Kincardine Wastewater Treatment System

2022 Annual Performance Report

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1.0 Introduction

The Kincardine Wastewater Treatment Plant consists of an aerated lagoon cell and two conventional stabilization ponds. Alum is added to the Aerated Cell discharge to aid in phosphorous removal. The final effluent is disinfected year-round by ultraviolet radiation before being discharged to Lake Huron. A schematic of the overall system can be viewed in Appendix A.

A new Environmental Compliance Approval (ECA) #A-500-1121679176 was issued on February 11, 2022. Prior to this the system followed Certificate of Approval # 4648-8DVSSR. Section 11(4) of the Kincardine Wastewater Treatment Plant Environmental Compliance Approval requires that an Annual Performance Report is prepared and outlines the information that must be contained within it. A copy of the current facility ECA and the previous C of A are included in Appendix B.

The Kincardine Wastewater Collection System consists of six major pumping stations and three lift stations plus the groundwater and leachate pumping stations at the Valentine Avenue landfill. The Connaught Park Sewage Pumping Station was replaced in 2018 and requires an annual performance report under Environmental Compliance Approval #3066-APUHY9 Section 8 which is also included in Appendix B.

The requirements of the treatment plant Certificate of Approval, Environmental Compliance Approval and the Connaught Park Environmental Compliance Approval are included in this report.

2.0 Summary and Interpretation of Monitoring Data

Operations staff collected biweekly grab samples of raw sewage and lagoon final effluent as well as semi-annual samples as required by the treatment facility Environmental Compliance Approval. All samples were submitted to SGS Environmental Services for analysis. The analytical results of the biweekly sampling are tracked in monthly spreadsheets. The monthly results are summarized in an annual spreadsheet which is included in Appendix C along with the full monitoring schedule for 2022 and 2023.

There is no requirement to collect raw sewage samples from any of the pumping stations including the Connaught Park Sewage Pumping Station.

In 2022, the ability of the Kincardine lagoon system to treat and remove waste was comparable to previous years. Table 1 below, summarizes and compares the alum dosages and the percent removals achieved over the last 5 years. There is no BOD Percent Removal due to the fact that we test for CBOD on the final effluent and BOD on the raw influent.

Table 1 Comparison of Alum Dosage and Percent Removal

		2018	**2019**	**2020**	**2021**	**2022**
Alum Dosage	mg/L	15.33	15.6	14.8	14.8	17.42
	kg/day	57.14	55.8	53.4	55.4	61.90
Percent Removal	TSS	79%	83%	81%	73%	80%
	TP	90%	91%	92%	89%	91%
	TKN	12%	23%	35%	21%	40%

Tables 2 and 3 compare the Final Effluent annual average quality to the effluent criteria limits in ECA # A-500-1121679176. While the CBOD5 results exceeded the ECA objectives in May, there was no exceedance of the ECA Limit. The TSS results exceeded the objectives in May and exceeded the ECA limit in August and September. Extra TSS samples were taken to monitor the exceedances. The ECA limit exceedances were reported to the ministry.

Table 2 Final Effluent Quality

Effluent Parameter	ECA Objective	ECA Limit	Monthly Average Concentration (mg/L)
CBOD5	25	30	15.3
Total Suspended Solids	30	40	25.0
Total Phosphorous	1.0	1.0	0.27
E. coli	150	200	4
pH	6.5 – 9.0	6.0 – 9.5	6.7 – 8.4

Table 3 Final Effluent Waste Loading

Effluent Parameter	ECA Limit	Monthly Average Waste Loading (kg/d)
CBOD5	177.0	41
Total Suspended Solids	236.0	65
Total Phosphorous	5.9	0.7

The lagoon UV disinfection system provides disinfection of the effluent year-round. In 2022 the average UV dosage was 131 mJ/cm^2 with the range spanning from 24.7 to 497 mJ/cm^2.

Bluewater Sanitation hauls portable toilet waste from their onsite holding tank to the Park Street Pumping station on an as requested basis for a fee. A total of 118.17m3 of septage was accepted between January and July 2022. Bluewater Sanitation also hauled 1166.52m3 of raw sewage from Bruce Power to the Park Street Pump Station in April 2022. A copy of the sample results for Bruce Power's sewage can be found in Appendix D. These imported septage and raw sewage flow are included in the total WWTP Influent flow numbers.

The 2022 final effluent semi-annual chemical analysis results are in Appendix E of this report. All chemicals were within the Provincial Water Quality Objectives and/or less than the Method Detection Limit except for aluminum.

Table 4 below, compares the precipitation and flow data over the past five years showing that the lagoon system is at approximately 67% capacity but definitely under the influence of inflow and infiltration. The precipitation data was obtained from the Environment Canada Website.

Table 4 Design capacity

	2018	**2019**	**2020**	**2021**	**2022**
Annual Influent Flow (m^3)	1,477,599	1,382,344	1,372,688	1,441,167	1,350,495
Overall Percentage of Influent Design Capacity	69%	64%	63%	67%	63%
Design Capacity Exceedances (days)	29	15	12	22	13
Annual Effluent Flow (m3)	1,111,004	1,135,261	1,108,680	1,136,733	998,846
Precipitation (mm)	670	709	444	375	582
Kincardine Drinking Water Produced (m^3) (*Adjusted)	1,049,209	1,072,574	1,130,119	1,410,221	1,205,253*
% Increase- KWTP water produced vs KWWTP Influent Flow	33%	27%	23%	7%	11%

*The KWTP was shut down for repairs in May and October-November, estimated flows supplied to distribution system by Huron Kinloss were included in total flows. Also removed average volumes for Routes 30, 32 (area north of Huron Ridge) and Inverhuron Park as they are not serviced by the Kincardine Wastewater System.

3.0 Groundwater and Leachate

The current ECA has a Special Condition (Section 9) which outlines groundwater and leachate flow limits. A monthly average flow of approximately 200 m^3/d of Groundwater from the Valentine Avenue Landfill and 63 m^3/d of combined Leachate flow (approximately 30 m^3/d from the Valentine Avenue Landfill and approximately 33 m^3/d from the Kincardine Waste Management Centre) is permitted. In 2022 the Leachate Pump Station pump was out for repair, so no leachate was pumped. Bluewater Sanitation hauled leachate from the pump station to the aerated cell at the lagoon a total of 35 days out of the year.

No Leachate was hauled from the Kincardine Waste Management Centre (KWMC) to the Valentine Avenue Leachate Pump Station in 2022. Table 5 summarizes the groundwater and leachate flows for the past 5 years.

Table 5 Groundwater and Leachate Flows

		2018	**2019**	**2020**	**2021**	**2022**
Groundwater (max = 200 m^3/d)	Annual average flow (m^3/d)	2.3	2.2	2.1	2.6	3.4
	Total Annual flow (m^3)	828	816	783	931	1241
Leachate (Valentine Ave max = 30 m^3/d) (KWMC max = 33 m^3/d)	Annual average flow (m^3/d)	36.3	14.6	14.2	11.9	29.7
	Total Annual flow (m^3)	13,240	5,325	5,178	4,329	1040

Municipal staff in conjunction with GHD, collected leachate and groundwater samples so that leachate testing was completed four times per year and groundwater testing twice per year. Appendix E includes the results for the leachate samples that were collected by the Municipality of Kincardine. GHD has been contracted by the Municipality to monitor the Valentine landfill site and prepare a separate annual report on their findings, which is submitted to the Ministry of the Environment, Conservation and Parks for review. Please refer to GHD's report for a detailed report on the landfill's collection system.

4.0 Effluent Quality Control Measures

Routine control measures were taken throughout the year including aerator time adjustments to maintain dissolved oxygen target levels between 2.0 and 6.0 mg/L in the Aerated Cell. May to August 2022 had periods of time the D.O. was below 2.0 mg/L. Winter dissolved oxygen levels are maintained at + 4.0 mg/L in the Aerated Cell to provide sufficient dissolved oxygen to the frozen lagoons, which can potentially become anaerobic when frozen over.

Alum dosage adjustments were made to maintain final effluent Total Phosphorous levels below 1.0 mg/L. The pH of the effluent was maintained within the range of 6.0 to 9.5, was essentially free of floating and settleable solids and did not contain oil or any other substance in amounts sufficient to create a visible film or sheen or foam or discolouration on the receiving waters.

5.0 Maintenance Summary and upgrades

The main pumping station at Huron Terrace underwent a replacement in 2022. The existing pumping station was placed offline in July and temporary pumps were put in place during construction. The new Huron Terrace pump station is set to be online in 2023.

Aeration upgrades have commenced at the Kincardine Wastewater Treatment Plant. Hybrid coarse/fine bubble type submerged air diffusers will be installed in the aerated cell with two positive displacement blowers (one duty, one standby), each with design air flow rate of 425 L/s as per the description in the ECA. A total of $1,011,416.07 was spent on the project in 2022. Due to equipment delivery delays the project is now expected to be completed in March 2023 with an estimated budget of $507,144.00 required to complete the project.

