

2023 Annual Performance

For the following system:

💧 Ilderton Wastewater Treatment Facility



Owner: Municipality of Middlesex Centre

Operating Authority: Municipality of Middlesex Centre

February 8, 2024



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Introduction

The Ilderton Wastewater Treatment Facility (WWTF) is located at 147 Meadowcreek Drive, Ilderton, Ontario in the Municipality of Middlesex Centre. The treatment facility is operated by the Municipality and is operated under guidelines and regulations established by the Ministry of the Environment, Conservation and Park (MECP) to ensure that strict effluent discharge criteria standards are met.

Plant Facts

Environmental Compliance Approval (ECA)

- 9219-AWWHWU (Dated May 1, 2018)
- Rated Capacity - 1,300 m³/day

Summaries and interpretations of all monitoring data that was collected through the year, with a comparison to the effluent limits and objectives, as outlined in Section 11 (4) (a) thru (n) of the ECA 9219-AWWHWU, follows. Providing an overview of the success and adequacy of the Ilderton WWTF.

Section A thru D & F - Monitoring & Compliance Data

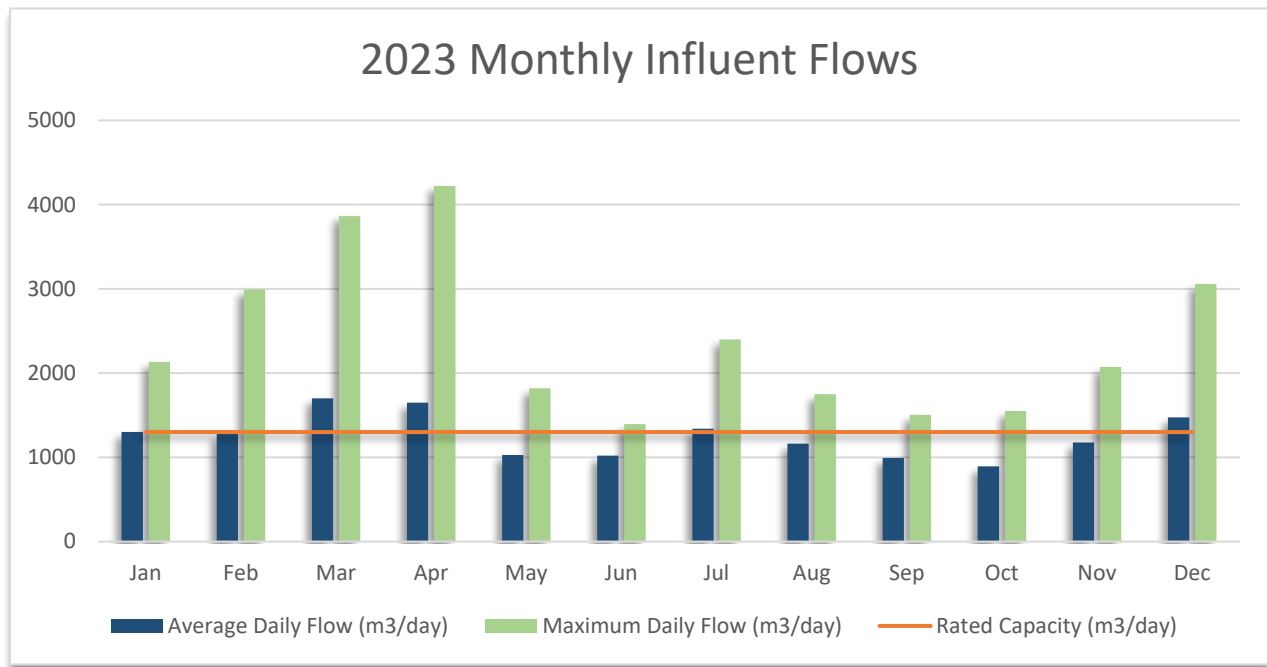
Influent Flow Data

The Ilderton WWTF provides a rated treatment capacity of 1,300 m³/day. For the year of 2023, the average daily flow was m³/day. The following table shows the average daily flow, the maximum daily flow, and the total flow for each month of 2023.

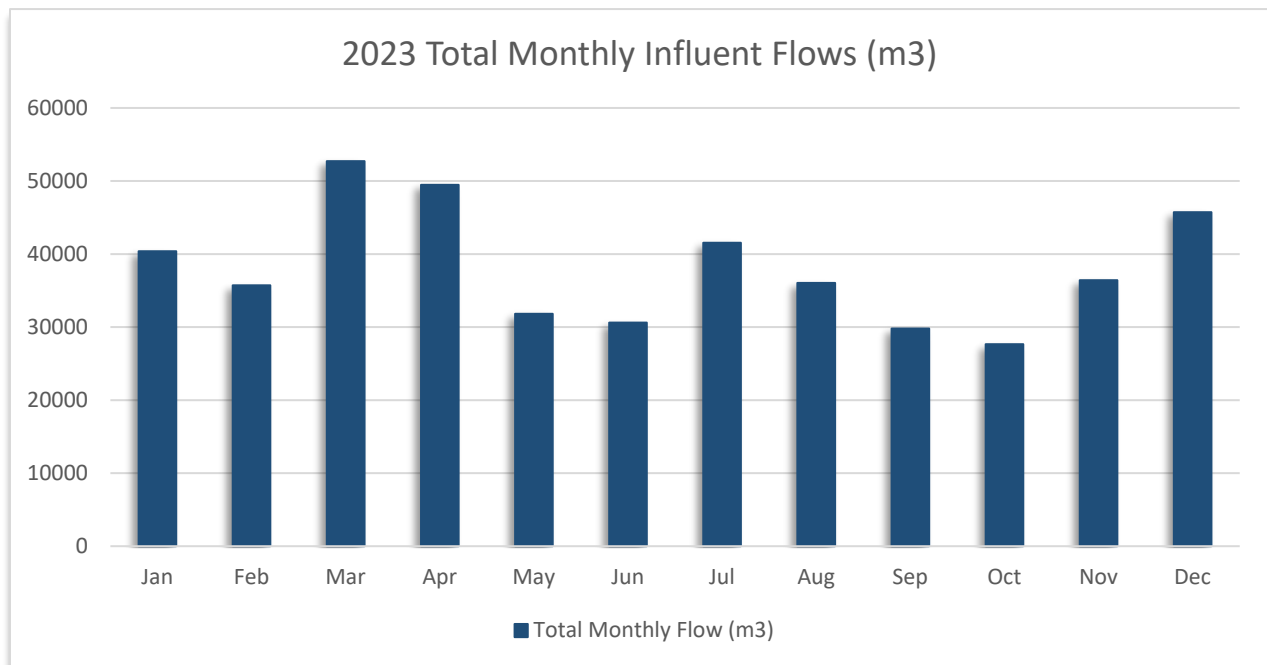
Table 1 – 2023 Influent Flow Data

	Average Daily Flow (m³/day)	Maximum Daily Flow (m³/day)	Total Monthly Flow (m³)
Jan	1,302	2,133	40,377
Feb	1,276	2,992	35,715
Mar	1,700	3,863	52,711
Apr	1,649	4,220	49,475
May	1,027	1,819	31,827
Jun	1,021	1,395	30,615
Jul	1,340	2,399	41,537
Aug	1,163	1,749	36,042
Sep	993	1,504	29,801
Oct	892	1,551	27,655
Nov	1,175	2,072	36,428
Dec	1,475	3,058	45,736
Total Flow	--	--	457,919
Avg. Flow	1,251	--	38,160

Graph 1 – 2023 Influent Flow (m3)



Graph 2 – 2023 Total Monthly Flows (m3)



Raw Sewage

Raw Sewage samples are collected from the Ilderton WWTF in accordance with the ECA, outlined in Table 2 below, utilizing 24-hour composite sampling procedure where

required. Analysis for these parameters is conducted through SGS Canada Inc. (SGS). SGS is a member of the Canadian Association for Laboratory Accreditation Incorporated, accreditation #'s A2764 and 1999. There were no reported deviations from the monitoring schedule.

In-house laboratory testing is also conducted which includes monitoring of MLSS, dissolved oxygen, pH, temperature, and solids throughout the process.

Table 2 – Raw Sewage Influent Sampling Point

Parameters	Sample Type	Frequency
BOD ₅	24-hour composite	Weekly
Total Suspended Solids	24-hour composite	Weekly
Total Phosphorus	24-hour composite	Weekly
Total Kjeldahl Nitrogen	24-hour composite	Weekly

Table 3 – 2023 Raw Sewage Monthly Average Concentrations

	BOD ₅ (mg/l)	Total Suspended Solids (mg/l)	Total Phosphorus (mg/l)	Total Kjeldahl Nitrogen (mg/l)
Jan	155	197	4.1	40.8
Feb	188	202	4.6	44.2
Mar	114	207	3.2	35.0
Apr	122	155	2.9	28.3
May	156	210	5.2	50.0
Jun	169	200	3.9	33.8
Jul	155	282	4.4	41.2
Aug	243	361	5.2	41.3
Sep	322	696	6.8	43.4
Oct	292	538	4.6	36.6
Nov	292	401	5.5	45.1
Dec	262	513	5.5	35.1
Avg.	206	330	4.7	39.6

Final Effluent Flow Data

Table 4 – 2023 Effluent Flow Data

	Average Daily Flow (m ³ /day)	Maximum Daily Flow (m ³ /day)	Total Monthly Flow (m ³)
Jan	980	1,742	30,394
Feb	972	2,530	27,218
Mar	1,278	3,136	39,618
Apr	1,260	3,567	37,808
May	770	1,414	23,856

	Average Daily Flow (m³/day)	Maximum Daily Flow (m³/day)	Total Monthly Flow (m³)
Jun	708	1,068	21,238
Jul	996	1,822	30,878
Aug	868	1,407	26,905
Sep	778	1,218	23,350
Oct	844	1,308	25,326
Nov	892	1,551	27,655
Dec	1,103	2,371	34,204
Total Flow	--	--	348,450
Avg. Flow	954	1,928	29,038

Final Effluent Sample Points and Procedures

Final Effluent samples are collected from the Ilderton WWTF in accordance with the table below, utilizing 24-hour composite sampling procedure when required. There were no reported deviations from the monitoring schedule.

Table 5 – Effluent Sampling Point Monitoring

Parameters	Sample Type	Frequency
cBOD ₅	24-hour Composite	Weekly
Total Suspended Solids	24-hour Composite	Weekly
Total Phosphorus	24-hour Composite	Weekly
Total Ammonia Nitrogen	24-hour Composite	Weekly
Total Kjeldahl Nitrogen	24-hour Composite	Weekly
Nitrate as Nitrogen	24-hour Composite	Weekly
Nitrite as Nitrogen	24-hour Composite	Weekly
E. Coli	Grab	Weekly
Dissolved Oxygen	Grab/Probe/Analyzer	Weekly
Temperature	Grab/Probe/ Analyzer	Weekly
pH	Grab/Probe/Analyzer	Weekly
Unionized Ammonia	Calculated	Weekly

Effluent Objectives & Limits

As per ECA #9219-AWWHWU (Dated May 1, 2018):

Design objectives are imposed to establish non-enforceable design objectives to be used as a mechanism to trigger corrective action proactively and voluntarily before environmental impairment occurs. Operational adjustments and preventative maintenance activities are performed at the facility to ensure operational excellence and compliance with the design objective limits outlined in the Environmental Compliance Agreements.

Final Effluent Compliance Limits outlined in Schedule C are enforceable and the Owner shall operate and maintain the facility such that the limits are met.

Tables 6 and 7 provide the objectives and limits that have been set by the ministry.

Table 6 – Final Effluent Design Objectives

Final Effluent Parameter	Averaging Calculator	Objectives
cBOD ₅	Monthly Average	5.0 mg/l
Total Suspended Solids	Monthly Average	5.0 mg/l
Total Phosphorus	Monthly Average	0.20 mg/l
Total Ammonia Nitrogen	Monthly Average	1.0 mg/l (May 1 to Nov 30) 3.0 mg/l (Dec 1 to Apr 30)
E. Coli	Monthly Geometric Mean	100 organisms per 100 ml
pH	Single Sample Result	6.5 to 8.5 inclusive
Dissolved Oxygen	Single Sample Result	6.0 mg/l

Table 7 – Final Effluent Design Limits

Final Effluent Parameter	Averaging Calculator	Limits
cBOD ₅	Monthly Average	10.0 mg/l
Total Suspended Solids	Monthly Average	10.0 mg/l
Total Phosphorus	Monthly Average	0.26 mg/l
Total Ammonia Nitrogen	Monthly Average	2.0 mg/l (May 1 to Nov 30) 4.0 mg/l (Dec 1 to Apr 30)
E. Coli	Monthly Geometric Mean	150 organisms per 100 ml
pH	Single Sample Result	6.5 to 8.5 inclusive
Dissolved Oxygen	Single Sample Result	5.0 mg/l

Table 8 – Final Effluent Design Concentration Objectives

	cBOD ₅ (mg/l)	TSS (mg/l)	TP (mg/l)	TAN (mg/l)	E. coli (cfu/100ml)	pH Min - Max	D.O. (mg/l) Min
Objectives	5.0	5.0	0.20	**	100	6.0 - 8.5	6.0
Jan	3.8	7.8	0.17	1.16	29	7.84 - 7.04	9.70
Feb	3.0	6.3	0.12	1.93	22	8.13 - 7.34	9.82
Mar	3.7	6.8	0.13	3.65	9	7.90 - 7.40	9.60
Apr	3.0	8.0	0.14	2.45	7	8.90 - 6.90	9.32
May	2.4	7.0	0.11	0.52	3	7.80 - 7.00	8.52
Jun	2.5	7.3	0.10	1.20	22	7.80 - 7.00	8.52
Jul	2.0	4.4	0.12	0.40	3	7.90 - 7.20	8.17
Aug	2.3	4.5	0.14	0.18	3	7.90 - 6.96	8.27
Sep	2.0	4.5	0.15	0.13	5	7.79 - 6.73	8.31
Oct	2.0	5.2	0.15	0.30	3	7.55 - 6.59	9.34
Nov	3.0	8.3	0.18	0.13	13	7.55 - 6.59	9.34

Dec	2.5	7.3	0.12	0.35	3	8.13 - 6.21	9.43
Avg.	2.7	6.5	0.14	1.03	--	--	9.03
Geomean	--	--	--	--	7	--	--

**1.0 mg/l (May 1 to Nov 30) 3.0 mg/l (Dec 1 to Apr 30)

Table 9 – Final Effluent Monthly Limit Concentrations

	cBOD ₅ (mg/l)	TSS (mg/l)	TP (mg/l)	TAN (mg/l)	E. coli (cfu/100ml)	pH Min - Max	D.O. (mg/l) Min
Limits	10	10	0.26	*	150	6 – 9.5	5
Jan	3.8	7.8	0.17	1.16	29	7.84 - 7.04	9.70
Feb	3.0	6.3	0.12	1.93	22	8.13 - 7.34	9.82
Mar	3.7	6.8	0.13	3.65	9	7.90 - 7.40	9.60
Apr	3.0	8.0	0.14	2.45	7	8.90 - 6.90	9.32
May	2.4	7.0	0.11	0.52	3	7.80 – 7.00	8.52
Jun	2.5	7.3	0.10	1.20	22	7.80 – 7.00	8.52
Jul	2.0	4.4	0.12	0.40	3	7.90 - 7.20	8.17
Aug	2.3	4.5	0.14	0.18	3	7.90 - 6.96	8.27
Sep	2.0	4.5	0.15	0.13	5	7.79 - 6.73	8.31
Oct	2.0	5.2	0.15	0.30	3	7.55 - 6.59	9.34
Nov	3.0	8.3	0.18	0.13	13	7.55 - 6.59	9.34
Dec	2.5	7.3	0.12	0.35	3	8.13 - 6.21	9.43
Avg.	2.7	6.5	0.14	1.03	--	--	9
Geomean	--	--	--	--	7	--	--

* 2.0 mg/l (May 01 to Nov 30) and 4.0 mg/l (Dec 01 – Apr 30)

Table 10 – Final Effluent Monthly Average Waste Loadings

	cBOD ₅ (kg/d)	TSS (kg/d)	TP (kg/d)	TAN (kg/d)
Jan	3.7	7.6	0.17	1.18
Feb	2.9	6.1	0.12	1.85
Mar	4.7	8.7	0.17	4.73
Apr	3.8	10.1	0.18	3.15
May	1.8	5.4	0.08	0.39
Jun	1.8	5.2	0.07	0.85
Jul	2.0	4.4	0.12	0.40
Aug	2.0	3.9	0.12	0.17
Sep	1.6	3.5	0.12	0.10
Oct	1.7	4.4	0.13	0.25
Nov	2.7	7.4	0.16	0.12
Dec	2.8	8.1	0.13	0.38
Avg.	2.6	6.2	0.13	1.13

Plant Performance and Interpretation of Results

Table 11 – Treatment Adequacy for CBOD5 Removal

Month	Incoming BOD5 (mg/l)	Effluent CBOD5 (mg/l)	Percent Removal (%)
Jan	155	3.8	98%
Feb	188	3.0	98%
Mar	114	3.7	97%
Apr	122	3.0	98%
May	156	2.4	98%
Jun	169	2.5	99%
Jul	155	2.0	99%
Aug	243	2.3	99%
Sep	322	2.0	99%
Oct	292	2.0	99%
Nov	292	3.0	99%
Dec	262	2.5	99%
Avg.	206	2.7	98%

Table 12 – Treatment Adequacy for Total Suspended Solids Removal

Month	Incoming TSS (mg/l)	Effluent TSS (mg/l)	Percent Removal (%)
Jan	197	7.8	96%
Feb	202	6.3	97%
Mar	207	6.8	97%
Apr	155	8.0	95%
May	210	7.0	97%
Jun	200	7.3	96%
Jul	282	4.4	98%
Aug	361	4.5	99%
Sep	696	4.5	99%
Oct	538	5.2	99%
Nov	401	8.3	98%
Dec	513	7.3	99%
Avg.	330	6.5	97%

Table 13 – Treatment Adequacy for Total Phosphorus Removal

Month	Incoming TP (mg/l)	Effluent TP (mg/l)	Percent Removal (%)
Jan	4.1	0.17	96%
Feb	4.6	0.12	97%
Mar	3.2	0.13	96%
Apr	2.9	0.14	95%

Month	Incoming TP (mg/l)	Effluent TP (mg/l)	Percent Removal (%)
May	5.2	0.11	98%
Jun	3.9	0.10	97%
Jul	4.4	0.12	97%
Aug	5.2	0.14	97%
Sep	6.8	0.15	98%
Oct	4.6	0.15	97%
Nov	5.5	0.18	97%
Dec	5.5	0.12	98%
Avg.	4.7	0.14	97%

The facility met effluent limits during the calendar year with a BOD removal efficiency of 98%, total suspended solids and total phosphorus removal rate of 97%.

Total suspended solids were over the objective of 5 mg/L and process adjustments were made after the implementation of the a mass balance control program and the complete overhaul of all three sand filters, where each was refilled with new sand.

Operating Problems Encountered

No major operational issues were encountered during the 2023 calendar year.

Section E - Maintenance

Preventative routine maintenance, including equipment oil and filter changes, and greasing, was performed throughout the year, utilizing the Computerized Maintenance Management System, Job Cal. The program maintains the schedule and allows us to track routine maintenance. All other significant maintenance, outside routine maintenance, is listed below:

Table 14 – Maintenance

Maintenance Activity	
January 11	Installed new UV control panel and control board
March 28	Installed new ARI combination valve on forcemain
April 11	Installed new clarifier drive and motor for Train #2
May 12	Installed new raw sewage sampler
September	Filter 1 Installed new sand and repaired fiberglass sand hoppers
October	Filter 2 Installed new sand and repaired fiberglass sand hoppers
October 13	Installed new Blower #5
November	Filter 3 Installed new sand and repaired fiberglass sand hoppers

Section G - Calibrations

Annual flow meter calibrations were performed between October 10 - 12, 2023. All meters are operating to within +/- 15% error as shown in the reports under *Appendix A*.

Section H – Design Objective Efforts

The final effluent quality exceeded the design objectives on multiple occasions during 2023. As per Subsection (1) of Section H ‘when any of the design objectives is not achieved more than 50% of the time in 2023 than an assessment of the issues and recommendations for actions are required. The one parameter that did not achieve 50% of the design objectives was Total Suspended Solids (TSS). The remainder of the parameters did achieve design objectives more than 50% of the time in 2023.

TSS exceeded the design objectives through the months of January to June of the reporting period. In response to these objective exceedances a mass balance control program, to manage the sludge masses within the aeration and clarifier tanks, was introduced in July. The success of this program is evident in the decreased TSS output and meeting design objectives until October when the capital project to overhaul the filters, change the sand and rebuild the air lift system, started. This operational approach will be continued into 2024, allowing the operators to maintain the minimum amount of mass within the aeration and clarifier tanks, minimizing the possibility of excessive carryover and reducing the load on the filters and reduced solids in the final effluent.

Effluent flow was less than 80% of the design capacity of 1,300 m³/day, except for the months of March, April, and December. December was below 90% and March and April were approximately 98% of the facility capacity. All the high flows were due to heavy precipitation events. The average flow for the year was 954 m³/day at 73% of design capacity, and the maximum flow occurred in April with 3,567 m³. During higher-than-normal events the facility influent pump control and headwork’s facility would direct flow to the equalization tank to reduce the peak flows entering the treatment system. Flow within the equalization tank would be discharged into the treatment facility for processing when incoming flows were below the rated capacity.

Section I – Sludge Generation & Analytical

During the year, aerobic sludge is removed from the sludge holding tanks and applied to agriculture land for soil conditioning. The following volumes were removed from the Ilderton WWTF.

Table 15- Ilderton Biosolids Haulage

Month	Volume Transported (m ³)
May 11, 12	1,710
September 21	765
Total Volume (m³)	2,475

Sludge production in 2024 is forecasted to be similar to the amount produced and hauled to agriculture land in 2023.

The following tables outline the Biosolids analytical data as required under schedule D – Monitoring Program of Environmental Compliance Agreement # 9219-AWWHWU.

Table 16 – Sludge / Biosolids Analytical

Quarter	Total Solids (mg/l)	Total Phosphorus (mg/l)	Total Ammonia Nitrogen (mg/l)	Nitrate as Nitrogen (mg/l)
1 st Quarter	19,567	637	31	70
2 nd Quarter	17,633	458	145	1
3 rd Quarter	16,900	521	121	30
4 th Quarter	12,134	496	15	49

Metal Scan	1 st Quarter	2 nd Quarter	3 rd Quarter	4 th Quarter
Arsenic (mg/l)	0.10	0.10	0.10	0.10
Cadmium (mg/l)	0.011	0.009	0.009	0.007
Cobalt (mg/l)	0.20	0.18	0.21	0.18
Chromium (mg/l)	0.03	0.02	0.03	0.04
Copper (mg/l)	4.70	3.27	3.63	3.30
Lead (mg/l)	0.13	0.10	0.10	0.10
Mercury (mg/l)	0.025	0.014	0.008	0.028
Molybdenum (mg/l)	0.13	0.08	0.08	0.07
Nickel (mg/l)	0.19	0.14	0.16	0.16
Potassium (mg/l)	76	62	58	55
Selenium (mg/l)	0.10	0.10	0.10	0.10
Zinc (mg/l)	9	6	8	7

Section J – Summary of Complaints Received

The Ilderton WWTP did not receive any complaints in 2023.

Section K – Summary of By-Pass Events

Ilderton WWTF did not have a by-pass during 2023.

Section L – Notification of Modifications to Sewage Works

No additional requests for information were made by the District Manager and there were no applications for use of the Limited Operations Flexibility Clause outlined in Section 10 of Environmental Compliance Agreement # 9219-AWWHWU.

Section M & N – Best Efforts

No major projects were undertaken in 2023 at the wastewater treatment facility.

APPENDIX A – FLOW CALIBRATION REPORTS



FLOW, PRESSURE and LEVEL INSTRUMENTATION

Verification/Calibration

REPORT



- ILDERTON WWTP -

OCTOBER 2023

October 29, 2023

Middlesex Centre
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**RE: Annual Verification/Calibration for Middlesex Centre - Ilderton WWTP
October 10th – 12th, 2023**

Dear Eric,

SCG Flowmetrix appreciates the opportunity to complete your annual instrument verification/calibration services. This letter of transmittal confirms completion of this service project.

The following service report contains the individual instrument reports for all verification/calibrations as well as an Equipment List Summary.

Note: Equipment List Summary is only included where 5 or more instruments are verified/calibrated for the same client/area. Otherwise, only individual reports are provided.

In addition to the base report, relevant information related to standard approach and methodologies for various instruments verified and/or calibrated, and a statement of qualifications for all verification/calibrations completed by trained, knowledgeable and experienced personnel is found in the section Quality Assurance and Quality Control.

If you have any additional questions or concerns with regards to this report, please do not hesitate to contact me directly.

Kind Regards,



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QUALITY ASSURANCE/QUALITY CONTROL

Flowmetrix adheres to a rigid scope of service and deliverables for each client and instrument verified, calibrated, and reported. We follow a standard guideline while performing verification and calibration procedures for each instrument, using original equipment manufacturer (OEM) tools, where possible. The values are field reported and entered in a standard report format for client review. A digital report is completed for each instrument and collated into a single document for client record.

Approach & Methodology

Flowmetrix conducts verification of each instrument and subsequent calibrations on instruments that are outside the expected tolerance of the instrument response, where possible. Manufacturers OEM suggested testing guidelines are used to verify and/or calibrate each instrument. Where, unable to perform the verification or calibration as suggested by the manufacturer, a best management practice is performed to validate the performance of such instruments.

REPORTING

Flowmetrix report is divided into (2) sections. Section (i) identifies an equipment summary of all instruments verified during this service project including instruments that PASS or FAIL; section (ii) identifies individual equipment reports for client review and record and identifies any comments and deficiencies that should be noted for client review and possible response.

Section (i) - Equipment Summary

An equipment summary sheet identifying all instruments; both PASSING and FAILING verification and/or calibration while completed during this service project.

The Summary Equipment List is only included where 5 or more instruments are verified/calibrated for the same client/area. Otherwise, only individual reports are provided.

Section (ii) - Individual Equipment Reports

Individual equipment reports are completed for easy review and are found in Appendix B. These reports outline all specific information pertaining to the equipment to be tested; noted as meter under test (MUT). Date, time, location, meter make, model and serial number accompany this report for tracking and identification. Each report identifies a PASS or FAIL comment 'as found' and 'as left' upon completion of the verification and/or calibration.

Where possible, a verification is performed prior to calibration, if the OEM testing procedures allow, otherwise an 'as left' report is provided for such equipment.

Note: If a meter under test (MUT) is (AS FOUND) to be operating outside of the allowable tolerance, the report will indicate "NA". The "NA" statement is NOT suggesting the MUT, or a component of the MUT is not functional or has failed; but simply indicates at the time the test was conducted the verification reported values are found outside the allowable tolerance.

Only if the MUT is failed due to equipment failure and not verification/calibration tolerances, the report will indicate "FAIL" (AS FOUND) and will be commented on in the individual equipment report.

STATEMENT OF QUALIFICATIONS

To comply with our clients DWQMS standards, Flowmetrix adheres to a rigid approach to conducting our equipment verification/calibration services including the training received by our company and our personnel conducting service. A Statement of Qualifications outlining Flowmetrix qualifications to conduct this level of service is available in a separate document upon request.



A P P E N D I X - A
S U M M A R Y E Q U I P M E N T L I S T

L O N D O N | T O R O N T O



Instrument Verification Certificate of Completion

CLIENT MIDDLESEX CENTRE
LOCATION VARIOUS LOCTIONS WITH IN THE MIDDLESEX AREA

Summary - Equipment List										
#	LOCATION	DESCRIPTION	MANUFACTURER	MODEL	SERIAL NUMBER	FIT #	TECH	VERIFICATION INFO.		
								DATE	FREQ.	DUE
EQUIPMENT LIST - PASS										
1	Komoka WWTP	Filter Effluent Water SPC2	Endress & Hauser	Promag 53W	E8050316000	FIT-1560	DK	10-Oct-23	Annual	Oct-24
2	Komoka Booster	Inlet Flow FIT-01	Endress & Hauser	Promag 50W	CB03A616000	FIT-01	DK	10-Oct-23	Annual	Oct-24
3	Komoka Booster	Discharge Flow FIT-02	Endress & Hauser	Promag 50W	CB03A516000	FIT-02	DK	10-Oct-23	Annual	Oct-24
4	Komoka Booster	Discharge Flow Pressure	Endress & Hauser	PMC71	CB011F1509C	PIT-03	DK	10-Oct-23	Annual	Oct-24
5	Komoka Tower	Tower Pressure	Endress & Hauser	PMC71	J602351509C	N/A	DK	10-Oct-23	Annual	Oct-24
6	Komoka WWTP	Distribuiton Flow	Endress & Hauser	Promag 400	P1223519000	FIT-02	DK	10-Oct-23	Annual	Oct-24
7	Komoka WWTP	Pressure	Endress & Hauser	Cerabar 'S'	P104731509C	PIT-01	DK	10-Oct-23	Annual	Oct-24
8	Komoka WWTP	Inlet Flow	Endress & Hauser	Promag 400	P1223419000	FIT-01	DK	10-Oct-23	Annual	Oct-24
9	Komoka WWTP	Pressure	Endress & Hauser	Cerabar 'S'	P104741509C	PIT-02	DK	10-Oct-23	Annual	Oct-24
10	Delaware Tower	Tower Pressure	Endress & Hauser	PMP-71	NB04EC1509C	LIT-01	DK	10-Oct-23	Annual	Oct-24
11	Delaware Tower	Inlet Flow FIT-01	Endress & Hauser	Promag 400	P104C016000	FIT-01	DK	10-Oct-23	Annual	Oct-24
12	Delaware Tower	Outlet Flow FIT-02	Endress & Hauser	Promag 400	P104C116000	FIT-02	DK	10-Oct-23	Annual	Oct-24
13	Melrose WTP	Well #3	Endress & Hauser	Promag 50W	5200D916000	FIT-03	DK	11-Oct-23	Annual	Oct-24
14	Melrose WTP	Well #2	Endress & Hauser	Promag 50W	5200D816000	FIT-02	DK	11-Oct-23	Annual	Oct-24
15	Melrose WTP	Discharge Flow Pressure	Foxboro	IGP10-A22D1C	09500421	PIT-01	DK	11-Oct-23	Annual	Oct-24
16	Melrose WTP	Distribution Flow	Endress & Hauser	Promag 50W	CC030D16000	FIT-05	DK	11-Oct-23	Annual	Oct-24
17	Birr WTP	Disribution Flow	Endress & Hauser	Promag 50W	4C004616000	N/A	DK	12-Oct-23	Annual	Oct-24
18	Birr WTP	Raw Flow	Endress & Hauser	Promag 50W	6A000716000	N/A	DK	12-Oct-23	Annual	Oct-24
19	Arva Water BPS	Plant Flow	ABB	50XM4000	125912	N/A	DK	12-Oct-23	Annual	Oct-24
20	Arva Sewage PS	Flow Meter	Krohne	IFC010D	n/a	N/A	DK	12-Oct-23	Annual	Oct-24
21	Denfield BPS	Discharge Pressure	Endress & Hauser	Cerabar 'S'	DB02851509C	PIT-03	DK	11-Oct-23	Annual	Oct-24
22	Denfield BPS	Treated	Endress & Hauser	Promag 53W	DB023216000	FIT-02	DK	11-Oct-23	Annual	Oct-24
23	Ballymont	Flow	ABB	WaterMaster	3K620000222992	N/A	DK	12-Oct-23	Annual	Oct-24
24	Ilderton BPS	Station Pressure	Endress & Hauser	Cerabar 'S'	J9034B1509C	WBIL-PIT02	DK	12-Oct-23	Annual	Oct-24
25	Ilderton BPS	Distribution Flow FIT-01	Siemens	FM MAG5000	N1E9170248	FIT-01	DK	12-Oct-23	Annual	Oct-24
26	Ilderton Tower	Tower Level/Pressure	Endress & Hauser	Cerabar 'S'	J9034A1509C	N/A	DK	11-Oct-23	Annual	Oct-24



Instrument Verification Certificate of Completion

CLIENT MIDDLESEX CENTRE
LOCATION VARIOUS LOCTIONS WITH IN THE MIDDLESEX AREA

Summary - Equipment List										
#	LOCATION	DESCRIPTION	MANUFACTURER	MODEL	SERIAL NUMBER	FIT #	TECH	VERIFICATION INFO.		
								DATE	FREQ.	DUE
EQUIPMENT LIST - PASS										
27	Ilderton WWTP	Effluent Flow	Endress & Hauser	Promag 50W	SB000F16000	FIT-720	DK	11-Oct-23	Annual	Oct-24
28	Ilderton WWTP	Train #1 Flow	Endress+Hauser	Promag 500	N80DF916000	FIT-6	DK	11-Oct-23	Annual	Oct-24
29	Ilderton WWTP	Train #2 Flow	Endress+Hauser	Promag 500	N80DF816000	FIT-5	DK	11-Oct-23	Annual	Oct-24
30	Ilderton WWTP	Train #3 Flow	Endress+Hauser	Promag 500	N80DFA16000	FIT-7	DK	11-Oct-23	Annual	Oct-24
31	Ilderton WWTP	RSP-101	Endress+Hauser	Promag 500	N80DF516000	FIT-2	DK	11-Oct-23	Annual	Oct-24
32	Ilderton WWTP	RSP-102	Endress+Hauser	Promag 500	N80DF616000	FIT-3	DK	11-Oct-23	Annual	Oct-24
33	Ilderton WWTP	RSP-103	Endress+Hauser	Promag 500	N80DF716000	FIT-4	DK	11-Oct-23	Annual	Oct-24
34	Ilderton WWTP	RSP-104	Endress+Hauser	Promag 500	N80DF416000	FIT-1	DK	11-Oct-23	Annual	Oct-24
<p>This Instrument Verification Certificate of Completion summary sheet identifies all instruments tested that PASSED verification/calibration testing during our service contract. Any instrument that does not PASS verification or cannot be calibrated during this contract is highlighted for quick identification. Further information should be identified within the body of our report.</p>										



A P P E N D I X - B
I N D I V I D U A L I N S T R U M E N T R E P O R T S

L O N D O N | T O R O N T O



AS FOUND CERTIFICATION
FORWARD FLOW DIRECTION
PASS

CLIENT DETAIL		EQUIPMENT DETAIL	
CUSTOMER	Middlesex Centre	[MUT] MANUFACTURER	ENDRESS & HAUSER
CONTACT	Eric Joudrey Manager Water & Wastewater Operations 10227 Ilderton Road Ilderton, ON N0M2A0 T: 519-666-0190 ext. 255 E: joudrey@middlesexcentre.ca	MODEL	PROMAG 50W
		CONVERTER S/N:	5B000F16000
		FUSE	PLC Control Panel - right side of pannel - Breaker with FL/FIT720 label
		PLANT ID	Ilderton WWTP
		METER ID	Effluent Flow Meter
		FIT ID	FIT-720
		CLIENT TAG	N/A
		OTHER	N/A
		GPS COORDINATES	N43 04.609 W081 22.051
VER. BY - FM	Daniel Kettlewell	VERIFICATION DATE	October 11th 2023
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.		CAL. FREQUENCY	Annual
		CAL. DUE DATE	October 2024

PROGRAMMING PARAMETERS				FORWARD TOTALIZER INFORMATION			
DIAMETER (DN)	mm	150		AS FOUND	5065681	M3	
F.S. FLOW - MAG	LPS	176.709		AS LEFT	5065705	M3	
F.S. RANGE - O/P	LPS	100.000		DIFFERENCE	24	M3	
TUBE k-FACTOR		1.01750					TEST CRITERIA
TUBE zero		0		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	25.0	50.0	75.0	100.0	LPS
		0.0	14.1	28.3	42.4	56.6	% F.S. Flow
		0.0	25.0	50.0	75.0	100.0	% F.S. Range
REF. FLOW RATE		0.000	25.000	50.000	75.000	100.000	LPS
MUT [Reading]		0.000	25.045	50.034	75.010	99.973	LPS
MUT [Difference]		0.000	0.045	0.034	0.010	-0.027	LPS
MUT [% Error]		n/a	0.18	0.07	0.01	-0.03	%
mA OUTPUT		4.000	8.000	12.000	16.000	20.000	mA
MUT [Reading]	min. 4 mA	3.998	8.001	12.008	16.012	19.992	mA
MUT [Difference]	max. 20 mA	-0.002	0.001	0.008	0.012	-0.008	mA
MUT [% Error]		-0.05	0.01	0.07	0.08	-0.04	%
TOTALIZER				REF. FLOW RATE		100.000	LPS
				TOTALIZER [MUT]		8.0	M3
				TEST TIME		80.98	SECONDS
				TOTALIZER [REF]		8.098	M3
				ERROR		-1.23	%

COMMENTS

QUALITY MANAGEMENT STANDARDS INFO.			RESULTS		
[QMS] INFORMATION	IDENT.	ID #	TEST	AVG % o.r.	PASS FAIL
[REFERENCE] FTS	E&H-FC	1	DISPLAY	0.06	PASS
PROCESS METER	DMM	0	mA OUTPUT	0.01	PASS
ANALOG METER	AM	N/A	TOTALIZER	-1.23	PASS
STOP WATCH	SW	Yes			

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.



