VER. BY - FM Paris Machuk

Quality Management Standards Information - Reference equipment and instrumentation used to conduct this verification test is found in our AC-QMS document at the time this test was conducted.

EQUIPMENT DETAIL

[MUT] MANUFACTURER	Krohne
MODEL	IFC 100W
SERIAL NUMBER	C12501983
FUSE	Wall switch to right of unit
PLANT ID	Southampton WWTP
METER ID	Return Activated Sludge #2 (East Side)
FIT ID	N/A
CLIENT TAG	N/A
OTHER	ORG #5613
GPS COORDINATES	N44 30.103 W081 21.236
VERIFICATION DATE	May 15th 2024
CAL. FREQUENCY	Annual
CAL. DUE DATE	May 2025

PROGRAMMING PARAMETERS

DIAMETER (DN)	mm	150
F.S. FLOW - MAG	LPS	165.9
F.S. RANGE - O/P	LPS	63.09
CAL. k-FACTOR	GKL	6.1613
Zero Offset Flow	LPS	0.0000

FORWARD TOTALIZER INFORMATION

AS FOUND	6103897.95	M3
AS LEFT	6103903.75	M3
DIFFERENCE	5.8	M3

TEST CRITERIA

AS FOUND CERTIFICATION TEST	Yes
FORWARD FLOW DIRECTION	Yes
ALLOWABLE [%] ERROR	5

COMPONENTS TESTED

CONVERTER DISPLAY	yes
mA OUTPUT	yes
TOTALIZER	Yes
ACCURACY BASED ON [% o.r.]	yes

ERROR DOCUMENTED IN THIS REPORT; BASED ON % o.r.

FLOW TUBE SIMULATION

				0.0		**0.5**	**1.0**	**2.0**	**m/s**
				0.0		**5.0**	**10.0**	**20.0**	**% F.S. Flow**
				0.0		**13.2**	**26.3**	**52.6**	**% F.S. Range**
REF. FLOW RATE				**0.0**		**8.3**	**16.6**	**33.2**	LPS
MUT [Reading]				0.0		8.3	16.6	33.2	LPS
MUT [Difference]				0.0		0.0	0.0	0.0	LPS
MUT [% Error]				n/a		0.04	0.04	0.04	%
mA OUTPUT				**4.000**		**6.104**	**8.208**	**12.416**	mA
MUT [Reading]	min.	4.000	mA	4.000		6.104	8.214	12.425	mA
MUT [Difference]	max.	20.000	mA	0.000		0.000	0.006	0.009	mA
MUT [% Error]				0.00		0.00	0.07	0.07	%
TOTALIZER - REF. FLOW RATE								**33.186**	LPS
TOTALIZER [MUT]								2	M3
TEST TIME								60.38	SECONDS
CALC. TOTALIZER								2.004	M3
ERROR								-0.19	%

COMMENTS

QUALITY MANAGEMENT STANDARDS INFO.

[QMS] INFORMATION	IDENT.	ID #
[REFERENCE] FTS	KRO	3
PROCESS METER	PM	20
ANALOG METER	AM	N/A
STOP WATCH	SW	yes

RESULTS

TEST	AVG % o.r.	PASS FAIL
DISPLAY	0.04	PASS
mA OUTPUT	0.04	PASS
TOTALIZER	-0.19	PASS

This report reflects the test results of the overall accuracy for the above flow converter using the specified manufacturers flow tube simulator to within the specified tolerance as identified within this report.

v-Notch Weir
Verification/Calibration Report

FLOWMETRIX

AS FOUND CERTIFICATION

PASS

CLIENT DETAIL

CUSTOMER OCWA - Georgian Highlands - Southampton
CONTACT Dan MacLeod
Senior Operations Manager
18 Caroline Street West
Southampton, ON N0H 2L0
Ph: 519-379-0431
E: DMacleod@ocwa.com

VER. BY - FM Paris Machuk / Travis Krayetski

Quality Management Standards Information - Reference equipment and instrumentation used to conduct this verification test is found in our AC-QMS document at the time this test was conducted.

EQUIPMENT DETAIL

[MUT] MANUFACTURER	Greyline
MODEL	OCM (SLT-32)
CONVERTER SERIAL NUMBER	38872-R
PLANT ID	Southampton WWTP
METER ID	Final Effluent
FIT ID	LIT-1
CLIENT TAG	OCWA# 74302
OTHER	ORG# 5613
GPS COORDINATES	N44 30.103 W081 21.236
VERIFICATION DATE	May 15th 2024
CAL. FREQUENCY	Annual
CAL. DUE DATE	May 2025

PROGRAMMING PARAMETERS

NOTCH ANGLE (ϕ)	inches	90
EMPTY DISTANCE, TX to notch	m	0.755
TRANSDUCER (TX), to sump flc	m	1.112
SUMP LEVEL, zero flow	m	0.357
MAX. HEAD	m	0.325
BLANKING DISTANCE	m	0.305
DEAD ZONE	m	0.125
MAX. FLOW	M3/D	7179.6
F.S. RANGE - O/P	M3/D	7179.6

Ultrasonic sensor installed to ensure full scale flow condition

TOTALIZER

AS FOUND	10455315	M3
AS LEFT	10455340	M3
DIFFERENCE	25	M3

TEST CRITERIA

AS FOUND CERTIFICATION TEST	Yes
ALLOWABLE [%] ERROR	15

COMPONENTS TESTED

CONVERTER DISPLAY	yes
mA OUTPUT	yes
TOTALIZER	yes
ACCURACY BASED ON [% o.r.]	No

ERROR DOCUMENTED IN THIS REPORT; BASED ON % F.S.

AS FOUND TEST RESULTS

				33.6	57.2	68.9	81.9	96.2	% F.S. Range
				0.210	0.260	0.280	0.300	0.320	m
REF. FLOW RATE				**2409.6**	**4109.9**	**4946.4**	**5877.5**	**6906.7**	M3/D
MUT [Reading]				2512.0	4436.0	5191.0	6155.0	7181.0	M3/D
MUT [Difference]				102.4	326.1	244.6	277.5	274.3	M3/D
MUT [% Error]				1.4	4.5	3.4	3.9	3.8	%
mA OUTPUT				**9.370**	**13.159**	**15.023**	**17.098**	**19.392**	mA
MUT [Reading]	min.	4.000	mA	9.593	13.854	15.555	17.698	19.981	mA
MUT [Difference]	max.	20.000	mA	0.223	0.695	0.532	0.600	0.589	mA
MUT [% Error]				1.12	3.48	2.66	3.00	2.95	%
TOTALIZER - REF. FLOW RATE								**6906.655**	M3/D
TOTALIZER [MUT]								5	M3
TEST TIME								61.69	SECONDS
CALC. TOTALIZER								4.931	M3
ERROR								1.37	%

COMMENTS

QUALITY MANAGEMENT STANDARDS INFO.

[QMS] INFORMATION	IDENT.	ID #
[REFERENCE] LEVEL	Sim. BOARD	Yes
PROCESS METER	PM	20
STOP WATCH	SW	Yes

RESULTS

TEST	AVG %FS	PASS FAIL
DISPLAY	3.91	PASS
mA OUTPUT	2.64	PASS
TOTALIZER	1.37	PASS

This report reflects the test results of the overall accuracy for the above flow converter using the specified manufacturers flow tube simulator to within the specified tolerance as identified within this report.