Table 6 on the following page summarizes maintenance and repair activities carried out during the reporting period on any major structure or equipment that forms part of the wastewater treatment and collection system.

Table 6 Maintenance Performed

MAINTENANCE PERFORMED	REASON
Annual maintenance of aerators: grease and oil change, check bearing temperature	Preventative maintenance
Maintenance of alum chemical pumps: inspect piping, replace o-rings and diaphragms, etc.	Preventative maintenance
Sludge Depths on all lagoon cells	Annual maintenance
Maintenance of UV system	Preventative and as required maintenance
Maintenance to the UV channel	Required maintenance
Annual calibration checks on plant equipment	Maintain plant integrity and accuracy
Flushing of sanitary mains	Preventative and as required maintenance
Bi-Weekly cleaning of bar screens	Preventative maintenance
Transducer maintenance at Pump Stations	Required maintenance
Pumps greased at Pump Stations	Preventative maintenance
Repairs and replacements to distribution valves, cleanouts and maintenance access hatches	As required maintenance
Pumps pulled and debris removed at Hunter's Ridge, Harbour Street, Huron Terrace, Goderich Street, Park Street, and Durham Street Pump Stations	Required and emergency maintenance
Main-line and lateral video inspections	Preventative maintenance
Goderich Street-Remove debris from manhole SMH-461 that was blocking main causing a backup	Emergency maintenance
Repaired Air Relief Valve in chamber SVC-06 on Bruce Ave-Reported a spill	Emergency Maintenance
Removed tree roots from SMH-457 on Bruce Ave after overflow occurred	Emergency Maintenance

6.0 Calibration and Maintenance of Monitoring Equipment

Routine calibration and maintenance procedures are conducted on all the monitoring equipment used on the Wastewater Treatment System. The Alum metering pumps discharge volumes are measured minimally once/day to ensure proper dosage rates. Influent and effluent flow miltronics equipment is calibrated yearly to check that accuracy is within +/- 5% of full scale. Refer to Appendix F to review the 2022 Calibration Certificates. In addition, monitoring equipment for pH, dissolved oxygen, phosphorous and conductivity measurements are calibrated according to the manufacture's instruction prior to use.

7.0 By-passes, Spill or Abnormal Discharge Events

There were two by-pass events and four overflow/spill events in 2022. One of the bypasses was a planned bypass of the aerated cell lasting 4 days for the tie in of a new forcemain from the Huron Terrace pumping station. Appendix G summarizes the date, location, volume and reason for the event. There are no meters in place to measure by-pass volumes, but they are estimated to the best of operations staff ability. All bypasses, overflows and spill events were reported to the Spills Action Center for the Ministry of the Environment, Conservation and Parks, the Ministry of Health through the Grey Bruce Health Unit and Environment Canada.

The Connaught Park Pump Station Environmental Compliance Approval requires by-pass events to be monitored and samples collected. There were no by-passes at the Connaught Park Pump Station in 2022.

8.0 Summary of Complaints

There were twenty-six complaints received and responded to from the public, mostly regarding sewer back-ups. A summary of all the complaints and the actions taken is attached in Appendix H.

9.0 Sludge Volumes

The sludge depths were measured in the Aerated Cell and Lagoon Cells 2 and 3 using a Sludge Judge. The estimated volume of sludge calculated is similar to previous years. No sludge was removed from any of the cells in 2021.

Table 7 Estimated Sludge Volumes

	2018	**2019**	**2020**	**2021**	**2022**
Aerated Cell (m^3)	4,976	5,442	4,665	6,047	6,306
East Cell (#2) (m^3)	19,789	25,901	20,721	19,426	24,671
West Cell (#3) (m^3)	22,992	25,145	21,277	23,211	24,501

10.0 Operating Problems and Corrective Actions

Problems with pumps plugging occurred at the Harbour Street, Hunter's Ridge, Goderich and Durham Street, Huron Terrace and Park St Pump Stations. These pump stations do not have automatic bar screens, so they require continual manual removal of solid waste from wet wells. This requires physical entry by staff into areas that are deemed confined spaces.

There were 9 UV alarms in 2022. Bank A had the most issues with card failures and bulb replacements. Staff were able to replace parts while keeping the second bank in operation each time.

During the hot summer months, the Dissolved Oxygen (DO) in the Aerated Cell typically falls to less than 2 mg/L. Aerator hours and cycles are adjusted in an attempt to improve the DO without lifting the sludge blanket. The addition of leachate is typically stopped temporarily during this time as well. The aerators are scheduled for replacement with a diffused air aeration system.

The Leachate pump was placed out of service in November 2021. Due to manufacturing and shipping delays a new pump was not obtained until December 2022. When the new pump was installed an electrical issue at the pumping station site was determined to be the issue and the pump was left out of service until the issue can be repaired.

11.0 Efforts to achieve conformance with Procedure F-5-1

Engineering was completed in 2022 for a diesel generator to be added at the wastewater effluent station located at 169 Mahood Johnston Drive. The diesel generator will assist with keeping a constant power supply to the UV disinfection system and will eliminate wastewater bypasses during power outages in the area. The generator is scheduled to be tendered and installed in 2023 pending council approval. Engineering costs for 2022 were $3,115 and 2023 budgeted costs for purchase and installation are $90,000.

The existing Huron Terrace pumping station was replaced in 2022. The new pumping station set to be commissioned in 2023 will have 2 submersible pumps, and one standby pump with variable frequency drives each rated at 150 L/s. The increased size of the pumps

and the upsizing of the forcemain to the lagoons from the pump station should eliminate the possibility of an overflow as it is designed for an initial period peak flow and a 20-year period peak flow of 190 L/s and 300 L/s respectively. Total cost for the project in 2022 was $4,972,769.63. A projected cost of $443,970 is budgeted to complete the project in 2023.

Engineering has commenced for upgrades to the Durham Street pumping station. The upgrades will include larger pumps to assist with eliminating the possibility of an overflow during wet weather events. Total spent in 2022 for engineering is $5,947.47 and projected costs for the project in 2023 for construction is $1,430,000.