RESULTS
PASSED

CLIENT DETAIL		DEVICE INFORMATION	
CUSTOMER	Middlesex Centre	[MUT] MANUFACTURER	Endress & Hauser
CONTACT	Eric Joudrey Manager Water & Wastewater Operations 10227 Ilderton Road Ilderton, ON N0M2A0 T: 519-666-0190 ext. 255 E: joudrey@middlesexcentre.ca	MODEL	Promag 500
		CONVERTER SERIAL NUMBER	N80DF916000
		ORDER CODE	5W5B1F-1D10/0
		PLANT ID	Ilderton WWTP
		METER ID	Train #1 Flow Meter
		FIT ID	FIT-6
		CLIENT TAG	n/a
		OTHER	n/a
		GPS COORDINATES	N43 04.609 W081 22.051
		VERIFICATION DATE	October 11th 2023
		CAL. FREQUENCY	Annual
		CAL. DUE DATE	October 2024

VER. BY - FM Daniel Kettlewell

Quality Management Standards Information -
Reference equipment and instrumentation used
to conduct this verification test is found in our AC-
QMS Document.

CALIBRATION			TOTALIZER	
DIAMETER (DN)	mm	150	AS FOUND	n/a M3
CALIBRATION FACTOR		1.0430	AS LEFT	n/a M3
ZERO POINT		-1	DIFFERENCE	n/a M3

VERIFICATION INFORMATION			COMPONENTS TESTED	
OPERATING TIME (d/h/m/s)	d	1672	SENSOR - Shot Time, Hold Voltage Symmetry	yes
	h	1	SENSOR - Coil-Loss, Stability, Resistance	yes
	m	50	SENSOR - Electrode Circuit 1 + 2 and EPD	yes
	s	59	SENSOR MODULE - Voltage-Supply, Ext. Reference	yes
			SENSOR MODULE - Voltage-Linearity, Ext. Reference	yes
DATE/TIME	date (dd.mm.yy)	11.10.23	SENSOR MODULE - Offset Electrode Circuitry	yes
	time (hh:mm)	10:58	SENSOR MODULE - Voltage: Hold + Shot Feedback	yes
			SENSOR MODULE - Current Loss, Coil Circuit Measurement	yes
VERIFICATION ID		8	SENSOR MODULE - Shot Control, Electrode Signal Integrity	yes
VERIFICATION TYPE		Internal	I/O MODULE - Input/Output 1, 2, 3, 4 (If used / included option)	yes

OVERALL VERIFICATION	PASSED
SENSOR	PASSED
Shot Time, Hold Voltage Symmetry	PASSED
Coil-Loss, Stability, Resistance	PASSED
Electrode Circuit 1 + 2 and EPD	PASSED
SENSOR ELECTRONIC MODULE (ISEM)	PASSED
Voltage-Supply, Ext. Reference	PASSED
Voltage-Linearity, Ext. Reference	PASSED
Offset Electrode Circuitry	PASSED
Voltage: Hold + Shot Feedback	PASSED
Current Loss, Coil Circuit Measurement	PASSED
Shot Control, Electrode Signal Integrity	PASSED
I/O MODULE	PASSED
Input/Output 1, 2, 3, 4 (If used / included option)	PASSED

* NOTE: Additional technical information from the OEM report is available upon request of this document

COMMENTS

This report reflects the results based on the manufacturers HEARTBEAT diagnostic technology for flow meter verification for all Promag 500 series meters with an active HEARTBEAT.



RESULTS
PASSED

CLIENT DETAIL		DEVICE INFORMATION	
CUSTOMER	Middlesex Centre	[MUT] MANUFACTURER	Endress & Hauser
CONTACT	Eric Joudrey Manager Water & Wastewater Operations 10227 Ilderton Road Ilderton, ON N0M2A0 T: 519-666-0190 ext. 255 E: joudrey@middlesexcentre.ca	MODEL	Promag 500
		CONVERTER SERIAL NUMBER	N80DF816000
		ORDER CODE	5W5B1F-1D10/0
		PLANT ID	Ilderton WWTP
		METER ID	Train #2 Flow Meter
		FIT ID	FIT-5
		CLIENT TAG	n/a
		OTHER	n/a
		GPS COORDINATES	N43 04.609 W081 22.051
VER. BY - FM	Daniel Kettlewell	VERIFICATION DATE	October 11th 2023
Quality Management Standards Information - Reference equipment and instrumentation used to conduct this verification test is found in our AC- QMS Document.		CAL. FREQUENCY	Annual
		CAL. DUE DATE	October 2024

CALIBRATION			TOTALIZER	
DIAMETER (DN)	mm	150	AS FOUND	n/a M3
CALIBRATION FACTOR		1.0583	AS LEFT	n/a M3
ZERO POINT		-4	DIFFERENCE	n/a M3

VERIFICATION INFORMATION			COMPONENTS TESTED	
OPERATING TIME (d/h/m/s)	d	1672	SENSOR - Shot Time, Hold Voltage Symmetry	yes
	h	1	SENSOR - Coil-Loss, Stability, Resistance	yes
	m	55	SENSOR - Electrode Circuit 1 + 2 and EPD	yes
	s	42	SENSOR MODULE - Voltage-Supply, Ext. Reference	yes
			SENSOR MODULE - Voltage-Linearity, Ext. Reference	yes
DATE/TIME	date (dd.mm.yy)	11.10.23	SENSOR MODULE - Offset Electrode Circuitry	yes
	time (hh:mm)	10:49	SENSOR MODULE - Voltage: Hold + Shot Feedback	yes
			SENSOR MODULE - Current Loss, Coil Circuit Measurement	yes
VERIFICATION ID		19	SENSOR MODULE - Shot Control, Electrode Signal Integrity	yes
VERIFICATION TYPE		Internal	I/O MODULE - Input/Output 1, 2, 3, 4 (If used / included option)	yes

OVERALL VERIFICATION	PASSED
SENSOR	PASSED
Shot Time, Hold Voltage Symmetry	PASSED
Coil-Loss, Stability, Resistance	PASSED
Electrode Circuit 1 + 2 and EPD	PASSED
SENSOR ELECTRONIC MODULE (ISEM)	PASSED
Voltage-Supply, Ext. Reference	PASSED
Voltage-Linearity, Ext. Reference	PASSED
Offset Electrode Circuitry	PASSED
Voltage: Hold + Shot Feedback	PASSED
Current Loss, Coil Circuit Measurement	PASSED
Shot Control, Electrode Signal Integrity	PASSED
I/O MODULE	PASSED
Input/Output 1, 2, 3, 4 (If used / included option)	PASSED

* NOTE: Additional technical information from the OEM report is available upon request of this document

COMMENTS

This report reflects the results based on the manufacturers HEARTBEAT diagnostic technology for flow meter verification for all Promag 500 series meters with an active HEARTBEAT.



RESULTS
PASSED

CLIENT DETAIL		DEVICE INFORMATION	
CUSTOMER	Middlesex Centre	[MUT] MANUFACTURER	Endress & Hauser
CONTACT	Eric Joudrey Manager Water & Wastewater Operations 10227 Ilderton Road Ilderton, ON N0M2A0 T: 519-666-0190 ext. 255 E: joudrey@middlesexcentre.ca	MODEL	Promag 500
		CONVERTER SERIAL NUMBER	N80DFA16000
		ORDER CODE	5W5B1F-1D10/0
		PLANT ID	Ilderton WWTP
		METER ID	Train #3 Flow Meter
		FIT ID	FIT-7
		CLIENT TAG	n/a
		OTHER	n/a
		GPS COORDINATES	N43 04.609 W081 22.051
VER. BY - FM	Daniel Kettlewell	VERIFICATION DATE	October 11th 2023
Quality Management Standards Information - Reference equipment and instrumentation used to conduct this verification test is found in our AC-QMS Document.		CAL. FREQUENCY	Annual
		CAL. DUE DATE	October 2024

CALIBRATION			TOTALIZER	
DIAMETER (DN)	mm	150	AS FOUND	n/a M3
CALIBRATION FACTOR		1.0897	AS LEFT	n/a M3
ZERO POINT		-4	DIFFERENCE	n/a M3

VERIFICATION INFORMATION			COMPONENTS TESTED	
OPERATING TIME (d/h/m/s)	d	1672	SENSOR - Shot Time, Hold Voltage Symmetry	yes
	h	2	SENSOR - Coil-Loss, Stability, Resistance	yes
	m	40	SENSOR - Electrode Circuit 1 + 2 and EPD	yes
	s	26	SENSOR MODULE - Voltage-Supply, Ext. Reference	yes
			SENSOR MODULE - Voltage-Linearity, Ext. Reference	yes
DATE/TIME	date (dd.mm.yy)	11.10.23	SENSOR MODULE - Offset Electrode Circuitry	yes
	time (hh:mm)	11:06	SENSOR MODULE - Voltage: Hold + Shot Feedback	yes
			SENSOR MODULE - Current Loss, Coil Circuit Measurement	yes
VERIFICATION ID		8	SENSOR MODULE - Shot Control, Electrode Signal Integrity	yes
VERIFICATION TYPE		Internal	I/O MODULE - Input/Output 1, 2, 3, 4 (If used / included option)	yes

OVERALL VERIFICATION	PASSED
SENSOR	PASSED
Shot Time, Hold Voltage Symmetry	PASSED
Coil-Loss, Stability, Resistance	PASSED
Electrode Circuit 1 + 2 and EPD	PASSED
SENSOR ELECTRONIC MODULE (ISEM)	PASSED
Voltage-Supply, Ext. Reference	PASSED
Voltage-Linearity, Ext. Reference	PASSED
Offset Electrode Circuitry	PASSED
Voltage: Hold + Shot Feedback	PASSED
Current Loss, Coil Circuit Measurement	PASSED
Shot Control, Electrode Signal Integrity	PASSED
I/O MODULE	PASSED
Input/Output 1, 2, 3, 4 (If used / included option)	PASSED

* NOTE: Additional technical information from the OEM report is available upon request of this document

COMMENTS

This report reflects the results based on the manufacturers HEARTBEAT diagnostic technology for flow meter verification for all Promag 500 series meters with an active HEARTBEAT.



RESULTS
PASSED

CLIENT DETAIL

CUSTOMER Middlesex Centre
CONTACT Eric Joudrey
Manager Water & Wastewater Operations
10227 Ilderton Road
Ilderton, ON N0M2A0
T: 519-666-0190 ext. 255
E: joudrey@middlesexcentre.ca

DEVICE INFORMATION

[MUT] MANUFACTURER Endress & Hauser
MODEL Promag 500
CONVERTER SERIAL NUMBER N80DF516000
ORDER CODE 5W5B1F-1D10/0

PLANT ID Ilderton WWTP
METER ID RSP-101 Flow Meter
FIT ID FIT-2
CLIENT TAG n/a
OTHER n/a
GPS COORDINATES N43 04.609 W081 22.051

VERIFICATION DATE October 11th 2023
CAL. FREQUENCY Annual
CAL. DUE DATE October 2024

VER. BY - FM Daniel Kettlewell

Quality Management Standards Information -
Reference equipment and instrumentation used
to conduct this verification test is found in our AC-
QMS Document.

CALIBRATION

DIAMETER (DN)	mm	150
CALIBRATION FACTOR		1.0592
ZERO POINT		-11

AS FOUND	n/a	M3
AS LEFT	n/a	M3
DIFFERENCE	n/a	M3

TOTALIZER

VERIFICATION INFORMATION

OPERATING TIME (d/h/m/s)	d	1671
	h	21
	m	29
	s	11
DATE/TIME	date (dd.mm.yy)	11.10.23
	time (hh:mm)	11:28
VERIFICATION ID		7
VERIFICATION TYPE		Internal

COMPONENTS TESTED

SENSOR - Shot Time, Hold Voltage Symmetry	yes
SENSOR - Coil-Loss, Stability, Resistance	yes
SENSOR - Electrode Circuit 1 + 2 and EPD	yes
SENSOR MODULE - Voltage-Supply, Ext. Reference	yes
SENSOR MODULE - Voltage-Linearity, Ext. Reference	yes
SENSOR MODULE - Offset Electrode Circuitry	yes
SENSOR MODULE - Voltage: Hold + Shot Feedback	yes
SENSOR MODULE - Current Loss, Coil Circuit Measurement	yes
SENSOR MODULE - Shot Control, Electrode Signal Integrity	yes
I/O MODULE - Input/Output 1, 2, 3, 4 (If used / included option)	yes

OVERALL VERIFICATION

PASSED

SENSOR

Shot Time, Hold Voltage Symmetry
Coil-Loss, Stability, Resistance
Electrode Circuit 1 + 2 and EPD

PASSED

PASSED
PASSED
PASSED

SENSOR ELECTRONIC MODULE (ISEM)

Voltage-Supply, Ext. Reference
Voltage-Linearity, Ext. Reference
Offset Electrode Circuitry
Voltage: Hold + Shot Feedback
Current Loss, Coil Circuit Measurement
Shot Control, Electrode Signal Integrity

PASSED

PASSED
PASSED
PASSED
PASSED
PASSED
PASSED

I/O MODULE

Input/Output 1, 2, 3, 4 (If used / included option)

PASSED

PASSED

* NOTE: Additional technical information from the OEM report is available upon request of this document

COMMENTS

This report reflects the results based on the manufacturers HEARTBEAT diagnostic technology for flow meter verification for all Promag 500 series meters with an active HEARTBEAT.



RESULTS
PASSED

CLIENT DETAIL		DEVICE INFORMATION	
CUSTOMER	Middlesex Centre	[MUT] MANUFACTURER	Endress & Hauser
CONTACT	Eric Joudrey Manager Water & Wastewater Operations 10227 Ilderton Road Ilderton, ON N0M2A0 T: 519-666-0190 ext. 255 E: joudrey@middlesexcentre.ca	MODEL	Promag 500
		CONVERTER SERIAL NUMBER	N80DF616000
		ORDER CODE	5W5B1F-1D10/0
		PLANT ID	Ilderton WWTP
		METER ID	RSP-102 Flow Meter
		FIT ID	FIT-3
		CLIENT TAG	n/a
		OTHER	n/a
		GPS COORDINATES	N43 04.609 W081 22.051
VER. BY - FM	Daniel Kettlewell	VERIFICATION DATE	October 11th 2023
Quality Management Standards Information - Reference equipment and instrumentation used to conduct this verification test is found in our AC-QMS Document.		CAL. FREQUENCY	Annual
		CAL. DUE DATE	October 2024

CALIBRATION			TOTALIZER	
DIAMETER (DN)	mm	150	AS FOUND	n/a M3
CALIBRATION FACTOR		1.0494	AS LEFT	n/a M3
ZERO POINT		4	DIFFERENCE	n/a M3

VERIFICATION INFORMATION			COMPONENTS TESTED	
OPERATING TIME (d/h/m/s)	d	1672	SENSOR - Shot Time, Hold Voltage Symmetry	yes
	h	2	SENSOR - Coil-Loss, Stability, Resistance	yes
	m	35	SENSOR - Electrode Circuit 1 + 2 and EPD	yes
	s	2	SENSOR MODULE - Voltage-Supply, Ext. Reference	yes
			SENSOR MODULE - Voltage-Linearity, Ext. Reference	yes
DATE/TIME	date (dd.mm.yy)	11.10.23	SENSOR MODULE - Offset Electrode Circuitry	yes
	time (hh:mm)	11:43	SENSOR MODULE - Voltage: Hold + Shot Feedback	yes
			SENSOR MODULE - Current Loss, Coil Circuit Measurement	yes
VERIFICATION ID		6	SENSOR MODULE - Shot Control, Electrode Signal Integrity	yes
VERIFICATION TYPE		Internal	I/O MODULE - Input/Output 1, 2, 3, 4 (If used / included option)	yes

OVERALL VERIFICATION	PASSED
SENSOR	PASSED
Shot Time, Hold Voltage Symmetry	PASSED
Coil-Loss, Stability, Resistance	PASSED
Electrode Circuit 1 + 2 and EPD	PASSED
SENSOR ELECTRONIC MODULE (ISEM)	PASSED
Voltage-Supply, Ext. Reference	PASSED
Voltage-Linearity, Ext. Reference	PASSED
Offset Electrode Circuitry	PASSED
Voltage: Hold + Shot Feedback	PASSED
Current Loss, Coil Circuit Measurement	PASSED
Shot Control, Electrode Signal Integrity	PASSED
I/O MODULE	PASSED
Input/Output 1, 2, 3, 4 (If used / included option)	PASSED

* NOTE: Additional technical information from the OEM report is available upon request of this document

COMMENTS

This report reflects the results based on the manufacturers HEARTBEAT diagnostic technology for flow meter verification for all Promag 500 series meters with an active HEARTBEAT.



RESULTS
PASSED

CLIENT DETAIL		DEVICE INFORMATION	
CUSTOMER	Middlesex Centre	[MUT] MANUFACTURER	Endress & Hauser
CONTACT	Eric Joudrey Manager Water & Wastewater Operations 10227 Ilderton Road Ilderton, ON N0M2A0 T: 519-666-0190 ext. 255 E: joudrey@middlesexcentre.ca	MODEL	Promag 500
		CONVERTER SERIAL NUMBER	N80DF716000
		ORDER CODE	5W5B1F-1D10/0
		PLANT ID	Ilderton WWTP
		METER ID	RSP-103 Flow Meter
		FIT ID	FIT-4
		CLIENT TAG	n/a
		OTHER	n/a
		GPS COORDINATES	N43 04.609 W081 22.051
VER. BY - FM	Daniel Kettlewell	VERIFICATION DATE	October 11th 2023
Quality Management Standards Information - Reference equipment and instrumentation used to conduct this verification test is found in our AC-QMS Document.		CAL. FREQUENCY	Annual
		CAL. DUE DATE	October 2024

CALIBRATION			TOTALIZER	
DIAMETER (DN)	mm	150	AS FOUND	n/a M3
CALIBRATION FACTOR		1.0648	AS LEFT	n/a M3
ZERO POINT		2	DIFFERENCE	n/a M3

VERIFICATION INFORMATION			COMPONENTS TESTED	
OPERATING TIME (d/h/m/s)	d	1672	SENSOR - Shot Time, Hold Voltage Symmetry	yes
	h	2	SENSOR - Coil-Loss, Stability, Resistance	yes
	m	39	SENSOR - Electrode Circuit 1 + 2 and EPD	yes
	s	17	SENSOR MODULE - Voltage-Supply, Ext. Reference	yes
			SENSOR MODULE - Voltage-Linearity, Ext. Reference	yes
DATE/TIME	date (dd.mm.yy)	11.10.23	SENSOR MODULE - Offset Electrode Circuitry	yes
	time (hh:mm)	11:45	SENSOR MODULE - Voltage: Hold + Shot Feedback	yes
			SENSOR MODULE - Current Loss, Coil Circuit Measurement	yes
VERIFICATION ID		6	SENSOR MODULE - Shot Control, Electrode Signal Integrity	yes
VERIFICATION TYPE		Internal	I/O MODULE - Input/Output 1, 2, 3, 4 (If used / included option)	yes

OVERALL VERIFICATION	PASSED
SENSOR	PASSED
Shot Time, Hold Voltage Symmetry	PASSED
Coil-Loss, Stability, Resistance	PASSED
Electrode Circuit 1 + 2 and EPD	PASSED
SENSOR ELECTRONIC MODULE (ISEM)	PASSED
Voltage-Supply, Ext. Reference	PASSED
Voltage-Linearity, Ext. Reference	PASSED
Offset Electrode Circuitry	PASSED
Voltage: Hold + Shot Feedback	PASSED
Current Loss, Coil Circuit Measurement	PASSED
Shot Control, Electrode Signal Integrity	PASSED
I/O MODULE	PASSED
Input/Output 1, 2, 3, 4 (If used / included option)	PASSED

* NOTE: Additional technical information from the OEM report is available upon request of this document

COMMENTS

This report reflects the results based on the manufacturers HEARTBEAT diagnostic technology for flow meter verification for all Promag 500 series meters with an active HEARTBEAT.



RESULTS
PASSED

CLIENT DETAIL

CUSTOMER Middlesex Centre
CONTACT Eric Joudrey
Manager Water & Wastewater Operations
10227 Ilderton Road
Ilderton, ON N0M2A0
T: 519-666-0190 ext. 255
E: joudrey@middlesexcentre.ca

DEVICE INFORMATION

[MUT] MANUFACTURER Endress & Hauser
MODEL Promag 500
CONVERTER SERIAL NUMBER N80DF416000
ORDER CODE 5W5B1F-1D10/0

PLANT ID Ilderton WWTP
METER ID RSP-104 Flow Meter
FIT ID FIT-1
CLIENT TAG n/a
OTHER n/a
GPS COORDINATES N43 04.609 W081 22.051

VERIFICATION DATE October 11th 2023
CAL. FREQUENCY Annual
CAL. DUE DATE October 2024

VER. BY - FM Daniel Kettlewell

Quality Management Standards Information -
Reference equipment and instrumentation used
to conduct this verification test is found in our AC-
Document.

CALIBRATION

DIAMETER (DN)	mm	150
CALIBRATION FACTOR		1.0761
ZERO POINT		-1

AS FOUND	n/a	M3
AS LEFT	n/a	M3
DIFFERENCE	n/a	M3

TOTALIZER

VERIFICATION INFORMATION

OPERATING TIME (d/h/m/s)	d	1671
	h	21
	m	56
	s	1
DATE/TIME	date (dd.mm.yy)	11.10.23
	time (hh:mm)	11:22
VERIFICATION ID		6
VERIFICATION TYPE		Internal

COMPONENTS TESTED

SENSOR - Shot Time, Hold Voltage Symmetry	yes
SENSOR - Coil-Loss, Stability, Resistance	yes
SENSOR - Electrode Circuit 1 + 2 and EPD	yes
SENSOR MODULE - Voltage-Supply, Ext. Reference	yes
SENSOR MODULE - Voltage-Linearity, Ext. Reference	yes
SENSOR MODULE - Offset Electrode Circuitry	yes
SENSOR MODULE - Voltage: Hold + Shot Feedback	yes
SENSOR MODULE - Current Loss, Coil Circuit Measurement	yes
SENSOR MODULE - Shot Control, Electrode Signal Integrity	yes
I/O MODULE - Input/Output 1, 2, 3, 4 (If used / included option)	yes

OVERALL VERIFICATION PASSED

SENSOR	PASSED
Shot Time, Hold Voltage Symmetry	PASSED
Coil-Loss, Stability, Resistance	PASSED
Electrode Circuit 1 + 2 and EPD	PASSED
SENSOR ELECTRONIC MODULE (ISEM)	PASSED
Voltage-Supply, Ext. Reference	PASSED
Voltage-Linearity, Ext. Reference	PASSED
Offset Electrode Circuitry	PASSED
Voltage: Hold + Shot Feedback	PASSED
Current Loss, Coil Circuit Measurement	PASSED
Shot Control, Electrode Signal Integrity	PASSED
I/O MODULE	PASSED
Input/Output 1, 2, 3, 4 (If used / included option)	PASSED

* NOTE: Additional technical information from the OEM report is available upon request of this document

COMMENTS

This report reflects the results based on the manufacturers HEARTBEAT diagnostic technology for flow meter verification for all Promag 500 series meters with an active HEARTBEAT.

APPENDIX B – ANALYTICAL REPORTS

SGS Canada Inc.

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

13-January-2023

Mun of Middlesex Centre (Ilderton WWTP)

Attn : Brian Watson

Date Rec. : 04 January 2023
LR Report: CA30111-JAN23

10227 Ilderton Rd.
 Ilderton, ON
 N0M 2A0, Canada

Copy: #1

Phone: 519-666-0190 ext 255
 Fax:519-666-0271

CERTIFICATE OF ANALYSIS

Final Report

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Completed Date	4: Analysis Completed Time	5: 1AC38 Raw Sewage	6: 1AC39 Final Effluent
Sample Date & Time					03-Jan-23 12:30	04-Jan-23 08:40
Temperature Upon Receipt [at London Lab °C]	---	---	---	---	8.6	8.6
Temperature Upon Receipt [at Lakefield Lab °C]	---	---	---	---	6.0	6.0
E. Coli [cfu/100mL]	05-Jan-23	17:35	09-Jan-23	10:12	---	39
Carbonaceous Biochemical Oxygen Demand [(CBOD5) mg/L]	06-Jan-23	17:29	11-Jan-23	15:21	---	2
Biochemical Oxygen Demand (BOD5) [mg/L]	06-Jan-23	17:03	11-Jan-23	14:05	122	---
Total Suspended Solids [mg/L]	07-Jan-23	12:05	10-Jan-23	13:05	146	10
Phosphorus (total) [mg/L]	10-Jan-23	08:03	11-Jan-23	12:47	3.16	0.24
Total Kjeldahl Nitrogen [as N mg/L]	10-Jan-23	15:45	11-Jan-23	11:09	34.0	4.8
Ammonia+Ammonium (N) [as N mg/L]	09-Jan-23	22:14	10-Jan-23	09:44	---	2.4
Nitrite (as N) [mg/L]	06-Jan-23	22:16	13-Jan-23	13:03	---	0.18
Nitrate (as N) [mg/L]	06-Jan-23	22:16	13-Jan-23	13:03	---	19.3
Nitrate + Nitrite (as N) [mg/L]	06-Jan-23	22:16	13-Jan-23	13:03	---	19.4
pH@temp15 [pH Units]	10-Jan-23	14:15	11-Jan-23	16:44	---	8.27
Unionized Ammonia @temp15 [mg/L as N]	10-Jan-23	14:15	11-Jan-23	16:44	---	0.118

*E. Coli analysis was completed at the SGS Environmental Services - London Laboratory.
 Note: Federal unionized ammonia at 15 °C calculated using lab pH results performed at this temperature.


 Carrie Greenlaw
 Project Specialist,
 Environment, Health & Safety



SGS Canada Inc.

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

20-January-2023

Mun of Middlesex Centre (Ilderton WWTP)

Attn : Brian Watson

Date Rec. : 04 January 2023
LR Report: CA30112-JAN23

10227 Ilderton Rd.
Ilderton, ON
N0M 2A0, Canada

Copy: #1

Phone: 519-666-0190 ext 255
Fax:519-666-0271

CERTIFICATE OF ANALYSIS

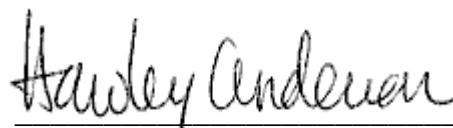
Final Report

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Completed Date	4: Analysis Completed Time	6: 36D05 Sludge
Sample Date & Time					03-Jan-23 11:00
Temperature Upon Receipt [at London Lab °C]	---	---	---	---	10.5
Temperature Upon Receipt [at Lakefield Lab °C]	---	---	---	---	6.0
Total Solids [%]	06-Jan-23	19:21	12-Jan-23	11:32	1.65
Specific Gravity	06-Jan-23	19:21	12-Jan-23	11:32	1.0
Volatile Solids [%]	06-Jan-23	19:21	12-Jan-23	11:32	71.9
Volatile Solids [mg/kg]	06-Jan-23	19:21	12-Jan-23	11:32	1.19
Nitrite (as N) [mg/kg]	10-Jan-23	12:54	20-Jan-23	10:11	<20
Nitrite (as N) [mg/L]	10-Jan-23	12:54	20-Jan-23	10:11	< 0.2
Nitrate (as N) [mg/kg]	10-Jan-23	12:54	20-Jan-23	10:11	62
Nitrate (as N) [mg/L]	10-Jan-23	12:54	20-Jan-23	10:11	1.0
Nitrate + Nitrite (a) [mg/kg]	10-Jan-23	12:54	20-Jan-23	10:11	62
Nitrate + Nitrite (as N) [mg/L]	10-Jan-23	12:54	20-Jan-23	10:12	1.0
Total Kjeldahl Nitrogen [as N mg/kg]	06-Jan-23	08:56	11-Jan-23	10:37	64000
Total Kjeldahl Nitrogen [as N mg/L]	06-Jan-23	08:56	11-Jan-23	10:37	1050
Ammonia+Ammonium (N) [as N mg/kg]	06-Jan-23	17:06	10-Jan-23	10:21	3900
Ammonia+Ammonium (N) [as N mg/L]	06-Jan-23	17:06	10-Jan-23	10:21	64.2
Mercury [mg/kg]	14-Jan-23	22:41	17-Jan-23	10:22	0.79
Mercury [mg/L]	14-Jan-23	22:41	17-Jan-23	10:22	0.013
Arsenic [mg/kg]	14-Jan-23	22:41	17-Jan-23	10:22	<6
Arsenic [mg/L]	14-Jan-23	22:41	17-Jan-23	10:22	< 0.1
Cadmium [mg/kg]	14-Jan-23	22:41	17-Jan-23	10:22	0.4
Cadmium [mg/L]	14-Jan-23	22:41	17-Jan-23	10:22	0.007
Cobalt [mg/kg]	14-Jan-23	22:41	17-Jan-23	10:22	1
Cobalt [mg/L]	14-Jan-23	22:41	17-Jan-23	10:23	0.02
Chromium [mg/kg]	14-Jan-23	22:41	17-Jan-23	10:22	4
Chromium [mg/L]	14-Jan-23	22:41	17-Jan-23	10:23	0.06
Copper [mg/kg]	14-Jan-23	22:41	17-Jan-23	10:22	180
Copper [mg/L]	14-Jan-23	22:41	17-Jan-23	10:23	3.1
Magnesium [mg/kg]	14-Jan-23	22:41	17-Jan-23	10:22	2400
Magnesium [mg/L]	14-Jan-23	22:41	17-Jan-23	10:23	39
Manganese [mg/kg]	14-Jan-23	22:41	17-Jan-23	10:22	110

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Completed Date	4: Analysis Completed Time	6: 36D05 Sludge
Manganese [mg/L]	14-Jan-23	22:41	17-Jan-23	10:23	1.8
Molybdenum [mg/kg]	14-Jan-23	22:41	17-Jan-23	10:22	6
Molybdenum [mg/L]	14-Jan-23	22:41	17-Jan-23	10:23	0.10
Nickel [mg/kg]	14-Jan-23	22:41	17-Jan-23	10:22	6
Nickel [mg/L]	14-Jan-23	22:41	17-Jan-23	10:23	0.09
Lead [mg/kg]	14-Jan-23	22:41	17-Jan-23	10:22	<6
Lead [mg/L]	14-Jan-23	22:41	17-Jan-23	10:23	< 0.1
Selenium [mg/kg]	14-Jan-23	22:41	17-Jan-23	10:22	<6
Selenium [mg/L]	14-Jan-23	22:41	17-Jan-23	10:23	< 0.1
Zinc [mg/kg]	14-Jan-23	22:41	17-Jan-23	10:22	380
Zinc [mg/L]	14-Jan-23	22:41	17-Jan-23	10:23	6
Phosphorus [mg/kg]	14-Jan-23	22:41	17-Jan-23	10:22	24000
Phosphorus (Total) [mg/L]	14-Jan-23	22:41	17-Jan-23	10:23	400
Potassium [mg/kg]	14-Jan-23	22:41	17-Jan-23	10:22	2900
Potassium [mg/L]	14-Jan-23	22:41	17-Jan-23	10:23	48
Sulphur [mg/kg]	14-Jan-23	22:41	17-Jan-23	10:22	7700
Sulfur [mg/L]	14-Jan-23	22:41	17-Jan-23	10:24	130
E. Coli [cfu/1g dried wgt]	05-Jan-23	10:40	06-Jan-23	15:59	200000
E.Coli [cfu/100mL]	05-Jan-23	10:40	06-Jan-23	15:59	330000

Sample matrix = Sludge/Biosolids Solution
 Metals, TKN, Ammonia + Ammonium, Nitrite, Nitrate and Nitrates calculated and reported in mg/kg on a dried weight basis. Detection Limits reflect this calculation
 The E.coli value reported in CFU/1g dried weight was calculated using Total Solids and CFU/100ml.

Note: E. Coli analysis was completed at the SGS London Laboratory.



 Hawley Anderson, Hon.B.Sc
 Project Specialist,
 Environment, Health & Safety



SGS Canada Inc.