Proportional Weir

Customer	OCWA - Southampton Area
Contact	Dan MacLeod
	Cluster Manager
	519-370-0431
Test Performed By:	*Paris Machuk / Travis Krayetski*
	Field Representative

Plant ID	Southampton WWTP	Date of Verification	May 15th 2024
Meter ID	Influent - North Channel	Calibration Frequency	Annual
FIT ID	n/a	Date of Next Verification	May 2025
Client Tag	OCWA# 74303		
GPS Coordinates	N44 30.103 & W081 21.236		

Converter Details

Manufacturer	Greyline
Model	SLT32-A
Converter S/N:	38873-R
Fuse	Panel

Totalizer Information

As Found	11637906	m3
As Left	11637931	m3
Difference	25	m3

Programming Parameters

Weir Type	Proportional	
Weir Length	m	degrees
Max. Head	0.326	m
Max. Flow	5888.65	m3/d
Max Range	0.726	m

Note: off set from zero to bottom of South channel = 133mm

Note: off set from zero to bottom of North channel = 138mm

Verification Instruments

Steel Ruler/Simulation Board	Yes
Digital Multimeter (DMM)	3
Stop Watch	1/100 th second
Display Accuracy Verified	Yes
mA Output Accuracy Verified	Yes
Totalizer Accuracy Verified	Yes

AS FOUND	**0**	**31%**	**61%**	**92%**	**98%**	**% F.S. Flow**
FLOW TUBE SIMULATION*	0.00001	0.100	0.200	0.300	0.320	**m**
Display	**0.000**	**1806.335**	**3612.669**	**5419.004**	**5780.271**	m3/d
MUT (As Found)	0.00	1710.00	3552.00	5433.00	5875.00	m3/d
MUT (Error)**	n/a	-1.64%	-1.03%	0.24%	1.61%	%
mA Output	**4.000**	**8.908**	**13.816**	**18.724**	**19.706**	mA
MUT (As Found)	4.002	8.659	13.649	18.740	19.995	mA
MUT (Error)**	0.05	-2.79	-1.21	0.09	1.47	%
Totalizer					**5780.271**	m3/d
Test Volume					5	m3
Time					74.84	Seconds
Calc. Flowrate					5772.31	m3/d
% Error					-0.14	%

** All values are for "As Found" values. If the values are not within acceptable limits an "As Left" certificate will be issued unless otherwise noted.*

Comments

Errror represented as % of full scale

Grey Line K&n factor for Q calc is k=458.809 and n = 1 for Greyline OCF calibration

k=2.25038 n =1

Checked Weir Zero and found to be good.

Note: checked South Side @ head 0.0m unit reading: HEAD=0.0m

@ head 0.32m unit reading: HEAD=0.316m

Results

	Avg. % Error	PASS/FAIL
Display	**0.00**	**PASS**
mA Output	**-0.61**	**PASS**
Totalizer	**-0.14**	**PASS**

This record only validates the operational integrity and accuracy verification results of the Secondary flow converter ONLY!!! This is not a complete calibration of the entire flow meter whereby, this verification does not validate the integrity of the primary measurement device using a comparative technique or traceable standard.

Krohne
Verification Report

AS FOUND CERTIFICATION

FORWARD FLOW DIRECTION

PASS

CLIENT DETAIL

CUSTOMER OCWA - Georgian Highlands - Southampton
CONTACT Dan MacLeod
Senior Operations Manager
18 Caroline Street West
Southampton, ON N0H 2L0
Ph: 519-379-0431
E: DMacleod@ocwa.com

VER. BY - FM Paris Machuk

Quality Management Standards Information - Reference equipment and instrumentation used to conduct this verification test is found in our AC-QMS document at the time this test was conducted.

EQUIPMENT DETAIL

[MUT] MANUFACTURER	Krohne
MODEL	IFC100W
SERIAL NUMBER	C10 1442
FUSE	in Panel ULF4
PLANT ID	Southampton PS#4
METER ID	Station Flow
FIT ID	FIT-01
CLIENT TAG	OCWA #??
OTHER	n/a
GPS COORDINATES	N44 30.969 W081 21.481
VERIFICATION DATE	May 15th 2024
CAL. FREQUENCY	Annual
CAL. DUE DATE	May 2025

PROGRAMMING PARAMETERS

DIAMETER (DN)	mm	150
F.S. FLOW - MAG	LPS	163.0
F.S. RANGE - O/P	LPS	100.0
CAL. k-FACTOR	GKL	6.05280
Zero Offset Flow	LPS	0

FORWARD TOTALIZER INFORMATION

AS FOUND	379015.71	M3
AS LEFT	379027.41	M3
DIFFERENCE	11.7	M3

TEST CRITERIA

AS FOUND CERTIFICATION TEST	Yes
FORWARD FLOW DIRECTION	Yes
ALLOWABLE [%] ERROR	5

COMPONENTS TESTED

CONVERTER DISPLAY	Yes
mA OUTPUT	Yes
TOTALIZER	Yes
ACCURACY BASED ON [% o.r.]	Yes

ERROR DOCUMENTED IN THIS REPORT; BASED ON % o.r.

FLOW TUBE SIMULATION

		0.0	**0.5**	**1.0**	**2.0**	**5.0**	**m/s**
		0.0	**5.0**	**10.0**	**20.0**	**50.0**	**% F.S. Flow**
		0.0	**8.2**	**16.3**	**32.6**	**81.5**	**% F.S. Range**
REF. FLOW RATE		**0.0**	**8.2**	**16.3**	**32.6**	**81.5**	LPS
MUT [Reading]		0.0	8.1	16.2	32.5	81.5	LPS
MUT [Difference]		0.0	-0.1	-0.1	-0.1	0.0	LPS
MUT [% Error]		n/a	-0.62	-0.62	-0.31	-0.01	%
mA OUTPUT		**4.000**	**5.304**	**6.608**	**9.216**	**17.041**	mA
MUT [Reading]	min. 4.000 mA	3.999	5.293	6.596	9.205	17.033	mA
MUT [Difference]	max. 20.000 mA	-0.001	-0.011	-0.012	-0.011	-0.008	mA
MUT [% Error]		-0.02	-0.21	-0.18	-0.12	-0.05	%
TOTALIZER - REF. FLOW RATE						**81.505**	LPS
TOTALIZER [MUT]						6	M3
TEST TIME						73.99	SECONDS
CALC. TOTALIZER						6.031	M3
ERROR						-0.51	%

COMMENTS

QUALITY MANAGEMENT STANDARDS INFO.

[QMS] INFORMATION	IDENT.	ID #
[REFERENCE] FTS	KRO	3
PROCESS METER	DMM	20
ANALOG METER	AM	N/A
STOP WATCH	SW	YES

RESULTS

TEST	AVG % o.r.	PASS FAIL
DISPLAY	-0.39	PASS
mA OUTPUT	-0.12	PASS
TOTALIZER	-0.51	PASS

This report reflects the test results of the overall accuracy for the above flow converter using the specified manufacturers flow tube simulator to within the specified tolerance as identified within this report.