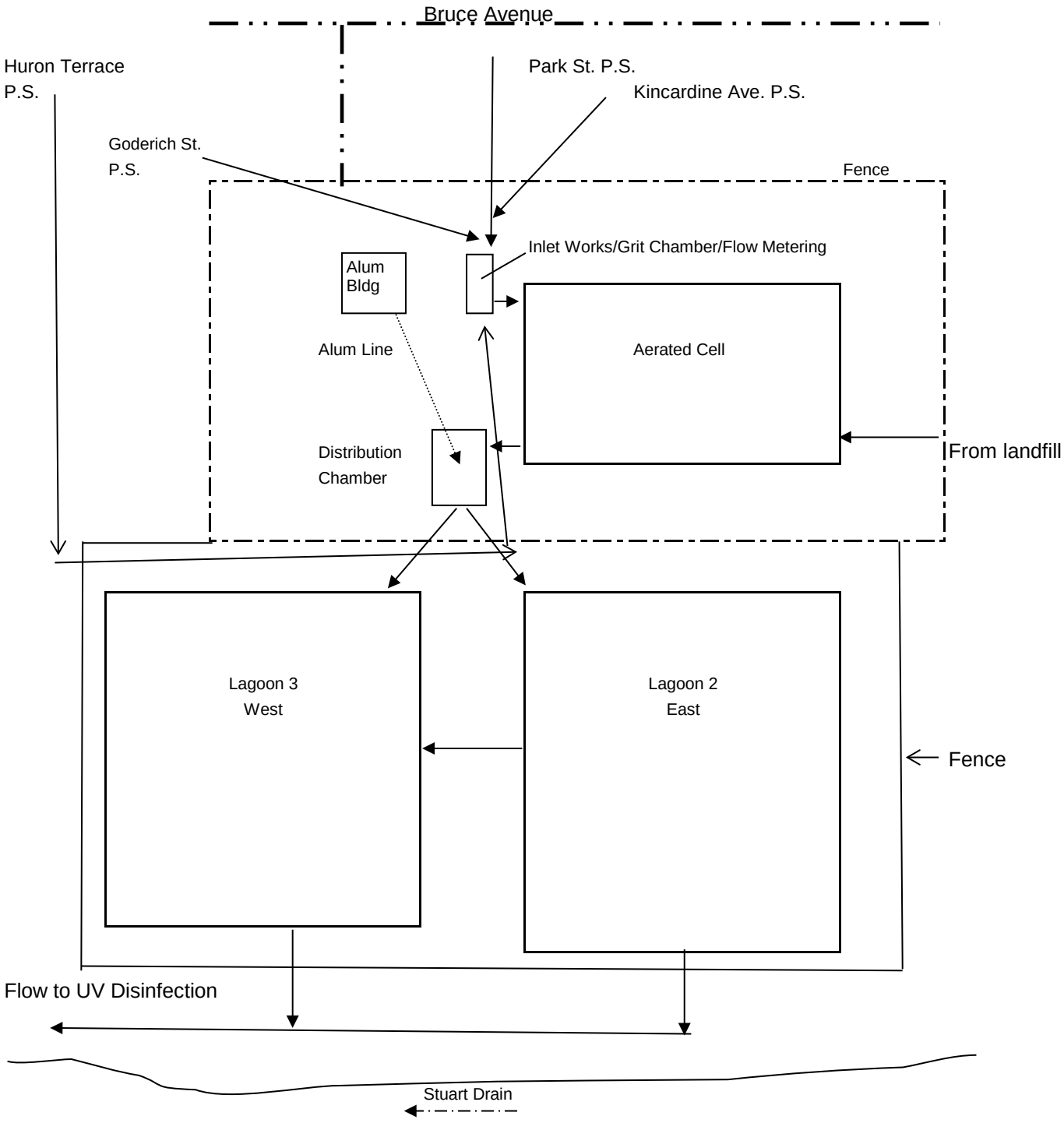
12.0 Summary

The system was effective at treating the wastewater and maintaining the effluent CBOD, and Total Phosphorous levels within non-compliance limits. The Total Suspended Solids exceeded the effluent compliance limit in the ECA in August and September but overall, there were no major problems with the treatment of the wastewater in 2022.

APPENDIX A

Schematic of the Wastewater Treatment Facility

SCHEMATIC DIAGRAM OF THE WASTEWATER TREATMENT FACILITY



APPENDIX B

Facility Environmental Compliance Approval

Facility C of A

Connaught Park Environmental Compliance Approval

ENVIRONMENTAL COMPLIANCE APPROVAL
NUMBER A-500-1121679176
Version: 1.0
Issue Date: February 11, 2022

Pursuant to section 20.3 of the Environmental Protection Act, Revised Statutes of Ontario (R.S.O.) 1990, c. E. 19 and subject to all other applicable Acts or regulations this Environmental Compliance Approval is issued to:

CORPORATION OF THE MUNICIPALITY OF KINCARDINE

1475 CONCESSION 5 CONCESSION
KINCARDINE ONTARIO
N2Z 2X6

For the following site:

520 Bruce Avenue , Kincardine, KINCARDINE, ONTARIO, CANADA, N2Z 2X6

Upon issuance of the environmental compliance approval, I hereby revoke Approval No(s) 4648-8DVSSR, issued on March 12, 2021.

You have applied under section 20.2 of Part II.1 of the Environmental Protection Act, R.S.O. 1990, c. E. 19 (Environmental Protection Act) for approval of:

upgrade, usage and operation of existing municipal sewage works, for the treatment of sanitary sewage and disposal of effluent to Lake Huron via a Sewage Treatment Plant (Kincardine Wastewater Treatment Plant) continuous discharge Lagoon and Final Effluent disposal facilities as follows:

Classification of Collection System: Separate Sewer System

Classification of Sewage Treatment Plant: Secondary Equivalent

Design Capacity of Sewage Treatment Plant

Design Capacity with All Treatment Trains in Operation	**Existing Works**
Rated Capacity	**5,910 m^3/d**

Influent and Imported Sewage

Receiving Location	Types
In Collection System	Sanitary Sewage/Septage/Leachate

Proposed Works:

Kincardine Wastewater Treatment Plant (WWTP)

Aerated Lagoon

- installation of new hybrid coarse/fine bubble type submerged air diffusers along the floor of aerated cell, equipped with two (2) positive displacement blowers (one duty, one standby), each with design air flow rate of 425 L/s at design pressure of 60 kPa;

- decommissioning and removal the existing surface aerators from the Aerated lagoon;

Existing Works:

Kincardine WWTP

Influent Structure

- forcemains to an inlet structure with a 760 mm diameter pipe to Aerated Lagoon;
- inlet pipes to Aerated Lagoon;

Influent Flow Measurement and Sampling Point

- Parshall flume and sampling point at the inlet structure;

Aerated Lagoon

- one (1) aerated lagoon cell with a design volume of approximately 24,000 m^3 and 0.85 ha surface area, equipped with four (4) 11 kW (15 hp) aerators;
- one (1) distribution chamber to discharge from the aerated lagoon cell to two (2) conventional stabilization ponds;

Conventional Stabilization Ponds

- two (2) conventional stabilization ponds, each with a design storage volume of approximately 118,000 m^3 (a total combined volume of 236,000 m^3);

Supplementary Treatment Systems

- Phosphorus Removal
    - one (1) 27 m^3 capacity chemical storage tank equipped with two (2) chemical metering pumps (one standby), associated valves, piping and control system enclosed in a 6.2 m x 6.2 m storage building;

Disinfection System

- one (1) ultraviolet irradiation (UV) disinfection channel equipped with two banks of UV lamp modules, each with a treatment capacity of 12,000 m^3/d;
- piping, flow measurement weir, low liquid level sensor, automatic level controller, electrical system, submersible ultraviolet intensity monitoring probe;

Final Effluent Flow Measurement and Sampling Point

- flow measurement device and sampling point at outlet of disinfection channel;

Final Effluent Disposal Facilities

- effluent sewer from the UV disinfection channel discharging to Lake Huron;

including all other mechanical system, electrical system, instrumentation and control system, standby power system, piping, pumps, valves and appurtenances essential for the proper, safe and reliable operation of the Works in accordance with this Approval, in the context of process performance and general principles of wastewater engineering only;
all in accordance with the submitted supporting documents listed in Schedule A.

DEFINITIONS

For the purpose of this environmental compliance approval, the following definitions apply:

1. "Annual Average Daily Influent Flow" means the cumulative total sewage flow of Influent to the Sewage Treatment Plant during a calendar year divided by the number of days during which sewage was flowing to the Sewage Treatment Plant that year;
2. "Approval" means this environmental compliance approval and any schedules attached to it, and the application;
3. "BOD5" (also known as TBOD5) means five day biochemical oxygen demand measured in an unfiltered sample and includes carbonaceous and nitrogenous oxygen demands;
4. "Bypass" means diversion of sewage around one or more treatment processes, excluding Preliminary Treatment System, within the Sewage Treatment Plant with the diverted sewage flows being returned to the Sewage Treatment Plant treatment train upstream of the Final Effluent sampling point(s) and discharged via the approved effluent disposal facilities;
5. "CBOD5" means five day carbonaceous (nitrification inhibited) biochemical oxygen demand measured in an unfiltered sample;
6. "Director" means a person appointed by the Minister pursuant to section 5 of the EPA for the purposes of Part II.1 of the EPA;
7. "District Manager" means the District Manager of the appropriate local district office of the Ministry where the Works is geographically located;
8. " *E. coli*" refers to coliform bacteria that possess the enzyme beta-glucuronidase and are capable of cleaving a fluorogenic or chromogenic substrate with the corresponding release of a fluorogen or chromogen, that produces fluorescence under long wavelength (366 nm) UV light, or color development, respectively. Enumeration methods include tube, membrane filter, or multi-well procedures. Depending on the method selected, incubation temperatures include 35.5 + 0.5 °C or 44.5 + 0.2 °C (to enumerate thermotolerant species). Depending on the procedure used, data are

reported as either colony forming units (CFU) per 100 mL (for membrane filtration methods) or as most probable number (MPN) per 100 mL (for tube or multi-well methods);