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

20-January-2023

Mun of Middlesex Centre (Ilderton WWTP)

Attn : Brian Watson

Date Rec. : 11 January 2023
LR Report: CA30243-JAN23

10227 Ilderton Rd.
Ilderton, ON
N0M 2A0, Canada

Copy: #1

Phone: 519-666-0190 ext 255
Fax:519-666-0271

CERTIFICATE OF ANALYSIS

Final Report

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Completed Date	4: Analysis Completed Time	5: 1AC38 Raw Sewage	6: 1AC39 Final Effluent
Sample Date & Time					10-Jan-23 12:00	10-Jan-23 09:20
Temperature Upon Receipt [at London Lab °C]	---	---	---	---	6.8	6.8
Temperature Upon Receipt [at Lakefield Lab °C]	---	---	---	---	5.0	5.0
E. Coli [cfu/100mL]	11-Jan-23	13:50	13-Jan-23	12:41	---	19
Carbonaceous Biochemical Oxygen Demand [(CBOD5) mg/L]	12-Jan-23	16:46	17-Jan-23	14:07	---	3
Biochemical Oxygen Demand (BOD5) [mg/L]	12-Jan-23	16:46	17-Jan-23	12:48	182	---
Total Suspended Solids [mg/L]	12-Jan-23	14:44	19-Jan-23	16:21	193	7
Phosphorus (total) [mg/L]	16-Jan-23	15:20	17-Jan-23	15:48	4.62	0.16
Total Kjeldahl Nitrogen [as N mg/L]	12-Jan-23	15:28	16-Jan-23	10:17	44.8	< 0.5
Ammonia+Ammonium (N) [as N mg/L]	12-Jan-23	21:20	13-Jan-23	09:47	---	0.6
Nitrite (as N) [mg/L]	12-Jan-23	20:14	18-Jan-23	13:14	---	0.13
Nitrate (as N) [mg/L]	12-Jan-23	20:14	18-Jan-23	13:14	---	23.0
Nitrate + Nitrite (as N) [mg/L]	12-Jan-23	20:14	18-Jan-23	13:14	---	23.1
pH@temp15 [pH Units]	16-Jan-23	10:34	16-Jan-23	15:49	---	7.69
Unionized Ammonia @temp15 [mg/L as N]	16-Jan-23	10:34	16-Jan-23	15:50	---	0.007

*E. Coli analysis was completed at the SGS Environmental Services - London Laboratory.
Note: Federal unionized ammonia at 15 °C calculated using lab pH results performed at this temperature.

Hawley Anderson, Hon.B.Sc
Project Specialist,
Environment, Health & Safety



SGS Canada Inc.

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

27-January-2023

Mun of Middlesex Centre (Ilderton WWTP)

Attn : Brian Watson

Date Rec. : 18 January 2023
LR Report: CA30356-JAN23

10227 Ilderton Rd.
Ilderton, ON
N0M 2A0, Canada

Copy: #1

Phone: 519-666-0190 ext 255
Fax:519-666-0271

CERTIFICATE OF ANALYSIS

Final Report

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Completed Date	4: Analysis Completed Time	5: 1AC38 Raw Sewage	6: 1AC39 Final Effluent
Sample Date & Time					17-Jan-23 12:55	17-Jan-23 09:40
Temperature Upon Receipt [at London Lab °C]	---	---	---	---	6.0	6.0
Temperature Upon Receipt [at Lakefield Lab °C]	---	---	---	---	6.0	6.0
E. Coli [cfu/100mL]	19-Jan-23	16:25	23-Jan-23	12:17	---	22 UAL
Carbonaceous Biochemical Oxygen Demand [(CBOD5) mg/L]	20-Jan-23	16:04	25-Jan-23	12:56	---	7
Biochemical Oxygen Demand (BOD5) [mg/L]	20-Jan-23	16:19	25-Jan-23	12:07	140	---
Total Suspended Solids [mg/L]	21-Jan-23	12:59	24-Jan-23	13:00	255	9
Phosphorus (total) [mg/L]	20-Jan-23	14:28	23-Jan-23	11:40	4.27	0.15
Total Kjeldahl Nitrogen [as N mg/L]	23-Jan-23	10:38	24-Jan-23	10:05	45.2	< 0.5
Ammonia+Ammonium (N) [as N mg/L]	20-Jan-23	16:06	23-Jan-23	10:13	---	0.5
Nitrite (as N) [mg/L]	20-Jan-23	22:31	26-Jan-23	13:06	---	0.07
Nitrate (as N) [mg/L]	20-Jan-23	22:31	26-Jan-23	13:16	---	33.7
Nitrate + Nitrite (as N) [mg/L]	20-Jan-23	22:31	26-Jan-23	13:16	---	33.8
pH@temp15 [pH Units]	20-Jan-23	11:42	23-Jan-23	13:39	---	7.59
Unionized Ammonia @temp15 [mg/L as N]	20-Jan-23	16:06	23-Jan-23	10:14	---	0.005

*E. Coli analysis was completed at the SGS Environmental Services - London Laboratory.
Note: Federal unionized ammonia at 15 °C calculated using lab pH results performed at this temperature.

UAL - Unreliable: Sample Age Exceeds Normal Limit. Received within holding but processed outside of method specified time due to lab error. Notified client 01/26/2023 AS

Hawley Anderson, Hon.B.Sc
Project Specialist,
Environment, Health & Safety



SGS Canada Inc.

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

01-February-2023

Mun of Middlesex Centre (Ilderton WWTP)

Attn : Brian Watson

Date Rec. : 25 January 2023
LR Report: CA30438-JAN23

10227 Ilderton Rd.
Ilderton, ON
N0M 2A0, Canada

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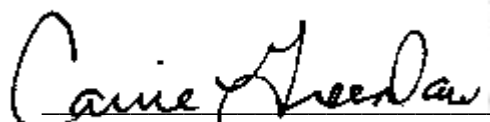
Phone: 519-666-0190 ext 255
Fax:519-666-0271

CERTIFICATE OF ANALYSIS

Final Report

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Completed Date	4: Analysis Completed Time	5: 1AC38 Raw Sewage	6: 1AC39 Final Effluent
Sample Date & Time					24-Jan-23 12:39	24-Jan-23 11:35
Temperature Upon Receipt [at London Lab °C]	---	---	---	---	8.6	8.6
Temperature Upon Receipt [at Lakefield Lab °C]	---	---	---	---	4.0	---
E. Coli [cfu/100mL]	25-Jan-23	17:20	27-Jan-23	10:09	---	38
Biochemical Oxygen Demand (BOD5) [mg/L]	27-Jan-23	16:31	01-Feb-23	12:58	166	---
Total Suspended Solids [mg/L]	30-Jan-23	15:07	31-Jan-23	14:52	166	---
Phosphorus (total) [mg/L]	27-Jan-23	15:57	30-Jan-23	11:37	3.52	---
Total Kjeldahl Nitrogen [as N mg/L]	27-Jan-23	19:04	30-Jan-23	11:14	37.2	---

*E. Coli analysis was completed at the SGS Environmental Services - London Laboratory.



Carrie Greenlaw
Project Specialist,
Environment, Health & Safety



SGS Canada Inc.

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

01-February-2023

Mun of Middlesex Centre (Ilderton WWTP)

Attn : Brian Watson

Date Rec. : 25 January 2023
LR Report: CA30439-JAN23

10227 Ilderton Rd.
Ilderton, ON
N0M 2A0, Canada

Copy: #1

Phone: 519-666-0190 ext 255
Fax:519-666-0271

CERTIFICATE OF ANALYSIS

Final Report

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Completed Date	4: Analysis Completed Time	5: 1AC39 Final Effluent
Sample Date & Time					25-Jan-23 08:34
Temperature Upon Receipt [at London Lab °C]	---	---	---	---	15.5
Temperature Upon Receipt [at Lakefield Lab °C]	---	---	---	---	4.0
Carbonaceous Biochemical Oxygen Demand [(CBOD5) mg/L]	27-Jan-23	17:18	01-Feb-23	15:06	5
Total Suspended Solids [mg/L]	28-Jan-23	12:40	30-Jan-23	15:23	7
Phosphorus (total) [mg/L]	27-Jan-23	15:57	30-Jan-23	11:37	0.19
Total Kjeldahl Nitrogen [as N mg/L]	27-Jan-23	19:04	30-Jan-23	11:14	2.4
Ammonia+Ammonium (N) [as N mg/L]	27-Jan-23	21:50	30-Jan-23	10:37	1.6
Nitrite (as N) [mg/L]	27-Jan-23	20:34	01-Feb-23	10:44	0.13
Nitrate (as N) [mg/L]	27-Jan-23	20:34	01-Feb-23	10:44	28.0
Nitrate + Nitrite (as N) [mg/L]	27-Jan-23	20:34	01-Feb-23	10:44	28.1
pH@temp15 [pH Units]	31-Jan-23	12:58	01-Feb-23	11:08	7.74
Unionized Ammonia @temp15 [mg/L as N]	31-Jan-23	12:58	01-Feb-23	11:08	0.023

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



Carrie Greenlaw
Project Specialist,
Environment, Health & Safety



SGS Canada Inc.

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

08-February-2023

Mun of Middlesex Centre (Ilderton WWTP)

Attn : Brian Watson

Date Rec. : 01 February 2023
LR Report: CA30013-FEB23

10227 Ilderton Rd.
Ilderton, ON
N0M 2A0, Canada

Copy: #1

Phone: 519-666-0190 ext 255
Fax:519-666-0271

CERTIFICATE OF ANALYSIS

Final Report

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Completed Date	4: Analysis Completed Time	5: 1AC38 Raw Sewage	6: 1AC39 Final Effluent
Sample Date & Time					31-Jan-23 11:59	31-Jan-23 10:53
Temperature Upon Receipt [at London Lab °C]	---	---	---	---	7.9	7.9
Temperature Upon Receipt [at Lakefield Lab °C]	---	---	---	---	4.0	4.0
E. Coli [cfu/100mL]	01-Feb-23	16:25	03-Feb-23	12:48	---	33
Carbonaceous Biochemical Oxygen Demand [(CBOD5) mg/L]	02-Feb-23	17:03	07-Feb-23	13:37	---	< 2
Biochemical Oxygen Demand (BOD5) [mg/L]	02-Feb-23	17:03	07-Feb-23	11:24	165	---
Total Suspended Solids [mg/L]	03-Feb-23	07:44	06-Feb-23	11:52	224	6
Phosphorus (total) [mg/L]	02-Feb-23	20:10	03-Feb-23	13:31	4.43	0.10
Total Kjeldahl Nitrogen [as N mg/L]	02-Feb-23	17:41	03-Feb-23	12:29	42.7	1.1
Ammonia+Ammonium (N) [as N mg/L]	02-Feb-23	16:47	03-Feb-23	11:25	---	0.7
Nitrite (as N) [mg/L]	02-Feb-23	16:09	07-Feb-23	16:35	---	0.10
Nitrate (as N) [mg/L]	02-Feb-23	16:09	07-Feb-23	16:35	---	27.0
Nitrate + Nitrite (as N) [mg/L]	02-Feb-23	16:09	07-Feb-23	16:35	---	27.1
pH@temp15 [pH Units]	03-Feb-23	08:54	03-Feb-23	10:55	---	8.39
Unionized Ammonia @temp15 [mg/L as N]	03-Feb-23	08:54	03-Feb-23	11:26	---	0.043

*E. Coli analysis was completed at the SGS Environmental Services - London Laboratory.
Note: Federal unionized ammonia at 15 °C calculated using lab pH results performed at this temperature.

Hawley Anderson, Hon.B.Sc
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15-February-2023

Mun of Middlesex Centre (Ilderton WWTP)

Attn : Brian Watson

Date Rec. : 08 February 2023
LR Report: CA30145-FEB23

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CERTIFICATE OF ANALYSIS

Final Report

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Completed Date	4: Analysis Completed Time	5: 1AC38 Raw Sewage	6: 1AC39 Final Effluent
Sample Date & Time					07-Feb-23 12:55	07-Feb-23 10:05
Temperature Upon Receipt [at London Lab °C]	---	---	---	---	8.0	8.0
Temperature Upon Receipt [at Lakefield Lab °C]	---	---	---	---	4.0	4.0
E. Coli [cfu/100mL]	08-Feb-23	15:55	10-Feb-23	17:03	---	14
Carbonaceous Biochemical Oxygen Demand [(CBOD5) mg/L]	09-Feb-23	17:30	14-Feb-23	13:35	---	< 2
Biochemical Oxygen Demand (BOD5) [mg/L]	09-Feb-23	16:15	14-Feb-23	12:08	196	---
Total Suspended Solids [mg/L]	10-Feb-23	09:58	13-Feb-23	10:52	234	5
Phosphorus (total) [mg/L]	10-Feb-23	14:55	13-Feb-23	10:09	5.10	0.10
Total Kjeldahl Nitrogen [as N mg/L]	09-Feb-23	15:22	10-Feb-23	11:33	47.0	1.8
Ammonia+Ammonium (N) [as N mg/L]	10-Feb-23	09:40	13-Feb-23	11:50	---	1.5
Nitrite (as N) [mg/L]	09-Feb-23	19:20	14-Feb-23	17:08	---	0.20
Nitrate (as N) [mg/L]	09-Feb-23	19:20	14-Feb-23	17:08	---	26.2
Nitrate + Nitrite (as N) [mg/L]	09-Feb-23	19:20	14-Feb-23	17:08	---	26.4
pH@temp15 [pH Units]	10-Feb-23	13:51	13-Feb-23	12:58	---	8.29
Unionized Ammonia @temp15 [mg/L as N]	10-Feb-23	13:51	13-Feb-23	12:58	---	0.078

*E. Coli analysis was completed at the SGS Environmental Services - London Laboratory.
Note: Federal unionized ammonia at 15 °C calculated using lab pH results performed at this temperature.

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22-February-2023

Mun of Middlesex Centre (Ilderton WWTP)

Attn : Brian Watson

Date Rec. : 08 February 2023
LR Report: CA30144-FEB23

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CERTIFICATE OF ANALYSIS

Final Report

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Completed Date	4: Analysis Completed Time	6: 36D05 Sludge
Sample Date & Time					08-Feb-23 08:07
Temperature Upon Receipt [at London Lab °C]	---	---	---	---	8.0
Temperature Upon Receipt [at Lakefield Lab °C]	---	---	---	---	4.0
Total Solids [%]	09-Feb-23	19:13	13-Feb-23	12:35	2.57
SpecificGravity	09-Feb-23	19:13	13-Feb-23	12:35	1.0
Volatile Solids [%]	09-Feb-23	19:13	13-Feb-23	12:44	73.3
Volatile Solids [%]	09-Feb-23	19:13	13-Feb-23	12:44	1.88
Nitrite (as N) [mg/kg]	09-Feb-23	20:11	21-Feb-23	12:57	60
Nitrite (as N) [mg/L]	09-Feb-23	20:11	21-Feb-23	12:57	1.7
Nitrate (as N) [mg/kg]	09-Feb-23	20:11	21-Feb-23	12:57	3500
Nitrate (as N) [mg/L]	09-Feb-23	20:11	21-Feb-23	12:57	90
Nitrate + Nitrite (a) [mg/kg]	09-Feb-23	20:11	21-Feb-23	12:57	3600
Nitrate + Nitrite (as N) [mg/L]	09-Feb-23	20:11	21-Feb-23	12:57	92
Total Kjeldahl Nitrogen [as N mg/kg]	10-Feb-23	08:53	14-Feb-23	14:05	58000
Total Kjeldahl Nitrogen [as N mg/L]	10-Feb-23	08:53	14-Feb-23	14:05	1500
Ammonia+Ammonium (N) [as N mg/kg]	09-Feb-23	14:20	10-Feb-23	13:25	460
Ammonia+Ammonium (N) [as N mg/L]	09-Feb-23	14:20	10-Feb-23	13:25	11.7
Mercury [mg/kg]	16-Feb-23	12:44	17-Feb-23	16:23	1.7
Mercury [mg/L]	16-Feb-23	12:44	17-Feb-23	16:23	0.043
Arsenic [mg/kg]	16-Feb-23	12:44	17-Feb-23	16:23	<4
Arsenic [mg/L]	16-Feb-23	12:44	17-Feb-23	16:23	< 0.1
Cadmium [mg/kg]	16-Feb-23	12:44	17-Feb-23	16:23	0.7
Cadmium [mg/L]	16-Feb-23	12:44	17-Feb-23	16:23	0.018
Cobalt [mg/kg]	16-Feb-23	12:44	17-Feb-23	16:23	2
Cobalt [mg/L]	16-Feb-23	12:44	17-Feb-23	16:23	0.05
Chromium [mg/kg]	16-Feb-23	12:44	17-Feb-23	16:23	14
Chromium [mg/L]	16-Feb-23	12:44	17-Feb-23	16:23	0.36
Copper [mg/kg]	16-Feb-23	12:44	17-Feb-23	16:23	280
Copper [mg/L]	16-Feb-23	12:44	17-Feb-23	16:23	7.3
Magnesium [mg/kg]	16-Feb-23	12:44	17-Feb-23	16:23	3400
Magnesium [mg/L]	16-Feb-23	12:44	17-Feb-23	16:23	87
Manganese [mg/kg]	16-Feb-23	12:44	17-Feb-23	16:23	330

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Completed Date	4: Analysis Completed Time	6: 36D05 Sludge
Manganese [mg/L]	16-Feb-23	12:44	17-Feb-23	16:22	8.6
Molybdenum [mg/kg]	16-Feb-23	12:44	17-Feb-23	16:23	8
Molybdenum [mg/L]	16-Feb-23	12:44	17-Feb-23	16:22	0.20
Nickel [mg/kg]	16-Feb-23	12:44	17-Feb-23	16:23	12
Nickel [mg/L]	16-Feb-23	12:44	17-Feb-23	16:22	0.32
Lead [mg/kg]	16-Feb-23	12:44	17-Feb-23	16:23	7
Lead [mg/L]	16-Feb-23	12:44	17-Feb-23	16:21	0.2
Selenium [mg/kg]	16-Feb-23	12:44	17-Feb-23	16:23	4
Selenium [mg/L]	16-Feb-23	12:44	17-Feb-23	16:21	0.1
Zinc [mg/kg]	16-Feb-23	12:44	17-Feb-23	16:23	530
Zinc [mg/L]	16-Feb-23	12:44	17-Feb-23	16:21	14
Phosphorus [mg/kg]	16-Feb-23	12:44	17-Feb-23	16:23	40000
Phosphorus (Total) [mg/L]	16-Feb-23	12:44	17-Feb-23	16:21	1000
Potassium [mg/kg]	16-Feb-23	12:44	17-Feb-23	16:23	4300
Potassium [mg/L]	16-Feb-23	12:44	17-Feb-23	16:21	110
Sulphur [mg/kg]	16-Feb-23	12:44	17-Feb-23	16:23	9600
Sulfur [mg/L]	16-Feb-23	12:44	17-Feb-23	16:21	250
E. Coli [cfu/1g dried wgt]	08-Feb-23	16:35	10-Feb-23	11:06	116732
E.Coli [cfu/100mL]	08-Feb-23	16:35	10-Feb-23	11:06	300000

Sample matrix = Sludge/Biosolids Solution
 Metals, TKN, Ammonia + Ammonium, Nitrite, Nitrate and Nitrates calculated and reported in mg/kg on a dried weight basis. Detection Limits reflect this calculation
 The E.coli value reported in CFU/1g dried weight was calculated using Total Solids and CFU/100ml.

Note: E. Coli analysis was completed at the SGS London Laboratory.



Carrie Greenlaw
 Project Specialist,
 Environment, Health & Safety



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23-February-2023

Mun of Middlesex Centre (Ilderton WWTP)

Attn : Brian Watson

Date Rec. : 15 February 2023
LR Report: CA30283-FEB23

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N0M 2A0, Canada

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CERTIFICATE OF ANALYSIS

Final Report

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Completed Date	4: Analysis Completed Time	5: 1AC38 Raw Sewage	6: 1AC39 Final Effluent
Sample Date & Time					14-Feb-23 15:47	15-Feb-23 08:02
Temperature Upon Receipt [at London Lab °C]	---	---	---	---	10.8	10.8
Temperature Upon Receipt [at Lakefield Lab °C]	---	---	---	---	7.0	7.0
E. Coli [cfu/100mL]	15-Feb-23	16:20	17-Feb-23	09:20	---	41
Carbonaceous Biochemical Oxygen Demand [(CBOD5) mg/L]	17-Feb-23	17:19	22-Feb-23	15:56	---	2
Biochemical Oxygen Demand (BOD5) [mg/L]	17-Feb-23	16:11	22-Feb-23	15:09	142	---
Total Suspended Solids [mg/L]	21-Feb-23	07:41	22-Feb-23	10:01	158	7
Phosphorus (total) [mg/L]	17-Feb-23	16:12	21-Feb-23	13:47	3.87	0.11
Total Kjeldahl Nitrogen [as N mg/L]	17-Feb-23	17:34	21-Feb-23	09:28	38.9	1.4
Ammonia+Ammonium (N) [as N mg/L]	17-Feb-23	16:51	21-Feb-23	15:01	---	1.4
Nitrite (as N) [mg/L]	17-Feb-23	14:27	21-Feb-23	11:36	---	0.47
Nitrate (as N) [mg/L]	17-Feb-23	14:27	21-Feb-23	11:36	---	21.8
Nitrate + Nitrite (as N) [mg/L]	17-Feb-23	14:27	21-Feb-23	11:36	---	22.3
pH@temp15 [pH Units]	17-Feb-23	10:27	21-Feb-23	09:21	---	8.61
Unionized Ammonia @temp15 [mg/L as N]	17-Feb-23	10:27	22-Feb-23	09:22	---	0.136

*E. Coli analysis was completed at the SGS Environmental Services - London Laboratory.
Note: Federal unionized ammonia at 15 °C calculated using lab pH results performed at this temperature.

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28-February-2023

Mun of Middlesex Centre (Ilderton WWTP)

Attn : Brian Watson

Date Rec. : 22 February 2023
LR Report: CA30346-FEB23

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CERTIFICATE OF ANALYSIS

Final Report

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Completed Date	4: Analysis Completed Time	5: 1AC38 Raw Sewage
Sample Date & Time					21-Feb-23 12:30
Temperature Upon Receipt [at London Lab °C]	---	---	---	---	5.8
Temperature Upon Receipt [at Lakefield Lab °C]	---	---	---	---	6.0
Biochemical Oxygen Demand (BOD5) [mg/L]	23-Feb-23	17:13	28-Feb-23	13:59	261
Total Suspended Solids [mg/L]	24-Feb-23	08:26	27-Feb-23	12:34	198
Phosphorus (total) [mg/L]	27-Feb-23	16:02	28-Feb-23	10:14	4.40
Total Kjeldahl Nitrogen [as N mg/L]	23-Feb-23	19:30	24-Feb-23	16:02	41.9

Carrie Greenlaw
Project Specialist,
Environment, Health & Safety



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02-March-2023

Mun of Middlesex Centre (Ilderton WWTP)

Attn : Brian Watson

Date Rec. : 22 February 2023
LR Report: CA30344-FEB23

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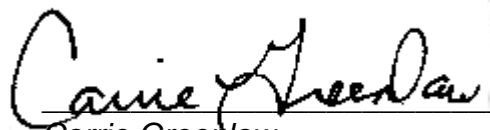
Phone: 519-666-0190 ext 255
Fax:519-666-0271

CERTIFICATE OF ANALYSIS

Final Report

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Completed Date	4: Analysis Completed Time	5: 1AC39 Final Effluent
Sample Date & Time					22-Feb-23 07:44
Temperature Upon Receipt [at London Lab °C]	---	---	---	---	7.1
Temperature Upon Receipt [at Lakefield Lab °C]	---	---	---	---	6.0
E. Coli [cfu/100mL]	23-Feb-23	13:15	27-Feb-23	11:33	18
Carbonaceous Biochemical Oxygen Demand [(CBOD5) mg/L]	23-Feb-23	17:13	28-Feb-23	15:23	5
Total Suspended Solids [mg/L]	25-Feb-23	11:03	28-Feb-23	10:28	7
Phosphorus (total) [mg/L]	27-Feb-23	16:02	01-Mar-23	09:33	0.15
Total Kjeldahl Nitrogen [as N mg/L]	23-Feb-23	19:30	24-Feb-23	16:02	5.2
Ammonia+Ammonium (N) [as N mg/L]	24-Feb-23	22:15	27-Feb-23	11:05	2.9
Nitrite (as N) [mg/L]	25-Feb-23	07:11	02-Mar-23	13:01	2.02
Nitrate (as N) [mg/L]	25-Feb-23	07:11	02-Mar-23	13:01	22.8
Nitrate + Nitrite (as N) [mg/L]	25-Feb-23	07:11	02-Mar-23	13:01	24.8
pH@temp15 [pH Units]	23-Feb-23	12:56	24-Feb-23	11:15	8.39
Unionized Ammonia @temp15 [mg/L as N]	23-Feb-23	12:56	27-Feb-23	11:05	0.182

*E. Coli analysis was completed at the SGS Environmental Services - London Laboratory.
Note: Federal unionized ammonia at 15 °C calculated using Lab pH results performed at this temperature.


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08-March-2023

Mun of Middlesex Centre (Ilderton WWTP)

Attn : Brian Watson

Date Rec. : 01 March 2023
LR Report: CA30023-MAR23

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N0M 2A0, Canada

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CERTIFICATE OF ANALYSIS

Final Report

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Completed Date	4: Analysis Completed Time	5: 1AC38 Raw Sewage
Sample Date & Time					28-Feb-23 12:00
Temperature Upon Receipt [at London Lab °C]	---	---	---	---	10.3
Temperature Upon Receipt [at Lakefield Lab °C]	---	---	---	---	7.0
Biochemical Oxygen Demand (BOD5) [mg/L]	03-Mar-23	17:17	08-Mar-23	13:30	152
Total Suspended Solids [mg/L]	06-Mar-23	09:12	07-Mar-23	13:36	216
Phosphorus (total) [mg/L]	03-Mar-23	16:28	06-Mar-23	13:23	5.01
Total Kjeldahl Nitrogen [as N mg/L]	03-Mar-23	19:39	07-Mar-23	11:30	49.0

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09-March-2023

Mun of Middlesex Centre (Ilderton WWTP)

Attn : Brian Watson

Date Rec. : 01 March 2023
LR Report: CA30022-MAR23

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 N0M 2A0, Canada

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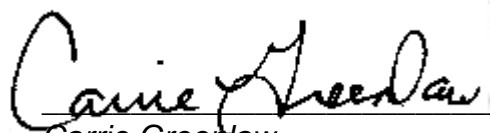
Phone: 519-666-0190 ext 255
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CERTIFICATE OF ANALYSIS

Final Report

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Completed Date	4: Analysis Completed Time	5: 1AC39 Final Effluent
Sample Date & Time					01-Mar-23 08:31
Temperature Upon Receipt [at London Lab °C]	---	---	---	---	10.6
Temperature Upon Receipt [at Lakefield Lab °C]	---	---	---	---	7.0
E. Coli [cfu/100mL]	02-Mar-23	16:55	06-Mar-23	10:18	29
Carbonaceous Biochemical Oxygen Demand [(CBOD5) mg/L]	03-Mar-23	17:18	08-Mar-23	15:44	3
Total Suspended Solids [mg/L]	06-Mar-23	09:12	07-Mar-23	13:36	7
Phosphorus (total) [mg/L]	03-Mar-23	16:28	06-Mar-23	13:23	0.19
Total Kjeldahl Nitrogen [as N mg/L]	03-Mar-23	19:39	07-Mar-23	11:30	14.4
Ammonia+Ammonium (N) [as N mg/L]	03-Mar-23	17:38	07-Mar-23	12:58	12.3
Nitrite (as N) [mg/L]	03-Mar-23	13:22	07-Mar-23	14:54	0.69
Nitrate (as N) [mg/L]	03-Mar-23	13:22	07-Mar-23	14:54	11.6
Nitrate + Nitrite (as N) [mg/L]	03-Mar-23	13:22	07-Mar-23	14:54	12.3
pH@temp15 [pH Units]	03-Mar-23	14:20	06-Mar-23	13:35	8.38
Unionized Ammonia @temp15 [mg/L as N]	03-Mar-23	14:20	07-Mar-23	12:58	0.765

*E. Coli analysis was completed at the SGS Environmental Services - London Laboratory.
 Note: Federal unionized ammonia at 15 °C calculated using Lab pH results performed at this temperature.



Carrie Greenlaw
 Project Specialist,
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22-March-2023

Mun of Middlesex Centre (Ilderton WWTP)

Attn : Brian Watson

Date Rec. : 08 March 2023
LR Report: CA30157-MAR23

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CERTIFICATE OF ANALYSIS

Final Report

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Completed Date	4: Analysis Completed Time	6: 36D05 Sludge
Sample Date & Time					07-Mar-23 12:30
Temperature Upon Receipt [at London Lab °C]	---	---	---	---	13.6
Temperature Upon Receipt [at Lakefield Lab °C]	---	---	---	---	8.0
Total Solids [%]	10-Mar-23	21:26	14-Mar-23	09:59	1.65
Specific Gravity	10-Mar-23	21:26	14-Mar-23	09:59	1.0
Volatile Solids [%]	10-Mar-23	21:26	14-Mar-23	09:59	72.5
Volatile Solids [mg/kg]	10-Mar-23	21:26	14-Mar-23	09:59	1.20
Nitrite (as N) [mg/kg]	13-Mar-23	20:27	22-Mar-23	10:55	820
Nitrite (as N) [mg/L]	13-Mar-23	20:27	22-Mar-23	10:55	14
Nitrate (as N) [mg/kg]	13-Mar-23	20:27	22-Mar-23	10:55	7200
Nitrate (as N) [mg/L]	13-Mar-23	20:27	22-Mar-23	10:55	120
Nitrate + Nitrite (a) [mg/kg]	13-Mar-23	20:27	22-Mar-23	10:55	8020
Nitrate + Nitrite (as N) [mg/L]	13-Mar-23	20:27	22-Mar-23	10:55	130
Total Kjeldahl Nitrogen [as N mg/kg]	13-Mar-23	14:26	15-Mar-23	12:36	59000
Total Kjeldahl Nitrogen [as N mg/L]	13-Mar-23	14:26	15-Mar-23	12:36	978
Ammonia+Ammonium (N) [as N mg/kg]	13-Mar-23	15:38	14-Mar-23	09:49	990
Ammonia+Ammonium (N) [as N mg/L]	13-Mar-23	15:38	14-Mar-23	09:49	16.3
Mercury [mg/kg]	13-Mar-23	13:28	13-Mar-23	16:33	1.2
Mercury [mg/L]	13-Mar-23	13:28	13-Mar-23	16:33	0.019
Arsenic [mg/kg]	13-Mar-23	13:28	13-Mar-23	16:33	<6
Arsenic [mg/L]	13-Mar-23	13:28	13-Mar-23	16:33	< 0.1
Cadmium [mg/kg]	13-Mar-23	13:28	13-Mar-23	16:33	0.5
Cadmium [mg/L]	13-Mar-23	13:28	13-Mar-23	16:33	0.009
Cobalt [mg/kg]	13-Mar-23	13:28	13-Mar-23	16:33	2
Cobalt [mg/L]	13-Mar-23	13:28	13-Mar-23	16:33	0.03
Chromium [mg/kg]	13-Mar-23	13:28	13-Mar-23	16:33	11
Chromium [mg/L]	13-Mar-23	13:28	13-Mar-23	16:33	0.19
Copper [mg/kg]	13-Mar-23	13:28	13-Mar-23	16:33	220
Copper [mg/L]	13-Mar-23	13:28	13-Mar-23	16:33	3.7
Magnesium [mg/kg]	13-Mar-23	13:28	13-Mar-23	16:33	3800

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Completed Date	4: Analysis Completed Time	6: 36D05 Sludge
Magnesium [mg/L]	13-Mar-23	13:28	13-Mar-23	16:33	62
Manganese [mg/kg]	13-Mar-23	13:28	13-Mar-23	16:33	150
Manganese [mg/L]	13-Mar-23	13:28	13-Mar-23	16:33	2.5
Molybdenum [mg/kg]	13-Mar-23	13:28	13-Mar-23	16:33	5
Molybdenum [mg/L]	13-Mar-23	13:28	13-Mar-23	16:33	0.08
Nickel [mg/kg]	13-Mar-23	13:28	13-Mar-23	16:33	9
Nickel [mg/L]	13-Mar-23	13:28	13-Mar-23	16:33	0.15
Lead [mg/kg]	13-Mar-23	13:28	13-Mar-23	16:33	<6
Lead [mg/L]	13-Mar-23	13:28	13-Mar-23	16:33	< 0.1
Selenium [mg/kg]	13-Mar-23	13:28	13-Mar-23	16:33	<6
Selenium [mg/L]	13-Mar-23	13:28	13-Mar-23	16:33	< 0.1
Zinc [mg/kg]	13-Mar-23	13:28	13-Mar-23	16:33	420
Zinc [mg/L]	13-Mar-23	13:28	13-Mar-23	16:33	7
Phosphorus [mg/kg]	13-Mar-23	13:28	13-Mar-23	16:33	31000
Phosphorus (Total) [mg/L]	13-Mar-23	13:28	13-Mar-23	16:33	510
Potassium [mg/kg]	13-Mar-23	13:28	13-Mar-23	16:33	4300
Potassium [mg/L]	13-Mar-23	13:28	13-Mar-23	16:33	71
Sulphur [mg/kg]	13-Mar-23	13:28	13-Mar-23	16:33	7500
Sulfur [mg/L]	13-Mar-23	13:28	14-Mar-23	11:55	120
E. Coli [cfu/1g dried wgt]	08-Mar-23	17:35	10-Mar-23	16:31	115152
E.Coli [cfu/100mL]	08-Mar-23	17:35	10-Mar-23	16:31	190000

Sample matrix = Sludge/Biosolids Solution

Metals, TKN, Ammonia + Ammonium, Nitrite, Nitrate and Nitrates calculated and reported in mg/kg on a dried weight basis. Detection Limits reflect this calculation
 The E. coli value reported in CFU/1g dried weight was calculated using Total Solids and CFU/100ml.

Note: E. Coli analysis was completed at the SGS London Laboratory.