Krohne
Verification Report

AS FOUND CERTIFICATION

FORWARD FLOW DIRECTION

PASS

CLIENT DETAIL

CUSTOMER OCWA - Georgian Highlands - Southampton
CONTACT Dan MacLeod
Senior Operations Manager
18 Caroline Street West
Southampton, ON N0H 2L0
Ph: 519-379-0431
E: DMacleod@ocwa.com

VER. BY - FM Paris Machuk

Quality Management Standards Information - Reference equipment and instrumentation used to conduct this verification test is found in our AC-QMS document at the time this test was conducted.

EQUIPMENT DETAIL

[MUT] MANUFACTURER	Krohne
MODEL	IFC100W
SERIAL NUMBER	C185000439
FUSE	in Panel ULF4
PLANT ID	Southampton PS#5
METER ID	Station Flow
FIT ID	FIT-02
CLIENT TAG	OCWA #??
OTHER	n/a
GPS COORDINATES	N44 30.347 W081 22.196
VERIFICATION DATE	May 15th 2024
CAL. FREQUENCY	Annual
CAL. DUE DATE	May 2025

PROGRAMMING PARAMETERS

DIAMETER (DN)	mm	200
F.S. FLOW - MAG	LPS	406.9
F.S. RANGE - O/P	LPS	120.0
CAL. k-FACTOR	GKL	8.4993
Zero Offset Flow	LPS	0

FORWARD TOTALIZER INFORMATION

AS FOUND	1863765.78	M3
AS LEFT	1863776.69	M3
DIFFERENCE	10.91	M3

TEST CRITERIA

AS FOUND CERTIFICATION TEST	Yes
FORWARD FLOW DIRECTION	Yes
ALLOWABLE [%] ERROR	5

COMPONENTS TESTED

CONVERTER DISPLAY	Yes
mA OUTPUT	Yes
TOTALIZER	yes
ACCURACY BASED ON [% o.r.]	Yes

ERROR DOCUMENTED IN THIS REPORT; BASED ON % o.r.

FLOW TUBE SIMULATION

			0.0		**0.5**	**1.0**	**2.0**	**m/s**
			0.0		**5.0**	**10.0**	**20.0**	**% F.S. Flow**
			0.0		**17.0**	**33.9**	**67.8**	**% F.S. Range**
REF. FLOW RATE			**0.0**		**20.3**	**40.7**	**81.4**	LPS
MUT [Reading]			0.0		20.3	40.6	81.3	LPS
MUT [Difference]			0.0		0.0	-0.1	-0.1	LPS
MUT [% Error]			n/a		-0.23	-0.23	-0.11	%
mA OUTPUT			**4.000**		**6.713**	**9.426**	**14.851**	mA
MUT [Reading]	min.	4.000 mA	3.999		6.706	9.413	14.846	mA
MUT [Difference]	max.	20.000 mA	-0.001		-0.007	-0.013	-0.005	mA
MUT [% Error]			-0.02		-0.10	-0.13	-0.04	%
TOTALIZER - REF. FLOW RATE							**81.386**	LPS
TOTALIZER [MUT]							6.00	M3
TEST TIME							73.90	SECONDS
CALC. TOTALIZER							6.014	M3
ERROR							-0.24	%

COMMENTS

QUALITY MANAGEMENT STANDARDS INFO.

[QMS] INFORMATION	IDENT.	ID #
[REFERENCE] FTS	KRO	3
PROCESS METER	DMM	20
ANALOG METER	AM	N/A
STOP WATCH	SW	YES

RESULTS

TEST	AVG % o.r.	PASS FAIL
DISPLAY	-0.19	PASS
mA OUTPUT	-0.07	PASS
TOTALIZER	-0.24	PASS

This report reflects the test results of the overall accuracy for the above flow converter using the specified manufacturers flow tube simulator to within the specified tolerance as identified within this report.

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 - Southampton						
Plant Name and address:	Southampton WWTP - 18 Caroline St W, southampton, ON						
Service Date:	30-Apr-24	**Instrument Type:**	**AIT**	**W.O. Number:**	**240422-0001**	**Asset#:**	
Due Date:	30-Apr-25	**Manufacturer:**	Hach				
Follow-Up Required:	**No**	**Model:**	2100P				
As Left Status:	**Initial Condt**	**Serial #:**	030300030469				
Instrument Visual Inspection:		**Range:**	0-1000 NTU		**Output:**	NA	
Mechanical Inspection:	**OK**	**Tag Infomration:**	NA				
Electrical Inspection:	**OK**	**Description:**	Portable Turbidity Analyzer				
As found Display information:	**OK**	**Process/Location Descrpition:**	Operator Room				

Instrument Information:	
Unit of measurement:	NTU
Range of the meter:	1000
Verification Standard Value:	10
Calibration Standard Solution 1:	20
Calibration Standard Solution 2:	100
Calibration Standard Solution 3:	800
Verification as found & left value:	9.80/10
Verification result:	Pass

Turbidity Standard	**Output Value**	**As Found**	**Deviation**	**As Left**	**Deviation**
20.00	**20.00**	18.90	-5.50%	20.30	1.50%
100.00	**100.00**	95.00	-5.00%	99.60	-0.40%
800.00	**800.00**	752.00	-6.00%	793.00	-0.88%

Comments		**Test Equipment Used**			
		Name / Type		**Serial No.**	**Due Date**
Calibrated Successfully		10 NTU		Lot #A3052	Jun-24
		20 NTU		Lot #A3041	Jun-24
		100 NTU		Lot #A3055	Jun-24
		800 NTU		Lot # A3065	Jun-24
		Technician Name		**Witness Name**	
		Vaibhav Patel		Justin Porter	
Calibration Result:	**Pass**	**Date:**	30-Apr-24	**Date:**	30-Apr-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 - Southampton						
Plant Name and address:	Southampton WWTP - 18 Caroline St W, southampton, ON						
Service Date:	30-Apr-24	**Instrument Type:**	**AIT**	**W.O. Number:**	**240422-0001**	**Asset#:**	NA
Due Date:	30-Apr-25	**Manufacturer:**	Hach				
Follow-Up Required:	**No**	**Model:**	**Transmitter:**	SC200	**Sensor:**	CL10	
As Left Status:	**Initial Condt**	**Serial #:**	**Transmitter:**	1210C00498781	**Sensor:**	140545001879	
Instrument Visual Inspection:		**Range:**	0-20 mg/l		**Output:**	4-20 mA	
Mechanical Inspection:	**OK**	**Tag Infomration:**	NA				
Electrical Inspection:	**OK**	**Description:**	Total Chlorine Analyzer				
As found Display information:	**OK**	**Process/Location Descrpition:**	Low Lift				

Instrument Information:	
Unit of measurement:	mg/l
Range	20
DPD Kit Value:	0.53

DPD Kit Reading	**Chlorine Meter Reading**	**As Found**	**Deviation**	**As Left**	**Deviation**
0.53	**0.55**	0.55	3.64%	0.55	3.64%