9. "EPA" means the *Environmental Protection Act,* R.S.O. 1990, c.E.19, as amended;
10. "Equivalent Equipment" means alternate piece(s) of equipment that meets the design requirements and performance specifications of the piece(s) of equipment to be substituted;
11. "Event" means an action or occurrence, at a given location within the Works that causes a Bypass or Overflow. An Event ends when there is no recurrence of Bypass or Overflow in the 12-hour period following the last Bypass or Overflow. Overflows and Bypasses are separate Events even when they occur concurrently;
12. "Existing Works" means those portions of the Works included in the Approval that have been constructed previously;
13. "Final Effluent" means effluent that is discharged to the environment through the approved effluent disposal facilities, including all Bypasses, that are required to meet the compliance limits stipulated in the Approval for the Sewage Treatment Plant at the Final Effluent sampling point(s);
14. "Imported Sewage" means sewage hauled to the Sewage Treatment Plant by licensed waste management system operators of the types and quantities approved for co-treatment in the Sewage Treatment Plant, including hauled sewage and leachate within the meaning of R.R.O. 1990, Regulation 347: General – Waste Management, as amended;
15. "Influent" means flows to the Sewage Treatment Plant from the collection system and Imported Sewage;
16. "Limited Operational Flexibility" (LOF) means the conditions that the Owner shall follow in order to undertake any modification that is pre-authorized as part of this Approval;
17. "Ministry" means the ministry of the government of Ontario responsible for the EPA and OWRA and includes all officials, employees or other persons acting on its behalf;
18. "Monthly Average Effluent Concentration" is the mean of all Single Sample Results of the concentration of a contaminant in the Final Effluent sampled or measured during a calendar month, calculated and reported as per the methodology specified in Schedule F;
19. Monthly Average Daily Effluent Flow" means the cumulative total Final Effluent discharged during a calendar month divided by the number of days during which Final Effluent was discharged that month;
20. "Monthly Average Daily Effluent Loading" means the value obtained by multiplying the Monthly Average Effluent Concentration of a contaminant by the Monthly Average Daily Effluent Flow over the same calendar month;
21. "Monthly Geometric Mean Density" is the mean of all Single Sample Results of E. coli measurement in the samples taken during a calendar month, calculated and reported as per the methodology specified in Schedule F;
22. "Normal Operating Condition" means the condition when all unit process(es), excluding Preliminary Treatment System, in a treatment train is operating within its design capacity;
23. "Operating Agency" means the Owner or the entity that is authorized by the Owner for the management, operation, maintenance, or alteration of the Works in accordance with this Approval;
24. "Overflow" means a discharge to the environment from the Works at designed location(s) other than the approved effluent disposal facilities or via the effluent disposal facilities downstream of the Final Effluent sampling point;
25. "Owner" means The Corporation of the Municipality of Kincardine and its successors and assignees;
26. "OWRA" means the *Ontario Water Resources Act,* R.S.O. 1990, c. O.40, as amended;
27. "Professional Engineer" means a person entitled to practice as a Professional Engineer in the Province of Ontario under a license issued under the Professional Engineers Act;
28. "Proposed Works" means those portions of the Works included in the Approval that are under construction or to be constructed;
29. "Rated Capacity" means the Annual Average Daily Influent Flow for which the Sewage Treatment Plant is designed to handle;

30. "Sanitary Sewers" means pipes that collect and convey wastewater from residential, commercial, institutional and industrial buildings, and some infiltration and inflow from extraneous sources such as groundwater and surface runoff through means other than stormwater catch basins;

31. "Separate Sewer Systems" means wastewater collection systems that comprised of Sanitary Sewers while runoff from precipitation and snowmelt are separately collected in Storm Sewers;

32. "Sewage Treatment Plant" means all the facilities related to sewage treatment within the sewage treatment plant site excluding the Final Effluent disposal facilities;

33. "Single Sample Result" means the test result of a parameter in the effluent discharged on any day, as measured by a probe, analyzer or in a composite or grab sample, as required;

34. "Storm Sewers" means pipes that collect and convey runoff resulting from precipitation and snowmelt (including infiltration and inflow);

35. "Works" means the approved sewage works, and includes Proposed Works, Existing Works and modifications made under Limited Operational Flexibility.

TERMS AND CONDITIONS

You are hereby notified that this environmental compliance approval is issued to you subject to the terms and conditions outlined below:

1. **GENERAL PROVISIONS**
    1. The Owner shall ensure that any person authorized to carry out work on or operate any aspect of the Works is notified of this Approval and the conditions herein and shall take all reasonable measures to ensure any such person complies with the same.
    2. Except as otherwise provided by these conditions, the Owner shall design, build, install, operate and maintain the Works in accordance with the description given in this Approval, and the application for approval of the Works.
    3. Where there is a conflict between a provision of any document referred to in this Approval and the conditions of this Approval, the conditions in this Approval shall take precedence.

2. **CHANGE OF OWNER AND OPERATING AGENCY**
    1. The Owner shall, within thirty (30) calendar days of issuance of this Approval, prepare/update and submit to the District Manager the Municipal and Local Services Board Wastewater System Profile Information Form, as amended (Schedule G) under any of the following situations:
        1. the form has not been previously submitted for the Works;
        2. this Approval is issued for extension, re-rating or process treatment upgrade of the Works;
        3. when a notification is provided to the District Manager in compliance with requirements of change of Owner or Operating Agency under this condition.
    2. The Owner shall notify the District Manager and the Director, in writing, of any of the following changes within thirty (30) days of the change occurring:
    change of address of Owner;
        1. change of Owner, including address of new owner;
        2. change of partners where the Owner is or at any time becomes a partnership, and a copy of the most recent declaration filed under the Business Names Act, R.S.O. 1990, c. B.17, as amended, shall be included in the notification;
        3. change of name of the corporation where the Owner is or at any time becomes a corporation, and a copy of the most current information filed under the Corporations Information Act, R.S.O. 1990, c. C.39, as

amended, shall be included in the notification.

3. The Owner shall notify the District Manager, in writing, of any of the following changes within thirty (30) days of the change occurring:
    1. change of address of Operating Agency;
    2. change of Operating Agency, including address of new Operating Agency.
4. In the event of any change in ownership of the Works, the Owner shall notify the succeeding owner in writing, of the existence of this Approval, and forward a copy of the notice to the District Manager.
5. The Owner shall ensure that all communications made pursuant to this condition refer to the environmental compliance approval number.

3. **CONSTRUCTION OF PROPOSED WORKS**

1. All Proposed Works in this Approval shall be constructed and installed and must commence operation within five (5) years of issuance of this Approval, after which time the Approval ceases to apply in respect of any portions of the Works not in operation. In the event that the construction, installation and/or operation of any portion of the Proposed Works is anticipated to be delayed beyond the time period stipulated, the Owner shall submit to the Director an application to amend the Approval to extend this time period, at least six (6) months prior to the end of the period. The amendment application shall include the reason(s) for the delay and whether there is any design change(s).
2. Within thirty (30) days of commencement of construction, the Owner shall prepare and submit to the District Manager a schedule for the completion of construction and commissioning operation of the Proposed Works. The Owner shall notify the District Manager within thirty (30) days of the commissioning operation of any Proposed Works. Upon completion of construction of the Proposed Works, the Owner shall prepare and submit a statement to the District Manager, certified by a Licensed Engineering Practioner, that the Proposed Works is constructed in accordance with this Approval.
3. Within one (1) year of completion of construction of the Proposed Works, a set of record drawings of the Works shall be prepared or updated. These drawings shall be kept up to date through revisions undertaken from time to time and a copy shall be readily accessible for reference at the Works.

4. **BYPASSES**

1. Any Bypass is prohibited, except:
    a. an emergency Bypass when a structural, mechanical or electrical failure causes a temporary reduction in the capacity of a treatment process or when an unforeseen flow condition exceeds the design capacity of a treatment process that is likely to result in personal injury, loss of life, health hazard, basement flooding, severe property damage, equipment damage or treatment process upset, if a portion of the flow is not bypassed;
    b. a planned Bypass that is a direct and unavoidable result of a planned repair and maintenance procedure or other circumstance(s), the Owner having notified the District Manager in writing at least fifteen (15) days prior to the occurrence of Bypass, including an estimated quantity and duration of the Bypass, an assessment of the impact on the quality of the Final Effluent and the mitigation measures if necessary, and the District Manager has given written consent of the Bypass.
2. Notwithstanding the exceptions given in Paragraph 1, the Operating Agency shall undertake everything practicable to maximize the flow through the downstream treatment process(es) prior to bypassing.
3. At the beginning of a Bypass Event, the Owner shall immediately notify the Spills Action Centre (SAC) and the local Medical Officer of Health. This notice shall include, at a minimum, the following information:
    a. the type of the Bypass as indicated in Paragraph 1 and the reason(s) for the Bypass;
    b. the date and time of the beginning of the Bypass;

c. the treatment process(es) gone through prior to the Bypass and the treatment process(es) bypassed;

d. the effort(s) done to maximize the flow through the downstream treatment process(es) and the reason(s) why the Bypass was not avoided.

4. Upon confirmation of the end of a Bypass Event, the Owner shall immediately notify the SAC and the local Medical Officer of Health. This notice shall include, at a minimum, the following information:

a. the date and time of the end of the Bypass;

b. the estimated or measured volume of Bypass.

5. For any Bypass Event, the Owner shall collect daily sample(s) of the Final Effluent, inclusive of the Event and analyze for all effluent parameters outlined in Compliance Limits condition that require composite samples, following the same protocol specified in the Monitoring and Recording condition for the regular samples. The sample(s) shall be in addition to the regular Final Effluent samples required under the monitoring and recording condition. If the Event occurs on a scheduled monitoring day, the regular sampling requirements prevail. If representative sample for the effluent parameter(s) that require grab sample cannot be obtained, they shall be collected after the Event at the earliest time when situation returns to normal.