Carrie Greenlaw
 Project Specialist,
 Environment, Health & Safety



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20-March-2023

Mun of Middlesex Centre (Ilderton WWTP)

Attn : Brian Watson

Date Rec. : 08 March 2023
LR Report: CA30148-MAR23

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CERTIFICATE OF ANALYSIS

Final Report

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Completed Date	4: Analysis Completed Time	5: 1AC38 Raw Sewage	6: 1AC39 Final Effluent
Sample Date & Time					07-Mar-23 12:16	08-Mar-23 08:14
Temperature Upon Receipt [at London Lab °C]	---	---	---	---	14.1	14.1
Temperature Upon Receipt [at Lakefield Lab °C]	---	---	---	---	8.0	8.0
E. Coli [cfu/100mL]	08-Mar-23	17:10	10-Mar-23	16:24	---	2
Carbonaceous Biochemical Oxygen Demand [(CBOD5) mg/L]	10-Mar-23	17:31	15-Mar-23	14:39	---	3
Biochemical Oxygen Demand (BOD5) [mg/L]	10-Mar-23	16:55	15-Mar-23	12:02	136	---
Total Suspended Solids [mg/L]	10-Mar-23	14:42	13-Mar-23	13:28	519	5
Phosphorus (total) [mg/L]	10-Mar-23	15:38	13-Mar-23	11:13	---	0.11
Total Kjeldahl Nitrogen [as N mg/L]	10-Mar-23	16:28	13-Mar-23	12:08	---	3.2
Phosphorus (total) [mg/L]	14-Mar-23	14:52	20-Mar-23	10:37	2.8	---
Total Kjeldahl Nitrogen [as N mg/L]	14-Mar-23	14:52	16-Mar-23	10:04	34.1	---
Ammonia+Ammonium (N) [as N mg/L]	10-Mar-23	17:02	13-Mar-23	10:26	---	2.4
Nitrite (as N) [mg/L]	10-Mar-23	20:26	17-Mar-23	16:03	---	1.29
Nitrate (as N) [mg/L]	10-Mar-23	20:26	17-Mar-23	16:03	---	17.2
Nitrate + Nitrite (as N) [mg/L]	10-Mar-23	20:26	17-Mar-23	16:03	---	18.5
pH@temp15 [pH Units]	10-Mar-23	13:34	10-Mar-23	16:28	---	8.11
Unionized Ammonia @temp15 [mg/L as N]	10-Mar-23	13:34	16-Mar-23	10:04	---	0.082

*E. Coli analysis was completed at the SGS Environmental Services - London Laboratory.
Note: Federal unionized ammonia at 15 °C calculated using Lab pH results performed at this temperature.


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22-March-2023

Mun of Middlesex Centre (Ilderton WWTP)

Attn : Brian Watson

Date Rec. : 15 March 2023
LR Report: CA30267-MAR23

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CERTIFICATE OF ANALYSIS

Final Report

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Completed Date	4: Analysis Completed Time	5: 1AC38 Raw Sewage
Sample Date & Time					14-Mar-23 12:30
Temperature Upon Receipt [at London Lab °C]	---	---	---	---	8.5
Temperature Upon Receipt [at Lakefield Lab °C]	---	---	---	---	6.0
Biochemical Oxygen Demand (BOD5) [mg/L]	17-Mar-23	16:53	22-Mar-23	11:28	129
Total Suspended Solids [mg/L]	18-Mar-23	12:36	20-Mar-23	14:38	98
Phosphorus (total) [mg/L]	17-Mar-23	15:13	21-Mar-23	10:21	4.59
Total Kjeldahl Nitrogen [as N mg/L]	17-Mar-23	18:32	22-Mar-23	09:45	48.7

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03-April-2023

Mun of Middlesex Centre (Ilderton WWTP)

Attn : Brian Watson

Date Rec. : 21 March 2023
LR Report: CA30332-MAR23

10227 Ilderton Rd.
Ilderton, ON
N0M 2A0, Canada

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Phone: 519-666-0190 ext 255
Fax:519-666-0271

CERTIFICATE OF ANALYSIS

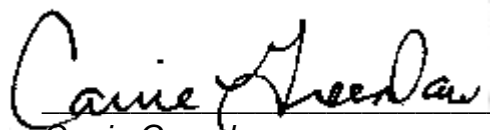
Final Report

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Completed Date	4: Analysis Completed Time	5: 1AC39 Final Effluent
Sample Date & Time					19-Mar-23 08:50
Temperature Upon Receipt [at London Lab °C]	---	---	---	---	6.1
Temperature Upon Receipt [at Lakefield Lab °C]	---	---	---	---	11.0
Carbonaceous Biochemical Oxygen Demand [(CBOD5) mg/L]	28-Mar-23	15:18	03-Apr-23	11:19	6
Phosphorus (total) [mg/L]	27-Mar-23	17:00	28-Mar-23	11:31	0.10
Total Kjeldahl Nitrogen [as N mg/L]	22-Mar-23	19:12	23-Mar-23	10:08	3.3
Ammonia+Ammonium (N) [as N mg/L]	22-Mar-23	17:37	23-Mar-23	12:55	3.1
Nitrite (as N) [mg/L]	22-Mar-23	11:39	28-Mar-23	09:47	0.59
Nitrate (as N) [mg/L]	22-Mar-23	11:39	28-Mar-23	09:47	11.2
Nitrate + Nitrite (as N) [mg/L]	22-Mar-23	11:39	28-Mar-23	09:47	11.8
pH@temp15 [pH Units]	23-Mar-23	13:19	24-Mar-23	09:54	8.96
Unionized Ammonia @temp15 [mg/L as N]	23-Mar-23	13:19	24-Mar-23	09:54	0.622

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

UAL - Unreliable: Sample Age Exceeds Normal Limit

Note: CBOD analysis was requested by client after the recommended holding time of 7 days.



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03-April-2023

Mun of Middlesex Centre (Ilderton WWTP)

Attn : Brian Watson

Date Rec. : 24 March 2023
LR Report: CA30422-MAR23

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CERTIFICATE OF ANALYSIS

Final Report

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Completed Date	4: Analysis Completed Time	5: 1AC38 Raw Sewage	6: 1AC39 Final Effluent
Sample Date & Time					21-Mar-23 13:26	24-Mar-23 08:07
Temperature Upon Receipt [at London Lab °C]	---	---	---	---	6.6	6.6
Temperature Upon Receipt [at Lakefield Lab °C]	---	---	---	---	5.0	5.0
E. Coli [cfu/100mL]	24-Mar-23	14:45	27-Mar-23	11:10	---	8
Carbonaceous Biochemical Oxygen Demand [(CBOD5) mg/L]	27-Mar-23	15:33	03-Apr-23	10:06	---	5
Biochemical Oxygen Demand (BOD5) [mg/L]	27-Mar-23	15:18	03-Apr-23	09:57	83	---
Total Suspended Solids [mg/L]	27-Mar-23	13:15	28-Mar-23	16:17	81	8
Phosphorus (total) [mg/L]	27-Mar-23	17:00	28-Mar-23	09:12	3.21	0.15
Total Kjeldahl Nitrogen [as N mg/L]	27-Mar-23	09:20	30-Mar-23	14:37	31.9	6.4
Ammonia+Ammonium (N) [as N mg/L]	27-Mar-23	16:48	29-Mar-23	11:38	---	3.7
Nitrite (as N) [mg/L]	27-Mar-23	13:34	29-Mar-23	09:40	---	0.84
Nitrate (as N) [mg/L]	27-Mar-23	13:34	29-Mar-23	09:40	---	13.9
Nitrate + Nitrite (as N) [mg/L]	27-Mar-23	13:34	29-Mar-23	09:40	---	14.7
pH@temp15 [pH Units]	27-Mar-23	12:47	27-Mar-23	15:28	---	8.39
Unionized Ammonia @temp15 [mg/L as N]	27-Mar-23	12:47	29-Mar-23	11:39	---	0.232

*E. Coli analysis was completed at the SGS Environmental Services - London Laboratory.
Note: Federal unionized ammonia at 15 °C calculated using lab pH results performed at this temperature.

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03-April-2023

Mun of Middlesex Centre (Ilderton WWTP)

Attn : Brian Watson

Date Rec. : 26 March 2023
LR Report: CA30427-MAR23

10227 Ilderton Rd.
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N0M 2A0, Canada

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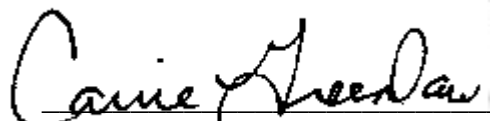
Phone: 519-666-0190 ext 255
Fax:519-666-0271

CERTIFICATE OF ANALYSIS

Final Report

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Completed Date	4: Analysis Completed Time	5: 1AC39 Final Effluent
Sample Date & Time					25-Mar-23 08:26
Temperature Upon Receipt [at London Lab °C]	---	---	---	---	13.8
Temperature Upon Receipt [at Lakefield Lab °C]	---	---	---	---	7.0
Total Kjeldahl Nitrogen [as N mg/L]	28-Mar-23	19:14	29-Mar-23	13:17	3.3
Ammonia+Ammonium (N) [as N mg/L]	28-Mar-23	17:05	29-Mar-23	11:39	2.5
Nitrite (as N) [mg/L]	28-Mar-23	15:00	29-Mar-23	11:04	0.91
Nitrate (as N) [mg/L]	28-Mar-23	15:00	29-Mar-23	11:04	15.2
Nitrate + Nitrite (as N) [mg/L]	28-Mar-23	15:00	29-Mar-23	11:04	16.1
pH@temp15 [pH Units]	31-Mar-23	13:51	03-Apr-23	13:43	8.20
Unionized Ammonia @temp15 [mg/L as N]	31-Mar-23	13:51	03-Apr-23	13:43	0.105

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



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03-April-2023

Mun of Middlesex Centre (Ilderton WWTP)

Attn : Brian Watson

Date Rec. : 26 March 2023
LR Report: CA30428-MAR23

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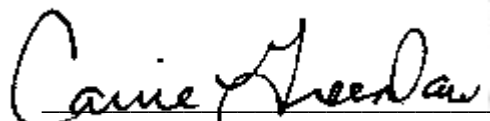
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Fax:519-666-0271

CERTIFICATE OF ANALYSIS

Final Report

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Completed Date	4: Analysis Completed Time	5: 1AC39 Final Effluent
Sample Date & Time					26-Mar-23 07:52
Temperature Upon Receipt [at London Lab °C]	---	---	---	---	13.8
Temperature Upon Receipt [at Lakefield Lab °C]	---	---	---	---	7.0
Total Kjeldahl Nitrogen [as N mg/L]	28-Mar-23	19:14	29-Mar-23	13:17	5.0
Ammonia+Ammonium (N) [as N mg/L]	28-Mar-23	17:05	29-Mar-23	11:39	3.4
Nitrite (as N) [mg/L]	28-Mar-23	15:00	29-Mar-23	11:04	1.52
Nitrate (as N) [mg/L]	28-Mar-23	15:00	29-Mar-23	11:04	14.6
Nitrate + Nitrite (as N) [mg/L]	28-Mar-23	15:00	29-Mar-23	11:04	16.1
pH@temp15 [pH Units]	31-Mar-23	13:51	03-Apr-23	13:43	8.16
Unionized Ammonia @temp15 [mg/L as N]	31-Mar-23	13:51	03-Apr-23	13:44	0.132

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



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06-April-2023

Mun of Middlesex Centre (Ilderton WWTP)

Attn : Brian Watson

Date Rec. : 29 March 2023
LR Report: CA30524-MAR23

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CERTIFICATE OF ANALYSIS

Final Report

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Completed Date	4: Analysis Completed Time	5: 1AC39 Final Effluent
Sample Date & Time					27-Mar-23 08:15
Temperature Upon Receipt [at London Lab °C]	---	---	---	---	4.1
Temperature Upon Receipt [at Lakefield Lab °C]	---	---	---	---	7.0
Carbonaceous Biochemical Oxygen Demand [(CBOD5) mg/L]	31-Mar-23	17:26	05-Apr-23	17:00	3
Ammonia+Ammonium (N) [as N mg/L]	30-Mar-23	16:05	31-Mar-23	11:00	3.0



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05-April-2023

Mun of Middlesex Centre (Ilderton WWTP)

Attn : Brian Watson

Date Rec. : 29 March 2023
LR Report: CA30523-MAR23

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CERTIFICATE OF ANALYSIS

Final Report

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Completed Date	4: Analysis Completed Time	5: 1AC38 Raw Sewage	6: 1AC39 Final Effluent
Sample Date & Time					28-Mar-23 15:41	28-Mar-23 14:09
Temperature Upon Receipt [at London Lab °C]	---	---	---	---	4.1	4.1
Temperature Upon Receipt [at Lakefield Lab °C]	---	---	---	---	7.0	7.0
E. Coli [cfu/100mL]	29-Mar-23	15:45	31-Mar-23	14:27	---	17
Carbonaceous Biochemical Oxygen Demand [(CBOD5) mg/L]	30-Mar-23	16:53	04-Apr-23	17:35	---	3
Biochemical Oxygen Demand (BOD5) [mg/L]	30-Mar-23	16:53	04-Apr-23	14:24	107	---
Total Suspended Solids [mg/L]	31-Mar-23	08:17	31-Mar-23	16:09	130	8
Phosphorus (total) [mg/L]	30-Mar-23	17:07	31-Mar-23	13:39	2.20	0.12
Total Kjeldahl Nitrogen [as N mg/L]	30-Mar-23	17:06	31-Mar-23	12:35	25.2	4.8
Ammonia+Ammonium (N) [as N mg/L]	30-Mar-23	16:05	31-Mar-23	11:00	---	2.3
Nitrite (as N) [mg/L]	02-Apr-23	16:52	05-Apr-23	10:06	---	1.18
Nitrate (as N) [mg/L]	02-Apr-23	16:52	05-Apr-23	10:06	---	14.2
Nitrate + Nitrite (as N) [mg/L]	02-Apr-23	16:52	05-Apr-23	10:06	---	15.4
pH@temp15 [pH Units]	31-Mar-23	13:51	03-Apr-23	13:45	---	7.90
Unionized Ammonia @temp15 [mg/L as N]	31-Mar-23	13:51	03-Apr-23	13:45	---	0.050

*E. Coli analysis was completed at the SGS Environmental Services - London Laboratory.
Note: Federal unionized ammonia at 15 °C calculated using lab pH results performed at this temperature.


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05-April-2023

Mun of Middlesex Centre (Ilderton WWTP)

Attn : Brian Watson

Date Rec. : 29 March 2023
LR Report: CA30525-MAR23

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CERTIFICATE OF ANALYSIS

Final Report

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Completed Date	4: Analysis Completed Time	5: 1AC39 Final Effluent
Sample Date & Time					29-Mar-23 08:12
Temperature Upon Receipt [at London Lab °C]	---	---	---	---	4.1
Temperature Upon Receipt [at Lakefield Lab °C]	---	---	---	---	7.0
Total Suspended Solids [mg/L]	31-Mar-23	08:17	31-Mar-23	16:09	5
Phosphorus (total) [mg/L]	30-Mar-23	17:07	31-Mar-23	13:39	0.11
Total Kjeldahl Nitrogen [as N mg/L]	30-Mar-23	17:06	31-Mar-23	12:35	5.2
Ammonia+Ammonium (N) [as N mg/L]	30-Mar-23	16:05	31-Mar-23	11:00	3.0
Nitrite (as N) [mg/L]	04-Apr-23	11:45	05-Apr-23	11:18	0.21
Nitrate (as N) [mg/L]	04-Apr-23	11:45	05-Apr-23	11:18	1.64
Nitrate + Nitrite (as N) [mg/L]	04-Apr-23	11:45	05-Apr-23	11:18	1.85
pH@temp15 [pH Units]	31-Mar-23	13:51	03-Apr-23	13:41	7.82
Unionized Ammonia @temp15 [mg/L as N]	31-Mar-23	13:51	03-Apr-23	13:41	0.054

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



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10-April-2023

Mun of Middlesex Centre (Ilderton WWTP)

Attn : Brian Watson

Date Rec. : 31 March 2023
LR Report: CA30561-MAR23

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N0M 2A0, Canada

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CERTIFICATE OF ANALYSIS

Final Report

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Completed Date	4: Analysis Completed Time	5: 1AC39 Final Effluent
Sample Date & Time					30-Mar-23 08:38
Temperature Upon Receipt [at London Lab °C]	---	---	---	---	4.1
Temperature Upon Receipt [at Lakefield Lab °C]	---	---	---	---	5.0
Carbonaceous Biochemical Oxygen Demand [(CBOD5) mg/L]	03-Apr-23	15:01	10-Apr-23	10:27	5
Ammonia+Ammonium (N) [as N mg/L]	04-Apr-23	21:44	05-Apr-23	11:16	2.1

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10-April-2023

Mun of Middlesex Centre (Ilderton WWTP)

Attn : Brian Watson

Date Rec. : 31 March 2023
LR Report: CA30562-MAR23

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CERTIFICATE OF ANALYSIS

Final Report

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Completed Date	4: Analysis Completed Time	5: 1AC39 Final Effluent
Sample Date & Time					31-Mar-23 08:20
Temperature Upon Receipt [at London Lab °C]	---	---	---	---	4.7
Temperature Upon Receipt [at Lakefield Lab °C]	---	---	---	---	5.0
Carbonaceous Biochemical Oxygen Demand [(CBOD5) mg/L]	03-Apr-23	15:01	10-Apr-23	10:27	5
Ammonia+Ammonium (N) [as N mg/L]	04-Apr-23	21:44	05-Apr-23	11:17	2.3

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17-April-2023

Mun of Middlesex Centre (Ilderton WWTP)

Attn : Brian Watson

Date Rec. : 05 April 2023
LR Report: CA30160-APR23

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CERTIFICATE OF ANALYSIS

Final Report

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Completed Date	4: Analysis Completed Time	5: 1AC38 Raw Sewage	6: 1AC39 Final Effluent
Sample Date & Time					04-Apr-23 12:30	04-Apr-23 10:40
Temperature Upon Receipt [at London Lab °C]	---	---	---	---	13.9	13.9
Temperature Upon Receipt [at Lakefield Lab °C]	---	---	---	---	7.0	7.0
E. Coli [cfu/100mL]	05-Apr-23	16:30	10-Apr-23	11:46	---	24
Carbonaceous Biochemical Oxygen Demand [(CBOD5) mg/L]	11-Apr-23	16:37	17-Apr-23	13:11	---	3
Biochemical Oxygen Demand (BOD5) [mg/L]	11-Apr-23	16:23	17-Apr-23	11:52	67	---
Total Suspended Solids [mg/L]	11-Apr-23	06:47	12-Apr-23	12:49	81	8
Phosphorus (total) [mg/L]	12-Apr-23	15:01	13-Apr-23	13:13	1.28	0.10
Total Kjeldahl Nitrogen [as N mg/L]	12-Apr-23	16:40	14-Apr-23	15:34	9.2	2.4
Ammonia+Ammonium (N) [as N mg/L]	12-Apr-23	15:50	13-Apr-23	10:07	---	1.6
Nitrite (as N) [mg/L]	10-Apr-23	20:02	13-Apr-23	15:55	---	1.09
Nitrate (as N) [mg/L]	10-Apr-23	20:02	13-Apr-23	15:55	---	13.5
Nitrate + Nitrite (as N) [mg/L]	10-Apr-23	20:02	13-Apr-23	15:55	---	14.6
pH@temp15 [pH Units]	11-Apr-23	13:19	12-Apr-23	11:27	---	8.42
Unionized Ammonia @temp15 [mg/L as N]	11-Apr-23	13:19	13-Apr-23	10:07	---	0.108

*E. Coli analysis was completed at the SGS Environmental Services - London Laboratory.
Note: Federal unionized ammonia at 15 °C calculated using lab pH results performed at this temperature.

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20-April-2023

Mun of Middlesex Centre (Ilderton WWTP)

Attn : Brian Watson

Date Rec. : 05 April 2023
LR Report: CA30168-APR23

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CERTIFICATE OF ANALYSIS

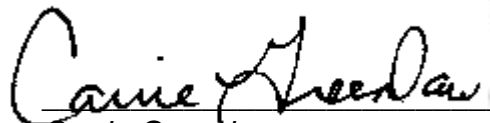
Final Report

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Completed Date	4: Analysis Completed Time	6: 36D05 Sludge
Sample Date & Time					04-Apr-23 12:45
Temperature Upon Receipt [at London Lab °C]	---	---	---	---	13.9
Temperature Upon Receipt [at Lakefield Lab °C]	---	---	---	---	7.0
Total Solids [%]	10-Apr-23	21:39	12-Apr-23	10:49	1.82
Specific Gravity	10-Apr-23	21:39	12-Apr-23	10:49	1.0
Volatile Solids [%]	10-Apr-23	21:39	12-Apr-23	10:49	71.9
Volatile Solids [mg/kg]	10-Apr-23	21:39	12-Apr-23	10:49	1.31
Nitrite (as N) [mg/kg]	10-Apr-23	20:42	19-Apr-23	17:24	80
Nitrite (as N) [mg/L]	10-Apr-23	20:42	19-Apr-23	17:24	1.4
Nitrate (as N) [mg/kg]	10-Apr-23	20:42	19-Apr-23	17:24	<30
Nitrate (as N) [mg/L]	10-Apr-23	20:42	19-Apr-23	17:24	< 0.3
Nitrate + Nitrite (a) [mg/kg]	10-Apr-23	20:42	19-Apr-23	17:24	80
Nitrate + Nitrite (as N) [mg/L]	10-Apr-23	20:42	19-Apr-23	17:24	1.4
Total Kjeldahl Nitrogen [as N mg/kg]	10-Apr-23	17:36	12-Apr-23	11:47	60000
Total Kjeldahl Nitrogen [as N mg/L]	10-Apr-23	17:36	12-Apr-23	11:47	1100
Ammonia+Ammonium (N) [as N mg/kg]	10-Apr-23	15:32	11-Apr-23	11:02	6800
Ammonia+Ammonium (N) [as N mg/L]	10-Apr-23	15:32	11-Apr-23	11:02	123
Mercury [mg/kg]	13-Apr-23	13:50	14-Apr-23	16:32	0.88
Mercury [mg/L]	13-Apr-23	13:50	14-Apr-23	16:32	0.016
Arsenic [mg/kg]	13-Apr-23	13:50	14-Apr-23	16:32	<6
Arsenic [mg/L]	13-Apr-23	13:50	14-Apr-23	16:32	< 0.1
Cadmium [mg/kg]	13-Apr-23	13:50	14-Apr-23	16:32	0.4
Cadmium [mg/L]	13-Apr-23	13:50	14-Apr-23	16:32	0.008
Cobalt [mg/kg]	13-Apr-23	13:50	14-Apr-23	16:32	1
Cobalt [mg/L]	13-Apr-23	13:50	14-Apr-23	16:32	0.02
Chromium [mg/kg]	13-Apr-23	13:50	14-Apr-23	16:32	9
Chromium [mg/L]	13-Apr-23	13:50	14-Apr-23	16:32	0.17
Copper [mg/kg]	13-Apr-23	13:50	14-Apr-23	16:32	170
Copper [mg/L]	13-Apr-23	13:50	14-Apr-23	16:32	3.2
Magnesium [mg/kg]	13-Apr-23	13:50	14-Apr-23	16:32	2600
Magnesium [mg/L]	13-Apr-23	13:50	14-Apr-23	16:32	47
Manganese [mg/kg]	13-Apr-23	13:50	14-Apr-23	16:32	110

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Completed Date	4: Analysis Completed Time	6: 36D05 Sludge
Manganese [mg/L]	13-Apr-23	13:50	14-Apr-23	16:32	2.1
Molybdenum [mg/kg]	13-Apr-23	13:50	14-Apr-23	16:32	4
Molybdenum [mg/L]	13-Apr-23	13:50	14-Apr-23	16:32	0.08
Nickel [mg/kg]	13-Apr-23	13:50	14-Apr-23	16:32	8
Nickel [mg/L]	13-Apr-23	13:50	14-Apr-23	16:32	0.14
Lead [mg/kg]	13-Apr-23	13:50	14-Apr-23	16:32	<6
Lead [mg/L]	13-Apr-23	13:50	14-Apr-23	16:32	< 0.1
Selenium [mg/kg]	13-Apr-23	13:50	14-Apr-23	16:32	<6
Selenium [mg/L]	13-Apr-23	13:50	14-Apr-23	16:32	< 0.1
Zinc [mg/kg]	13-Apr-23	13:50	14-Apr-23	16:32	320
Zinc [mg/L]	13-Apr-23	13:50	14-Apr-23	16:32	6
Phosphorus [mg/kg]	13-Apr-23	13:50	14-Apr-23	16:32	24000
Phosphorus (Total) [mg/L]	13-Apr-23	13:50	14-Apr-23	16:32	430
Potassium [mg/kg]	13-Apr-23	13:50	14-Apr-23	16:32	2900
Potassium [mg/L]	13-Apr-23	13:50	14-Apr-23	16:32	53
Sulphur [mg/kg]	13-Apr-23	13:50	14-Apr-23	16:32	6000
Sulfur [mg/L]	13-Apr-23	13:50	14-Apr-23	16:31	110
E. Coli [cfu/1g dried wgt]	05-Apr-23	17:40	10-Apr-23	11:53	170330
E.Coli [cfu/100mL]	05-Apr-23	17:40	10-Apr-23	11:53	310000

Sample matrix = Sludge/Biosolids Solution
 Metals, TKN, Ammonia + Ammonium, Nitrite, Nitrate and Nitrates calculated and reported in mg/kg on a dried weight basis. Detection Limits reflect this calculation
 The E.coli value reported in CFU/1g dried weight was calculated using Total Solids and CFU/100ml.

Note: E. Coli analysis was completed at the SGS London Laboratory.



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25-April-2023

Mun of Middlesex Centre (Ilderton WWTP)

Attn : Brian Watson

Date Rec. : 12 April 2023
LR Report: CA30307-APR23

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CERTIFICATE OF ANALYSIS

Final Report

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Completed Date	4: Analysis Completed Time	5: 1AC38 Raw Sewage	6: 1AC39 Final Effluent
Sample Date & Time					11-Apr-23 12:10	11-Apr-23 08:52
Temperature Upon Receipt [at London Lab °C]	---	---	---	---	9.9	9.9
Temperature Upon Receipt [at Lakefield Lab °C]	---	---	---	---	13.0	13.0
E. Coli [cfu/100mL]	12-Apr-23	17:30	14-Apr-23	13:04	---	8
Carbonaceous Biochemical Oxygen Demand [(CBOD5) mg/L]	14-Apr-23	17:09	19-Apr-23	13:36	---	3
Biochemical Oxygen Demand (BOD5) [mg/L]	14-Apr-23	17:30	19-Apr-23	12:22	140	---
Total Suspended Solids [mg/L]	14-Apr-23	14:32	17-Apr-23	14:22	179	8
Phosphorus (total) [mg/L]	17-Apr-23	15:37	18-Apr-23	11:07	3.75	0.16
Total Kjeldahl Nitrogen [as N mg/L]	18-Apr-23	09:00	18-Apr-23	16:22	35.0	3.4
Ammonia+Ammonium (N) [as N mg/L]	17-Apr-23	21:28	18-Apr-23	10:33	---	1.8
Nitrite (as N) [mg/L]	18-Apr-23	08:58	25-Apr-23	09:48	---	1.38
Nitrate (as N) [mg/L]	18-Apr-23	08:58	24-Apr-23	11:22	---	19.4
Nitrate + Nitrite (as N) [mg/L]	18-Apr-23	08:58	25-Apr-23	09:48	---	20.8
pH@temp15 [pH Units]	17-Apr-23	14:00	18-Apr-23	10:41	---	7.88
Unionized Ammonia @temp15 [mg/L as N]	17-Apr-23	14:00	18-Apr-23	10:33	---	0.037

*E. Coli analysis was completed at the SGS Environmental Services - London Laboratory.
 Note: Federal unionized ammonia at 15 °C calculated using lab pH results performed at this temperature.



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27-April-2023

Mun of Middlesex Centre (Ilderton WWTP)

Attn : Brian Watson

Date Rec. : 19 April 2023
LR Report: CA30445-APR23

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N0M 2A0, Canada

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CERTIFICATE OF ANALYSIS

Final Report

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Completed Date	4: Analysis Completed Time	5: 1AC38 Raw Sewage	6: 1AC39 Final Effluent
Sample Date & Time					18-Apr-23 14:40	18-Apr-23 11:32
Temperature Upon Receipt [at London Lab °C]	---	---	---	---	3.9	3.9
Temperature Upon Receipt [at Lakefield Lab °C]	---	---	---	---	11.0	11.0
E. Coli [cfu/100mL]	19-Apr-23	15:15	21-Apr-23	09:55	---	13
Carbonaceous Biochemical Oxygen Demand [(CBOD5) mg/L]	21-Apr-23	17:05	26-Apr-23	17:22	---	3
Biochemical Oxygen Demand (BOD5) [mg/L]	21-Apr-23	17:06	26-Apr-23	13:23	134	---
Total Suspended Solids [mg/L]	24-Apr-23	07:44	25-Apr-23	11:53	200	7
Phosphorus (total) [mg/L]	22-Apr-23	12:26	24-Apr-23	13:40	3.42	0.10
Total Kjeldahl Nitrogen [as N mg/L]	22-Apr-23	13:50	26-Apr-23	10:23	34.6	3.9
Ammonia+Ammonium (N) [as N mg/L]	25-Apr-23	16:51	26-Apr-23	13:55	---	2.8
Nitrite (as N) [mg/L]	24-Apr-23	12:00	27-Apr-23	14:55	---	0.34
Nitrate (as N) [mg/L]	24-Apr-23	12:00	27-Apr-23	14:55	---	23.3
Nitrate + Nitrite (as N) [mg/L]	24-Apr-23	12:00	27-Apr-23	14:55	---	23.6
pH@temp15 [pH Units]	21-Apr-23	13:06	24-Apr-23	09:42	---	7.71
Unionized Ammonia @temp15 [mg/L as N]	21-Apr-23	13:06	26-Apr-23	13:55	---	0.040

*E. Coli analysis was completed at the SGS Environmental Services - London Laboratory.
Note: Federal unionized ammonia at 15 °C calculated using lab pH results performed at this temperature.


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03-May-2023

Mun of Middlesex Centre (Ilderton WWTP)

Attn : Brian Watson

Date Rec. : 26 April 2023
LR Report: CA30561-APR23

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CERTIFICATE OF ANALYSIS

Final Report

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Completed Date	4: Analysis Completed Time	5: 1AC38 Raw Sewage
Sample Date & Time					25-Apr-23 12:30
Temperature Upon Receipt [at London Lab °C]	---	---	---	---	9.6
Temperature Upon Receipt [at Lakefield Lab °C]	---	---	---	---	9.0
Biochemical Oxygen Demand (BOD5) [mg/L]	27-Apr-23	17:27	02-May-23	14:39	148
Total Suspended Solids [mg/L]	01-May-23	13:03	02-May-23	18:05	158
Phosphorus (total) [mg/L]	28-Apr-23	14:33	30-Apr-23	08:21	3.27
Total Kjeldahl Nitrogen [as N mg/L]	28-Apr-23	15:47	28-Apr-23	11:52	34.4

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03-May-2023

Mun of Middlesex Centre (Ilderton WWTP)

Attn : Brian Watson

Date Rec. : 26 April 2023
LR Report: CA30560-APR23

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CERTIFICATE OF ANALYSIS

Final Report

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Completed Date	4: Analysis Completed Time	5: 1AC39 Final Effluent
Sample Date & Time					26-Apr-23 10:30
Temperature Upon Receipt [at London Lab °C]	---	---	---	---	9.6
Temperature Upon Receipt [at Lakefield Lab °C]	---	---	---	---	8.0
E. Coli [cfu/100mL]	26-Apr-23	18:05	28-Apr-23	11:56	1
Carbonaceous Biochemical Oxygen Demand [(CBOD5) mg/L]	27-Apr-23	17:11	02-May-23	15:44	3
Total Suspended Solids [mg/L]	01-May-23	13:03	02-May-23	18:04	9
Phosphorus (total) [mg/L]	28-Apr-23	14:33	30-Apr-23	08:21	0.19
Total Kjeldahl Nitrogen [as N mg/L]	28-Apr-23	15:47	28-Apr-23	11:52	5.7
Ammonia+Ammonium (N) [as N mg/L]	28-Apr-23	17:12	30-Apr-23	07:54	3.6
Nitrite (as N) [mg/L]	01-May-23	12:10	02-May-23	11:06	0.35
Nitrate (as N) [mg/L]	01-May-23	12:10	02-May-23	11:06	17.7
Nitrate + Nitrite (as N) [mg/L]	01-May-23	12:10	02-May-23	11:06	18.1
pH@temp15 [pH Units]	27-Apr-23	15:21	28-Apr-23	10:27	7.87
Unionized Ammonia @temp15 [mg/L as N]	27-Apr-23	15:21	30-Apr-23	07:54	0.071

*E. Coli analysis was completed at the SGS Environmental Services - London Laboratory.
 Note: Federal unionized ammonia at 15 °C calculated using Lab pH results performed at this temperature.



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10-May-2023

Mun of Middlesex Centre (Ilderton WWTP)

Attn : Brian Watson

Date Rec. : 03 May 2023
LR Report: CA30112-MAY23

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N0M 2A0, Canada

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CERTIFICATE OF ANALYSIS

Final Report

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Completed Date	4: Analysis Completed Time	5: 1AC38 Raw Sewage	6: 1AC39 Final Effluent
Sample Date & Time					02-May-23 13:50	02-May-23 08:20
Temperature Upon Receipt [at London Lab °C]	---	---	---	---	6.1	6.1
Temperature Upon Receipt [at Lakefield Lab °C]	---	---	---	---	7.0	7.0
E. Coli [cfu/100mL]	03-May-23	15:05	05-May-23	10:58	---	0
Carbonaceous Biochemical Oxygen Demand [(CBOD5) mg/L]	04-May-23	17:22	09-May-23	16:59	---	2
Biochemical Oxygen Demand (BOD5) [mg/L]	04-May-23	17:53	09-May-23	13:07	81	---
Total Suspended Solids [mg/L]	08-May-23	18:51	09-May-23	14:11	110	6
Phosphorus (total) [mg/L]	05-May-23	14:44	08-May-23	11:52	2.89	0.13
Total Kjeldahl Nitrogen [as N mg/L]	05-May-23	12:07	08-May-23	12:27	31.1	1.4
Ammonia+Ammonium (N) [as N mg/L]	04-May-23	16:39	05-May-23	09:53	---	0.6
Nitrite (as N) [mg/L]	05-May-23	15:17	08-May-23	17:55	---	0.58
Nitrate (as N) [mg/L]	05-May-23	15:17	08-May-23	17:55	---	20.3
Nitrate + Nitrite (as N) [mg/L]	05-May-23	15:17	08-May-23	17:55	---	20.9
pH@temp15 [pH Units]	04-May-23	21:26	05-May-23	12:45	---	7.95
Unionized Ammonia @temp15 [mg/L as N]	04-May-23	21:26	05-May-23	12:46	---	0.014

*E. Coli analysis was completed at the SGS Environmental Services - London Laboratory.
Note: Federal unionized ammonia at 15 °C calculated using lab pH results performed at this temperature.