Comments		**Test Equipment Used**		
		Name / Type	**Serial No.**	**Due Date**
Verified SuccessFully.		DPD kit	19110A001768	Aug-24
No adjustment needed.				
Other Outputs Tested:	**Not tested**	**Technician Name**	**Witness Name**	
Loop Check Performed:	**Not tested**	Vaibhav Patel	Nicole Moore	
Within Specification:	**Yes**	**Date:** 30-Apr-24	**Date:** 30-Apr-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 - Southampton						
Plant Name and address:	Southampton WWTP - 18 Caroline St W, southampton, ON						
Service Date:	29-Apr-24	**Instrument Type:**	**AIT**	**W.O. Number:**	**240422-0001**	**Asset#:**	NA
Due Date:	29-Apr-25	**Manufacturer:**	Hach				
Follow-Up Required:	**No**	**Model:**	DR300 - LPV445.97.00110				
As Left Status:	**Initial Condt**	**Serial #:**	20030A001000				
Instrument Visual Inspection:		**Range:**	NA		**Output:**	NA	
Mechanical Inspection:	**OK**	**Tag Infomration:**	NA				
Electrical Inspection:	**OK**	**Description:**	Portable Chlorine Meter				
As found Display information:	**OK**	**Process/Location Descrpition:**	Operator Room				

Instrument Information:		
Unit of measurement:	mg/l	
Range of the meter:	NA	
Calibration Standard Solution 1:	0.21	+-0.09
Calibration Standard Solution 2:	0.91	+-0.10
Calibration Standard Solution 3:	1.59	+-0.14

Chlorine Standard	**Output Value**	**As Found**	**Deviation**	**As Left**	**Deviation**
0.21	**0.21**	0.22	0.00%	0.22	0.00%
0.91	**0.91**	0.92	1.10%	0.91	0.00%
1.59	**1.59**	1.60	0.63%	1.59	0.00%

Comments		**Test Equipment Used**		
		Name / Type	**Serial No.**	**Due Date**
Calibrated Successfully		DPD Chlrine LR Standard Kit	Lot #A2027	Jun-24
		Technician Name	**Witness Name**	
		Vaibhav Patel	Justine Porter	
Calibration Result:	**Pass**	**Date:** 29-Apr-24	**Date:**	29-Apr-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 - Southampton						
Plant Name and address:	Southampton WWTP - 18 Caroline St W, southampton, ON						
Service Date:	29-Apr-24	**Instrument Type:**	**AIT**	**W.O. Number:**	**240422-0001**	**Asset#:**	NA
Due Date:	29-Apr-25	**Manufacturer:**	Hach				
Follow-Up Required:	**No**	**Model:**	Pocket Colorimeter II				
As Left Status:	**Initial Condt**	**Serial #:**	18030E350957				
Instrument Visual Inspection:		**Range:**	NA	**Output:**	NA		
Mechanical Inspection:	**OK**	**Tag Infomration:**	NA				
Electrical Inspection:	**OK**	**Description:**	Portable Chlorine Meter				
As found Display information:	**OK**	**Process/Location Descrpition:**	Operator Room				

Instrument Information:		
Unit of measurement:	mg/l	
Range of the meter:	NA	
Calibration Standard Solution 1:	0.21	+-0.09
Calibration Standard Solution 2:	0.91	+-.10
Calibration Standard Solution 3:	1.59	+-.14

Chlorine Standard	**Output Value**	**As Found**	**Deviation**	**As Left**	**Deviation**
0.21	**0.21**	0.22	4.76%	0.21	0.00%
0.91	**0.91**	0.89	-2.20%	0.92	1.10%
1.59	**1.59**	1.59	0.00%	1.59	0.00%

Comments		**Test Equipment Used**		
		Name / Type	**Serial No.**	**Due Date**
Verified SuccessFully.		DPD Chlorine LR Standard Kit	Lot #A2027	Jun-24
		Technician Name	**Witness Name**	
		Vaibhav Patel	Justine Porter	
Verification Result	**Pass**	**Date:** 29-Apr-24	**Date:** 29-Apr-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 - Southampton						
Plant Name and address:	Southampton WWTP - 18 Caroline St W, southampton, ON						
Service Date:	30-Apr-24	**Instrument Type:**	**AIT**	**W.O. Number:**	**240422-0001**	**Asset#:**	NA
Due Date:	30-Apr-25	**Manufacturer:**	Hach				
Follow-Up Required:	**No**	**Model:**	**Transmitter:**	HQ2200	**Sensor:**	PHC101	
As Left Status:	**Initial Condt**	**Serial #:**	**Transmitter:**	213282200038	**Sensor:**	220452561210	
Instrument Visual Inspection:		**Range:**	0-14 PH		**Output:**	NA	
Mechanical Inspection:	**OK**	**Tag Infomration:**	NA				
Electrical Inspection:	**OK**	**Description:**	Portable PH Probe				
As found Display information:	**OK**	**Process/Location Descrpition:**	Operator Room				

Instrument Information:	
Range:	14
Slope:	96%
Offset:	-4.3 mV

Input	**Input %**	**Temp. °C**	**As Found**	**Deviation**	**As Left**	**Deviation**
4.01	**28.64%**	**20.80**	4.03	0.50%	4.01	0.00%
7.00	**50.00%**	**20.80**	7.05	0.71%	7.00	0.00%
10.00	**71.43%**	**20.80**	-	#VALUE!	-	#VALUE!

Comments	**Test Equipment Used**		
	Name / Type	**Serial No.**	**Due Date**
Calibrated Successfully	pH 4.00 Cat 2283449	Lot#A2045	Feb-26
	pH 7.00 Cat2283549	Lot #A3270	Sep-25
	Technician Name	**Witness Name**	
	Vaibhav Patel	Justin Porter	
Calibration Result: **Pass**	**Date:** 30-Apr-24	**Date:** 30-Apr-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 - Southampton						
Plant Name and address:	Southampton WWTP - 18 Caroline St W, southampton, ON						
Service Date:	30-Apr-24	**Instrument Type:**	**AIT**	**W.O. Number:**	**240422-0001**	**Asset#:**	NA
Due Date:	30-Apr-25	**Manufacturer:**	Hach				
Follow-Up Required:	**No**	**Model:**	**Transmitter:**	HQ2200	**Sensor:**	LDO	
As Left Status:	**Initial Condt**	**Serial #:**	**Transmitter:**	213282200038	**Sensor:**	90292592005	
Instrument Visual Inspection:		**Range:**	NA		**Output:**	NA	
Mechanical Inspection:	**OK**	**Tag Infomration:**	NA				
Electrical Inspection:	**OK**	**Description:**	Portable DO Probe				
As found Display information:	**OK**	**Process/Location Descrpition:**	Operator Room				

Instrument Information:	
Range	Auto
Temperature:	20.0 Degree C
Offset	0
Slope	101.00%

Input		**mg/L**		**As Found**	**Deviation**	**As Left**	**Deviation**
Dissolved oxygen from Air	**Should be between 8 to10 mg/l**	**9.03**		8.65	-4.21%	8.55	-5.32%

Comments	**Test Equipment Used**		
	Name / Type	**Serial No.**	**Due Date**
Air calibration was performed.			
As left reading was 8.55 mg/l in air.			
Disolved oxygen in Air depends on the various parameter such as temperature, pressure			
and weather conditins.			
	Technician Name	**Witness Name**	
	Vaibhav Patel	Justin Porter	
Calibration Result: **Pass**	**Date:** 30-Apr-24	**Date:** 30-Apr-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 - Southampton						
Plant Name and address:	Southampton WWTP - 18 Caroline St W, southampton, ON						
Service Date:	30-Apr-24	**Instrument Type:**	**AIT**	**W.O. Number:**	**240422-0001**	**Asset#:**	NA
Due Date:	30-Apr-25	**Manufacturer:**	Hach				
Follow-Up Required:	**No**	**Model:**	**Transmitter:**	SC200	**Sensor:**	LDO	
As Left Status:	**Initial Condt**	**Serial #:**	**Transmitter:**	1412CO0116822	**Sensor:**	150470000034	
Instrument Visual Inspection:		**Range:**	NA		**Output:**	4-20 mA	
Mechanical Inspection:	**OK**	**Tag Infomration:**	NA				
Electrical Inspection:	**OK**	**Description:**	Portable DO Probe				
As found Display information:	**OK**	**Process/Location Descrpition:**	Operator Room				