6. The Owner shall submit a summary report of the Bypass Event(s) to the District Manager on a quarterly basis, no later than each of the following dates for each calendar year: February 15, May 15, August 15, and November 15. The summary reports shall contain, at a minimum, the types of information set out in Paragraphs (3), (4) and (5) and either a statement of compliance or a summary of the non-compliance notifications submitted as required under Paragraph 1 of Condition 11. If there is no Bypass Event during a quarter, a statement of no occurrence of Bypass is deemed sufficient.

7. The Owner shall develop a notification procedure in consultation with the District Manager and SAC and notify the public and downstream water users that may be adversely impacted by any Bypass Event.

5. **OVERFLOWS**

1. Any Overflow is prohibited, except:

a. an emergency Overflow in an emergency situation when a structural, mechanical or electrical failure causes a temporary reduction in the capacity of the Works or when an unforeseen flow condition exceeds the design capacity of the Works that is likely to result in personal injury, loss of life, health hazard, basement flooding, severe property damage, equipment damage or treatment process upset, if a portion of the flow is not overflowed;

b. a planned Overflow that is a direct and unavoidable result of a planned repair and maintenance procedure or other circumstance(s), the Owner having notified the District Manager in writing at least fifteen (15) days prior to the occurrence of Overflow, including an estimated quantity and duration of the Overflow, an assessment of the impact on the environment and the mitigation measures if necessary, and the District Manager has given written consent of the Overflow.

2. Notwithstanding the exceptions given in Paragraph 1, the Operating Agency shall undertake everything practicable to maximize the flow through the downstream treatment process(es) and Bypass(es) prior to overflowing.

3. At the beginning of an Overflow Event, the Owner shall immediately notify the SAC and the local Medical Officer of Health. This notice shall include, at a minimum, the following information:

a. the type of the Overflow as indicated in Paragraph 1 and the reason(s) for the Overflow;

b. the date and time of the beginning of the Overflow;

c. the point of the Overflow from the Works, the treatment process(es) gone through prior to the Overflow, the disinfection status of the Overflow and whether the Overflow is discharged through the effluent disposal facilities or an alternate location;

d. the effort(s) done to maximize the flow through the downstream treatment process(es) and Bypass(es) and the reason(s) why the Overflow was not avoided.

4. Upon confirmation of the end of an Overflow Event, the Owner shall immediately notify the SAC and the local Medical Officer of Health. This notice shall include, at a minimum, the following information:

   a. the date and time of the end of the Overflow;

   b. the estimated or measured volume of the Overflow.

5. For any Overflow Event

   a. in the Sewage Treatment Plant, the Owner shall collect grab sample(s) of the Overflow, one near the beginning of the Event and one every eight (8) hours for the duration of the Event, and have them analyzed at least for CBOD5, total suspended solids, total phosphorus, total ammonia nitrogen, nitrate as N, nitrite as N, total Kjeldahl nitrogen, *E. coli.,* except that raw sewage and primary treated effluent Overflow shall be analyzed for BOD5, total suspended solids, total phosphorus and total Kjeldahl nitrogen only.

6. The Owner shall submit a summary report of the Overflow Event(s) to the District Manager on a quarterly basis, no later than each of the following dates for each calendar year: February 15, May 15, August 15, and November 15. The summary report shall contain, at a minimum, the types of information set out in Paragraphs (3), (4) and (5). If there is no Overflow Event during a quarter, a statement of no occurrence of Overflow is deemed sufficient.

7. The Owner shall develop a notification procedure in consultation with the District Manager and SAC and notify the public and downstream water users that may be adversely impacted by any Overflow Event.

6. **DESIGN OBJECTIVES**

1. The Owner shall operate and maintain the Works such that the design monthly average landfill leachate flow of 63 m^3/d (approximately 30 m^3/d from Valentine Avenue Landfill and approximately 33 m^3/d from Kincardine Waste Management Centre) and groundwater (contaminated) flow of approximately 200 m^3/d from Valentine Avenue Landfill for co-treatment at the Works is not exceeded.

2. The Owner shall design and undertake everything practicable to operate the Sewage Treatment Plant in accordance with the following objectives:

   a. Final Effluent parameters design objectives listed in the table(s) included in Schedule B.

   b. Final Effluent is essentially free of floating and settleable solids and does not contain oil or any other substance in amounts sufficient to create a visible film or sheen or foam or discolouration on the receiving waters.

   c. Annual Average Daily Influent Flow is within the Rated Capacity of the Sewage Treatment Plant.

7. **COMPLIANCE LIMITS**

1. The Owner shall operate and maintain the Sewage Treatment Plant such that compliance limits for the Final Effluent parameters listed in the table(s) included in Schedule C are met.

2. The Owner shall operate and maintain the Sewage Treatment Plant such that the Final Effluent is disinfected continuously year-round.

8. **OPERATION AND MAINTENANCE**

1. The Owner shall ensure that, at all times, the Works and the related equipment and appurtenances used to achieve compliance with this Approval are properly operated and maintained. Proper operation and maintenance shall include effective performance, adequate funding, adequate staffing and training, including training in all procedures and other requirements of this Approval and the OWRA and regulations, adequate laboratory facilities, process controls and alarms and the use of process chemicals and other substances used in the Works.

2. The Owner shall prepare/update the operations manual for the Works within six (6) months of completion of

construction of the Proposed Works, that includes, but not necessarily limited to, the following information:

a. operating procedures for the Works under Normal Operating Conditions;

b. inspection programs, including frequency of inspection, for the Works and the methods or tests employed to detect when maintenance is necessary;

c. repair and maintenance programs, including the frequency of repair and maintenance for the Works;

d. procedures for the inspection and calibration of monitoring equipment;

e. operating procedures for the Works to handle situations outside Normal Operating Conditions and emergency situations such as a structural, mechanical or electrical failure, or an unforeseen flow condition, including procedures to minimize Bypasses and Overflows;

f. a spill prevention and contingency plan, consisting of procedures and contingency plans, including notification to the District Manager, to reduce the risk of spills of pollutants and prevent, eliminate or ameliorate any adverse effects that result or may result from spills of pollutants;

g. procedures for receiving, responding and recording public complaints, including recording any followup actions taken.

3. The Owner shall maintain the operations manual up-to-date and make the manual readily accessible for reference at the Works.

4. The Owner shall ensure that the Operating Agency fulfills the requirements under O. Reg. 129/04, as amended for the Works, including the classification of facilities, licensing of operators and operating standards.

9. **MONITORING AND RECORDING**

1. The Owner shall, upon commencement of operation of the Works, carry out a scheduled monitoring program of collecting samples at the required sampling points, at the frequency specified or higher, by means of the specified sample type and analyzed for each parameter listed in the tables under the monitoring program included in Schedule D and record all results, as follows:

a. all samples and measurements are to be taken at a time and in a location characteristic of the quality and quantity of the sewage stream over the time period being monitored.

b. definitions and preparation requirements for each sample type are included in document referenced in Paragraph 3.b.

c. definitions for frequency:

i. Bi-weekly means once every two weeks;

ii. Semi-annually means once every six months;

d. a schedule of the day of the week/month for the scheduled sampling shall be created. The sampling schedule shall be revised and updated every year through rotation of the day of the week/month for the scheduled sampling program, except when the actual scheduled monitoring frequency is three (3) or more times per week.

2. In addition to the scheduled monitoring program required in Paragraph 1, the Owner shall collect daily sample(s) of the Final Effluent, on any day when there is any situation outside Normal Operating Conditions, and analyze for all effluent parameters outlined in Compliance Limits condition that require composite samples, following the same protocol specified in this condition for the regular samples. If the Event occurs on a scheduled monitoring day, the regular sampling requirements prevail. If representative sample for the effluent parameter(s) that require grab sample cannot be obtained, they shall be collected after the Event at the earliest time when situation returns to normal.

3. The methods and protocols for sampling, analysis and recording shall conform, in order of precedence, to the methods and protocols specified in the following documents and all analysis shall be conducted by a laboratory accredited to the ISO/IEC:17025 standard or as directed by the District Manager :

a. the Ministry's Procedure F-10-1, “Procedures for Sampling and Analysis Requirements for Municipal and Private Sewage Treatment Works (Liquid Waste Streams Only), as amended;

b. the Ministry's publication "Protocol for the Sampling and Analysis of Industrial/Municipal Wastewater Version 2.0" (January 2016), PIBS 2724e02, as amended; and

c. the publication "Standard Methods for the Examination of Water and Wastewater", as amended.