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18-May-2023

Mun of Middlesex Centre (Ilderton WWTP)

Attn : Brian Watson

Date Rec. : 10 May 2023
LR Report: CA30220-MAY23

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 Ilderton, ON
 N0M 2A0, Canada

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CERTIFICATE OF ANALYSIS

Final Report

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Completed Date	4: Analysis Completed Time	5: 1AC38 Raw Sewage	6: 1AC39 Final Effluent
Sample Date & Time					09-May-23 12:45	10-May-23 08:03
Temperature Upon Receipt [at London Lab °C]	---	---	---	---	12.9	12.9
Temperature Upon Receipt [at Lakefield Lab °C]	---	---	---	---	9.0	9.0
E. Coli [cfu/100mL]	10-May-23	13:45	12-May-23	15:30	---	1
Carbonaceous Biochemical Oxygen Demand [(CBOD5) mg/L]	11-May-23	17:13	16-May-23	15:21	---	< 2
Biochemical Oxygen Demand (BOD5) [mg/L]	11-May-23	17:13	16-May-23	11:33	181	---
Total Suspended Solids [mg/L]	16-May-23	07:47	16-May-23	14:58	202	8
Phosphorus (total) [mg/L]	12-May-23	15:00	15-May-23	11:32	6.16	0.14
Total Kjeldahl Nitrogen [as N mg/L]	11-May-23	16:15	12-May-23	14:11	48.4	< 0.5
Ammonia+Ammonium (N) [as N mg/L]	11-May-23	17:33	12-May-23	10:26	---	0.3
Nitrite (as N) [mg/L]	12-May-23	13:21	17-May-23	15:39	---	0.16
Nitrate (as N) [mg/L]	12-May-23	13:21	17-May-23	15:39	---	28.7
Nitrate + Nitrite (as N) [mg/L]	12-May-23	13:21	17-May-23	15:39	---	28.9
pH@temp15 [pH Units]	15-May-23	09:01	15-May-23	12:50	---	7.91
Unionized Ammonia @temp15 [mg/L as N]	15-May-23	09:01	15-May-23	12:51	---	0.006

*E. Coli analysis was completed at the SGS Environmental Services - London Laboratory.
 Note: Federal unionized ammonia at 15 °C calculated using lab pH results performed at this temperature.


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15-May-2023

Mun of Middlesex Centre (Ilderton WWTP)

Attn : Brian Watson

Date Rec. : 03 May 2023
LR Report: CA30110-MAY23

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CERTIFICATE OF ANALYSIS

Final Report

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Completed Date	4: Analysis Completed Time	6: 36D05 Sludge
Sample Date & Time					02-May-23 13:59
Temperature Upon Receipt [at London Lab °C]					5.4
Temperature Upon Receipt [at Lakefield Lab °C]					7.0
Total Solids [%]	05-May-23	21:18	09-May-23	09:48	1.79
Specific Gravity	05-May-23	21:18	09-May-23	09:48	1.0
Volatile Solids [%]	05-May-23	21:18	09-May-23	09:48	72.3
Volatile Solids [%]	05-May-23	21:18	09-May-23	09:48	1.29
Nitrite (as N) [mg/kg]	06-May-23	12:37	08-May-23	16:59	60
Nitrite (as N) [mg/L]	06-May-23	12:37	08-May-23	16:59	1.0
Nitrate (as N) [mg/kg]	06-May-23	12:37	08-May-23	16:59	<30
Nitrate (as N) [mg/L]	06-May-23	12:37	08-May-23	16:59	< 0.3
Nitrate + Nitrite (a) [mg/kg]	06-May-23	12:37	08-May-23	16:59	60
Nitrate + Nitrite (as N) [mg/L]	06-May-23	12:37	08-May-23	16:59	1.0
Total Kjeldahl Nitrogen [as N mg/kg]	04-May-23	16:12	08-May-23	10:18	64000
Total Kjeldahl Nitrogen [as N mg/L]	04-May-23	16:12	08-May-23	10:18	1140
Ammonia+Ammonium (N) [as N mg/kg]	04-May-23	17:19	05-May-23	10:38	16000
Ammonia+Ammonium (N) [as N mg/L]	04-May-23	17:19	05-May-23	10:38	294
Mercury [mg/kg]	09-May-23	14:09	12-May-23	15:58	1.0
Mercury [mg/L]	09-May-23	14:09	12-May-23	15:58	0.018
Arsenic [mg/kg]	09-May-23	14:09	12-May-23	15:58	<6
Arsenic [mg/L]	09-May-23	14:09	12-May-23	15:58	< 0.1
Cadmium [mg/kg]	09-May-23	14:09	12-May-23	15:58	0.6
Cadmium [mg/L]	09-May-23	14:09	12-May-23	15:58	0.010
Cobalt [mg/kg]	09-May-23	14:09	12-May-23	15:58	2
Cobalt [mg/L]	09-May-23	14:09	12-May-23	15:58	0.03
Chromium [mg/kg]	09-May-23	14:09	12-May-23	15:58	11
Chromium [mg/L]	09-May-23	14:09	12-May-23	15:58	0.20
Copper [mg/kg]	09-May-23	14:09	12-May-23	15:58	200
Copper [mg/L]	09-May-23	14:09	12-May-23	15:58	3.5
Magnesium [mg/kg]	09-May-23	14:09	12-May-23	15:58	3600
Magnesium [mg/L]	09-May-23	14:09	12-May-23	15:58	64
Manganese [mg/kg]	09-May-23	14:09	12-May-23	15:58	130

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Completed Date	4: Analysis Completed Time	6: 36D05 Sludge
Manganese [mg/L]	09-May-23	14:09	12-May-23	15:58	2.3
Molybdenum [mg/kg]	09-May-23	14:09	12-May-23	15:58	5
Molybdenum [mg/L]	09-May-23	14:09	12-May-23	15:58	0.09
Nickel [mg/kg]	09-May-23	14:09	12-May-23	15:58	9
Nickel [mg/L]	09-May-23	14:09	12-May-23	15:58	0.17
Lead [mg/kg]	09-May-23	14:09	12-May-23	15:58	6
Lead [mg/L]	09-May-23	14:09	12-May-23	15:58	0.1
Selenium [mg/kg]	09-May-23	14:09	12-May-23	15:58	<6
Selenium [mg/L]	09-May-23	14:09	12-May-23	15:58	< 0.1
Zinc [mg/kg]	09-May-23	14:09	12-May-23	15:58	350
Zinc [mg/L]	09-May-23	14:09	12-May-23	15:58	6
Phosphorus [mg/kg]	09-May-23	14:09	12-May-23	15:58	28000
Phosphorus (Total) [mg/L]	09-May-23	14:09	12-May-23	15:58	508
Potassium [mg/kg]	09-May-23	14:09	12-May-23	15:58	3600
Potassium [mg/L]	09-May-23	14:09	12-May-23	15:58	65
Sulphur [mg/kg]	09-May-23	14:09	12-May-23	15:58	5800
Sulfur [mg/L]	09-May-23	14:09	12-May-23	15:58	104
E. Coli [cfu/1g dried wgt]	03-May-23	16:15	05-May-23	11:15	150838
E.Coli [cfu/100mL]	03-May-23	16:15	05-May-23	11:15	270000

Sample matrix = Sludge/Biosolids Solution
 Metals, TKN, Ammonia + Ammonium, Nitrite, Nitrate and Nitrates calculated and reported in mg/kg on a dried weight basis. Detection Limits reflect this calculation
 The E.coli value reported in CFU/1g dried weight was calculated using Total Solids and CFU/100ml.

Note: E. Coli analysis was completed at the SGS London Laboratory.



Carrie Greenlaw
 Project Specialist,
 Environment, Health & Safety



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24-May-2023

Mun of Middlesex Centre (Ilderton WWTP)

Attn : Brian Watson

Date Rec. : 17 May 2023
LR Report: CA30337-MAY23

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Fax:519-666-0271

CERTIFICATE OF ANALYSIS

Final Report

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Completed Date	4: Analysis Completed Time	5: 1AC38 Raw Sewage	6: 1AC39 Final Effluent
Sample Date & Time					16-May-23 14:30	16-May-23 11:04
Temperature Upon Receipt [at London Lab °C]	---	---	---	---	4.6	4.6
Temperature Upon Receipt [at Lakefield Lab °C]	---	---	---	---	4.0	---
E. Coli [cfu/100mL]	17-May-23	12:00	19-May-23	15:10	---	5
Biochemical Oxygen Demand (BOD5) [mg/L]	18-May-23	17:29	23-May-23	17:21	190	---
Total Suspended Solids [mg/L]	20-May-23	11:07	23-May-23	16:27	210	---
Phosphorus (total) [mg/L]	18-May-23	15:07	19-May-23	11:44	5.08	---
Total Kjeldahl Nitrogen [as N mg/L]	18-May-23	19:44	19-May-23	14:57	49.2	---

*E. Coli analysis was completed at the SGS Environmental Services - London Laboratory.

Hawley Anderson, Hon.B.Sc
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02-June-2023

Mun of Middlesex Centre (Ilderton WWTP)

Attn : Brian Watson

Date Rec. : 18 May 2023
LR Report: CA30370-MAY23

10227 Ilderton Rd.
Ilderton, ON
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CERTIFICATE OF ANALYSIS

Final Report

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Completed Date	4: Analysis Completed Time	5: 1AC39 Final Effluent
Sample Date & Time					18-May-23 09:01
Temperature Upon Receipt [at London Lab °C]	---	---	---	---	7.4
Temperature Upon Receipt [at Lakefield Lab °C]	---	---	---	---	9.0
Carbonaceous Biochemical Oxygen Demand [(CBOD5) mg/L]	23-May-23	18:30	29-May-23	10:14	3
Total Suspended Solids [mg/L]	24-May-23	07:35	25-May-23	13:17	6
Phosphorus (total) [mg/L]	23-May-23	16:00	24-May-23	13:39	0.10
Total Kjeldahl Nitrogen [as N mg/L]	23-May-23	22:20	24-May-23	11:51	0.6
Ammonia+Ammonium (N) [as N mg/L]	31-May-23	17:13	02-Jun-23	10:48	1.2
Nitrite (as N) [mg/L]	24-May-23	15:06	31-May-23	12:02	0.35
Nitrate (as N) [mg/L]	24-May-23	15:06	31-May-23	14:44	33.3
Nitrate + Nitrite (as N) [mg/L]	24-May-23	15:06	31-May-23	14:44	33.6
pH@temp15 [pH Units]	24-May-23	8.5	25-May-23	12:22	7.36
Unionized Ammonia @temp15 [mg/L as N]	24-May-23	8.5	29-May-23	08:07	0.008

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



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02-June-2023

Mun of Middlesex Centre (Ilderton WWTP)

Attn : Brian Watson

Date Rec. : 24 May 2023
LR Report: CA30433-MAY23

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Ilderton, ON
N0M 2A0, Canada

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CERTIFICATE OF ANALYSIS

Final Report

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Completed Date	4: Analysis Completed Time	5: 1AC38 Raw Sewage	6: 1AC39 Final Effluent
Sample Date & Time					24-May-23 07:56	24-May-23 07:58
Temperature Upon Receipt [at London Lab °C]	---	---	---	---	9.5	9.5
Temperature Upon Receipt [at Lakefield Lab °C]	---	---	---	---	7.0	7.0
E. Coli [cfu/100mL]	25-May-23	15:15	29-May-23	09:42	---	2
Carbonaceous Biochemical Oxygen Demand [(CBOD5) mg/L]	26-May-23	18:41	31-May-23	16:46	---	3
Biochemical Oxygen Demand (BOD5) [mg/L]	26-May-23	18:18	31-May-23	13:37	194	---
Total Suspended Solids [mg/L]	27-May-23	11:50	30-May-23	13:49	432	7
Phosphorus (total) [mg/L]	29-May-23	15:51	30-May-23	10:14	---	0.11
Phosphorus (total) [mg/L]	30-May-23	16:52	02-Jun-23	15:16	6.8	---
Total Kjeldahl Nitrogen [as N mg/L]	30-May-23	16:52	02-Jun-23	13:56	69.5	---
Total Kjeldahl Nitrogen [as N mg/L]	26-May-23	17:59	29-May-23	12:58	---	< 0.5
Ammonia+Ammonium (N) [as N mg/L]	29-May-23	19:33	30-May-23	11:28	---	0.2
Nitrite (as N) [mg/L]	29-May-23	18:17	01-Jun-23	14:49	---	< 0.03
Nitrate (as N) [mg/L]	29-May-23	18:17	01-Jun-23	13:03	---	37.3
Nitrate + Nitrite (as N) [mg/L]	29-May-23	18:17	01-Jun-23	14:49	---	37.3
pH@temp15 [pH Units]	30-May-23	13:14	30-May-23	15:16	---	7.69
Unionized Ammonia @temp15 [mg/L as N]	30-May-23	13:14	31-May-23	08:07	---	0.003

*E. Coli analysis was completed at the SGS Environmental Services - London Laboratory.
Note: Federal unionized ammonia at 15 °C calculated using lab pH results performed at this temperature.


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08-June-2023

Mun of Middlesex Centre (Ilderton WWTP)

Attn : Brian Watson

Date Rec. : 31 May 2023
LR Report: CA30531-MAY23

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CERTIFICATE OF ANALYSIS

Final Report

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Completed Date	4: Analysis Completed Time	5: 1AC38 Raw Sewage	6: 1AC39 Final Effluent
Sample Date & Time					30-May-23 09:40	30-May-23 11:35
Sampled By					Cromwell Damile	Cromwell Damile
Temperature Upon Receipt [at London Lab °C]	---	---	---	---	8.8	8.8
Temperature Upon Receipt [at Lakefield Lab °C]	---	---	---	---	11.0	11.0
E. Coli [cfu/100mL]	31-May-23	15:50	02-Jun-23	09:10	---	6
Carbonaceous Biochemical Oxygen Demand [(CBOD5) mg/L]	01-Jun-23	17:02	06-Jun-23	15:20	---	< 2
Biochemical Oxygen Demand (BOD5) [mg/L]	01-Jun-23	17:02	06-Jun-23	14:04	132	---
Total Suspended Solids [mg/L]	01-Jun-23	11:43	02-Jun-23	10:39	96	8
Phosphorus (total) [mg/L]	02-Jun-23	14:39	05-Jun-23	10:52	4.84	0.09
Total Kjeldahl Nitrogen [as N mg/L]	01-Jun-23	16:49	02-Jun-23	12:58	51.9	< 0.5
Ammonia+Ammonium (N) [as N mg/L]	05-Jun-23	11:19	06-Jun-23	15:54	---	0.2
Nitrite (as N) [mg/L]	06-Jun-23	08:22	07-Jun-23	14:26	---	0.15
Nitrate (as N) [mg/L]	06-Jun-23	08:22	08-Jun-23	10:26	---	41.5
Nitrate + Nitrite (as N) [mg/L]	06-Jun-23	08:22	08-Jun-23	10:26	---	41.6
pH@temp15 [pH Units]	02-Jun-23	10:43	05-Jun-23	11:10	---	7.48
Unionized Ammonia @temp15 [mg/L as N]	02-Jun-23	10:43	06-Jun-23	15:54	---	0.002

*E. Coli analysis was completed at the SGS Environmental Services - London Laboratory.
Note: Federal unionized ammonia at 15 °C calculated using Lab pH results performed at this temperature.


Carrie Greenlaw
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21-June-2023

Mun of Middlesex Centre (Ilderton WWTP)

Attn : Brian Watson

Date Rec. : 07 June 2023
LR Report: CA30132-JUN23

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 Ilderton, ON
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CERTIFICATE OF ANALYSIS

Final Report

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Completed Date	4: Analysis Completed Time	5: 1AC38 Raw Sewage	6: 1AC39 Final Effluent
Sample Date & Time					06-Jun-23 08:53	06-Jun-23 09:05
Temperature Upon Receipt [at London Lab °C]	---	---	---	---	6.6	6.6
Temperature Upon Receipt [at Lakefield Lab °C]	---	---	---	---	4.0	4.0
E. Coli [cfu/100mL]	07-Jun-23	13:50	09-Jun-23	14:29	---	55
Carbonaceous Biochemical Oxygen Demand [(CBOD5) mg/L]	08-Jun-23	16:01	13-Jun-23	16:30	---	< 2
Biochemical Oxygen Demand (BOD5) [mg/L]	08-Jun-23	15:40	13-Jun-23	12:47	148	---
Total Suspended Solids [mg/L]	13-Jun-23	06:10	13-Jun-23	16:21	92	4
Phosphorus (total) [mg/L]	08-Jun-23	21:25	09-Jun-23	14:57	4.65	0.11
Total Kjeldahl Nitrogen [as N mg/L]	08-Jun-23	16:50	09-Jun-23	16:28	41.9	< 0.5
Ammonia+Ammonium (N) [as N mg/L]	12-Jun-23	19:04	13-Jun-23	12:51	---	0.2
Nitrite (as N) [mg/L]	11-Jun-23	18:18	13-Jun-23	09:42	---	0.09
Nitrate (as N) [mg/L]	11-Jun-23	18:18	21-Jun-23	11:39	---	40.6
Nitrate + Nitrite (as N) [mg/L]	11-Jun-23	18:18	21-Jun-23	11:39	---	40.7
pH@temp15 [pH Units]	12-Jun-23	12:46	13-Jun-23	09:42	---	7.18
Unionized Ammonia @temp15 [mg/L as N]	12-Jun-23	12:46	13-Jun-23	12:51	---	< 0.001

*E. Coli analysis was completed at the SGS Environmental Services - London Laboratory.
 Note: Federal unionized ammonia at 15 °C calculated using lab pH results performed at this temperature.



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20-June-2023

Mun of Middlesex Centre (Ilderton WWTP)

Attn : Brian Watson

Date Rec. : 07 June 2023
LR Report: CA30130-JUN23

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CERTIFICATE OF ANALYSIS

Final Report

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Completed Date	4: Analysis Completed Time	6: 36D05 Sludge
Sample Date & Time					06-Jun-23 14:25
Temperature Upon Receipt [at London Lab °	---	---	---	---	6.4
Temperature Upon Receipt [at Lakefield Lab	---	---	---	---	4.0
Total Solids [%]	08-Jun-23	19:00	12-Jun-23	12:54	1.68
Specific Gravity	08-Jun-23	19:00	12-Jun-23	12:54	1.0
Volatile Solids [%]	08-Jun-23	19:00	12-Jun-23	12:54	75.2
Volatile Solids [%]	08-Jun-23	19:00	12-Jun-23	12:54	1.26
Nitrite (as N) [mg/kg]	13-Jun-23	22:28	19-Jun-23	19:19	<180
Nitrite (as N) [mg/L]	13-Jun-23	22:28	19-Jun-23	19:19	< 3
Nitrate (as N) [mg/kg]	13-Jun-23	22:28	19-Jun-23	19:19	<180
Nitrate (as N) [mg/L]	13-Jun-23	22:28	19-Jun-23	19:19	< 3
Nitrate + Nitrite (a [mg/kg]	13-Jun-23	22:28	19-Jun-23	19:19	<180
Nitrate + Nitrite (as N) [mg/L]	13-Jun-23	22:28	19-Jun-23	19:19	< 3
Total Kjeldahl Nitrogen [as N mg/kg]	08-Jun-23	14:33	12-Jun-23	13:00	55000
Total Kjeldahl Nitrogen [as N mg/L]	08-Jun-23	14:33	12-Jun-23	13:00	926
Ammonia+Ammonium (N) [as N mg/kg]	09-Jun-23	16:58	12-Jun-23	10:12	1200
Ammonia+Ammonium (N) [as N mg/L]	09-Jun-23	16:58	12-Jun-23	10:12	19.4
Mercury [mg/kg]	14-Jun-23	14:23	16-Jun-23	14:48	0.42
Mercury [mg/L]	14-Jun-23	14:23	16-Jun-23	14:48	0.007
Arsenic [mg/kg]	14-Jun-23	14:23	16-Jun-23	14:48	<6
Arsenic [mg/L]	14-Jun-23	14:23	16-Jun-23	14:48	< 0.1
Cadmium [mg/kg]	14-Jun-23	14:23	16-Jun-23	14:48	0.6
Cadmium [mg/L]	14-Jun-23	14:23	16-Jun-23	14:48	0.009
Cobalt [mg/kg]	14-Jun-23	14:23	16-Jun-23	14:48	1
Cobalt [mg/L]	14-Jun-23	14:23	16-Jun-23	14:48	0.02
Chromium [mg/kg]	14-Jun-23	14:23	16-Jun-23	14:48	9
Chromium [mg/L]	14-Jun-23	14:23	16-Jun-23	14:48	0.16
Copper [mg/kg]	14-Jun-23	14:23	16-Jun-23	14:48	180
Copper [mg/L]	14-Jun-23	14:23	16-Jun-23	14:48	3.1
Magnesium [mg/kg]	14-Jun-23	14:23	16-Jun-23	14:48	2600

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Completed Date	4: Analysis Completed Time	6: 36D05 Sludge
Magnesium [mg/L]	14-Jun-23	14:23	16-Jun-23	14:48	44
Manganese [mg/kg]	14-Jun-23	14:23	16-Jun-23	14:48	100
Manganese [mg/L]	14-Jun-23	14:23	16-Jun-23	14:48	1.7
Molybdenum [mg/kg]	14-Jun-23	14:23	16-Jun-23	14:48	4
Molybdenum [mg/L]	14-Jun-23	14:23	16-Jun-23	14:48	0.07
Nickel [mg/kg]	14-Jun-23	14:23	16-Jun-23	14:48	7
Nickel [mg/L]	14-Jun-23	14:23	16-Jun-23	14:48	0.11
Lead [mg/kg]	14-Jun-23	14:23	16-Jun-23	14:48	<6
Lead [mg/L]	14-Jun-23	14:23	16-Jun-23	14:48	< 0.1
Selenium [mg/kg]	14-Jun-23	14:23	16-Jun-23	14:48	<6
Selenium [mg/L]	14-Jun-23	14:23	16-Jun-23	14:49	< 0.1
Zinc [mg/kg]	14-Jun-23	14:23	16-Jun-23	14:48	370
Zinc [mg/L]	14-Jun-23	14:23	16-Jun-23	14:49	6
Phosphorus [mg/kg]	14-Jun-23	14:23	16-Jun-23	14:48	26000
Phosphorus (Total) [mg/L]	14-Jun-23	14:23	16-Jun-23	14:49	436
Potassium [mg/kg]	14-Jun-23	14:23	16-Jun-23	14:48	4000
Potassium [mg/L]	14-Jun-23	14:23	16-Jun-23	14:49	68
Sulphur [mg/kg]	14-Jun-23	14:23	16-Jun-23	14:48	7700
Sulfur [mg/L]	14-Jun-23	14:23	16-Jun-23	14:49	130
E. Coli [cfu/1g dried wgt]	07-Jun-23	16:15	09-Jun-23	13:12	416667
E.Coli [cfu/100mL]	07-Jun-23	16:15	09-Jun-23	13:12	700000

Sample matrix = Sludge/Biosolids Solution

Metals, TKN, Ammonia + Ammonium, Nitrite, Nitrate and Nitrates calculated and reported in mg/kg on a dried weight basis. Detection Limits reflect this calculation
 The E.coli value reported in CFU/1g dried weight was calculated using Total Solids and CFU/100ml.

Note: E. Coli analysis was completed at the SGS London Laboratory.



Carrie Greenlaw
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21-June-2023

Mun of Middlesex Centre (Ilderton WWTP)

Attn : Brian Watson

Date Rec. : 14 June 2023
LR Report: CA30255-JUN23

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CERTIFICATE OF ANALYSIS

Final Report

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Completed Date	4: Analysis Completed Time	5: 1AC39 Final Effluent
Sample Date & Time					12-Jun-23 09:40
Temperature Upon Receipt [at London Lab °C]	---	---	---	---	8.1
Temperature Upon Receipt [at Lakefield Lab °C]	---	---	---	---	7.0
Carbonaceous Biochemical Oxygen Demand [(CBOD5) mg/L]	15-Jun-23	17:45	20-Jun-23	14:01	2
Total Suspended Solids [mg/L]	16-Jun-23	08:50	19-Jun-23	14:49	4
Phosphorus (total) [mg/L]	15-Jun-23	14:21	16-Jun-23	11:58	0.10
Total Kjeldahl Nitrogen [as N mg/L]	16-Jun-23	16:37	20-Jun-23	14:55	0.8
Ammonia+Ammonium (N) [as N mg/L]	15-Jun-23	14:40	16-Jun-23	14:06	1.6
Nitrite (as N) [mg/L]	16-Jun-23	22:40	19-Jun-23	12:36	0.15
Nitrate (as N) [mg/L]	16-Jun-23	22:40	19-Jun-23	16:42	41.0
Nitrate + Nitrite (as N) [mg/L]	16-Jun-23	22:40	19-Jun-23	16:42	41.2
pH@temp15 [pH Units]	16-Jun-23	13:20	19-Jun-23	10:33	7.31
Unionized Ammonia @temp15 [mg/L as N]	16-Jun-23	13:20	19-Jun-23	10:33	0.009

*E. Coli analysis was completed at the SGS Environmental Services - London Laboratory.
 Note: Federal unionized ammonia at 15 °C calculated using Lab pH results performed at this temperature.


 Carrie Greenlaw
 Project Specialist,
 Environment, Health & Safety



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20-June-2023

Mun of Middlesex Centre (Ilderton WWTP)

Attn : Brian Watson

Date Rec. : 14 June 2023
LR Report: CA30254-JUN23

10227 Ilderton Rd.
Ilderton, ON
N0M 2A0, Canada

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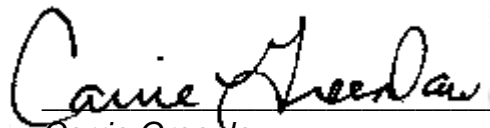
Phone: 519-666-0190 ext 255
Fax:519-666-0271

CERTIFICATE OF ANALYSIS

Final Report

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Completed Date	4: Analysis Completed Time	5: 1AC38 Raw Sewage	6: 1AC39 Final Effluent
Sample Date & Time					13-Jun-23 09:32	13-Jun-23 09:03
Temperature Upon Receipt [at London Lab °C]	---	---	---	---	8.1	8.1
Temperature Upon Receipt [at Lakefield Lab °C]	---	---	---	---	7.0	7.0
E. Coli [cfu/100mL]	14-Jun-23	16:50	16-Jun-23	10:40	---	4
Biochemical Oxygen Demand (BOD5) [mg/L]	15-Jun-23	16:51	20-Jun-23	11:21	116	---
Total Suspended Solids [mg/L]	16-Jun-23	12:35	19-Jun-23	15:03	151	---
Phosphorus (total) [mg/L]	15-Jun-23	14:21	16-Jun-23	11:58	2.50	---
Total Kjeldahl Nitrogen [as N mg/L]	16-Jun-23	16:37	19-Jun-23	12:08	22.4	---

*E. Coli analysis was completed at the SGS Environmental Services - London Laboratory.



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06-July-2023

Mun of Middlesex Centre (Ilderton WWTP)

Attn : Brian Watson

Date Rec. : 28 June 2023
LR Report: CA30509-JUN23

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Ilderton, ON
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CERTIFICATE OF ANALYSIS

Final Report

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Completed Date	4: Analysis Completed Time	5: 1AC39 Final Effluent
Sample Date & Time					26-Jun-23 10:03
Temperature Upon Receipt [at London Lab °C]	---	---	---	---	7.0
Temperature Upon Receipt [at Lakefield Lab °C]	---	---	---	---	4.0
Carbonaceous Biochemical Oxygen Demand [(CBOD5) mg/L]	30-Jun-23	16:36	05-Jul-23	16:35	3
Total Suspended Solids [mg/L]	30-Jun-23	09:33	04-Jul-23	09:02	13
Phosphorus (total) [mg/L]	04-Jul-23	15:38	05-Jul-23	13:45	0.16
Total Kjeldahl Nitrogen [as N mg/L]	05-Jul-23	16:32	06-Jul-23	13:47	1.1
Ammonia+Ammonium (N) [as N mg/L]	04-Jul-23	17:50	05-Jul-23	11:03	1.1
Nitrite (as N) [mg/L]	01-Jul-23	09:30	05-Jul-23	09:52	0.07
Nitrate (as N) [mg/L]	01-Jul-23	09:30	05-Jul-23	14:33	38.7
Nitrate + Nitrite (as N) [mg/L]	01-Jul-23	09:30	05-Jul-23	14:33	38.8
pH@temp15 [pH Units]	30-Jun-23	11:10	04-Jul-23	10:31	7.46
Unionized Ammonia @temp15 [mg/L as N]	30-Jun-23	11:10	05-Jul-23	11:03	0.009

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

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05-July-2023

Mun of Middlesex Centre (Ilderton WWTP)

Attn : Brian Watson

Date Rec. : 28 June 2023
LR Report: CA30502-JUN23

10227 Ilderton Rd.
Ilderton, ON
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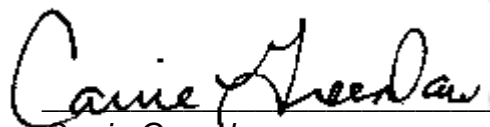
Phone: 519-666-0190 ext 255
Fax:519-666-0271

CERTIFICATE OF ANALYSIS

Final Report

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Completed Date	4: Analysis Completed Time	5: 1AC38 Raw Sewage	6: 1AC39 Final Effluent
Sample Date & Time					27-Jun-23 11:08	27-Jun-23 11:03
Temperature Upon Receipt [at London Lab °C]	---	---	---	---	6.3	6.3
Temperature Upon Receipt [at Lakefield Lab °C]	---	---	---	---	8.0	---
E. Coli [cfu/100mL]	28-Jun-23	17:30	29-Jun-23	17:38	---	43
Biochemical Oxygen Demand (BOD5) [mg/L]	30-Jun-23	17:47	05-Jul-23	12:58	196	---
Total Suspended Solids [mg/L]	30-Jun-23	15:47	04-Jul-23	15:30	230	---
Chemical Oxygen Demand [mg/L]	05-Jul-23	09:27	05-Jul-23	13:47	260	---
Phosphorus (total) [mg/L]	04-Jul-23	15:38	05-Jul-23	13:45	2.32	---
Total Kjeldahl Nitrogen [as N mg/L]	05-Jul-23	16:32	05-Jul-23	13:11	16.6	---

*E. Coli analysis was completed at the SGS Environmental Services - London Laboratory.



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11-July-2023

Mun of Middlesex Centre (Ilderton WWTP)

Attn : Brian Watson

Date Rec. : 05 July 2023
LR Report: CA30101-JUL23

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 Ilderton, ON
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CERTIFICATE OF ANALYSIS

Final Report

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Completed Date	4: Analysis Completed Time	5: 1AC38 Raw Sewage	6: 1AC39 Final Effluent
Sample Date & Time					04-Jul-23 08:30	04-Jul-23 08:33
Temperature Upon Receipt [at London Lab °C]	---	---	---	---	7.4	7.4
Temperature Upon Receipt [at Lakefield Lab °C]	---	---	---	---	9.0	9.0
E. Coli [cfu/100mL]	05-Jul-23	17:05	07-Jul-23	12:38	---	2
Carbonaceous Biochemical Oxygen Demand [(CBOD5) mg/L]	06-Jul-23	14:23	11-Jul-23	15:35	---	< 2
Biochemical Oxygen Demand (BOD5) [mg/L]	06-Jul-23	17:57	11-Jul-23	14:09	183	---
Chemical Oxygen Demand [mg/L]	11-Jul-23	08:40	11-Jul-23	16:03	345	---
Total Suspended Solids [mg/L]	10-Jul-23	07:34	11-Jul-23	14:35	311	5
Phosphorus (total) [mg/L]	07-Jul-23	14:08	10-Jul-23	10:07	5.22	0.14
Total Kjeldahl Nitrogen [as N mg/L]	06-Jul-23	16:25	07-Jul-23	14:39	46.9	1.5
Ammonia+Ammonium (N) [as N mg/L]	06-Jul-23	18:47	07-Jul-23	12:16	---	1.5
Nitrite (as N) [mg/L]	07-Jul-23	19:17	10-Jul-23	20:18	---	0.24
Nitrate (as N) [mg/L]	07-Jul-23	19:17	10-Jul-23	20:18	---	33.0
Nitrate + Nitrite (as N) [mg/L]	07-Jul-23	19:17	10-Jul-23	20:18	---	33.2
pH@temp15 [pH Units]	07-Jul-23	10:35	10-Jul-23	15:00	---	7.67
Unionized Ammonia @temp15 [mg/L as N]	07-Jul-23	10:35	10-Jul-23	15:00	---	0.019

*E. Coli analysis was completed at the SGS Environmental Services - London Laboratory.
 Note: Federal unionized ammonia at 15 °C calculated using Lab pH results performed at this temperature.



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13-July-2023

Mun of Middlesex Centre (Ilderton WWTP)

Attn : Brian Watson

Date Rec. : 05 July 2023
LR Report: CA30104-JUL23

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CERTIFICATE OF ANALYSIS

Final Report

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Completed Date	4: Analysis Completed Time	6: 36D05 Sludge
Sample Date & Time					04-Jul-23 11:53
Temperature Upon Receipt [at London Lab °C]	---	---	---	---	7.4
Temperature Upon Receipt [at Lakefield Lab °C]	---	---	---	---	9.0
Total Solids [%]	06-Jul-23	20:53	10-Jul-23	12:08	1.83
Specific Gravity	06-Jul-23	20:53	10-Jul-23	12:08	1.0
Volatile Solids [%]	06-Jul-23	20:53	10-Jul-23	12:08	69.8
Volatile Solids [mg/kg]	06-Jul-23	20:53	10-Jul-23	12:08	1.28
Nitrite (as N) [mg/kg]	10-Jul-23	23:57	12-Jul-23	16:26	<160
Nitrite (as N) [mg/L]	10-Jul-23	23:57	12-Jul-23	16:26	< 3
Nitrate (as N) [mg/kg]	10-Jul-23	23:57	12-Jul-23	16:26	4600
Nitrate (as N) [mg/L]	10-Jul-23	23:57	12-Jul-23	16:26	85
Nitrate + Nitrite (a) [mg/kg]	10-Jul-23	23:57	12-Jul-23	16:26	4600
Nitrate + Nitrite (as N) [mg/L]	10-Jul-23	23:57	12-Jul-23	16:26	85
Total Kjeldahl Nitrogen [as N mg/kg]	06-Jul-23	14:31	11-Jul-23	10:23	50000
Total Kjeldahl Nitrogen [as N mg/L]	06-Jul-23	14:31	11-Jul-23	10:23	906
Ammonia+Ammonium (N) [as N mg/kg]	06-Jul-23	15:57	07-Jul-23	09:53	1300
Ammonia+Ammonium (N) [as N mg/L]	06-Jul-23	15:57	07-Jul-23	09:53	23.8
Mercury [mg/kg]	10-Jul-23	13:49	12-Jul-23	14:32	0.49
Mercury [mg/L]	10-Jul-23	13:49	12-Jul-23	14:32	0.009
Arsenic [mg/kg]	10-Jul-23	13:49	12-Jul-23	14:32	<6
Arsenic [mg/L]	10-Jul-23	13:49	12-Jul-23	14:32	< 0.1
Cadmium [mg/kg]	10-Jul-23	13:49	12-Jul-23	14:32	0.5
Cadmium [mg/L]	10-Jul-23	13:49	12-Jul-23	14:32	0.009
Cobalt [mg/kg]	10-Jul-23	13:49	12-Jul-23	14:32	2
Cobalt [mg/L]	10-Jul-23	13:49	12-Jul-23	14:32	0.03
Chromium [mg/kg]	10-Jul-23	13:49	12-Jul-23	14:32	10
Chromium [mg/L]	10-Jul-23	13:49	12-Jul-23	14:32	0.19
Copper [mg/kg]	10-Jul-23	13:49	12-Jul-23	14:32	200
Copper [mg/L]	10-Jul-23	13:49	12-Jul-23	14:32	3.7
Magnesium [mg/kg]	10-Jul-23	13:49	12-Jul-23	14:32	2900
Magnesium [mg/L]	10-Jul-23	13:49	12-Jul-23	14:32	53
Manganese [mg/kg]	10-Jul-23	13:49	12-Jul-23	14:32	110

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Completed Date	4: Analysis Completed Time	6: 36D05 Sludge
Manganese [mg/L]	10-Jul-23	13:49	12-Jul-23	14:32	2.0
Molybdenum [mg/kg]	10-Jul-23	13:49	12-Jul-23	14:27	4
Molybdenum [mg/L]	10-Jul-23	13:49	12-Jul-23	14:32	0.08
Nickel [mg/kg]	10-Jul-23	13:49	12-Jul-23	14:27	8
Nickel [mg/L]	10-Jul-23	13:49	12-Jul-23	14:32	0.14
Lead [mg/kg]	10-Jul-23	13:49	12-Jul-23	14:27	<6
Lead [mg/L]	10-Jul-23	13:49	12-Jul-23	14:32	< 0.1
Selenium [mg/kg]	10-Jul-23	13:49	12-Jul-23	14:27	<6
Selenium [mg/L]	10-Jul-23	13:49	12-Jul-23	14:32	< 0.1
Zinc [mg/kg]	10-Jul-23	13:49	12-Jul-23	14:27	410
Zinc [mg/L]	10-Jul-23	13:49	12-Jul-23	14:31	8
Phosphorus [mg/kg]	10-Jul-23	13:49	12-Jul-23	14:27	30000
Phosphorus (Total) [mg/L]	10-Jul-23	13:49	12-Jul-23	14:31	550
Potassium [mg/kg]	10-Jul-23	13:49	12-Jul-23	14:27	3400
Potassium [mg/L]	10-Jul-23	13:49	12-Jul-23	14:31	63
Sulphur [mg/kg]	10-Jul-23	13:49	12-Jul-23	14:27	8600
Sulfur [mg/L]	10-Jul-23	13:49	12-Jul-23	14:31	160
E. Coli [cfu/1g dried wgt]	06-Jul-23	10:35	07-Jul-23	15:09	46448
E.Coli [cfu/100mL]	06-Jul-23	10:35	07-Jul-23	15:09	85000

Sample matrix = Sludge/Biosolids Solution
 Metals, TKN, Ammonia + Ammonium, Nitrite, Nitrate and Nitrates calculated and reported in mg/kg on a dried weight basis. Detection Limits reflect this calculation
 The E. coli value reported in CFU/1g dried weight was calculated using Total Solids and CFU/100ml.