Instrument Information:	
Range at 4 mA:	Auto Range
Range at 20 mA:	Auto Range
Temperature:	21 Degree C
Slope correction	0.76

Input		**mg/L**		**As Found**	**Deviation**	**As Left**	**Deviation**
Dissolved oxygen from Air	**Should be between 8 to10 mg/l**	**9.03**		11.20	24.03%	9.45	4.65%

Comments		**Test Equipment Used**		
		Name / Type	**Serial No.**	**Due Date**
Air calibration was performed.				
As left reading was 9.45 mg/l in air.				
Disolved oxygen in Air depends on the various parameter such as temperature, pressure				
and weather conditins.				
Other Outputs Tested:	**Not tested**	**Technician Name**		**Witness Name**
Loop Check Performed:	**Not tested**	Vaibhav Patel		Justin Porter
Within Specification:	**Yes**	**Date:** 30-Apr-24		**Date:** 30-Apr-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 - Southampton						
Plant Name and address:	Southampton WWTP - 18 Caroline St W, southampton, ON						
Service Date:	30-Apr-24	**Instrument Type:**	**AIT**	**W.O. Number:**	**240422-0001**	**Asset#:**	NA
Due Date:	30-Apr-25	**Manufacturer:**	Hach				
Follow-Up Required:	**No**	**Model:**	**Transmitter:**	SC200	**Sensor:**	LDO	
As Left Status:	**Initial Condt**	**Serial #:**	**Transmitter:**	1412CO0116822	**Sensor:**	152160000061	
Instrument Visual Inspection:		**Range:**	NA		**Output:**	4-20 mA	
Mechanical Inspection:	**OK**	**Tag Infomration:**	NA				
Electrical Inspection:	**OK**	**Description:**	Portable DO Probe				
As found Display information:	**OK**	**Process/Location Descrpition:**	Operator Room				

Instrument Information:	
Range at 4 mA:	Auto Range
Range at 20 mA:	Auto Range
Temperature:	21 Degree C
Slope correction	0.80

Input		**mg/L**		**As Found**	**Deviation**	**As Left**	**Deviation**
Dissolved oxygen from Air	**Should be between 8 to10 mg/l**	**9.03**		11.70	29.57%	9.68	7.20%

Comments		**Test Equipment Used**		
		Name / Type	**Serial No.**	**Due Date**
Air calibration was performed.				
As left reading was 9.68 mg/l in air.				
Disolved oxygen in Air depends on the various parameter such as temperature, pressure				
and weather conditins.				
Other Outputs Tested:	**Not tested**	**Technician Name**		**Witness Name**
Loop Check Performed:	**Not tested**	Vaibhav Patel		Justin Porter
Within Specification:	**Yes**	**Date:**	30-Apr-24	**Date:** 30-Apr-24

CALIBRATION / VERIFICATION

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

Customer Name:	OCWA - Southhampton						
Plant Name and address:	86 Saugeen St ON						
Service Date:	17-Apr-24	**Instrument Type:**	**AIT**	**W.O. Number:**	**240369-0001**	**Asset#:**	NA
Due Date:	17-Oct-24	**Manufacturer:**	MSA				
Follow-Up Required:	**No**	**Model:**	ULTIMA - X 5000				
As Left Status:	**Initial Condt**	**Serial #:**	000100200117001B				
Instrument Visual Inspection:		**Range:**	0-100% LEL	**Output:**	4-20 mA		
Mechanical Inspection:	**OK**	**Tag Infomration:**	NA				
Electrical Inspection:	**OK**	**Description:**	Monitoring Methane Gas				
As found Display information:	**OK**	**Process/Location Descrpition:**	Saugeen St pumping station				

Instrument Information:	
Sensor Type and unit:	LEL, %
Zero Gas Value:	0
Span Gas Value:	50
Gas Range Value:	0-100
Caution Level:	NA
Warning Level:	10
Alarm Level:	20

Gas	**Gas Value**	**As Found**	**Deviation**	**As Left**	**Deviation**
Zero	**0**	0	0.00%	0	0.00%
Span	**50**	51	2.00%	50	0.00%

Comments	**Test Equipment Used**	
	Name / Type	**Serial and Due Date**
Calibrated successfully	CalGas Methane 2.5% Vol (50%)	304-402205618-1, Aug-2025
	CalGas Oxygen 20.8% Vol	304-402190658-1, Aug-2025

Other Outputs Tested:	**Not tested**	**Technician Name**		**Witness Name**	
Loop Check Performed:	**Not Tested**	Vaibhav Patel		Jusin Porter	
Within Specification:	**Yes**	**Date:**	17-Apr-24	**Date:**	17-Apr-24

CALIBRATION / VERIFICATION

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

Customer Name:	OCWA - Southhampton						
Plant Name and address:	86 Saugeen St ON						
Service Date:	17-Apr-24	**Instrument Type:**	**AIT**	**W.O. Number:**	**240369-0001**	**Asset#:**	NA
Due Date:	17-Oct-24	**Manufacturer:**	MSA				
Follow-Up Required:	**No**	**Model:**	ULTIMA - X 5000				
As Left Status:	**Initial Condt**	**Serial #:**	000100200115001C				
Instrument Visual Inspection:		**Range:**	0-25 O2%, 0- 50 PPM H2S	**Output:**	4-20 mA		
Mechanical Inspection:	**OK**	**Tag Infomration:**	NA				
Electrical Inspection:	**OK**	**Description:**	Monitoring Oxygen Gas & H2S Gas				
As found Display information:	**OK**	**Process/Location Descrpition:**	Saugeen St pumping station				

Instrument Information:

Sensor No.:	Sensor Type	Unit	Zero Gas Value	Span Gas Value	Range Gas Value	Caution Setpoint	Warning Setpoint	Alarm Setpoint
1	O2	%	0	20.80	0-25	NA	19.50	18.00
2	H2S	PPM	0	40	0-50	NA	5.00	15.00

Sensor No.:	Gas	Gas Value	As Found	Deviation	As Left	Deviation
Sensor 1	**Zero**	**0**	0	0.00%	0	0.00%
	Span	**20.8**	20.80	0.00%	20.80	0.00%
Sensor 2	**Zero**	**0**	0	0.00%	0	0.00%
	Span	**40**	37.00	7.50%	40	0.00%

Comments	**Test Equipment Used**	
	Name / Type	**Serial and Due Date**
Calibrated successfully	CalGas Oxygen 20.8% Vol	304-402190658-1, Aug-2025
	CalGas H2S 40 PPM	304-402184551-1, Aug-2024

Other Outputs Tested:	**Not tested**	**Technician Name**		**Witness Name**	
Loop Check Performed:	**Not Tested**	Vaibhav Patel		Jusin Porter	
Within Specification:	**Yes**	**Date:**	17-Apr-24	**Date:**	17-Apr-24