4. The Owner shall monitor and record the flow rate and daily quantity using flow measuring devices or other methods of measurement as approved below calibrated to an accuracy within plus or minus 15 per cent (+/- 15%) of the actual flowrate of the following:

   a. Influent flow to the Sewage Treatment Plant by continuous flow measuring devices and instrumentations, or in lieu of an actual installation of equipment, adopt the flow measurements of the Final Effluent for the purpose of estimating Influent flows if the Influent and Final Effluent streams are considered not significantly different in flow rates and quantities;

   b. Final Effluent discharged from the Sewage Treatment Plant by continuous flow measuring devices and instrumentations, or in lieu of an actual installation of equipment, adopt the flow measurements of the Influent for the purpose of estimating Final Effluent flows if the Influent and Final Effluent streams are considered not significantly different in flow rates and quantities;

   c. leachate and groundwater (contaminated) received for co-treatment at the Sewage Treatment by flow measuring devices/pumping rate;

   d. blended hauled sewage received for co-treatment at the Sewage Treatment Plant by flow measuring devices/pumping rates.

5. The Owner shall retain for a minimum of five (5) years from the date of their creation, all records and information related to or resulting from the monitoring activities required by this Approval.

10. **LIMITED OPERATIONAL FLEXIBILITY**

1. The Owner may make pre-authorized modifications to the Sewage Treatment Plant in Works in accordance with the document "Limited Operational Flexibility - Protocol for Pre-Authorized Modifications to Municipal Sewage Works" (Schedule E), as amended, subject to the following:

   a. the modifications will not involve the addition of any new treatment process or the removal of an existing treatment process, including chemical systems, from the liquid or solids treatment trains as originally designed and approved.

   b. the scope and technical aspects of the modifications are in line with those delineated in Schedule E and conform with the Ministry’s publication “Design Guidelines for Sewage Works 2008”, as amended, Ministry’s regulations, policies, guidelines, and industry engineering standards;

   c. the modifications shall not negatively impact on the performance of any process or equipment in the Works or result in deterioration in the Final Effluent quality;

   d. where the pre-authorized modification requires notification, a "Notice of Modifications to Sewage Works" (Schedule E), as amended shall be completed with declarations from a Licensed Engineering Practitioner and the Owner and retained on-site prior to the scheduled implementation date. All supporting information including technical memorandum, engineering plans and specifications, as applicable and appropriate to support the declarations that the modifications conform with LOF shall remain on-site for future inspection.

2. The following modifications are not pre-authorized under Limited Operational Flexibility:

   a. Modifications that involve addition or extension of process structures, tankages or channels;

   b. Modifications that involve relocation of the Final Effluent outfall or any other discharge location or that may require reassessment of the impact to the receiver or environment;

c. Modifications that involve addition of or change in technology of a treatment process or that may involve reassessment of the treatment train process design;

d. Modifications that require changes to be made to the emergency response, spill prevention and contingency plan; or

e. Modifications that are required pursuant to an order issued by the Ministry.

11. **REPORTING**

1. The Owner shall report to the District Manager orally as soon as possible any non-compliance with the compliance limits, and in writing within seven (7) days of non-compliance.

2. The Owner shall, within fifteen (15) days of occurrence of a spill within the meaning of Part X of the EPA, submit a full written report of the occurrence to the District Manager describing the cause and discovery of the spill, clean-up and recovery measures taken, preventative measures to be taken and schedule of implementation, in addition to fulfilling the requirements under the EPA and O. Reg. 675/98 "Classification and Exemption of Spills and Reporting of Discharges".

3. The Owner shall, upon request, make all manuals, plans, records, data, procedures and supporting documentation available to Ministry staff.

4. The Owner shall prepare performance reports on a calendar year basis and submit to the District Manager by March 31 of the calendar year following the period being reported upon. The reports shall contain, but shall not be limited to, the following information pertaining to the reporting period:

    a. a summary and interpretation of all Influent, Imported Sewage monitoring data, and a review of the historical trend of the sewage characteristics and flow rates;

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

    c. a summary of all operating issues encountered and corrective actions taken;

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

    e. a summary of any effluent quality assurance or control measures undertaken;

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

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

        a. when any of the design objectives is not achieved more than 50% of the time in a year, or there is an increasing trend in deterioration of Final Effluent quality;

        b. when the Annual Average Daily Influent Flow reaches 80% of the Rated Capacity;

    h. a tabulation of the measured volume of sludge accumulated in the lagoon cells in five year intervals and the estimated volume in the interim years and when sludge was disposed of during the reporting period, a summary of disposal locations and volumes of sludge disposed at each location;

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

    j. a summary of all Bypasses, Overflows, other situations outside Normal Operating Conditions and spills within the meaning of Part X of EPA and abnormal discharge events;

    k. a summary of all Notice of Modifications to Sewage Works completed under Paragraph 1.d. of Condition

10, including a report on status of implementation of all modification;

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

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

n. a summary of any deviation from the monitoring schedule and reasons for the current reporting year and a schedule for the next reporting year.

REASONS

The reasons for the imposition of these terms and conditions are as follows:

1. Condition 1 regarding general provisions is imposed to ensure that the Works are constructed and operated in the manner in which they were described and upon which approval was granted.

2. Condition 2 regarding change of Owner and Operating Agency is included to ensure that the Ministry records are kept accurate and current with respect to ownership and Operating Agency of the Works and to ensure that subsequent owners of the Works are made aware of the Approval and continue to operate the Works in compliance with it.

3. Condition 3 regarding construction of Proposed Works is included to ensure that the Works are constructed in a timely manner so that standards applicable at the time of Approval of the Works are still applicable at the time of construction to ensure the ongoing protection of the environment, and also ensure that the Works are constructed in accordance with the Approval and that record drawings of the Works "as constructed" are updated and maintained for future references.

4. Condition 4 regarding Bypasses is included to indicate that Bypass is prohibited, except in circumstances where the failure to Bypass could result in greater damage to the environment than the Bypass itself. The notification and documentation requirements allow the Ministry to take action in an informed manner and will ensure the Owner is aware of the extent and frequency of Bypass Events.

5. Condition 5 regarding Overflows is included to indicate that Overflow of untreated or partially treated sewage to the receiver is prohibited, except in circumstances where the failure to Overflow could result in greater damage to the environment than the Overflow itself. The notification and documentation requirements allow the Ministry to take action in an informed manner and will ensure the Owner is aware of the extent and frequency of Overflow Events.

6. Condition 6 regarding design objectives is imposed to establish non-enforceable design objectives to be used as a mechanism to trigger corrective action proactively and voluntarily before environmental impairment occurs.

7. Condition 7 regarding compliance limits is imposed to ensure that the Final Effluent discharged from the Works to the environment meets the Ministry's effluent quality requirements.

8. Condition 8 regarding operation and maintenance is included to require that the Works be properly operated, maintained, funded, staffed and equipped such that the environment is protected and deterioration, loss, injury or damage to any person or property is prevented. As well, the inclusion of a comprehensive operations manual governing all significant areas of operation, maintenance and repair is prepared, implemented and kept up-to-date by the Owner. Such a manual is an integral part of the operation of the Works. Its compilation and use should assist the Owner in staff training, in proper plant operation and in identifying and planning for contingencies during possible abnormal conditions. The manual will also act as a benchmark for Ministry staff when reviewing the Owner's operation of the Works.

9. Condition 9 regarding monitoring and recording is included to enable the Owner to evaluate and demonstrate the performance of the Works, on a continual basis, so that the Works are properly operated and maintained at a level which is consistent with the design objectives and compliance limits.

10. Condition 10 regarding Limited Operational Flexibility is included to ensure that the Works are constructed, maintained and operated in accordance with the Approval, and that any pre-approved modification will not negatively impact on the performance of the Works.

11. Condition 11 regarding reporting is included to provide a performance record for future references, to ensure that the Ministry is made aware of problems as they arise, and to provide a compliance record for this Approval.

APPEAL PROVISIONS

In accordance with Section 139 of the *Environmental Protection Act*, you may by written notice served upon me and the Ontario Land Tribunal within 15 days after receipt of this notice, require a hearing by the Tribunal. Section 142 of the *Environmental Protection Act* provides that the notice requiring the hearing ("the Notice") shall state:

I. The portions of the environmental compliance approval or each term or condition in the environmental compliance approval in respect of which the hearing is required, and;

II. The grounds on which you intend to rely at the hearing in relation to each portion appealed.

Pursuant to subsection 139(3) of the *Environmental Protection Act*, a hearing may not be required with respect to any terms and conditions in this environmental compliance approval, if the terms and conditions are substantially the same as those contained in an approval that is amended or revoked by this environmental compliance approval.
The Notice should also include:

I. The name of the appellant;

II. The address of the appellant;

III. The environmental compliance approval number;

IV. The date of the environmental compliance approval;

V. The name of the Director, and;

VI. The municipality or municipalities within which the project is to be engaged in.

And the Notice should be signed and dated by the appellant.