Note: E. Coli analysis was completed at the SGS London Laboratory.



Carrie Greenlaw
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 Project Specialist,
 Environment, Health & Safety



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19-July-2023

Mun of Middlesex Centre (Ilderton WWTP)

Attn : Brian Watson

Date Rec. : 12 July 2023
LR Report: CA30287-JUL23

10227 Ilderton Rd.
Ilderton, ON
N0M 2A0, Canada

Copy: #1

Phone: 519-666-0190 ext 255
Fax:519-666-0271

CERTIFICATE OF ANALYSIS

Final Report

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Completed Date	4: Analysis Completed Time	5: 1AC38 Raw Sewage	6: 1AC39 Final Effluent
Sample Date & Time					11-Jul-23 10:39	11-Jul-23 10:55
Temperature Upon Receipt [at London Lab °C]	---	---	---	---	7.1	7.1
Temperature Upon Receipt [at Lakefield Lab °C]	---	---	---	---	11.0	11.0
E. Coli [cfu/100mL]	12-Jul-23	16:10	14-Jul-23	15:38	---	2
Carbonaceous Biochemical Oxygen Demand [(CBOD5) mg/L]	14-Jul-23	14:24	19-Jul-23	14:20	---	2
Biochemical Oxygen Demand (BOD5) [mg/L]	14-Jul-23	13:45	19-Jul-23	13:16	155	---
Total Suspended Solids [mg/L]	17-Jul-23	12:45	18-Jul-23	15:19	337	4
Phosphorus (total) [mg/L]	17-Jul-23	15:35	19-Jul-23	11:40	4.04	0.10
Total Kjeldahl Nitrogen [as N mg/L]	17-Jul-23	17:31	18-Jul-23	16:07	33.8	< 0.5
Ammonia+Ammonium (N) [as N mg/L]	18-Jul-23	08:39	19-Jul-23	11:12	---	< 0.1
Chemical Oxygen Demand [mg/L]	17-Jul-23	10:21	19-Jul-23	14:21	395	---
Nitrite (as N) [mg/L]	17-Jul-23	12:04	18-Jul-23	11:39	---	< 0.03
Nitrate (as N) [mg/L]	17-Jul-23	12:04	18-Jul-23	11:39	---	28.5
Nitrate + Nitrite (as N) [mg/L]	17-Jul-23	12:04	18-Jul-23	11:39	---	28.5
pH@temp15 [pH Units]	17-Jul-23	13:28	18-Jul-23	09:25	---	7.51
Unionized Ammonia @temp15 [mg/L as N]	17-Jul-23	13:28	19-Jul-23	11:12	---	< 0.001

*E. Coli analysis was completed at the SGS Environmental Services - London Laboratory.
Note: Federal unionized ammonia at 15 °C calculated using Lab pH results performed at this temperature.


Carrie Greenlaw
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26-July-2023

Mun of Middlesex Centre (Ilderton WWTP)

Attn : Brian Watson

Date Rec. : 20 July 2023
LR Report: CA30428-JUL23

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N0M 2A0, Canada

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CERTIFICATE OF ANALYSIS

Final Report

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Completed Date	4: Analysis Completed Time	5: 1AC38 Raw Sewage	6: 1AC39 Final Effluent
Sample Date & Time					20-Jul-23 10:46	20-Jul-23 09:27
Temperature Upon Receipt [at London Lab °C]	---	---	---	---	8.1	8.1
Temperature Upon Receipt [at Lakefield Lab °C]	---	---	---	---	6.0	6.0
E. Coli [cfu/100mL]	20-Jul-23	18:15	24-Jul-23	11:25	---	14
Carbonaceous Biochemical Oxygen Demand [(CBOD5) mg/L]	21-Jul-23	15:32	26-Jul-23	13:46	---	< 2
Chemical Oxygen Demand [mg/L]	25-Jul-23	10:45	26-Jul-23	12:03	258	---
Biochemical Oxygen Demand (BOD5) [mg/L]	21-Jul-23	16:03	26-Jul-23	12:03	123	---
Total Suspended Solids [mg/L]	22-Jul-23	10:09	25-Jul-23	13:35	320	4
Phosphorus (total) [mg/L]	21-Jul-23	14:25	24-Jul-23	13:42	4.41	0.10
Total Kjeldahl Nitrogen [as N mg/L]	24-Jul-23	18:00	25-Jul-23	10:27	45.6	2.8
Ammonia+Ammonium (N) [as N mg/L]	21-Jul-23	16:22	24-Jul-23	09:31	---	< 0.1
Nitrite (as N) [mg/L]	25-Jul-23	19:44	26-Jul-23	13:35	---	0.04
Nitrate (as N) [mg/L]	25-Jul-23	19:44	26-Jul-23	13:35	---	35.5
Nitrate + Nitrite (as N) [mg/L]	25-Jul-23	19:44	26-Jul-23	13:35	---	35.5
pH@temp15 [pH Units]	21-Jul-23	15:52	25-Jul-23	10:21	---	7.65
Unionized Ammonia @temp15 [mg/L as N]	21-Jul-23	15:52	25-Jul-23	10:21	---	< 0.001

*E. Coli analysis was completed at the SGS Environmental Services - London Laboratory.
Note: Federal unionized ammonia at 15 °C calculated using lab pH results performed at this temperature.

Hawley Anderson, Hon.B.Sc
Project Specialist,
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01-August-2023

Mun of Middlesex Centre (Ilderton WWTP)

Attn : Brian Watson

Date Rec. : 26 July 2023
LR Report: CA30520-JUL23

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N0M 2A0, Canada

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CERTIFICATE OF ANALYSIS

Final Report

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Completed Date	4: Analysis Completed Time	5: 1AC39 Final Effluent
Sample Date & Time					24-Jul-23 10:18
Temperature Upon Receipt [at London Lab °C]	---	---	---	---	8.3
Temperature Upon Receipt [at Lakefield Lab °C]	---	---	---	---	13.0
Carbonaceous Biochemical Oxygen Demand [(CBOD5) mg/L]	27-Jul-23	16:06	01-Aug-23	13:26	< 2
Total Suspended Solids [mg/L]	31-Jul-23	08:55	01-Aug-23	09:27	4
Phosphorus (total) [mg/L]	27-Jul-23	15:12	28-Jul-23	13:33	0.14
Total Kjeldahl Nitrogen [as N mg/L]	27-Jul-23	16:27	28-Jul-23	10:42	< 0.5
Ammonia+Ammonium (N) [as N mg/L]	27-Jul-23	18:06	28-Jul-23	10:19	0.2
Nitrite (as N) [mg/L]	28-Jul-23	11:12	31-Jul-23	13:23	0.06
Nitrate (as N) [mg/L]	28-Jul-23	11:12	31-Jul-23	13:23	33.6
Nitrate + Nitrite (as N) [mg/L]	28-Jul-23	11:12	31-Jul-23	13:23	33.7
pH@temp15 [pH Units]	27-Jul-23	11:54	28-Jul-23	09:38	7.55
Unionized Ammonia @temp15 [mg/L as N]	27-Jul-23	11:54	28-Jul-23	10:19	0.002

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

Hawley Anderson, Hon.B.Sc
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01-August-2023

Mun of Middlesex Centre (Ilderton WWTP)

Attn : Brian Watson

Date Rec. : 26 July 2023
LR Report: CA30519-JUL23

10227 Ilderton Rd.
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Phone: 519-666-0190 ext 255
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CERTIFICATE OF ANALYSIS

Final Report

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Completed Date	4: Analysis Completed Time	5: 1AC38 Raw Sewage	6: 1AC39 Final Effluent
Sample Date & Time					25-Jul-23 12:40	25-Jul-23 12:00
Temperature Upon Receipt [at London Lab °C]	---	---	---	---	9.0	9.0
Temperature Upon Receipt [at Lakefield Lab °C]	---	---	---	---	12.0	---
E. Coli [cfu/100mL]	26-Jul-23	14:45	28-Jul-23	15:41	---	2
Biochemical Oxygen Demand (BOD5) [mg/L]	27-Jul-23	16:47	01-Aug-23	11:15	157	---
Chemical Oxygen Demand [mg/L]	27-Jul-23	10:54	01-Aug-23	11:15	305	---
Total Suspended Solids [mg/L]	29-Jul-23	12:25	31-Jul-23	13:33	158	---
Phosphorus (total) [mg/L]	27-Jul-23	15:12	28-Jul-23	13:32	4.05	---
Total Kjeldahl Nitrogen [as N mg/L]	27-Jul-23	16:27	28-Jul-23	10:41	38.3	---

*E. Coli analysis was completed at the SGS Environmental Services - London Laboratory.

Hawley Anderson, Hon.B.Sc
Project Specialist,
Environment, Health & Safety



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09-August-2023

Mun of Middlesex Centre (Ilderton WWTP)

Attn : Brian Watson

Date Rec. : 02 August 2023
LR Report: CA30065-AUG23

10227 Ilderton Rd.
Ilderton, ON
N0M 2A0, Canada

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Phone: 519-666-0190 ext 255
Fax:519-666-0271

CERTIFICATE OF ANALYSIS

Final Report

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Completed Date	4: Analysis Completed Time	5: 1AC39 Final Effluent
Sample Date & Time					31-Jul-23 12:00
Temperature Upon Receipt [at London Lab °C]	---	---	---	---	8.0
Temperature Upon Receipt [at Lakefield Lab °C]	---	---	---	---	7.0
Carbonaceous Biochemical Oxygen Demand [(CBOD5) mg/L]	03-Aug-23	17:29	08-Aug-23	17:55	< 2
Total Suspended Solids [mg/L]	03-Aug-23	11:41	04-Aug-23	12:37	5
Phosphorus (total) [mg/L]	03-Aug-23	15:59	04-Aug-23	13:28	0.14
Total Kjeldahl Nitrogen [as N mg/L]	03-Aug-23	21:18	04-Aug-23	15:34	< 0.5
Ammonia+Ammonium (N) [as N mg/L]	04-Aug-23	18:55	08-Aug-23	09:18	< 0.1
Nitrite (as N) [mg/L]	03-Aug-23	21:52	04-Aug-23	15:03	< 0.03
Nitrate (as N) [mg/L]	03-Aug-23	21:52	04-Aug-23	15:03	22.1
Nitrate + Nitrite (as N) [mg/L]	03-Aug-23	21:52	04-Aug-23	15:03	22.1
pH@temp15 [pH Units]	04-Aug-23	14:24	08-Aug-23	09:36	8.03
Unionized Ammonia @temp15 [mg/L as N]	04-Aug-23	14:24	09-Aug-23	14:44	0.001

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



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10-August-2023

Mun of Middlesex Centre (Ilderton WWTP)

Attn : Brian Watson

Date Rec. : 02 August 2023
LR Report: CA30064-AUG23

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 Ilderton, ON
 N0M 2A0, Canada

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 Fax:519-666-0271

CERTIFICATE OF ANALYSIS

Final Report

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Completed Date	4: Analysis Completed Time	5: 1AC38 Raw Sewage	6: 1AC39 Final Effluent
Sample Date & Time					01-Aug-23 11:24	01-Aug-23 11:26
Temperature Upon Receipt [at London Lab °C]	---	---	---	---	7.6	7.7
Temperature Upon Receipt [at Lakefield Lab °C]	---	---	---	---	7.0	---
E. Coli [cfu/100mL]	02-Aug-23	17:30	04-Aug-23	13:19	---	8
Biochemical Oxygen Demand (BOD5) [mg/L]	03-Aug-23	17:25	10-Aug-23	15:11	185	---
Chemical Oxygen Demand [mg/L]	10-Aug-23	08:01	10-Aug-23	15:11	325	---
Total Suspended Solids [mg/L]	03-Aug-23	11:41	04-Aug-23	12:37	227	---
Phosphorus (total) [mg/L]	03-Aug-23	15:59	04-Aug-23	13:28	3.82	---
Total Kjeldahl Nitrogen [as N mg/L]	03-Aug-23	21:18	04-Aug-23	15:34	38.5	---

*E. Coli analysis was completed at the SGS Environmental Services - London Laboratory.



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15-August-2023

Mun of Middlesex Centre (Ilderton WWTP)

Attn : Brian Watson

Date Rec. : 09 August 2023
LR Report: CA30153-AUG23

10227 Ilderton Rd.
 Ilderton, ON
 N0M 2A0, Canada

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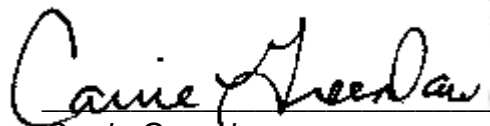
Phone: 519-666-0190 ext 255
 Fax:519-666-0271

CERTIFICATE OF ANALYSIS

Final Report

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Completed Date	4: Analysis Completed Time	5: 1AC39 Final Effluent
Sample Date & Time					07-Aug-23 12:01
Temperature Upon Receipt [at London Lab °C]	---	---	---	---	8.1
Temperature Upon Receipt [at Lakefield Lab °C]	---	---	---	---	9.0
Carbonaceous Biochemical Oxygen Demand [(CBOD5) mg/L]	10-Aug-23	16:31	15-Aug-23	13:54	< 2
Total Suspended Solids [mg/L]	10-Aug-23	16:38	11-Aug-23	15:57	4
Phosphorus (total) [mg/L]	14-Aug-23	15:01	15-Aug-23	15:02	0.14
Total Kjeldahl Nitrogen [as N mg/L]	11-Aug-23	16:42	14-Aug-23	14:45	0.7
Ammonia+Ammonium (N) [as N mg/L]	11-Aug-23	19:38	14-Aug-23	14:24	< 0.1
Nitrite (as N) [mg/L]	11-Aug-23	22:24	15-Aug-23	14:02	< 0.03
Nitrate (as N) [mg/L]	11-Aug-23	22:24	14-Aug-23	15:08	38.8
Nitrate + Nitrite (as N) [mg/L]	11-Aug-23	22:24	15-Aug-23	14:02	38.8
pH@temp15 [pH Units]	10-Aug-23	13:13	11-Aug-23	14:08	7.87
Unionized Ammonia @temp15 [mg/L as N]	10-Aug-23	13:13	14-Aug-23	14:24	0.001

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



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16-August-2023

Mun of Middlesex Centre (Ilderton WWTP)

Attn : Brian Watson

Date Rec. : 09 August 2023
LR Report: CA30154-AUG23

10227 Ilderton Rd.
Ilderton, ON
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CERTIFICATE OF ANALYSIS

Final Report

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Completed Date	4: Analysis Completed Time	5: 1AC38 Raw Sewage	6: 1AC39 Final Effluent
Sample Date & Time					08-Aug-23 10:19	08-Aug-23 10:21
Temperature Upon Receipt [at London Lab °C]	---	---	---	---	8.1	8.1
Temperature Upon Receipt [at Lakefield Lab °C]	---	---	---	---	9.0	---
E. Coli [cfu/100mL]	09-Aug-23	18:15	11-Aug-23	13:47	---	1
Biochemical Oxygen Demand (BOD5) [mg/L]	10-Aug-23	17:20	15-Aug-23	11:28	108	---
Chemical Oxygen Demand [mg/L]	11-Aug-23	08:18	15-Aug-23	11:28	330	---
Total Suspended Solids [mg/L]	12-Aug-23	10:20	15-Aug-23	15:57	320	---
Phosphorus (total) [mg/L]	14-Aug-23	15:01	15-Aug-23	15:02	2.99	---
Total Kjeldahl Nitrogen [as N mg/L]	11-Aug-23	16:42	14-Aug-23	14:45	25.2	---

*E. Coli analysis was completed at the SGS Environmental Services - London Laboratory.

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23-August-2023

Mun of Middlesex Centre (Ilderton WWTP)

Attn : Brian Watson

Date Rec. : 09 August 2023
LR Report: CA30157-AUG23

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CERTIFICATE OF ANALYSIS

Final Report

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Completed Date	4: Analysis Completed Time	6: 36D05 Sludge
Sample Date & Time					08-Aug-23 10:27
Temperature Upon Receipt [at London Lab °C]					8.1
Temperature Upon Receipt [at Lakefield Lab °C]					9.0
Total Solids [%]	10-Aug-23	20:29	14-Aug-23	11:38	1.64
Specific Gravity	10-Aug-23	20:29	14-Aug-23	11:38	1.0
Volatile Solids [%]	10-Aug-23	20:29	14-Aug-23	11:38	69.1
Volatile Solids [%]	10-Aug-23	20:29	14-Aug-23	11:38	1.13
Nitrite (as N) [mg/kg]	10-Aug-23	13:58	14-Aug-23	12:28	<180
Nitrite (as N) [mg/L]	10-Aug-23	13:58	14-Aug-23	12:28	< 3
Nitrate (as N) [mg/kg]	10-Aug-23	13:58	14-Aug-23	12:28	<180
Nitrate (as N) [mg/L]	10-Aug-23	13:58	14-Aug-23	12:28	< 3
Nitrate + Nitrite (a) [mg/kg]	10-Aug-23	13:58	14-Aug-23	12:28	<180
Nitrate + Nitrite (as N) [mg/L]	10-Aug-23	13:58	14-Aug-23	12:28	< 3
Total Kjeldahl Nitrogen [as N mg/kg]	10-Aug-23	14:29	14-Aug-23	11:59	52000
Total Kjeldahl Nitrogen [as N mg/L]	10-Aug-23	14:29	14-Aug-23	11:59	856
Ammonia+Ammonium (N) [as N mg/kg]	10-Aug-23	13:23	14-Aug-23	11:39	7500
Ammonia+Ammonium (N) [as N mg/L]	10-Aug-23	13:23	14-Aug-23	11:39	123
Mercury [mg/kg]	15-Aug-23	14:50	22-Aug-23	11:42	0.37
Mercury [mg/L]	15-Aug-23	14:50	22-Aug-23	11:42	0.006
Arsenic [mg/kg]	15-Aug-23	14:50	22-Aug-23	11:42	<6
Arsenic [mg/L]	15-Aug-23	14:50	22-Aug-23	11:42	< 0.1
Cadmium [mg/kg]	15-Aug-23	14:50	22-Aug-23	11:42	0.5
Cadmium [mg/L]	15-Aug-23	14:50	22-Aug-23	11:43	0.008
Cobalt [mg/kg]	15-Aug-23	14:50	22-Aug-23	11:42	2
Cobalt [mg/L]	15-Aug-23	14:50	22-Aug-23	11:43	0.03
Chromium [mg/kg]	15-Aug-23	14:50	22-Aug-23	11:42	15
Chromium [mg/L]	15-Aug-23	14:50	22-Aug-23	11:43	0.24
Copper [mg/kg]	15-Aug-23	14:50	22-Aug-23	11:42	220
Copper [mg/L]	15-Aug-23	14:50	22-Aug-23	11:43	3.6
Magnesium [mg/kg]	15-Aug-23	14:50	22-Aug-23	11:42	3400
Magnesium [mg/L]	15-Aug-23	14:50	22-Aug-23	11:43	56
Manganese [mg/kg]	15-Aug-23	14:50	22-Aug-23	11:42	150

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Completed Date	4: Analysis Completed Time	6: 36D05 Sludge
Manganese [mg/L]	15-Aug-23	14:50	22-Aug-23	11:43	2.5
Molybdenum [mg/kg]	15-Aug-23	14:50	22-Aug-23	11:42	5
Molybdenum [mg/L]	15-Aug-23	14:50	22-Aug-23	11:43	0.08
Nickel [mg/kg]	15-Aug-23	14:50	22-Aug-23	11:42	12
Nickel [mg/L]	15-Aug-23	14:50	22-Aug-23	11:43	0.19
Lead [mg/kg]	15-Aug-23	14:50	22-Aug-23	11:42	6
Lead [mg/L]	15-Aug-23	14:50	22-Aug-23	11:43	0.1
Selenium [mg/kg]	15-Aug-23	14:50	22-Aug-23	11:42	<6
Selenium [mg/L]	15-Aug-23	14:50	22-Aug-23	11:43	< 0.1
Zinc [mg/kg]	15-Aug-23	14:50	22-Aug-23	11:42	420
Zinc [mg/L]	15-Aug-23	14:50	22-Aug-23	11:43	7
Phosphorus [mg/kg]	15-Aug-23	14:50	22-Aug-23	11:42	31000
Phosphorus (Total) [mg/L]	15-Aug-23	14:50	22-Aug-23	11:43	506
Potassium [mg/kg]	15-Aug-23	14:50	22-Aug-23	11:42	3400
Potassium [mg/L]	15-Aug-23	14:50	22-Aug-23	11:43	56
Sulphur [mg/kg]	15-Aug-23	14:50	22-Aug-23	11:42	7800
Sulfur [mg/L]	15-Aug-23	14:50	22-Aug-23	11:43	128
E. Coli [cfu/1g dried wgt]	09-Aug-23	17:35	11-Aug-23	13:42	59146
E.Coli [cfu/100mL]	09-Aug-23	17:35	11-Aug-23	13:42	97000

Sample matrix = Sludge/Biosolids Solution
 Metals, TKN, Ammonia + Ammonium, Nitrite, Nitrate and Nitrates calculated and reported in mg/kg on a dried weight basis. Detection Limits reflect this calculation
 The E. coli value reported in CFU/1g dried weight was calculated using Total Solids and CFU/100ml.

Note: E. Coli analysis was completed at the SGS London Laboratory.



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22-August-2023

Mun of Middlesex Centre (Ilderton WWTP)

Attn : Brian Watson

Date Rec. : 16 August 2023
LR Report: CA30362-AUG23

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N0M 2A0, Canada

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CERTIFICATE OF ANALYSIS

Final Report

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Completed Date	4: Analysis Completed Time	5: 1AC39 Final Effluent
Sample Date & Time					14-Aug-23 10:25
Temperature Upon Receipt [at London Lab °C]	---	---	---	---	8.3/8.7
Temperature Upon Receipt [at Lakefield Lab °C]	---	---	---	---	8.0
Carbonaceous Biochemical Oxygen Demand [(CBOD5) mg/L]	17-Aug-23	16:53	22-Aug-23	13:28	< 2
Total Suspended Solids [mg/L]	18-Aug-23	09:01	21-Aug-23	11:32	6
Phosphorus (total) [mg/L]	17-Aug-23	21:12	18-Aug-23	11:38	0.11
Total Kjeldahl Nitrogen [as N mg/L]	18-Aug-23	16:14	21-Aug-23	10:38	1.1
Ammonia+Ammonium (N) [as N mg/L]	17-Aug-23	18:50	18-Aug-23	14:23	0.3
Nitrite (as N) [mg/L]	18-Aug-23	14:05	22-Aug-23	14:35	0.06
Nitrate (as N) [mg/L]	18-Aug-23	14:05	22-Aug-23	11:07	38.6
Nitrate + Nitrite (as N) [mg/L]	18-Aug-23	14:05	22-Aug-23	14:35	38.7
pH@temp15 [pH Units]	17-Aug-23	15:22	18-Aug-23	11:50	7.66
Unionized Ammonia @temp15 [mg/L as N]	17-Aug-23	15:22	21-Aug-23	10:38	0.004

*E. Coli analysis was completed at the SGS Environmental Services - London Laboratory.
Note: Federal unionized ammonia at 15 °C calculated using lab pH results performed at this temperature.


Carrie Greenlaw
Project Specialist,
Environment, Health & Safety



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25-August-2023

Mun of Middlesex Centre (Ilderton WWTP)

Attn : Brian Watson

Date Rec. : 16 August 2023
LR Report: CA30360-AUG23

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Ilderton, ON
N0M 2A0, Canada

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CERTIFICATE OF ANALYSIS

Final Report

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Completed Date	4: Analysis Completed Time	5: 1AC38 Raw Sewage	6: 1AC39 Final Effluent
Sample Date & Time					15-Aug-23 09:41	15-Aug-23 09:30
Temperature Upon Receipt [at London Lab °C]	---	---	---	---	8.3	7.6
Temperature Upon Receipt [at Lakefield Lab °C]	---	---	---	---	8.0	---
E. Coli [cfu/100mL]	16-Aug-23	14:40	18-Aug-23	10:06	---	3
Biochemical Oxygen Demand (BOD5) [mg/L]	17-Aug-23	17:17	22-Aug-23	11:42	114	---
Chemical Oxygen Demand [mg/L]	18-Aug-23	11:12	22-Aug-23	11:42	154	---
Total Suspended Solids [mg/L]	21-Aug-23	08:58	22-Aug-23	09:54	77	---
Phosphorus (total) [mg/L]	17-Aug-23	21:12	18-Aug-23	11:38	3.52	---
Total Kjeldahl Nitrogen [as N mg/L]	18-Aug-23	16:14	24-Aug-23	16:18	29.0	---

*E. Coli analysis was completed at the SGS Environmental Services - London Laboratory.



Carrie Greenlaw
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31-August-2023

Mun of Middlesex Centre (Ilderton WWTP)

Attn : Brian Watson

Date Rec. : 23 August 2023
LR Report: CA30481-AUG23

10227 Ilderton Rd.
 Ilderton, ON
 N0M 2A0, Canada

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Phone: 519-666-0190 ext 255
 Fax:519-666-0271

CERTIFICATE OF ANALYSIS

Final Report

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Completed Date	4: Analysis Completed Time	5: 1AC38 Raw Sewage	6: 1AC39 Final Effluent
Sample Date & Time					22-Aug-23 10:47	22-Aug-23 10:56
Temperature Upon Receipt [at London Lab °C]	---	---	---	---	11.6	11.6
Temperature Upon Receipt [at Lakefield Lab °C]	---	---	---	---	8.0	8.0
E. Coli [cfu/100mL]	23-Aug-23	14:00	25-Aug-23	14:10	---	0
Carbonaceous Biochemical Oxygen Demand [(CBOD5) mg/L]	24-Aug-23	16:32	29-Aug-23	14:27	---	2
Biochemical Oxygen Demand (BOD5) [mg/L]	24-Aug-23	17:14	29-Aug-23	13:24	285	---
Chemical Oxygen Demand [mg/L]	25-Aug-23	10:12	29-Aug-23	13:24	615	---
Total Suspended Solids [mg/L]	25-Aug-23	06:57	25-Aug-23	13:26	492	4
Phosphorus (total) [mg/L]	24-Aug-23	17:30	25-Aug-23	12:28	---	0.15
Phosphorus (total) [mg/L]	28-Aug-23	13:39	30-Aug-23	14:28	6.8	---
Total Kjeldahl Nitrogen [as N mg/L]	28-Aug-23	13:39	31-Aug-23	14:58	53.6	---
Total Kjeldahl Nitrogen [as N mg/L]	24-Aug-23	17:50	25-Aug-23	16:59	---	0.8
Ammonia+Ammonium (N) [as N mg/L]	25-Aug-23	21:05	28-Aug-23	14:33	---	0.2
Nitrite (as N) [mg/L]	25-Aug-23	21:21	29-Aug-23	10:08	---	0.04
Nitrate (as N) [mg/L]	25-Aug-23	21:21	29-Aug-23	10:08	---	29.9
Nitrate + Nitrite (as N) [mg/L]	25-Aug-23	21:21	29-Aug-23	10:08	---	29.9
pH@temp15 [pH Units]	25-Aug-23	09:16	25-Aug-23	14:27	---	7.95
Unionized Ammonia @temp15 [mg/L as N]	25-Aug-23	09:16	28-Aug-23	14:33	---	0.004

*E. Coli analysis was completed at the SGS Environmental Services - London Laboratory.
 Note: Federal unionized ammonia at 15 °C calculated using Lab pH results performed at this temperature.

Carrie Greenlaw
 Project Specialist,
 Environment, Health & Safety

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08-September-2023

Mun of Middlesex Centre (Ilderton WWTP)

Attn : Brian Watson

Date Rec. : 30 August 2023
LR Report: CA30629-AUG23

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 N0M 2A0, Canada

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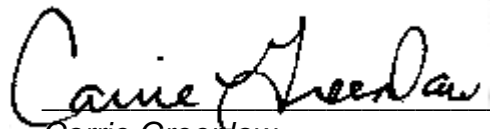
Phone: 519-666-0190 ext 255
 Fax:519-666-0271

CERTIFICATE OF ANALYSIS

Final Report

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Completed Date	4: Analysis Completed Time	5: 1AC38 Raw Sewage	6: 1AC39 Final Effluent
Sample Date & Time					29-Aug-23 09:00	29-Aug-23 08:45
Temperature Upon Receipt [at London Lab °C]	---	---	---	---	6.1	6.1
Temperature Upon Receipt [at Lakefield Lab °C]	---	---	---	---	8.0	8.0
E. Coli [cfu/100mL]	30-Aug-23	16:30	05-Sep-23	11:52	---	0
Carbonaceous Biochemical Oxygen Demand [(CBOD5) mg/L]	01-Sep-23	17:55	06-Sep-23	13:40	---	3
Biochemical Oxygen Demand (BOD5) [mg/L]	01-Sep-23	17:28	06-Sep-23	12:24	463	---
Total Suspended Solids [mg/L]	01-Sep-23	09:45	05-Sep-23	16:28	556	4
Phosphorus (total) [mg/L]	01-Sep-23	15:48	05-Sep-23	14:36	---	0.15
Phosphorus (total) [mg/L]	06-Sep-23	14:06	08-Sep-23	11:47	9.3	---
Total Kjeldahl Nitrogen [as N mg/L]	06-Sep-23	14:06	08-Sep-23	14:13	57.4	---
Total Kjeldahl Nitrogen [as N mg/L]	01-Sep-23	16:54	06-Sep-23	09:09	---	1.8
Ammonia+Ammonium (N) [as N mg/L]	01-Sep-23	18:41	05-Sep-23	13:30	---	0.1
Nitrite (as N) [mg/L]	01-Sep-23	18:40	05-Sep-23	14:14	---	0.05
Nitrate (as N) [mg/L]	01-Sep-23	18:40	05-Sep-23	14:14	---	28.9
Nitrate + Nitrite (as N) [mg/L]	01-Sep-23	18:40	05-Sep-23	14:14	---	29.0
pH@temp15 [pH Units]	05-Sep-23	12:21	06-Sep-23	10:46	---	7.93
Unionized Ammonia @temp15 [mg/L as N]	05-Sep-23	12:21	06-Sep-23	10:46	---	0.002
Chemical Oxygen Demand [mg/L]	05-Sep-23	07:57	06-Sep-23	12:24	710	---

*E. Coli analysis was completed at the SGS Environmental Services - London Laboratory.
 Note: Federal unionized ammonia at 15 °C calculated using Lab pH results performed at this temperature.


 Carrie Greenlaw
 Project Specialist,
 Environment, Health & Safety



SGS Canada Inc.

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15-September-2023

Mun of Middlesex Centre (Ilderton WWTP)

Attn : Brian Watson

Date Rec. : 06 September 2023
LR Report: CA30078-SEP23

10227 Ilderton Rd.
Ilderton, ON
N0M 2A0, Canada

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CERTIFICATE OF ANALYSIS

Final Report

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Completed Date	4: Analysis Completed Time	5: 1AC38 Raw Sewage	6: 1AC39 Final Effluent
Sample Date & Time					05-Sep-23 13:57	05-Sep-23 15:15
Temperature Upon Receipt [at London Lab °C]	---	---	---	---	8.9	8.9
Temperature Upon Receipt [at Lakefield Lab °C]	---	---	---	---	6.0	6.0
E. Coli [cfu/100mL]	07-Sep-23	10:10	08-Sep-23	17:01	---	0
Carbonaceous Biochemical Oxygen Demand [(CBOD5) mg/L]	07-Sep-23	15:15	12-Sep-23	13:56	---	< 2
Biochemical Oxygen Demand (BOD5) [mg/L]	07-Sep-23	16:07	12-Sep-23	11:30	313	---
Chemical Oxygen Demand [mg/L]	08-Sep-23	08:14	12-Sep-23	11:30	630	---
Total Suspended Solids [mg/L]	07-Sep-23	16:18	11-Sep-23	07:18	490	4
Phosphorus (total) [mg/L]	07-Sep-23	15:18	08-Sep-23	11:40	---	0.12
Phosphorus (total) [mg/L]	12-Sep-23	09:47	14-Sep-23	14:48	7.9	---
Total Kjeldahl Nitrogen [as N mg/L]	12-Sep-23	09:47	15-Sep-23	13:54	45.3	---
Total Kjeldahl Nitrogen [as N mg/L]	07-Sep-23	16:48	08-Sep-23	13:04	---	< 0.5
Ammonia+Ammonium (N) [as N mg/L]	07-Sep-23	17:51	08-Sep-23	13:14	---	0.1
Nitrite (as N) [mg/L]	08-Sep-23	00:56	08-Sep-23	14:14	---	0.07
Nitrate (as N) [mg/L]	08-Sep-23	00:56	11-Sep-23	13:37	---	38.2
Nitrate + Nitrite (as N) [mg/L]	08-Sep-23	00:56	11-Sep-23	13:37	---	38.3
pH@temp15 [pH Units]	11-Sep-23	13:05	11-Sep-23	16:01	---	7.30
Unionized Ammonia @temp15 [mg/L as N]	11-Sep-23	13:05	15-Sep-23	15:17	---	< 0.001

*E. Coli analysis was completed at the SGS Environmental Services - London Laboratory.
Note: Federal unionized ammonia at 15 °C calculated using Lab pH results performed at this temperature.