CALIBRATION / VERIFICATION

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

Customer Name:	OCWA - Southhampton						
Plant Name and address:	18 Caroline st, Southhampton						
Service Date:	17-Apr-24	**Instrument Type:**	**AIT**	**W.O. Number:**	**240369-0001**	**Asset#:**	NA
Due Date:	17-Oct-24	**Manufacturer:**	MSA				
Follow-Up Required:	**No**	**Model:**	ALTAIR 4X				
As Left Status:	**Initial Condt**	**Serial #:**	00356341				
Instrument Visual Inspection:		**Range:**	0-100%,0-100PPM,0-50PPM,0-25%	**Output:**	NA		
Mechanical Inspection:	**OK**	**Tag Infomration:**	NA				
Electrical Inspection:	**OK**	**Description:**	MSA ALTAIR 4X Handheld gas				
As found Display information:	**OK**	**Process/Location Descrpition:**	Operator room				

Instrument Information:

Sensor No.:	Sensor Type	Unit	Zero Gas Value	Span Gas Value	Range Gas Value	Caution Setpoint	Warning Setpoint	Alarm Setpoint
1	LEL	%	0	50	100	NA	10.00	10.00
2	CO	PPM	0	100	100	NA	10.00	20.00
3	H2S	PPM	0	25	50	NA	5.00	15.00
4	O2	%	0	18.0	25	NA	19.50	18.00

Sensor No.:	Gas	Gas Value	As Found	Deviation	As Left	Deviation
Sensor 1	**Zero**	**0**	0	0.00%	0	0.00%
	Span	**50**	50	0.00%	58	50.00%
Sensor 2	**Zero**	**0**	0	0.00%	0	0.00%
	Span	**100**	95	-5.00%	60	100.00%
Sensor 3	**Zero**	**0**	0	0.00%	0	0.00%
	Span	**25**	25	0.00%	20	25.00%
Sensor 4	**Zero**	**0**	0	0.00%	0	0.00%
	Span	**18.0**	18	0.00%	18	18.00%

Comments		**Test Equipment Used**	
		Name / Type	**Serial and Due Date**
Calibrated Successfully		MSA Quadgas	304-402541925-1 ; Sept-2026
		(100 PPM CO, 25 PPM H2S, 50 %LEL, 18% O2)	
Other Outputs Tested:	**Not tested**	**Technician Name**	**Witness Name**
Loop Check Performed:	**Not tested**	Vaibhav Patel	Justin Porter
Within Specification:	**Yes**	**Date:** 17-Apr-24	**Date:** 17-Apr-24

CALIBRATION / VERIFICATION

3230B American Dr, Mississauga,
Ontario L4V 1B3. **Tel:** (905) 678-2882
Email: service@spdsales.com
Web Site: www.spdsales.com

Customer Name:	OCWA - Southhampton						
Plant Name and address:	18 Caroline st, Southhampton						
Service Date:	17-Apr-24	**Instrument Type:**	**AIT**	**W.O. Number:**	**240369-0001**	**Asset#:**	NA
Due Date:	17-Oct-24	**Manufacturer:**	MSA				
Follow-Up Required:	**No**	**Model:**	ALTAIR 4X				
As Left Status:	**Initial Condt**	**Serial #:**	199193				
Instrument Visual Inspection:		**Range:**	0-100%,0-100PPM,0-50PPM,0-25%	**Output:**	NA		
Mechanical Inspection:	**OK**	**Tag Infomration:**	NA				
Electrical Inspection:	**OK**	**Description:**	MSA ALTAIR 4X Handheld gas				
As found Display information:	**OK**	**Process/Location Descrpition:**	Operator room				

Instrument Information:

Sensor No.:	Sensor Type	Unit	Zero Gas Value	Span Gas Value	Range Gas Value	Caution Setpoint	Warning Setpoint	Alarm Setpoint
1	LEL	%	0	50	100	10.00	10.00	
2	CO	PPM	0	100	100	10.00	20.00	
3	H2S	PPM	0	25	50	5.00	15.00	
4	O2	%	0	18.0	25	19.50	18.00	

Sensor No.:	Gas	Gas Value	As Found	Deviation	As Left	Deviation
Sensor 1	**Zero**	**0**	0	0.00%	0	0.00%
	Span	**50**	50	0.00%	50	0.00%
Sensor 2	**Zero**	**0**	0	0.00%	0	0.00%
	Span	**100**	98	-2.00%	100	0.00%
Sensor 3	**Zero**	**0**	0	0.00%	0	0.00%
	Span	**25**	25	0.00%	25	0.00%
Sensor 4	**Zero**	**0**	0	0.00%	0	0.00%
	Span	**18.0**	18	0.00%	18	0.00%

Comments		**Test Equipment Used**	
		Name / Type	**Serial and Due Date**
Calibrated Successfully		MSA Quadgas	304-402541925-1 ; Sept-2026
		(100 PPM CO, 25 PPM H2S, 50 %LEL, 18% O2)	
Other Outputs Tested:	**Not tested**	**Technician Name**	**Witness Name**
Loop Check Performed:	**Not tested**	Vaibhav Patel	Justin Porter
Within Specification:	**Yes**	**Date:** 17-Apr-24	**Date:** 17-Apr-24

CALIBRATION / VERIFICATION

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

Customer Name:	OCWA - Southhampton						
Plant Name and address:	86 Saugeen St ON						
Service Date:	30-Oct-24	**Instrument Type:**	**AIT**	**W.O. Number:**	**240988-0001**	**Asset#:**	NA
Due Date:	30-Apr-25	**Manufacturer:**	MSA				
Follow-Up Required:	**No**	**Model:**	ULTIMA - X 5000				
As Left Status:	**Initial Condt**	**Serial #:**	000100200117001B				
Instrument Visual Inspection:		**Range:**	0-100% LEL	**Output:**	4-20 mA		
Mechanical Inspection:	**OK**	**Tag Infomration:**	NA				
Electrical Inspection:	**OK**	**Description:**	Monitoring Methane Gas				
As found Display information:	**OK**	**Process/Location Descrpition:**	Saugeen St pumping station				

Instrument Information:	
Sensor Type and unit:	LEL, %
Zero Gas Value:	0
Span Gas Value:	50
Gas Range Value:	0-100
Caution Level:	NA
Warning Level:	10
Alarm Level:	20

Gas	**Gas Value**	**As Found**	**Deviation**	**As Left**	**Deviation**
Zero	**0**	0	0.00%	0	0.00%
Span	**50**	51	2.00%	50	0.00%

Comments	**Test Equipment Used**	
	Name / Type	**Serial and Due Date**
Calibrated successfully	CalGas Methane 2.5% Vol (50%)	304-402205618-1, Aug-2025
	CalGas Oxygen 20.8% Vol	304-402190658-1, Aug-2025

Other Outputs Tested:	**Not tested**	**Technician Name**		**Witness Name**	
Loop Check Performed:	**Not Tested**	Vaibhav Patel		Jusin Porter	
Within Specification:	**Yes**	**Date:**	30-Oct-24	**Date:**	30-Oct-24