This Notice must be served upon:

Registrar* Ontario Land Tribunal 655 Bay Street, Suite 1500 Toronto, Ontario M5G 1E5 OLT.Registrar@ontario.ca	and	The Director appointed for the purposes of Part II.1 of the *Environmental Protection Act* Ministry of the Environment, Conservation and Parks 135 St. Clair Avenue West, 1st Floor Toronto, Ontario M4V 1P5

*** Further information on the Ontario Land Tribunal's requirements for an appeal can be obtained directly from the Tribunal at: Tel: (416) 212-6349 or 1 (866) 448-2248, or www.olt.gov.on.ca**
The above noted activity is approved under s.20.3 of Part II.1 of the *Environmental Protection Act*.

Dated at Toronto this 11th day of February, 2022

A. Ahmed

Aziz Ahmed

Director

appointed for the purposes of Part II.1 of the Environmental Protection Act

c: Andrew Garland, B. M. Ross and Associates Ltd.
Adam Weishar, Municipality of Kincardine

The following schedules are a part of this environmental compliance approval:

SCHEDULE 1

Schedule A

Application for Environmental Compliance Approval submitted by Adam Weishar of The Corporation of the Municipality of Kincardine received on March 16, 2021 for the proposed upgrade of the lagoon aeration system, including all supporting information and documentation, final plans and specifications provided by B.M. Ross and Associates Limited.

SCHEDULE 2

Schedule B

Final Effluent Design Objectives

Concentration Objectives

Final Effluent Parameter	**Averaging Calculator**	**Objective** (milligrams per litre unless otherwise indicated)
CBOD5	Monthly Average Effluent Concentration	25 mg/L
Total Suspended Solids	Monthly Average Effluent Concentration	30 mg/L
Total Phosphorus	Monthly Average Effluent Concentration	1.0 mg/L
E. coli	Monthly Geometric Mean Density	*150 CFU/100 mL
pH	Single Sample Result	6.5 - 9.0 inclusive

*If the MPN method is utilized for *E.coli* analysis the objective shall be 150 MPN/100 mL

SCHEDULE 3

Schedule C

Final Effluent Compliance Limits

Concentration Limits

Effluent Parameter	**Averaging Calculator**	**Limit** (maximum unless otherwise indicated)
CBOD5	Monthly Average Effluent Concentration	30 mg/L
Total Suspended Solids	Monthly Average Effluent Concentration	40 mg/L
Total Phosphorus	Monthly Average Effluent Concentration	1.0 mg/L
E. coli	Monthly Geometric Mean Density	*200 CFU/100 mL
pH	Single Sample Result	between 6.0 - 9.5 inclusive

*If the MPN method is utilized for *E.coli* analysis the limit shall be 200 MPN/100 mL

Loading Limits

Final Effluent Parameter	**Averaging Calculator**	**Limit** (maximum unless otherwise indicated)
CBOD5	Monthly Average Daily Effluent Loading	177.0 kg/d
Total Suspended Solids	Monthly Average Daily Effluent Loading	236.0 kg/d
Total Phosphorus	Monthly Average Daily Effluent Loading	5.9 kg/d

SCHEDULE 4

Schedule D

Monitoring Program

Influent - Influent sampling point

Parameters	Sample Type	Minimum Frequency
BOD5	Grab	Bi-weekly
Total Suspended Solids	Grab	Bi-weekly
Total Phosphorus	Grab	Bi-weekly
Total Kjeldahl Nitrogen	Grab	Bi-weekly
Alkalinity	Grab	Bi-weekly

Final Effluent - Final Effluent sampling point

Parameters	Sample Type	Minimum Frequency
CBOD5	Grab	Bi-weekly
Total Suspended Solids	Grab	Bi-weekly
Total Phosphorus	Grab	Bi-weekly
Total Ammonia	Grab	Bi-weekly
Total Kjeldahl Nitrogen	Grab	Bi-weekly
Nitrate as Nitrogen	Grab	Bi-weekly
Nitrite as Nitrogen	Grab	Bi-weekly
Alkalinity	Grab	Bi-weekly
E. coli	Grab	Bi-weekly
pH	Grab	Bi-weekly
Temperature	Grab	Bi-weekly
Chloride	Grab	Semi-annually
COD	Grab	Semi-annually
DOC	Grab	Semi-annually
Hardness	Grab	Semi-annually
Phenols	Grab	Semi-annually
Metals (total): ICP Metal Scan	Grab	Semi-annually
Volatile Organic Compounds (VOC) US EPA 624 Parameters	Grab	Semi-annually
Conductivity	Grab	Semi-annually

Landfill Leachate*

Parameters	Sample Type	Minimum Frequency
Alkalinity	Grab	Semi-annually
BOD5	Grab	Semi-annually
Chloride	Grab	Semi-annually
COD	Grab	Semi-annually
DOC	Grab	Semi-annually
Hardness	Grab	Semi-annually
Nitrate as Nitrogen	Grab	Semi-annually
Nitrite as Nitrogen	Grab	Semi-annually
Total Kjeldahl Nitrogen	Grab	Semi-annually
Ammonia	Grab	Semi-annually
Metals (Total): ICP 24 Metal Scan	Grab	Semi-annually
Volatile Organic Compounds (VOC): US EPA 624 Parameters	Grab	Semi-annually
pH	Grab	Semi-annually
Conductivity	Grab	Semi-annually
Temperature	Grab	Semi-annually

*Note

1. Samples of the leachate and groundwater contaminated with leachate to be collected from Valentine Avenue Landfill and Kincardine Waste Management Centre leachate pumping station, the discharge end of leachate forcemain, or at the point of addition to the sewer system or to the Works.

2. Representative samples of landfill leachate shall be collected for analysis on a semi-annually basis, subject to availability of the leachate requiring co-treatment at the Sewage Treatment Plant.

3. The Owner can use applicable existing samples collected from Valentine Avenue Landfill site of groundwater (contaminated) as required by Environmental Compliance Approval No. 3-0408-93-006 and of leachate as required by Environmental Compliance Approval No. 3-0354-94-006 and analyze for parameters as specified.

SCHEDULE 5

Schedule E

Limited Operational Flexibility

Protocol for Pre-Authorized Modifications to Municipal Sewage Works

1. **General**
    1. Pre-authorized modifications are permitted only where Limited Operational Flexibility has already been granted in the Approval and only permitted to be made at the pumping stations and sewage treatment plant in the Works, subject to the conditions of the Approval.
    2. Where there is a conflict between the types and scope of pre-authorized modifications listed in this document, and the Approval where Limited Operational Flexibility has been granted, the Approval shall take precedence.
    3. The Owner shall consult the District Manager on any proposed modifications that may fall within the scope and intention of the Limited Operational Flexibility but is not listed explicitly or included as an example in this document.
    4. The Owner shall ensure that any pre-authorized modifications will not:
        a. adversely affect the hydraulic profile of the Sewage Treatment Plant or the performance of any upstream or downstream processes, both in terms of hydraulics and treatment performance;
        b. result in new Overflow or Bypass locations, or any potential increase in frequency or quantity of Overflow(s) or Bypass(es).
        c. result in a reduction in the required Peak Flow Rate of the treatment process or equipment as originally designed.

2. **Modifications that do not require pre-authorization:**
    1. Sewage works that are exempt from Ministry approval requirements;
    2. Modifications to the electrical system, instrumentation and control system.

3. **Pre-authorized modifications that do not require preparation of "Notice of Modification to Sewage Works"**
    1. Normal or emergency maintenance activities, such as repairs, renovations, refurbishments and replacements with Equivalent Equipment, or other improvements to an existing approved piece of equipment of a treatment process do not require pre-authorization. Examples of these activities are:
        a. Repairing a piece of equipment and putting it back into operation, including replacement of minor components such as belts, gear boxes, seals, bearings;
        b. Repairing a piece of equipment by replacing a major component of the equipment such as motor, with the same make and model or another with the same or very close power rating but the capacity of the pump or blower will still be essentially the same as originally designed and approved;
        c. Replacing the entire piece of equipment with Equivalent Equipment.
    2. Improvements to equipment efficiency or treatment process control do not require pre-authorization. Examples of these activities are:
        a. Adding variable frequency drive to pumps;
        b. Adding on-line analyzer, dissolved oxygen probe, ORP probe, flow measurement or other process control device.

4. **Pre-Authorized Modifications that require preparation of "Notice of Modification to Sewage Works"**

1. Pumping Stations
    a. Replacement, realignment of existing sewers including manholes, valves, gates, weirs and associated appurtenances provided that the modifications will not add new influent source(s) or result in an increase in flow from existing sources as originally approved.
    b. Extension or partition of wetwell to increase retention time for emergency response and improve station maintenance and pump operation;
    c. Replacement or installation of inlet screens to the wetwell;
    d. Replacement or installation of flowmeters, construction of station bypass;
    e. Replacement, reconfiguration or addition of pumps and modifications to pump suctions and discharge pipings including valve, gates, motors, variable frequency drives and associated appurtenances to maintain firm pumping capacity or modulate the pump rate provided that the modifications will not result in a reduction in the firm pumping capacity or discharge head or an increase in the peak pumping rate of the pumping station as originally designed;
    f. Replacement, realignment of existing forcemain(s) including valves, gates, and associated appurtenances provided that the modifications will not reduce the flow capacity or increase the total dynamic head and transient in the forcemain.