Hawley Anderson, Hon.B.Sc
Project Specialist,
Environment, Health & Safety



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19-September-2023

Mun of Middlesex Centre (Ilderton WWTP)

Attn : Brian Watson

Date Rec. : 06 September 2023
LR Report: CA30073-SEP23

10227 Ilderton Rd.
Ilderton, ON
N0M 2A0, Canada

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Phone: 519-666-0190 ext 255
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CERTIFICATE OF ANALYSIS

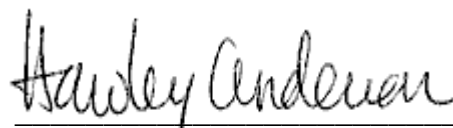
Final Report

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Completed Date	4: Analysis Completed Time	6: 36D05 Sludge
Sample Date & Time					05-Sep-23 15:21
Temperature Upon Receipt [at London Lab °C]					9.6
Temperature Upon Receipt [at Lakefield Lab °C]					6.0
Total Solids [%]	07-Sep-23	20:05	11-Sep-23	09:40	1.60
Specific Gravity	07-Sep-23	20:05	11-Sep-23	09:40	1.0
Volatile Solids [%]	07-Sep-23	20:05	11-Sep-23	09:40	64.1
Volatile Solids [%]	07-Sep-23	20:05	11-Sep-23	09:40	1.03
Nitrite (as N) [mg/kg]	07-Sep-23	10:25	11-Sep-23	12:27	<190
Nitrite (as N) [mg/L]	07-Sep-23	10:25	11-Sep-23	12:27	< 3
Nitrate (as N) [mg/kg]	07-Sep-23	10:25	11-Sep-23	12:27	<190
Nitrate (as N) [mg/L]	07-Sep-23	10:25	11-Sep-23	12:27	< 3
Nitrate + Nitrite (a) [mg/kg]	07-Sep-23	10:25	11-Sep-23	12:27	<190
Nitrate + Nitrite (as N) [mg/L]	07-Sep-23	10:25	11-Sep-23	12:27	< 3
Total Kjeldahl Nitrogen [as N mg/kg]	07-Sep-23	11:47	12-Sep-23	13:17	52000
Total Kjeldahl Nitrogen [as N mg/L]	07-Sep-23	11:47	12-Sep-23	13:17	828
Ammonia+Ammonium (N) [as N mg/kg]	07-Sep-23	10:48	11-Sep-23	09:53	14000
Ammonia+Ammonium (N) [as N mg/L]	07-Sep-23	10:48	11-Sep-23	09:53	217
Mercury [mg/kg]	16-Sep-23	16:47	19-Sep-23	09:56	0.50
Mercury [mg/L]	16-Sep-23	16:47	19-Sep-23	09:56	0.008
Arsenic [mg/kg]	16-Sep-23	16:47	19-Sep-23	09:56	<7
Arsenic [mg/L]	16-Sep-23	16:47	19-Sep-23	09:56	< 0.1
Cadmium [mg/kg]	16-Sep-23	16:47	19-Sep-23	09:56	0.6
Cadmium [mg/L]	16-Sep-23	16:47	19-Sep-23	09:56	0.009
Cobalt [mg/kg]	16-Sep-23	16:47	19-Sep-23	09:56	2
Cobalt [mg/L]	16-Sep-23	16:47	19-Sep-23	09:56	0.03
Chromium [mg/kg]	16-Sep-23	16:47	19-Sep-23	09:56	13
Chromium [mg/L]	16-Sep-23	16:47	19-Sep-23	09:56	0.21
Copper [mg/kg]	16-Sep-23	16:47	19-Sep-23	09:56	220
Copper [mg/L]	16-Sep-23	16:47	19-Sep-23	09:56	3.6
Magnesium [mg/kg]	16-Sep-23	16:47	19-Sep-23	09:56	3100
Magnesium [mg/L]	16-Sep-23	16:47	19-Sep-23	09:56	50
Manganese [mg/kg]	16-Sep-23	16:47	19-Sep-23	09:56	150

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Completed Date	4: Analysis Completed Time	6: 36D05 Sludge
Manganese [mg/L]	16-Sep-23	16:47	19-Sep-23	09:56	2.4
Molybdenum [mg/kg]	16-Sep-23	16:47	19-Sep-23	09:56	4
Molybdenum [mg/L]	16-Sep-23	16:47	19-Sep-23	09:56	0.07
Nickel [mg/kg]	16-Sep-23	16:47	19-Sep-23	09:56	9
Nickel [mg/L]	16-Sep-23	16:47	19-Sep-23	09:56	0.15
Lead [mg/kg]	16-Sep-23	16:47	19-Sep-23	09:56	7
Lead [mg/L]	16-Sep-23	16:47	19-Sep-23	09:56	0.1
Selenium [mg/kg]	16-Sep-23	16:47	19-Sep-23	09:56	<7
Selenium [mg/L]	16-Sep-23	16:47	19-Sep-23	09:56	< 0.1
Zinc [mg/kg]	16-Sep-23	16:47	19-Sep-23	09:56	510
Zinc [mg/L]	16-Sep-23	16:47	19-Sep-23	09:56	8
Phosphorus [mg/kg]	16-Sep-23	16:47	19-Sep-23	09:56	32000
Phosphorus (Total) [mg/L]	16-Sep-23	16:47	19-Sep-23	09:56	506
Potassium [mg/kg]	16-Sep-23	16:47	19-Sep-23	09:56	3300
Potassium [mg/L]	16-Sep-23	16:47	19-Sep-23	09:56	54
Sulphur [mg/kg]	16-Sep-23	16:47	19-Sep-23	09:56	6600
Sulfur [mg/L]	16-Sep-23	16:47	19-Sep-23	09:56	106
E. Coli [cfu/1g dried wgt]	07-Sep-23	11:00	08-Sep-23	16:07	25000
E.Coli [cfu/100mL]	07-Sep-23	11:00	08-Sep-23	16:07	40000

Sample matrix = Sludge/Biosolids Solution
 Metals, TKN, Ammonia + Ammonium, Nitrite, Nitrate and Nitrates calculated and reported in mg/kg on a dried weight basis. Detection Limits reflect this calculation
 The E.coli value reported in CFU/1g dried weight was calculated using Total Solids and CFU/100ml.

Note: E. Coli analysis was completed at the SGS London Laboratory.



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25-September-2023

Mun of Middlesex Centre (Ilderton WWTP)

Attn : Brian Watson

Date Rec. : 13 September 2023
LR Report: CA30275-SEP23

10227 Ilderton Rd.
Ilderton, ON
N0M 2A0, Canada

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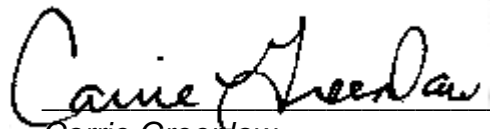
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Fax:519-666-0271

CERTIFICATE OF ANALYSIS

Final Report

Analysis	1:	2:	3:	4:	5:	6:
	Analysis Start Date	Analysis Start Time	Analysis Completed Date	Analysis Completed Time	1AC38 Raw Sewage	1AC39 Final Effluent
Sample Date & Time					12-Sep-23 08:57	12-Sep-23 09:57
Temperature Upon Receipt [at London Lab °C]	---	---	---	---	14.4	14.4
Temperature Upon Receipt [at Lakefield Lab °C]	---	---	---	---	8.0	8.0
E. Coli [cfu/100mL]	13-Sep-23	16:20	15-Sep-23	16:27	---	12
Carbonaceous Biochemical Oxygen Demand [(CBOD5) mg/L]	15-Sep-23	12:47	20-Sep-23	13:46	---	< 2
Biochemical Oxygen Demand (BOD5) [mg/L]	15-Sep-23	13:00	20-Sep-23	12:09	433	---
Chemical Oxygen Demand [mg/L]	18-Sep-23	09:32	20-Sep-23	12:09	620	---
Total Suspended Solids [mg/L]	18-Sep-23	16:08	19-Sep-23	13:54	607	5
Phosphorus (total) [mg/L]	17-Sep-23	12:40	21-Sep-23	13:06	---	0.15
Total Kjeldahl Nitrogen [as N mg/L]	17-Sep-23	13:50	19-Sep-23	15:57	---	< 0.5
Phosphorus (total) [mg/L]	20-Sep-23	09:54	25-Sep-23	10:18	6.9	---
Total Kjeldahl Nitrogen [as N mg/L]	20-Sep-23	09:54	25-Sep-23	13:45	46.4	---
Ammonia+Ammonium (N) [as N mg/L]	17-Sep-23	12:00	18-Sep-23	13:58	---	0.2
Nitrite (as N) [mg/L]	16-Sep-23	15:27	18-Sep-23	12:47	---	0.04
Nitrate (as N) [mg/L]	18-Sep-23	15:53	19-Sep-23	13:16	---	34.7
Nitrate + Nitrite (as N) [mg/L]	18-Sep-23	15:53	19-Sep-23	13:16	---	34.7
pH@temp15 [pH Units]	19-Sep-23	12:34	20-Sep-23	10:10	---	7.52
Unionized Ammonia @temp15 [mg/L as N]	19-Sep-23	12:34	20-Sep-23	10:27	---	0.001

*E. Coli analysis was completed at the SGS Environmental Services - London Laboratory.
Note: Federal unionized ammonia at 15 °C calculated using Lab pH results performed at this temperature.


Carrie Greenlaw
Project Specialist,
Environment, Health & Safety



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28-September-2023

Mun of Middlesex Centre (Ilderton WWTP)

Attn : Brian Watson

Date Rec. : 20 September 2023
LR Report: CA30404-SEP23

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Ilderton, ON
N0M 2A0, Canada

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Fax:519-666-0271

CERTIFICATE OF ANALYSIS

Final Report

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Completed Date	4: Analysis Completed Time	5: 1AC38 Raw Sewage	6: 1AC39 Final Effluent
Sample Date & Time					19-Sep-23 10:27	19-Sep-23 10:41
Temperature Upon Receipt [at London Lab °C]	---	---	---	---	6.9	6.9
Temperature Upon Receipt [at Lakefield Lab °C]	---	---	---	---	9.0	9.0
E. Coli [cfu/100mL]	20-Sep-23	16:25	22-Sep-23	12:45	---	0
Chemical Oxygen Demand [mg/L]	26-Sep-23	08:15	27-Sep-23	09:39	500	---
Carbonaceous Biochemical Oxygen Demand [(CBOD5) mg/L]	21-Sep-23	15:40	26-Sep-23	13:34	---	< 2
Biochemical Oxygen Demand (BOD5) [mg/L]	21-Sep-23	17:45	26-Sep-23	13:34	180	---
Total Suspended Solids [mg/L]	24-Sep-23	11:19	25-Sep-23	15:28	733	4
Phosphorus (total) [mg/L]	21-Sep-23	15:03	25-Sep-23	09:58	---	0.18
Phosphorus (total) [mg/L]	25-Sep-23	16:52	27-Sep-23	12:57	5.5	---
Total Kjeldahl Nitrogen [as N mg/L]	21-Sep-23	18:44	22-Sep-23	10:17	---	< 0.5
Total Kjeldahl Nitrogen [as N mg/L]	25-Sep-23	16:52	28-Sep-23	12:16	27.3	---
Ammonia+Ammonium (N) [as N mg/L]	21-Sep-23	20:16	22-Sep-23	16:19	---	< 0.1
Nitrite (as N) [mg/L]	21-Sep-23	19:59	25-Sep-23	12:53	---	< 0.03
Nitrate (as N) [mg/L]	21-Sep-23	19:59	25-Sep-23	12:53	---	28.6
Nitrate + Nitrite (as N) [mg/L]	21-Sep-23	19:59	25-Sep-23	12:53	---	28.6
pH@temp15 [pH Units]	23-Sep-23	13:07	25-Sep-23	10:37	---	7.88
Unionized Ammonia @temp15 [mg/L as N]	23-Sep-23	13:07	26-Sep-23	11:37	---	0.002

*E. Coli analysis was completed at the SGS Environmental Services - London Laboratory.
Note: Federal unionized ammonia at 15 °C calculated using lab pH results performed at this temperature.

Hawley Anderson, Hon.B.Sc
Project Specialist,
Environment, Health & Safety



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10-October-2023

Mun of Middlesex Centre (Ilderton WWTP)

Attn : Brian Watson

Date Rec. : 27 September 2023
LR Report: CA30536-SEP23

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Ilderton, ON
N0M 2A0, Canada

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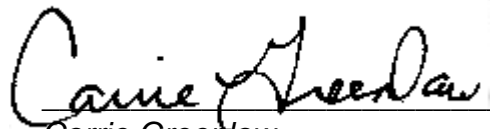
Phone: 519-666-0190 ext 255
Fax:519-666-0271

CERTIFICATE OF ANALYSIS

Final Report

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Completed Date	4: Analysis Completed Time	5: 1AC38 Raw Sewage	6: 1AC39 Final Effluent
Sample Date & Time					26-Sep-23 08:58	26-Sep-23 09:33
Temperature Upon Receipt [at London Lab °C]	---	---	---	---	5.3	5.3
Temperature Upon Receipt [at Lakefield Lab °C]	---	---	---	---	5.0	5.0
E. Coli [cfu/100mL]	27-Sep-23	14:30	28-Sep-23	18:51	---	2
Carbonaceous Biochemical Oxygen Demand [(CBOD5) mg/L]	28-Sep-23	16:24	03-Oct-23	14:46	---	< 2
Chemical Oxygen Demand [mg/L]	29-Sep-23	08:43	03-Oct-23	12:03	635	---
Biochemical Oxygen Demand (BOD5) [mg/L]	28-Sep-23	16:24	03-Oct-23	12:03	360	---
Total Suspended Solids [mg/L]	28-Sep-23	13:33	03-Oct-23	10:33	952	5
Phosphorus (total) [mg/L]	28-Sep-23	15:59	03-Oct-23	15:19	---	0.13
Phosphorus (total) [mg/L]	02-Oct-23	14:15	10-Oct-23	11:55	6.7	---
Total Kjeldahl Nitrogen [as N mg/L]	28-Sep-23	14:34	29-Sep-23	13:59	---	< 0.5
Total Kjeldahl Nitrogen [as N mg/L]	02-Oct-23	14:15	05-Oct-23	12:52	54.6	---
Ammonia+Ammonium (N) [as N mg/L]	28-Sep-23	19:55	02-Oct-23	09:56	---	< 0.1
Nitrite (as N) [mg/L]	28-Sep-23	22:49	29-Sep-23	14:14	---	< 0.03
Nitrate (as N) [mg/L]	29-Sep-23	21:58	03-Oct-23	13:59	---	41.0
Nitrate + Nitrite (as N) [mg/L]	29-Sep-23	21:58	03-Oct-23	13:59	---	41.0
pH@temp15 [pH Units]	02-Oct-23	09:55	02-Oct-23	12:52	---	7.71
Unionized Ammonia @temp15 [mg/L as N]	02-Oct-23	09:55	02-Oct-23	12:52	---	< 0.001

*E. Coli analysis was completed at the SGS Environmental Services - London Laboratory.
Note: Federal unionized ammonia at 15 °C calculated using Lab pH results performed at this temperature.


Carrie Greenlaw
Project Specialist,
Environment, Health & Safety



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25-October-2023

Mun of Middlesex Centre (Ilderton WWTP)

Attn : Brian Watson

Date Rec. : 04 October 2023
LR Report: CA30082-OCT23

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N0M 2A0, Canada

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CERTIFICATE OF ANALYSIS

Final Report

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Completed Date	4: Analysis Completed Time	6: 36D05 Sludge
Sample Date & Time					03-Oct-23 12:03
Temperature Upon Receipt [at London Lab °C]	---	---	---	---	6.7
Temperature Upon Receipt [at Lakefield Lab °C]	---	---	---	---	9.0
Total Solids [%]	06-Oct-23	20:53	11-Oct-23	09:24	2.07
SpecificGravity	06-Oct-23	20:53	11-Oct-23	09:24	1.0
Volatile Solids [%]	06-Oct-23	20:53	11-Oct-23	09:24	71.7
Volatile Solids [mg/kg]	06-Oct-23	20:53	11-Oct-23	09:24	1.48
Nitrite (as N) [mg/kg]	07-Oct-23	07:52	13-Oct-23	16:05	<140
Nitrite (as N) [mg/L]	07-Oct-23	07:52	13-Oct-23	16:05	< 3
Nitrate (as N) [mg/kg]	07-Oct-23	07:52	13-Oct-23	16:05	<140
Nitrate (as N) [mg/L]	07-Oct-23	07:52	13-Oct-23	16:05	< 3
Nitrate + Nitrite (a) [mg/kg]	07-Oct-23	07:52	13-Oct-23	16:05	<140
Nitrate + Nitrite (as N) [mg/L]	07-Oct-23	07:52	13-Oct-23	16:05	< 3
Total Kjeldahl Nitrogen [as N mg/kg]	20-Oct-23	12:35	25-Oct-23	11:53	53000
Total Kjeldahl Nitrogen [as N mg/L]	20-Oct-23	12:35	25-Oct-23	11:53	1100
Ammonia+Ammonium (N) [as N mg/kg]	06-Oct-23	16:05	10-Oct-23	11:04	910
Ammonia+Ammonium (N) [as N mg/L]	06-Oct-23	16:05	10-Oct-23	11:04	18.9
Mercury [mg/kg]	19-Oct-23	15:03	20-Oct-23	13:25	1.8
Mercury [mg/L]	19-Oct-23	15:03	20-Oct-23	13:25	0.037
Arsenic [mg/kg]	19-Oct-23	15:03	20-Oct-23	13:25	<5
Arsenic [mg/L]	19-Oct-23	15:03	20-Oct-23	13:25	< 0.1
Cadmium [mg/kg]	19-Oct-23	15:03	20-Oct-23	13:25	0.4
Cadmium [mg/L]	19-Oct-23	15:03	20-Oct-23	13:25	0.008
Cobalt [mg/kg]	19-Oct-23	15:03	20-Oct-23	13:25	2
Cobalt [mg/L]	19-Oct-23	15:03	20-Oct-23	13:25	0.04
Chromium [mg/kg]	19-Oct-23	15:03	20-Oct-23	13:25	9
Chromium [mg/L]	19-Oct-23	15:03	20-Oct-23	13:25	0.19
Copper [mg/kg]	19-Oct-23	15:03	20-Oct-23	13:25	180
Copper [mg/L]	19-Oct-23	15:03	20-Oct-23	13:25	3.6
Magnesium [mg/kg]	19-Oct-23	15:03	20-Oct-23	13:25	2600
Magnesium [mg/L]	19-Oct-23	15:03	20-Oct-23	13:25	53
Manganese [mg/kg]	19-Oct-23	15:03	20-Oct-23	13:25	170

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Completed Date	4: Analysis Completed Time	6: 36D05 Sludge
Manganese [mg/L]	19-Oct-23	15:03	20-Oct-23	13:25	3.6
Molybdenum [mg/kg]	19-Oct-23	15:03	20-Oct-23	13:25	4
Molybdenum [mg/L]	19-Oct-23	15:03	20-Oct-23	13:25	0.08
Nickel [mg/kg]	19-Oct-23	15:03	20-Oct-23	13:25	8
Nickel [mg/L]	19-Oct-23	15:03	20-Oct-23	13:25	0.17
Lead [mg/kg]	19-Oct-23	15:03	20-Oct-23	13:25	5
Lead [mg/L]	19-Oct-23	15:03	20-Oct-23	13:25	0.1
Selenium [mg/kg]	19-Oct-23	15:03	20-Oct-23	13:25	<5
Selenium [mg/L]	19-Oct-23	15:03	20-Oct-23	13:25	< 0.1
Zinc [mg/kg]	19-Oct-23	15:03	20-Oct-23	13:25	380
Zinc [mg/L]	19-Oct-23	15:03	20-Oct-23	13:25	8
Phosphorus [mg/kg]	19-Oct-23	15:03	20-Oct-23	13:25	27000
Phosphorus (Total) [mg/L]	19-Oct-23	15:03	20-Oct-23	13:25	554
Potassium [mg/kg]	19-Oct-23	15:03	20-Oct-23	13:25	3100
Potassium [mg/L]	19-Oct-23	15:03	20-Oct-23	13:25	64
Sulphur [mg/kg]	19-Oct-23	15:03	20-Oct-23	13:25	6300
Sulfur [mg/L]	19-Oct-23	15:03	20-Oct-23	13:25	131
E. Coli [cfu/1g dried wgt]	07-Oct-23	15:29	12-Oct-23	14:39	217391
E. Coli [cfu/100mL]	07-Oct-23	15:29	12-Oct-23	14:39	450000 UAL

Sample matrix = Sludge/Biosolids Solution
 Metals, TKN, Ammonia + Ammonium, Nitrite, Nitrate and Nitrates calculated and reported in mg/kg on a dried weight basis. Detection Limits reflect this calculation
 The E. coli value reported in CFU/1g dried weight was calculated using Total Solids and CFU/100ml.

*Due to a laboratory oversight E. Coli was missed being completed within the recommended holding time of 48 hours. Client was notified.
 UAL - Unreliable: Sample Age Exceeds Normal Limit



Carrie Greenlaw
 Project Specialist,
 Environment, Health & Safety

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10-October-2023

Mun of Middlesex Centre (Ilderton WWTP)

Attn : Brian Watson

Date Rec. : 27 September 2023
LR Report: CA30536-SEP23

10227 Ilderton Rd.
 Ilderton, ON
 N0M 2A0, Canada

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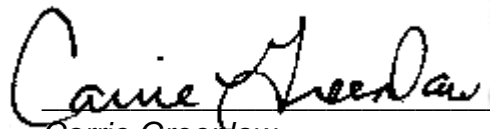
Phone: 519-666-0190 ext 255
 Fax:519-666-0271

CERTIFICATE OF ANALYSIS

Final Report

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Completed Date	4: Analysis Completed Time	5: 1AC38 Raw Sewage	6: 1AC39 Final Effluent
Sample Date & Time					26-Sep-23 08:58	26-Sep-23 09:33
Temperature Upon Receipt [at London Lab °C]	---	---	---	---	5.3	5.3
Temperature Upon Receipt [at Lakefield Lab °C]	---	---	---	---	5.0	5.0
E. Coli [cfu/100mL]	27-Sep-23	14:30	28-Sep-23	18:51	---	2
Carbonaceous Biochemical Oxygen Demand [(CBOD5) mg/L]	28-Sep-23	16:24	03-Oct-23	14:46	---	< 2
Chemical Oxygen Demand [mg/L]	29-Sep-23	08:43	03-Oct-23	12:03	635	---
Biochemical Oxygen Demand (BOD5) [mg/L]	28-Sep-23	16:24	03-Oct-23	12:03	360	---
Total Suspended Solids [mg/L]	28-Sep-23	13:33	03-Oct-23	10:33	952	5
Phosphorus (total) [mg/L]	28-Sep-23	15:59	03-Oct-23	15:19	---	0.13
Phosphorus (total) [mg/L]	02-Oct-23	14:15	10-Oct-23	11:55	6.7	---
Total Kjeldahl Nitrogen [as N mg/L]	28-Sep-23	14:34	29-Sep-23	13:59	---	< 0.5
Total Kjeldahl Nitrogen [as N mg/L]	02-Oct-23	14:15	05-Oct-23	12:52	54.6	---
Ammonia+Ammonium (N) [as N mg/L]	28-Sep-23	19:55	02-Oct-23	09:56	---	< 0.1
Nitrite (as N) [mg/L]	28-Sep-23	22:49	29-Sep-23	14:14	---	< 0.03
Nitrate (as N) [mg/L]	29-Sep-23	21:58	03-Oct-23	13:59	---	41.0
Nitrate + Nitrite (as N) [mg/L]	29-Sep-23	21:58	03-Oct-23	13:59	---	41.0
pH@temp15 [pH Units]	02-Oct-23	09:55	02-Oct-23	12:52	---	7.71
Unionized Ammonia @temp15 [mg/L as N]	02-Oct-23	09:55	02-Oct-23	12:52	---	< 0.001

*E. Coli analysis was completed at the SGS Environmental Services - London Laboratory.
 Note: Federal unionized ammonia at 15 °C calculated using Lab pH results performed at this temperature.



Carrie Greenlaw
 Project Specialist,
 Environment, Health & Safety



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23-October-2023

Mun of Middlesex Centre (Ilderton WWTP)

Attn : Brian Watson

Date Rec. : 11 October 2023
LR Report: CA30257-OCT23

10227 Ilderton Rd.
Ilderton, ON
N0M 2A0, Canada

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CERTIFICATE OF ANALYSIS

Final Report

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Completed Date	4: Analysis Completed Time	5: 1AC38 Raw Sewage	6: 1AC39 Final Effluent
Sample Date & Time					11-Oct-23 08:30	11-Oct-23 09:12
Temperature Upon Receipt [at London Lab °C]	---	---	---	---	7.3	7.3
Temperature Upon Receipt [at Lakefield Lab °C]	---	---	---	---	7.0	7.0
E. Coli [cfu/100mL]	12-Oct-23	16:25	16-Oct-23	12:54	---	1
Chemical Oxygen Demand [mg/L]	16-Oct-23	08:07	18-Oct-23	12:10	800	---
Carbonaceous Biochemical Oxygen Demand [(CBOD5) mg/L]	13-Oct-23	15:32	18-Oct-23	13:05	---	< 2
Biochemical Oxygen Demand (BOD5) [mg/L]	13-Oct-23	14:52	18-Oct-23	12:10	377	---
Total Suspended Solids [mg/L]	17-Oct-23	12:23	18-Oct-23	13:48	400	4
Phosphorus (total) [mg/L]	17-Oct-23	14:25	18-Oct-23	13:24	4.85	0.16
Total Kjeldahl Nitrogen [as N mg/L]	19-Oct-23	11:29	23-Oct-23	10:59	35.4	0.8
Ammonia+Ammonium (N) [as N mg/L]	16-Oct-23	19:37	17-Oct-23	12:53	---	< 0.1
Nitrite (as N) [mg/L]	16-Oct-23	16:36	18-Oct-23	16:32	---	< 0.03
Nitrate (as N) [mg/L]	16-Oct-23	16:36	18-Oct-23	16:32	---	28.6
Nitrate + Nitrite (as N) [mg/L]	16-Oct-23	16:36	18-Oct-23	16:32	---	28.6
pH@temp15 [pH Units]	17-Oct-23	15:10	18-Oct-23	13:15	---	7.79
Unionized Ammonia @temp15 [mg/L as N]	17-Oct-23	15:10	18-Oct-23	13:16	---	< 0.001

*E. Coli analysis was completed at the SGS Environmental Services - London Laboratory.
Note: Federal unionized ammonia at 15 °C calculated using Lab pH results performed at this temperature.


Carrie Greenlaw
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Phone: 705-652-2000 FAX: 705-652-6365

25-October-2023

Mun of Middlesex Centre (Ilderton WWTP)

Attn : Brian Watson

Date Rec. : 17 October 2023
LR Report: CA30400-OCT23

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Ilderton, ON
N0M 2A0, Canada

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Phone: 519-666-0190 ext 255
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CERTIFICATE OF ANALYSIS

Final Report

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Completed Date	4: Analysis Completed Time	5: 1AC38 Raw Sewage	6: 1AC39 Final Effluent
Sample Date & Time					17-Oct-23 08:40	17-Oct-23 08:37
Temperature Upon Receipt [at London Lab °C]	---	---	---	---	4.9	4.9
Temperature Upon Receipt [at Lakefield Lab °C]	---	---	---	---	10.0	10.0
E. Coli [cfu/100mL]	18-Oct-23	16:30	20-Oct-23	14:06	---	0
Carbonaceous Biochemical Oxygen Demand [(CBOD5) mg/L]	19-Oct-23	16:38	24-Oct-23	11:59	---	< 2
Biochemical Oxygen Demand (BOD5) [mg/L]	19-Oct-23	17:19	24-Oct-23	11:32	298	---
Total Suspended Solids [mg/L]	21-Oct-23	13:09	24-Oct-23	10:23	318	7
Phosphorus (total) [mg/L]	21-Oct-23	14:26	23-Oct-23	15:16	3.90	0.14
Total Kjeldahl Nitrogen [as N mg/L]	21-Oct-23	14:27	23-Oct-23	13:09	36.2	0.5
Ammonia+Ammonium (N) [as N mg/L]	21-Oct-23	14:29	23-Oct-23	14:35	---	0.1
Nitrite (as N) [mg/L]	21-Oct-23	12:55	25-Oct-23	10:35	---	0.05
Nitrate (as N) [mg/L]	24-Oct-23	14:48	25-Oct-23	15:28	---	39.3
Nitrate + Nitrite (as N) [mg/L]	24-Oct-23	14:48	25-Oct-23	15:28	---	39.3
pH@temp15 [pH Units]	19-Oct-23	16:38	20-Oct-23	13:23	---	8.10
Unionized Ammonia @temp15 [mg/L as N]	19-Oct-23	16:38	23-Oct-23	14:35	---	0.004

*E. Coli analysis was completed at the SGS Environmental Services - London Laboratory.
Note: Federal unionized ammonia at 15 °C calculated using lab pH results performed at this temperature.


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02-November-2023

Mun of Middlesex Centre (Ilderton WWTP)

Attn : Brian Watson

Date Rec. : 25 October 2023
LR Report: CA30515-OCT23

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CERTIFICATE OF ANALYSIS

Final Report

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Completed Date	4: Analysis Completed Time	5: 1AC39 Final Effluent
Sample Date & Time					23-Oct-23 16:00
Temperature Upon Receipt [at London Lab °C]	---	---	---	---	8.2
Temperature Upon Receipt [at Lakefield Lab °C]	---	---	---	---	9.0
Carbonaceous Biochemical Oxygen Demand [(CBOD5) mg/L]	26-Oct-23	16:01	31-Oct-23	14:11	< 2
Total Suspended Solids [mg/L]	30-Oct-23	15:16	31-Oct-23	13:44	8
Phosphorus (total) [mg/L]	26-Oct-23	17:26	27-Oct-23	15:59	0.24
Total Kjeldahl Nitrogen [as N mg/L]	26-Oct-23	15:54	30-Oct-23	11:09	1.2
Ammonia+Ammonium (N) [as N mg/L]	27-Oct-23	21:38	30-Oct-23	10:23	0.6
Nitrite (as N) [mg/L]	29-Oct-23	17:09	02-Nov-23	09:38	0.04
Nitrate (as N) [mg/L]	29-Oct-23	17:09	02-Nov-23	09:38	14.1
Nitrate + Nitrite (as N) [mg/L]	29-Oct-23	17:09	02-Nov-23	09:38	14.1
pH@temp15 [pH Units]	28-Oct-23	09:09	30-Oct-23	08:58	7.84
Unionized Ammonia @temp15 [mg/L as N]	27-Oct-23	21:38	30-Oct-23	10:23	0.011

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



Carrie Greenlaw
Project Specialist,
Environment, Health & Safety



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01-November-2023

Mun of Middlesex Centre (Ilderton WWTP)

Attn : Brian Watson

Date Rec. : 25 October 2023
LR Report: CA30514-OCT23

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CERTIFICATE OF ANALYSIS

Final Report

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Completed Date	4: Analysis Completed Time	5: 1AC38 Raw Sewage	6: 1AC39 Final Effluent
Sample Date & Time					24-Oct-23 08:00	24-Oct-23 11:25
Temperature Upon Receipt [at London Lab °C]	---	---	---	---	9.2	9.3
Temperature Upon Receipt [at Lakefield Lab °C]	---	---	---	---	9.0	---
E. Coli [cfu/100mL]	25-Oct-23	12:40	27-Oct-23	12:20	---	4
Biochemical Oxygen Demand (BOD5) [mg/L]	26-Oct-23	17:05	31-Oct-23	11:02	149	---
Total Suspended Solids [mg/L]	31-Oct-23	14:45	01-Nov-23	11:27	322	---
Phosphorus (total) [mg/L]	26-Oct-23	17:26	27-Oct-23	15:59	2.69	---
Total Kjeldahl Nitrogen [as N mg/L]	26-Oct-23	15:54	27-Oct-23	22:21	25.0	---

*E. Coli analysis was completed at the SGS Environmental Services - London Laboratory.



Carrie Greenlaw
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Project Specialist,
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10-November-2023

Mun of Middlesex Centre (Ilderton WWTP)

Attn : Brian Watson

Date Rec. : 01 November 2023
LR Report: CA30015-NOV23

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Ilderton, ON
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CERTIFICATE OF ANALYSIS

Final Report

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Completed Date	4: Analysis Completed Time	5: 1AC38 Raw Sewage	6: 1AC39 Final Effluent
Sample Date & Time					31-Oct-23 10:10	31-Oct-23 08:23
Temperature Upon Receipt [at London Lab °C]	---	---	---	---	3.9	3.9
Temperature Upon Receipt [at Lakefield Lab °C]	---	---	---	---	4.0	4.0
E. Coli [cfu/100mL]	01-Nov-23	12:30	02-Nov-23	16:31	---	10
Carbonaceous Biochemical Oxygen Demand [(CBOD5) mg/L]	03-Nov-23	16:08	08-Nov-23	13:54	---	< 2
Biochemical Oxygen Demand (BOD5) [mg/L]	03-Nov-23	13:42	08-Nov-23	12:03	274	---
Total Suspended Solids [mg/L]	05-Nov-23	11:01	06-Nov-23	13:34	700	2
Phosphorus (total) [mg/L]	03-Nov-23	15:07	08-Nov-23	08:09	---	0.10
Total Kjeldahl Nitrogen [as N mg/L]	02-Nov-23	16:49	06-Nov-23	08:02	---	< 0.5
Phosphorus (total) [mg/L]	06-Nov-23	16:15	10-Nov-23	08:15	4.7	---
Total Kjeldahl Nitrogen [as N mg/L]	06-Nov-23	16:15	08-Nov-23	11:17	31.6	---
Ammonia+Ammonium (N) [as N mg/L]	03-Nov-23	17:49	07-Nov-23	15:53	---	0.6
Nitrite (as N) [mg/L]	03-Nov-23	21:59	10-Nov-23	11:40	---	0.43
Nitrate (as N) [mg/L]	03-Nov-23	21:59	10-Nov-23	11:40	---	23.3
Nitrate + Nitrite (as N) [mg/L]	03-Nov-23	21:59	10-Nov-23	11:40	---	23.7
pH@temp15 [pH Units]	03-Nov-23	13:03	06-Nov-23	09:52	---	8.03
Unionized Ammonia @temp15 [mg/L as N]	03-Nov-23	13:03	07-Nov-23	15:53	---	0.018

*E. Coli analysis was completed at the SGS Environmental Services - London Laboratory.
Note: Federal unionized ammonia at 15 °C calculated using Lab pH results performed at this temperature.