CALIBRATION / VERIFICATION

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

Customer Name:	OCWA - Southhampton						
Plant Name and address:	86 Saugeen St ON						
Service Date:	30-Oct-24	**Instrument Type:**	**AIT**	**W.O. Number:**	**240988-0001**	**Asset#:**	NA
Due Date:	30-Apr-25	**Manufacturer:**	MSA				
Follow-Up Required:	**No**	**Model:**	ULTIMA - X 5000				
As Left Status:	**Initial Condt**	**Serial #:**	000100200115001C				
Instrument Visual Inspection:		**Range:**	0-25 O2%, 0- 50 PPM H2S	**Output:**	4-20 mA		
Mechanical Inspection:	**OK**	**Tag Infomration:**	NA				
Electrical Inspection:	**OK**	**Description:**	Monitoring Oxygen Gas & H2S Gas				
As found Display information:	**OK**	**Process/Location Descrpition:**	Saugeen St pumping station				

Instrument Information:

Sensor No.:	Sensor Type	Unit	Zero Gas Value	Span Gas Value	Range Gas Value	Caution Setpoint	Warning Setpoint	Alarm Setpoint
1	O2	%	0	20.80	0-25	NA	19.50	18.00
2	H2S	PPM	0	40	0-50	NA	5.00	15.00

Sensor No.:	Gas	Gas Value	As Found	Deviation	As Left	Deviation
Sensor 1	**Zero**	**0**	0	0.00%	0	0.00%
	Span	**20.8**	20.80	0.00%	20.80	0.00%
Sensor 2	**Zero**	**0**	0	0.00%	0	0.00%
	Span	**40**	38.00	5.00%	40	0.00%

Comments	**Test Equipment Used**	
	Name / Type	**Serial and Due Date**
Calibrated successfully	CalGas Oxygen 20.8% Vol	304-402190658-1, Aug-2025
	CalGas H2S 40 PPM	304-402184551-1, Aug-2025

Other Outputs Tested:	**Not tested**	**Technician Name**		**Witness Name**	
Loop Check Performed:	**Not Tested**	Vaibhav Patel		Jusin Porter	
Within Specification:	**Yes**	**Date:**	30-Oct-24	**Date:**	30-Oct-24

CALIBRATION / VERIFICATION

3230B American Dr, Mississauga,
Ontario L4V 1B3. **Tel:** (905) 678-2882
Email: service@spdsales.com
Web Site: www.spdsales.com

Customer Name:	OCWA - Southhampton						
Plant Name and address:	18 Caroline st, Southhampton						
Service Date:	30-Oct-24	**Instrument Type:**	**AIT**	**W.O. Number:**	**240988-0001**	**Asset#:**	NA
Due Date:	30-Apr-25	**Manufacturer:**	MSA				
Follow-Up Required:	**No**	**Model:**	ALTAIR 4X				
As Left Status:	**Initial Condt**	**Serial #:**	199193				
Instrument Visual Inspection:		**Range:**	0-100%,0-100PPM,0-50PPM,0-25%	**Output:**	NA		
Mechanical Inspection:	**OK**	**Tag Infomration:**	NA				
Electrical Inspection:	**OK**	**Description:**	MSA ALTAIR 4X Handheld gas				
As found Display information:	**OK**	**Process/Location Descrpition:**	Operator room				

Instrument Information:

Sensor No.:	Sensor Type	Unit	Zero Gas Value	Span Gas Value	Range Gas Value	Caution Setpoint	Warning Setpoint	Alarm Setpoint
1	LEL	%	0	50	100	10.00	10.00	
2	CO	PPM	0	100	100	10.00	20.00	
3	H2S	PPM	0	25	50	5.00	15.00	
4	O2	%	0	18.0	25	19.50	18.00	

Sensor No.:	Gas	Gas Value	As Found	Deviation	As Left	Deviation
Sensor 1	**Zero**	**0**	0	0.00%	0	0.00%
	Span	**50**	50	0.00%	50	0.00%
Sensor 2	**Zero**	**0**	0	0.00%	0	0.00%
	Span	**100**	101	1.00%	100	0.00%
Sensor 3	**Zero**	**0**	0	0.00%	0	0.00%
	Span	**25**	25	0.00%	25	0.00%
Sensor 4	**Zero**	**0**	0	0.00%	0	0.00%
	Span	**18.0**	18	0.00%	18	0.00%

Comments		**Test Equipment Used**	
		Name / Type	**Serial and Due Date**
Calibrated Successfully		MSA Quadgas	304-402541925-1 ; Sept-2026
		(100 PPM CO, 25 PPM H2S, 50 %LEL, 18% O2)	
Other Outputs Tested:	**Not tested**	**Technician Name**	**Witness Name**
Loop Check Performed:	**Not tested**	Vaibhav Patel	Justin Porter
Within Specification:	**Yes**	**Date:** 30-Oct-24	**Date:** 30-Oct-24

CALIBRATION / VERIFICATION

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

Customer Name:	OCWA - Southhampton						
Plant Name and address:	18 Caroline st, Southhampton						
Service Date:	30-Oct-24	**Instrument Type:**	**AIT**	**W.O. Number:**	**240988-0001**	**Asset#:**	NA
Due Date:	30-Apr-25	**Manufacturer:**	MSA				
Follow-Up Required:	**Yes**	**Model:**	ALTAIR 4X				
As Left Status:	**Initial Condt**	**Serial #:**	00356331				
Instrument Visual Inspection:		**Range:**	0-100%,0-100PPM,0-50PPM,0-25%	**Output:**	NA		
Mechanical Inspection:	**OK**	**Tag Infomration:**	NA				
Electrical Inspection:	**OK**	**Description:**	MSA ALTAIR 4X Handheld gas				
As found Display information:	**OK**	**Process/Location Descrpition:**	Operator room				

Instrument Information:

Sensor No.:	Sensor Type	Unit	Zero Gas Value	Span Gas Value	Range Gas Value	Caution Setpoint	Warning Setpoint	Alarm Setpoint
1	LEL	%	0	50	100	NA	10.00	10.00
2	CO	PPM	0	100	100	NA	10.00	20.00
3	H2S	PPM	0	25	50	NA	5.00	15.00
4	O2	%	0	18.0	25	NA	19.50	18.00

Sensor No.:	Gas	Gas Value	As Found	Deviation	As Left	Deviation
Sensor 1	**Zero**	**0**	0	0.00%	-	0.00%
	Span	**50**	50	0.00%	-	50.00%
Sensor 2	**Zero**	**0**	0	0.00%	-	0.00%
	Span	**100**	95	-5.00%	-	100.00%
Sensor 3	**Zero**	**0**	0	0.00%	-	0.00%
	Span	**25**	25	0.00%	-	25.00%
Sensor 4	**Zero**	**0**	0	0.00%	-	0.00%
	Span	**18.0**	4	-77.78%	-	18.00%

Comments		**Test Equipment Used**			
		Name / Type		**Serial and Due Date**	
Oxygen Sensor was not workimg.		MSA Quadgas		304-402541925-1 ; Sept-2026	
		(100 PPM CO, 25 PPM H2S, 50 %LEL, 18% O2)			
Other Outputs Tested:	**Not tested**	**Technician Name**		**Witness Name**	
Loop Check Performed:	**Not tested**	Vaibhav Patel		Justin Porter	
Within Specification:	**No**	**Date:**	30-Oct-24	**Date:**	30-Oct-24

ONTARIO CLEAN WATER AGENCY
AGENCE ONTARIENNE DES EAUX

Appendix E

Community Complaints

Ontario Clean Water Agency
Agence Ontarienne Des Eaux

Georgian Highlands Logbook Report

Start: 2024-Jun-18 00:00:00
End: 2024-Jun-19 00:00:00
Run Time: 2025-Feb-18 14:38:07