Hawley Anderson, Hon.B.Sc
Project Specialist,
Environment, Health & Safety



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20-November-2023

Mun of Middlesex Centre (Ilderton WWTP)

Attn : Brian Watson

Date Rec. : 08 November 2023
LR Report: CA30160-NOV23

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CERTIFICATE OF ANALYSIS

Final Report

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Completed Date	4: Analysis Completed Time	6: 36D05 Sludge
Sample Date & Time					07-Nov-23 08:20
Temperature Upon Receipt [at London Lab °C]	---	---	---	---	4.9
Temperature Upon Receipt [at Lakefield Lab °C]	---	---	---	---	4.0
Total Solids [%]	09-Nov-23	20:28	13-Nov-23	11:07	1.57
Specific Gravity	09-Nov-23	20:28	13-Nov-23	11:07	1.0
Volatile Solids [%]	09-Nov-23	20:28	13-Nov-23	11:07	72.3
Volatile Solids [%]	09-Nov-23	20:28	13-Nov-23	11:07	1.14
Nitrite (as N) [mg/kg]	10-Nov-23	09:55	16-Nov-23	13:44	<190
Nitrite (as N) [mg/L]	10-Nov-23	09:55	16-Nov-23	13:44	< 3
Nitrate (as N) [mg/kg]	10-Nov-23	09:55	16-Nov-23	13:44	960
Nitrate (as N) [mg/L]	10-Nov-23	09:55	16-Nov-23	13:44	15
Nitrate + Nitrite (a) [mg/kg]	10-Nov-23	09:55	16-Nov-23	13:44	960
Nitrate + Nitrite (as N) [mg/L]	10-Nov-23	09:55	16-Nov-23	13:44	15
Total Kjeldahl Nitrogen [as N mg/kg]	10-Nov-23	12:52	14-Nov-23	10:15	53000
Total Kjeldahl Nitrogen [as N mg/L]	10-Nov-23	12:52	14-Nov-23	10:15	840
Ammonia+Ammonium (N) [as N mg/kg]	10-Nov-23	11:49	13-Nov-23	09:34	810
Ammonia+Ammonium (N) [as N mg/L]	10-Nov-23	11:49	13-Nov-23	09:34	12.7
Mercury [mg/kg]	15-Nov-23	20:33	16-Nov-23	15:56	1.2
Mercury [mg/L]	15-Nov-23	20:33	16-Nov-23	15:56	0.019
Arsenic [mg/kg]	15-Nov-23	20:33	16-Nov-23	15:56	<6
Arsenic [mg/L]	15-Nov-23	20:33	16-Nov-23	15:56	< 0.1
Cadmium [mg/kg]	15-Nov-23	20:33	16-Nov-23	15:56	0.4
Cadmium [mg/L]	15-Nov-23	20:33	16-Nov-23	15:56	0.006
Cobalt [mg/kg]	15-Nov-23	20:33	16-Nov-23	15:56	2
Cobalt [mg/L]	15-Nov-23	20:33	16-Nov-23	15:56	0.03
Chromium [mg/kg]	15-Nov-23	20:33	16-Nov-23	15:56	10
Chromium [mg/L]	15-Nov-23	20:33	16-Nov-23	15:56	0.15
Copper [mg/kg]	15-Nov-23	20:33	16-Nov-23	15:56	170
Copper [mg/L]	15-Nov-23	20:33	16-Nov-23	15:56	2.7
Magnesium [mg/kg]	15-Nov-23	20:33	16-Nov-23	15:56	2500
Magnesium [mg/L]	15-Nov-23	20:33	16-Nov-23	15:56	39
Manganese [mg/kg]	15-Nov-23	20:33	16-Nov-23	15:56	150

Online LIMS

0003538438

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Completed Date	4: Analysis Completed Time	6: 36D05 Sludge
Manganese [mg/L]	15-Nov-23	20:33	16-Nov-23	15:56	2.3
Molybdenum [mg/kg]	15-Nov-23	20:33	16-Nov-23	15:56	4
Molybdenum [mg/L]	15-Nov-23	20:33	16-Nov-23	15:56	0.06
Nickel [mg/kg]	15-Nov-23	20:33	16-Nov-23	15:56	9
Nickel [mg/L]	15-Nov-23	20:33	16-Nov-23	15:56	0.14
Lead [mg/kg]	15-Nov-23	20:33	16-Nov-23	15:56	<6
Lead [mg/L]	15-Nov-23	20:33	16-Nov-23	15:56	< 0.1
Selenium [mg/kg]	15-Nov-23	20:33	16-Nov-23	15:56	<6
Selenium [mg/L]	15-Nov-23	20:33	16-Nov-23	15:56	< 0.1
Zinc [mg/kg]	15-Nov-23	20:33	16-Nov-23	15:56	340
Zinc [mg/L]	15-Nov-23	20:33	16-Nov-23	15:56	5
Phosphorus [mg/kg]	15-Nov-23	20:33	16-Nov-23	15:56	26000
Phosphorus (Total) [mg/L]	15-Nov-23	20:33	16-Nov-23	15:56	401
Potassium [mg/kg]	15-Nov-23	20:33	16-Nov-23	15:56	2900
Potassium [mg/L]	15-Nov-23	20:33	16-Nov-23	15:56	45
Sulphur [mg/kg]	15-Nov-23	20:33	16-Nov-23	15:56	5900
Sulfur [mg/L]	15-Nov-23	20:33	16-Nov-23	15:56	92
E. Coli [cfu/1g dried wgt]	08-Nov-23	18:00	10-Nov-23	09:17	63694
E.Coli [cfu/100ml]	08-Nov-23	18:00	10-Nov-23	09:17	100000

Sample matrix = Sludge/Biosolids Solution
 Metals, TKN, Ammonia + Ammonium, Nitrite, Nitrate and Nitrates calculated and reported in mg/kg on a dried weight basis. Detection Limits reflect this calculation
 The E. coli value reported in CFU/1g dried weight was calculated using Total Solids and CFU/100ml.

Note: E. Coli analysis was completed at the SGS London Laboratory.



Carrie Greenlaw
 Project Specialist,
 Environment, Health & Safety

SGS Canada Inc.

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20-November-2023

Mun of Middlesex Centre (Ilderton WWTP)

Attn : Brian Watson

Date Rec. : 08 November 2023
LR Report: CA30161-NOV23

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CERTIFICATE OF ANALYSIS

Final Report

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Completed Date	4: Analysis Completed Time	5: 1AC38 Raw Sewage	6: 1AC39 Final Effluent
Sample Date & Time					07-Nov-23 08:00	07-Nov-23 08:15
Temperature Upon Receipt [at London Lab °C]	---	---	---	---	3.4	3.4
Temperature Upon Receipt [at Lakefield Lab °C]	---	---	---	---	4.0	4.0
E. Coli [cfu/100mL]	08-Nov-23	18:20	10-Nov-23	13:10	---	5
Carbonaceous Biochemical Oxygen Demand [(CBOD5) mg/L]	13-Nov-23	17:42	20-Nov-23	10:53	---	3
Biochemical Oxygen Demand (BOD5) [mg/L]	10-Nov-23	17:20	15-Nov-23	12:38	196	---
Total Suspended Solids [mg/L]	11-Nov-23	11:15	14-Nov-23	14:26	300	2
Phosphorus (total) [mg/L]	13-Nov-23	18:40	14-Nov-23	15:00	3.79	0.11
Total Kjeldahl Nitrogen [as N mg/L]	13-Nov-23	16:16	14-Nov-23	14:19	32.0	< 0.5
Ammonia+Ammonium (N) [as N mg/L]	10-Nov-23	20:23	13-Nov-23	11:31	---	0.1
Nitrite (as N) [mg/L]	12-Nov-23	13:07	13-Nov-23	19:03	---	0.14
Nitrate (as N) [mg/L]	12-Nov-23	13:07	13-Nov-23	19:03	---	29.0
Nitrate + Nitrite (as N) [mg/L]	12-Nov-23	13:07	13-Nov-23	19:03	---	29.1
pH@temp15 [pH Units]	14-Nov-23	10:15	14-Nov-23	11:58	---	7.73
Unionized Ammonia @temp15 [mg/L as N]	14-Nov-23	10:15	14-Nov-23	11:58	---	0.002

*E. Coli analysis was completed at the SGS Environmental Services - London Laboratory.
 Note: Federal unionized ammonia at 15 °C calculated using lab pH results performed at this temperature.



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21-November-2023

Mun of Middlesex Centre (Komoka WWTP)

Attn : Brian Watson

Date Rec. : 15 November 2023
LR Report: CA30272-NOV23

10227 Ilderton Rd.
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N0M 2A0, Canada

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Phone: 519-666-0190 ext 255
Fax:519-666-0271

CERTIFICATE OF ANALYSIS

Final Report

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Completed Date	4: Analysis Completed Time	5: 1A0C6 Final Effluent
Sample Date & Time					15-Nov-23 07:58
Temperature Upon Receipt [at London Lab °C]	---	---	---	---	13.9
Temperature Upon Receipt [at Lakefield Lab °C]	---	---	---	---	9.0
E.Coli [cfu/100mL]	15-Nov-23	12:30	16-Nov-23	16:46	18
Carbonaceous Biochemical Oxygen Demand [(CBOD5) mg/L]	16-Nov-23	15:17	21-Nov-23	13:07	< 2
Total Suspended Solids [mg/L]	20-Nov-23	18:02	21-Nov-23	14:03	3
Phosphorus (total) [mg/L]	17-Nov-23	20:12	20-Nov-23	14:04	0.23
Ammonia+Ammonium (N) [as N mg/L]	17-Nov-23	18:34	20-Nov-23	16:18	0.2

*E. Coli analysis was completed at the SGS Environmental Services - London Laboratory.

Hawley Anderson, Hon.B.Sc
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30-November-2023

Mun of Middlesex Centre (Ilderton WWTP)

Attn : Brian Watson

Date Rec. : 22 November 2023
LR Report: CA30392-NOV23

10227 Ilderton Rd.
Ilderton, ON
N0M 2A0, Canada

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Phone: 519-666-0190 ext 255
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CERTIFICATE OF ANALYSIS

Final Report

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Completed Date	4: Analysis Completed Time	5: 1AC38 Raw Sewage
Sample Date & Time					21-Nov-23 12:25
Temperature Upon Receipt [at London Lab °C]	---	---	---	---	5.7
Temperature Upon Receipt [at Lakefield Lab °C]	---	---	---	---	6.0
Biochemical Oxygen Demand (BOD5) [mg/L]	23-Nov-23	17:16	28-Nov-23	11:56	388
Total Suspended Solids [mg/L]	24-Nov-23	08:20	24-Nov-23	15:40	452
Phosphorus (total) [mg/L]	27-Nov-23	14:45	30-Nov-23	14:03	8.7
Total Kjeldahl Nitrogen [as N mg/L]	27-Nov-23	14:45	29-Nov-23	10:36	65.8

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29-November-2023

Mun of Middlesex Centre (Ilderton WWTP)

Attn : Brian Watson

Date Rec. : 22 November 2023
LR Report: CA30393-NOV23

10227 Ilderton Rd.
 Ilderton, ON
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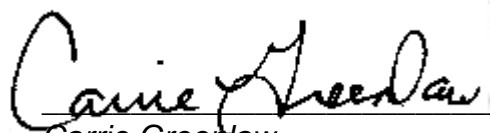
Phone: 519-666-0190 ext 255
 Fax:519-666-0271

CERTIFICATE OF ANALYSIS

Final Report

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Completed Date	4: Analysis Completed Time	5: 1AC39 Final Effluent
Sample Date & Time					22-Nov-23 07:49
Temperature Upon Receipt [at London Lab °C]	---	---	---	---	5.2
Temperature Upon Receipt [at Lakefield Lab °C]	---	---	---	---	6.0
E. Coli [cfu/100mL]	22-Nov-23	14:20	24-Nov-23	14:34	20
Carbonaceous Biochemical Oxygen Demand [(CBOD5) mg/L]	23-Nov-23	16:35	28-Nov-23	13:31	4
Total Suspended Solids [mg/L]	23-Nov-23	12:46	24-Nov-23	14:54	14
Phosphorus (total) [mg/L]	23-Nov-23	15:16	24-Nov-23	15:18	0.26
Total Kjeldahl Nitrogen [as N mg/L]	23-Nov-23	15:48	27-Nov-23	09:46	< 0.5
Ammonia+Ammonium (N) [as N mg/L]	23-Nov-23	17:00	24-Nov-23	13:19	< 0.1
Nitrite (as N) [mg/L]	24-Nov-23	09:48	27-Nov-23	10:33	0.05
Nitrate (as N) [mg/L]	27-Nov-23	13:39	28-Nov-23	09:31	38.3
Nitrate + Nitrite (as N) [mg/L]	27-Nov-23	13:39	28-Nov-23	09:31	38.4
pH@temp15 [pH Units]	27-Nov-23	12:58	27-Nov-23	15:39	7.39
Unionized Ammonia @temp15 [mg/L as N]	27-Nov-23	12:58	29-Nov-23	11:44	< 0.001

*E. Coli analysis was completed at the SGS Environmental Services - London Laboratory.
 Note: Federal unionized ammonia at 15 °C calculated using Lab pH results performed at this temperature.



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07-December-2023

Mun of Middlesex Centre (Ilderton WWTP)

Attn : Brian Watson

Date Rec. : 29 November 2023
LR Report: CA30463-NOV23

10227 Ilderton Rd.
Ilderton, ON
N0M 2A0, Canada

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Phone: 519-666-0190 ext 255
Fax:519-666-0271

CERTIFICATE OF ANALYSIS

Final Report

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Completed Date	4: Analysis Completed Time	5: 1AC38 Raw Sewage	6: 1AC39 Final Effluent
Sample Date & Time					28-Nov-23 11:30	28-Nov-23 11:25
Temperature Upon Receipt [at London Lab °C]	---	---	---	---	6.4	6.4
Temperature Upon Receipt [at Lakefield Lab °C]	---	---	---	---	5.0	5.0
E. Coli [cfu/100mL]	29-Nov-23	11:50	30-Nov-23	14:44	---	20
Carbonaceous Biochemical Oxygen Demand [(CBOD5) mg/L]	30-Nov-23	16:02	05-Dec-23	12:22	---	3
Biochemical Oxygen Demand (BOD5) [mg/L]	30-Nov-23	17:19	05-Dec-23	11:48	286	---
Total Suspended Solids [mg/L]	30-Nov-23	13:40	01-Dec-23	13:54	488	9
Phosphorus (total) [mg/L]	30-Nov-23	16:01	01-Dec-23	11:46	---	0.19
Total Kjeldahl Nitrogen [as N mg/L]	30-Nov-23	18:50	01-Dec-23	13:40	---	1.2
Phosphorus (total) [mg/L]	04-Dec-23	12:10	07-Dec-23	11:17	6.2	---
Total Kjeldahl Nitrogen [as N mg/L]	04-Dec-23	12:10	06-Dec-23	10:22	49.7	---
Ammonia+Ammonium (N) [as N mg/L]	30-Nov-23	17:42	01-Dec-23	14:10	---	0.2
Nitrite (as N) [mg/L]	30-Nov-23	16:49	01-Dec-23	16:12	---	0.16
Nitrate (as N) [mg/L]	30-Nov-23	16:49	01-Dec-23	16:12	---	29.8
Nitrate + Nitrite (as N) [mg/L]	30-Nov-23	16:49	01-Dec-23	16:12	---	30.0
pH@temp15 [pH Units]	04-Dec-23	11:03	04-Dec-23	15:08	---	7.39
Unionized Ammonia @temp15 [mg/L as N]	04-Dec-23	11:03	04-Dec-23	15:15	---	0.001

*E. Coli analysis was completed at the SGS Environmental Services - London Laboratory.
Note: Federal unionized ammonia at 15 °C calculated using lab pH results performed at this temperature.


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14-December-2023

Mun of Middlesex Centre (Ilderton WWTP)

Attn : Brian Watson

Date Rec. : 06 December 2023
LR Report: CA30096-DEC23

10227 Ilderton Rd.
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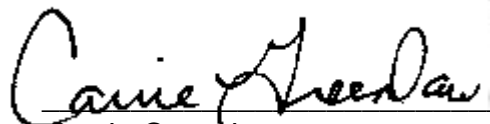
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CERTIFICATE OF ANALYSIS

Final Report

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Completed Date	4: Analysis Completed Time	5: 1AC38 Raw Sewage	6: 1AC39 Final Effluent
Sample Date & Time					05-Dec-23 09:00	05-Dec-23 08:55
Temperature Upon Receipt [at London Lab °C]	---	---	---	---	6.3	6.3
Temperature Upon Receipt [at Lakefield Lab °C]	---	---	---	---	4.0	4.0
E. Coli [cfu/100mL]	06-Dec-23	16:35	08-Dec-23	13:20	---	1
Carbonaceous Biochemical Oxygen Demand [(CBOD5) mg/L]	07-Dec-23	17:53	12-Dec-23	13:49	---	< 2
Biochemical Oxygen Demand (BOD5) [mg/L]	07-Dec-23	17:15	12-Dec-23	12:24	118	---
Total Suspended Solids [mg/L]	09-Dec-23	12:50	11-Dec-23	14:05	218	6
Phosphorus (total) [mg/L]	08-Dec-23	15:27	11-Dec-23	11:05	1.97	0.08
Total Kjeldahl Nitrogen [as N mg/L]	08-Dec-23	17:06	11-Dec-23	10:17	19.3	1.3
Ammonia+Ammonium (N) [as N mg/L]	08-Dec-23	20:58	11-Dec-23	09:50	---	< 0.1
Nitrite (as N) [mg/L]	09-Dec-23	17:10	13-Dec-23	13:18	---	0.08
Nitrate (as N) [mg/L]	09-Dec-23	17:10	13-Dec-23	13:18	---	21.8
Nitrate + Nitrite (as N) [mg/L]	09-Dec-23	17:10	13-Dec-23	13:18	---	21.9
pH@temp15 [pH Units]	11-Dec-23	13:30	11-Dec-23	15:46	---	7.87
Unionized Ammonia @temp15 [mg/L as N]	11-Dec-23	13:30	14-Dec-23	10:55	---	0.001

*E. Coli analysis was completed at the SGS Environmental Services - London Laboratory.
 Note: Federal unionized ammonia at 15 °C calculated using lab pH results performed at this temperature.


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19-December-2023

Mun of Middlesex Centre (Ilderton WWTP)

Attn : Brian Watson

Date Rec. : 06 December 2023
LR Report: CA30098-DEC23

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CERTIFICATE OF ANALYSIS

Final Report

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Completed Date	4: Analysis Completed Time	6: 36D05 Sludge
Sample Date & Time					05-Dec-23 09:30
Temperature Upon Receipt [at London Lab °C]					6.6
Temperature Upon Receipt [at Lakefield Lab °C]					4.0
Total Solids [%]	07-Dec-23	18:16	11-Dec-23	10:38	1.71
Specific Gravity	07-Dec-23	18:16	11-Dec-23	10:38	1.0
Volatile Solids [%]	07-Dec-23	18:16	11-Dec-23	10:38	66.5
Volatile Solids [%]	07-Dec-23	18:16	11-Dec-23	10:38	1.14
Nitrite (as N) [mg/kg]	11-Dec-23	07:58	14-Dec-23	16:59	500
Nitrite (as N) [mg/L]	11-Dec-23	07:58	14-Dec-23	16:59	8
Nitrate (as N) [mg/kg]	11-Dec-23	07:58	14-Dec-23	16:59	6800
Nitrate (as N) [mg/L]	11-Dec-23	07:58	14-Dec-23	16:59	120
Nitrate + Nitrite (a) [mg/kg]	11-Dec-23	07:58	14-Dec-23	16:59	7300
Nitrate + Nitrite (as N) [mg/L]	11-Dec-23	07:58	14-Dec-23	16:59	130
Total Kjeldahl Nitrogen [as N mg/kg]	08-Dec-23	13:24	12-Dec-23	14:15	47000
Total Kjeldahl Nitrogen [as N mg/L]	08-Dec-23	13:24	12-Dec-23	14:15	804
Ammonia+Ammonium (N) [as N mg/kg]	08-Dec-23	19:34	11-Dec-23	11:54	720
Ammonia+Ammonium (N) [as N mg/L]	08-Dec-23	19:34	11-Dec-23	11:54	12.2
Mercury [mg/kg]	13-Dec-23	14:02	18-Dec-23	16:51	1.6
Mercury [mg/L]	13-Dec-23	14:02	18-Dec-23	16:51	0.028
Arsenic [mg/kg]	13-Dec-23	14:02	18-Dec-23	16:51	<6
Arsenic [mg/L]	13-Dec-23	14:02	18-Dec-23	16:51	< 0.1
Cadmium [mg/kg]	13-Dec-23	14:02	18-Dec-23	16:51	0.4
Cadmium [mg/L]	13-Dec-23	14:02	18-Dec-23	16:51	0.007
Cobalt [mg/kg]	13-Dec-23	14:02	18-Dec-23	16:51	2
Cobalt [mg/L]	13-Dec-23	14:02	18-Dec-23	16:51	0.04
Chromium [mg/kg]	13-Dec-23	14:02	18-Dec-23	16:51	12
Chromium [mg/L]	13-Dec-23	14:02	18-Dec-23	16:52	0.20
Copper [mg/kg]	13-Dec-23	14:02	18-Dec-23	16:51	210
Copper [mg/L]	13-Dec-23	14:02	18-Dec-23	16:52	3.6
Magnesium [mg/kg]	13-Dec-23	14:02	18-Dec-23	16:51	3000
Magnesium [mg/L]	13-Dec-23	14:02	18-Dec-23	16:52	52
Manganese [mg/kg]	13-Dec-23	14:02	18-Dec-23	16:51	180

Online LIMS

0003568132

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Completed Date	4: Analysis Completed Time	6: 36D05 Sludge
Manganese [mg/L]	13-Dec-23	14:02	18-Dec-23	16:52	3.0
Molybdenum [mg/kg]	13-Dec-23	14:02	18-Dec-23	16:51	4
Molybdenum [mg/L]	13-Dec-23	14:02	18-Dec-23	16:52	0.07
Nickel [mg/kg]	13-Dec-23	14:02	18-Dec-23	16:51	10
Nickel [mg/L]	13-Dec-23	14:02	18-Dec-23	16:52	0.17
Lead [mg/kg]	13-Dec-23	14:02	18-Dec-23	16:51	6
Lead [mg/L]	13-Dec-23	14:02	18-Dec-23	16:52	0.1
Selenium [mg/kg]	13-Dec-23	14:02	18-Dec-23	16:51	<6
Selenium [mg/L]	13-Dec-23	14:02	18-Dec-23	16:52	< 0.1
Zinc [mg/kg]	13-Dec-23	14:02	18-Dec-23	16:51	430
Zinc [mg/L]	13-Dec-23	14:02	18-Dec-23	16:52	7
Phosphorus [mg/kg]	13-Dec-23	14:02	18-Dec-23	16:51	31000
Phosphorus (Total) [mg/L]	13-Dec-23	14:02	18-Dec-23	16:52	533
Potassium [mg/kg]	13-Dec-23	14:02	18-Dec-23	16:51	3200
Potassium [mg/L]	13-Dec-23	14:02	18-Dec-23	16:52	55
Sulphur [mg/kg]	13-Dec-23	14:02	18-Dec-23	16:51	9000
Sulfur [mg/L]	13-Dec-23	14:02	18-Dec-23	16:52	153
E. Coli [cfu/1g dried wgt]	06-Dec-23	16:55	08-Dec-23	13:22	11111
E.Coli [cfu/100mL]	06-Dec-23	16:55	08-Dec-23	13:22	19000

Sample matrix = Sludge/Biosolids Solution
 Metals, TKN, Ammonia + Ammonium, Nitrite, Nitrate and Nitrates calculated and reported in mg/kg on a dried weight basis. Detection Limits reflect this calculation
 The E.coli value reported in CFU/1g dried weight was calculated using Total Solids and CFU/100ml.

Note: E. Coli analysis was completed at the SGS London Laboratory.



Carrie Greenlaw
 Project Specialist,
 Environment, Health & Safety



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22-December-2023

Mun of Middlesex Centre (Ilderton WWTP)

Attn : Brian Watson

Date Rec. : 13 December 2023
LR Report: CA30216-DEC23

10227 Ilderton Rd.
Ilderton, ON
N0M 2A0, Canada

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Phone: 519-666-0190 ext 255
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CERTIFICATE OF ANALYSIS

Final Report

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Completed Date	4: Analysis Completed Time	5: 1AC38 Raw Sewage	6: 1AC39 Final Effluent
Sample Date & Time					12-Dec-23 09:57	12-Dec-23 09:49
Temperature Upon Receipt [at London Lab °C]	---	---	---	---	6.8	6.8
Temperature Upon Receipt [at Lakefield Lab °C]	---	---	---	---	5.0	5.0
E. Coli [cfu/100mL]	13-Dec-23	16:05	14-Dec-23	16:42	---	3
Carbonaceous Biochemical Oxygen Demand [(CBOD5) mg/L]	15-Dec-23	16:56	20-Dec-23	12:46	---	2
Biochemical Oxygen Demand (BOD5) [mg/L]	14-Dec-23	17:28	19-Dec-23	11:54	215	---
Total Suspended Solids [mg/L]	18-Dec-23	07:54	18-Dec-23	15:59	818	9
Phosphorus (total) [mg/L]	14-Dec-23	15:44	15-Dec-23	13:21	---	0.17
Phosphorus (total) [mg/L]	21-Dec-23	15:17	22-Dec-23	11:03	8.0	---
Total Kjeldahl Nitrogen [as N mg/L]	14-Dec-23	17:02	15-Dec-23	16:19	---	< 0.5
Total Kjeldahl Nitrogen [as N mg/L]	21-Dec-23	15:17	22-Dec-23	13:11	56.5	---
Ammonia+Ammonium (N) [as N mg/L]	15-Dec-23	17:43	18-Dec-23	11:48	---	< 0.1
Nitrite (as N) [mg/L]	16-Dec-23	14:25	19-Dec-23	10:24	---	0.07
Nitrate (as N) [mg/L]	16-Dec-23	14:25	19-Dec-23	10:24	---	29.1
Nitrate + Nitrite (as N) [mg/L]	16-Dec-23	14:25	19-Dec-23	10:24	---	29.2
pH@temp15 [pH Units]	15-Dec-23	13:21	18-Dec-23	11:05	---	7.70
Unionized Ammonia @temp15 [mg/L as N]	15-Dec-23	13:21	18-Dec-23	11:05	---	< 0.001

*E. Coli analysis was completed at the SGS Environmental Services - London Laboratory.
Note: Federal unionized ammonia at 15 °C calculated using lab pH results performed at this temperature.


Carrie Greenlaw
Project Specialist,
Environment, Health & Safety



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29-December-2023

Mun of Middlesex Centre (Ilderton WWTP)

Attn : Brian Watson

Date Rec. : 20 December 2023
LR Report: CA30329-DEC23

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CERTIFICATE OF ANALYSIS

Final Report

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Completed Date	4: Analysis Completed Time	5: 1AC38 Raw Sewage	6: 1AC39 Final Effluent
Sample Date & Time					19-Dec-23 08:48	19-Dec-23 09:42
Temperature Upon Receipt [at London Lab °C]	---	---	---	---	12.3	12.3
Temperature Upon Receipt [at Lakefield Lab °C]	---	---	---	---	5.0	5.0
E. Coli [cfu/100mL]	20-Dec-23	18:30	22-Dec-23	09:55	---	12
Carbonaceous Biochemical Oxygen Demand [(CBOD5) mg/L]	21-Dec-23	17:28	27-Dec-23	14:43	---	2
Biochemical Oxygen Demand (BOD5) [mg/L]	21-Dec-23	16:39	27-Dec-23	13:19	367	---
Total Suspended Solids [mg/L]	21-Dec-23	15:59	27-Dec-23	13:28	519	8
Phosphorus (total) [mg/L]	22-Dec-23	16:05	27-Dec-23	10:45	---	0.13
Phosphorus (total) [mg/L]	27-Dec-23	14:57	29-Dec-23	10:36	5.6	---
Total Kjeldahl Nitrogen [as N mg/L]	27-Dec-23	14:57	29-Dec-23	11:33	45.9	---
Total Kjeldahl Nitrogen [as N mg/L]	28-Dec-23	07:04	29-Dec-23	11:03	---	0.7
Ammonia+Ammonium (N) [as N mg/L]	21-Dec-23	18:08	22-Dec-23	10:24	---	0.1
Nitrite (as N) [mg/L]	22-Dec-23	19:38	27-Dec-23	13:57	---	0.12
Nitrate (as N) [mg/L]	22-Dec-23	19:38	27-Dec-23	13:57	---	30.0
Nitrate + Nitrite (as N) [mg/L]	22-Dec-23	19:38	27-Dec-23	13:57	---	30.1
pH@temp15 [pH Units]	22-Dec-23	12:24	22-Dec-23	13:52	---	7.62
Unionized Ammonia @temp15 [mg/L as N]	22-Dec-23	12:24	22-Dec-23	13:53	---	0.001

*E. Coli analysis was completed at the SGS Environmental Services - London Laboratory.
Note: Federal unionized ammonia at 15 °C calculated using Lab pH results performed at this temperature.


Carrie Greenlaw
Project Specialist,
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04-January-2024

Mun of Middlesex Centre (Ilderton WWTP)

Attn : Brian Watson

Date Rec. : 27 December 2023
LR Report: CA30384-DEC23

10227 Ilderton Rd.
 Ilderton, ON
 N0M 2A0, Canada

Copy: #1

Phone: 519-666-0190 ext 255
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CERTIFICATE OF ANALYSIS

Final Report

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Completed Date	4: Analysis Completed Time	5: 1AC38 Raw Sewage	6: 1AC39 Final Effluent
Sample Date & Time					26-Dec-23 08:34	26-Dec-23 09:15
Temperature Upon Receipt [at London Lab °C]	---	---	---	---	7.1	7.1
Temperature Upon Receipt [at Lakefield Lab °C]	---	---	---	---	7.0	7.0
E. Coli [cfu/100mL]	27-Dec-23	18:40	29-Dec-23	13:06	---	4
Carbonaceous Biochemical Oxygen Demand [(CBOD5) mg/L]	28-Dec-23	17:30	02-Jan-24	15:41	---	4
Biochemical Oxygen Demand (BOD5) [mg/L]	28-Dec-23	17:16	02-Jan-24	15:16	348	---
Total Suspended Solids [mg/L]	28-Dec-23	15:03	29-Dec-23	15:07	496	6
Phosphorus (total) [mg/L]	29-Dec-23	14:22	02-Jan-24	11:07	---	0.10
Total Kjeldahl Nitrogen [as N mg/L]	29-Dec-23	15:47	02-Jan-24	14:29	---	1.0
Phosphorus (total) [mg/L]	03-Jan-24	17:19	04-Jan-24	11:58	5.4	---
Total Kjeldahl Nitrogen [as N mg/L]	03-Jan-24	17:19	04-Jan-24	10:22	43.4	---
Ammonia+Ammonium (N) [as N mg/L]	28-Dec-23	16:09	29-Dec-23	11:26	---	1.1
Nitrite (as N) [mg/L]	29-Dec-23	20:14	02-Jan-24	12:59	---	0.65
Nitrate (as N) [mg/L]	29-Dec-23	20:14	02-Jan-24	12:59	---	23.0
Nitrate + Nitrite (as N) [mg/L]	29-Dec-23	20:14	02-Jan-24	12:59	---	23.7
pH@temp15 [pH Units]	02-Jan-24	10:02	02-Jan-24	15:52	---	7.68
Unionized Ammonia @temp15 [mg/L as N]	02-Jan-24	10:02	04-Jan-24	09:41	---	0.014

*E. Coli analysis was completed at the SGS Environmental Services - London Laboratory.
 Note: Federal unionized ammonia at 15 °C calculated using Lab pH results performed at this temperature.

Carrie Greenlaw
 Project Specialist,
 Environment, Health & Safety

APPENDIX B – BYPASS EVENT AND MECP REPORTS

March 30, 2023

Angela Storyberg, Provincial Officer
London District Office
733 Exeter Road
London, ON
N6E 1L3

Re: Notification of Missed Sample Parameters at the Ilderton Wastewater Treatment Facility

This is a notification concerning the missed sample collection of final effluent carbonaceous biochemical oxygen demand (CBOD₅), Total Suspended Solids (TSS) and E. coli during the week of March 13, 2023. The samples were missed as outlined in Schedule D Monitoring Program Final Effluent – Final Effluent sampling point of Environmental Compliance Approval # 9219-AWWHWU.

Table 1 - Final Effluent – Final Effluent Sampling Point

Parameter	Sample Type	Minimum Frequency
CBOD ₅	24-hour Composite	Weekly
Total Suspended Solids	24-hour Composite	Weekly
E. coli	Grab	Weekly

The regular sample collection routine was performed on Tuesday March 14, 2023, but was not submitted to SGS Canada Inc. for analysis. A second set of samples was collected on Saturday March 18, 2023 which was submitted for analysis with sample parameters not identified on the sample Chain of Custody. The sample was analyzed and upon review of the final effluent results it was noticed CBOD₅, TSS, and E. Coli was not analyzed and the MECP was notified.

Comments/Actions Taken:

A review and investigation as to why the wrong Chain of Custody was used was conducted and it was determined to be operator error. SGS Canada Inc. was contacted to inquire if any of the effluent sample was still available for analysis. Analysis for CBOD₅ was completed however it was beyond its holding time and will be unreliable and the results will be available. There was not enough aliquot available to complete TSS and E. Coli analysis. Extra samples were collected and submitted to SGS Canada Inc during the last week of March which are still being analyzed. The CBOB₅, TSS and E. coli concentration in the final effluent for the month of February and March 2023 is included below outlining the consistent and stable operations of the wastewater facility.

Table 2 – February & March 2023 CBOD₅ Monthly Average vs Limits

	CBOD ₅ (mg/l)	TSS (mg/l)	E. coli (cfu/100ml)
Limit	10.0	10.0	150
Feb.	3.0	6.3	22
Mar.	3.0	6.0	8
Average	3.0	6.2	--
Geomean	--	--	13

If you have any questions or concerns, please contact me at 519-666-0190 x 5255.

Yours truly,



Eric Joudrey
Water & Wastewater Operations Manager, Municipality of Middlesex Centre
cc: Robert Cascaden, Director of Public Works and Engineering

Brian Watson, Operations Supervisor