SOUTHAMPTON WWTF Logbook

Entry Time	Label	Entry Text	Operator	Created Time
2024-06-18 00:00:00		07:00-15:30 Duty OIC: Justyn Becker (jbecker) 00:00-23:59 ORO: Joshua Marx (jmarx) 07:00-15:30 OIC: Justin Porter (jporter)	Justin Porter	2024-06-18 17:48:54
2024-06-18 15:15:00	Biosolids, Facility Checks	Completed morning rounds at wpcp. Assisted with operations. Took approx 8 cubic meters of RAS from ditch 2 to seed north lagoon at Greenfield in the afternoon.	Justin Porter	2024-06-18 17:50:19
2024-06-18 15:33:00	Facility Checks, Health & Safety, Sampling, Southampton WWTP	Completed rounds at pump stations. Test ran diesel generators at pump stations for monthly checks, no issues. Completed facility health and safety checks, all good. Contacted by Trevor Robinson to investigate a report of liquid flowing from manhole in the Oak/Shore rd area. Checked all manholes in that area, found rain catchers to be full of water after heavy rainfall this morning. Flow as normal in sewers below. Started weekly in house lab. Wasted sludge to primary digester. Collected bi weekly effluent/raw composite samples and sent to SGS. Skimmed clarifiers and pulled rags off bar screens. Shut off air to primary digester to decant tomorrow.	Justyn Becker	2024-06-18 15:40:41

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Georgian Highlands Logbook Report

Start: 2024-Jul-31 00:00:00
End: 2024-Aug-01 00:00:00
Run Time: 2025-Feb-18 14:42:21

SOUTHAMPTON WWTF Logbook

Entry Time	Label	Entry Text	Operator	Created Time
2024-07-31 00:00:00		00:00-23:59 ORO: Justin Porter (jporter) 07:00-15:30 Duty OIC: Justin Porter (jporter) 07:00-15:30 OIC: Justyn Becker (jbecker)	Justyn Becker	2024-07-31 09:17:46
2024-07-31 09:18:00	Southampton WWTP	Finished weekly in house lab. Assisted with operations.	Justyn Becker	2024-07-31 09:19:02
2024-07-31 15:15:00	Community Complaint, Facility Checks, Maintenance, PS3, Southampton WWTP	Completed pump station and WPCP checks. De ragged RAS pump #4 to improve flow. All other checks good. RMP on site replacing wear shoes on clarifier #3 flights. Replaced a few damaged links on the flight chain while down there. RMP removed the broken guide rails for sludge loading pump #1. Fabing up a new set to install when on site next, along with the rails for sludge loading pump #2. Greased and rotated 100 hp blower motors. Lifted both ditch probes and cleaned. Took spare 10 hp submersible pump down to pump station #3 for storage until needed. Investigated odour complaint along Tyendinaga Drive (between 238 and 242). Did not notice any unusual odours. Poured deodourizer down manholes and into catch basins. Left clarifier #3 offline at end of shift to refill tomorrow morning while operators were on site.	Justin Porter	2024-07-31 15:56:31

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Georgian Highlands Logbook Report

Start: 2024-Aug-13 00:00:00
End: 2024-Aug-14 00:00:00
Run Time: 2025-Feb-18 14:43:05

SOUTHAMPTON WWTF Logbook

Entry Time	Label	Entry Text	Operator	Created Time
2024-08-13 00:00:00		07:00-15:30 OIC: Justyn Becker (jbecker) 00:00-23:59 ORO: Joshua Marx (jmarx) 07:00-15:30 Duty OIC: Justin Porter (jporter)	Justyn Becker	2024-08-13 16:29:33
2024-08-13 09:00:00	Facility Checks	Completed rounds at pump stations.	Justyn Becker	2024-08-13 16:31:51
2024-08-13 15:15:00	Community Complaint, PS4, PS5, Southampton WWTP	Completed rounds at WPCP. Deragged RAS pumps 1 and 3 at start of shift to improve flow. Wasted to primary digester. Collected bi-weekly, monthly, and annual WSER samples - sent to labs via Purolator. Investigated odour complaint mentioned by Nicole Moore, who was approached at pump station 5 while collecting samples recently. There was an odour above the lid of pump station 5 wet well. Turned on both pump ventilation fans at stations 4 and 5. Pour deodourizer down wet wells, and along lid lips. Checked stations while on site - all checks good. Lifted rain catchers and poured deodoutizer down manholes at Oak and Blanchfield between the two pump stations, as it is a common spot for odour complaints.	Justin Porter	2024-08-13 16:02:17

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Appendix F
Monitoring Schedule

2025 Laboratory Sampling Requirements: **SOUTHAMPTON SEWAGE TREATMENT PLANT**

Org #: 5613, Works #: 110001453, Revised: 2024-11-08

	Timeframe	Source	Parameters
BIWEEKLY[a]	Every other Tuesday	Raw (Composite[b])	BOD_5; TSS; TKN; Alkalinity; Total Phosphorus
		Effluent (Composite[b])	BOD^5; TSS; TKN; Total Phosphorus[c]; Total Ammonia Nitrogen; Nitrate+Nitrite; Nitrate; Nitrite; Alkalinity, pH; pH (at 15˚C); $CBOD^5$; Un-ionized Ammonia
		Effluent (Grab)	E. Coli
MONTHLY	First Biweekly sample of Month	Primary Digester Contents (Grab)[d]	TS; TS Ash; TS LOI; TKN; Nitrite; Nitrate; Nitrite + Nitrate; Total Phosphorus; Total Ammonia; E. Coli; pH; Metals
ANNUAL	August	Effluent (Grab)	Acute Lethality RBT
PER LOAD OF HAULED SLUDGE[e]	As required	Sludge Quality Hauled Sludge (Grab)[d]	TS; TS Ash; TS LOI; TKN; Nitrite; Nitrate; Nitrite + Nitrate; Total Phosphorus; Total Ammonia; E. Coli; pH; Metals
WEEKLY (IN-HOUSE)	Every Tuesday	Raw	Ammonia; Alkalinity; Total Phosphorus; pH; TSS; VSS
		Effluent (Composite)	Ammonia; Alkalinity; Total Phosphorus; TSS; VSS
		Effluent (Grab)	pH; Dissolved Oxygen
		RAS	TSS; VSS
		Mixed Liquor	TSS; VSS; SVI
		Digested Sludge	TSS; VSS; %VS; VSR
	Every Thursday	Effluent (Grab)	Ammonia; Alkalinity; Total Phosphorus; pH; Dissolved Oxygen
	As needed	When Decanting	Ammonia; Alkalinity; Total Phosphorus; pH

Unless specified, samples listed are required by ECA 7640-D6FQP3.

Specific sample dates for this calendar year are included in the Sampling Calendar and take into consideration stat holidays etc.

[a]Samples are required once a month by ECA 7640-D6FQP3 or WSER (CBOD5; pH (at 15˚C); Un-ionized Ammonia.

[b]24 Hour Composite is a requirement of ECA 7640-D6FQP3

[c]Effluent Total Phosphorus samples are to be taken twice per month as a requirement of ECA 7640-DFQP3

[d]Samples required by O. Reg 267/03 for land application.

[e]Hauled Sludge samples are to be taken on the first load applied to each land application for each application period.