2. Sewage Treatment Plant
    1. Sewers and appurtenances
        a. Replacement, realignment of existing sewers (including pipes and channels) or construction of new sewers, including manholes, valves, gates, weirs and associated appurtenances within the a sewage treatment plant, provided that the modifications will not add new influent source(s) or result in an increase in flow from existing sources as originally approved and that the modifications will remove hydraulic bottlenecks or improve the conveyance of sewage into and through the Works.
    2. Flow Distribution Chambers/Splitters
        a. Replacement or modification of existing flow distribution chamber/splitters or construction of new flow distribution chamber/splitters, including replacements or installation of sluice gates, weirs, valves for distribution of flows to the downstream process trains, provided that the modifications will not result in a change in flow distribution ratio to the downstream process trains as originally designed.
    3. Imported Sewage Receiving Facility
        a. Replacement, relocation or installation of loading bays, connect/disconnect hook-up systems and unloading/transferring systems;
        b. Replacement, relocation or installation of screens, grit removal units and compactors;
        c. Replacement, relocation or installation of pumps, such as dosing pumps and transfer pumps, valves, piping and appurtenances;
        d. Replacement, relocation or installation of storage tanks/chambers and spill containment systems;
        e. Replacement, relocation or installation of flow measurement and sampling equipment;
        f. Changes to the source(s) or quantity from each source, provided that changes will not result in an increase in the total quantity and waste loading of each type of Imported Sewage already approved for co-treatment.
    4. Preliminary Treatment System

a. Replacement of existing screens and grit removal units with equipment of the same or higher process performance technology, including where necessary replacement or upgrading of existing screenings dewatering washing compactors, hydrocyclones, grit classifiers, grit pumps, air blowers conveyor system, disposal bins and other ancillary equipment to the screening and grit removal processes.

b. Replacement or installation of channel aeration systems, including air blowers, air supply main, air headers, air laterals, air distribution grids and diffusers.

5. Primary Treatment System

a. Replacement of existing sludge removal mechanism, including sludge chamber;

b. Replacement or installation of scum removal mechanism, including scum chamber;

c. Replacement or installation of primary sludge pumps, scum pumps, provided that:the modifications will not result in a reduction in the firm pumping capacity or discharge head that the primary sludge pump(s) and scum pump(s) are originally designed to handle.

6. Secondary Treatment System

1. Biological Treatment

a. Conversion of complete mix aeration tank to plug-flow multi-pass aeration tank, including modifications to internal structural configuration;

b. Addition of inlet gates in multi-pass aeration tank for step-feed operation mode;

c. Partitioning of an anoxic/flip zone in the inlet of the aeration tank, including installation of submersible mixer(s);

d. Replacement of aeration system including air blowers, air supply main, air headers, air laterals, air distribution grids and diffusers, provided that the modifications will not result in a reduction in the firm capacity or discharge pressure that the blowers are originally designed to supply or in the net oxygen transferred to the wastewater required for biological treatment as originally required.

2. Secondary Sedimentation

a. Replacement of sludge removal mechanism, including sludge chamber;

b. Replacement or installation of scum removal mechanism, including scum chamber;

c. Replacement or installation of return activated sludge pump(s), waste activated sludge pump(s), scum pump(s), provided that the modifications will not result in a reduction in the firm pumping capacity or discharge head that the activated sludge pump(s) and scum pump(s) are originally designed to handle.

7. Post-Secondary Treatment System

a. Replacement of filtration system with equipment of the same filtration technology, including feed pumps, backwash pumps, filter reject pumps, filtrate extract pumps, holding tanks associated with the pumping system, provided that the modifications will not result in a reduction in the capacity of the filtration system as originally designed.

8. Disinfection System

1. UV Irradiation

a. Replacement of UV irradiation system, provided that the modifications will not result in a reduction in the design capacity of the disinfection system or the radiation level as originally

designed.

2. Chlorination/Dechlorination and Ozonation Systems
    a. Extension and reconfiguration of contact tank to increase retention time for effective disinfection and reduce dead zones and minimize short-circuiting;
    b. Replacement or installation of chemical storage tanks, provided that the tanks are provided with effective spill containment.

9. Supplementary Treatment Systems
    1. Chemical systems
        a. Replacement, relocation or installation of chemical storage tanks for existing chemical systems only, provided that the tanks are sited with effective spill containment;
        b. Replacement or installation of chemical dosing pumps provided that the modifications will not result in a reduction in the firm capacity that the dosing pumps are originally designed to handle.
        c. Relocation and addition of chemical dosing point(s) including chemical feed pipes and valves and controls, to improve phosphorus removal efficiency;
        d. Use of an alternate chemical provided that it is a non-proprietary product and is a commonly used alternative to the chemical approved in the Works, provided that the chemical storage tanks, chemical dosing pumps, feed pipes and controls are also upgraded, as necessary.

10. Sludge Management System
    1. Sludge Holding and Thickening
        a. Replacement or installation of sludge holding tanks, sludge handling pumps, such as transfer pumps, feed pumps, recirculation pumps, provided that modifications will not result in reduction in the solids storage or handling capacities;
    2. Sludge Digestion
        a. Replacement or installation of digesters, sludge handling pumps, such as transfer pumps, feed pumps, recirculation pumps, provided that modifications will not result in reduction in the solids storage or handling capacities;
        b. replacement of sludge digester covers.
    3. Sludge Dewatering and Disposal
        a. Replacement of sludge dewatering equipment, sludge handling pumps, such as transfer pumps, feed pumps, cake pumps, loading pumps, provided that modifications will not result in reduction in solids storage or handling capacities.
    4. Processed Organic Waste
        a. Changes to the source(s) or quantity from each source, provided that changes will not result in an increase in the total quantity already approved for co-processing.

11. Standby Power System
    a. Replacement or installation of standby power system, including feed from alternate power grid, emergency power generator, fuel supply and storage systems, provided that the existing standby power generation capacity is not reduced.

12. Pilot Study
    1. Small side-stream pilot study for existing or new technologies, alternative treatment process or chemical, provided:
        a. all effluent from the pilot system is hauled off-site for proper disposal or returned back to the sewage treatment plant for at a point no further than immediately downstream of the location from where the side-stream is drawn;
        b. no proprietary treatment process or propriety chemical is involved in the pilot study;
        c. the effluent from the pilot system returned to the sewage treatment plant does not significantly alter the composition/concentration of or add any new contaminant/inhibiting substances to the sewage to be treated in the downstream process;
        d. the pilot study will not have any negative impacts on the operation of the sewage treatment plant or cause a deterioration of effluent quality;
        e. the pilot study does not exceed a maximum of two years and a notification of completion shall be submitted to the District Manager within one month of completion of the pilot project.

13. Lagoons
    a. installing baffles in lagoon provided that the operating capacity of the lagoon system is not reduced;
    b. raise top elevation of lagoon berms to increase free-board;
    c. replace or install interconnecting pipes and chambers between cells, provided that the process design operating sequence is not changed;
    d. replace or install mechanical aerators, or replace mechanical aerators with diffused aeration system provided that the mixing and aeration capacity are not reduced;
    e. removal of accumulated sludge and disposal to an approved location offsite.

3. Final Effluent Disposal Facilities
    a. Replacement or realignment of the Final Effluent channel, sewer or forcemain, including manholes, valves and appurtenances from the end of the treatment train to the discharge outfall section, provided that the sewer conveys only effluent discharged from the Sewage Treatment Plant and that the replacement or re-aligned sewer has similar dimensions and performance criteria and is in the same or approximately the same location and that the hydraulic capacity will not be reduced.

Please contact the District Manager for a copy of the form entitled "Notice of Modification to Sewage Works".

SCHEDULE 6

Schedule F
Methodology for Calculating and Reporting Monthly Average Effluent Concentration, Annual Average Effluent Concentration and Monthly Geometric Mean Density

1. Monthly Average Effluent Concentration

Step 1: Calculate the arithmetic mean of all Single Sample Results of the concentration of a contaminant in the Final Effluent sampled or measured during a calendar month and proceed as follows depending on the result of the calculation:

a. Group No Bypass Days (NBPD) data and Bypass Days (BPD) data during a calendar month separately;

b. If the arithmetic mean does not exceed the compliance limit for the contaminant, then report and use this arithmetic mean as the Monthly Average Effluent Concentration for this parameter where applicable in this Approval;

c. If the arithmetic mean exceeds the compliance limit for the contaminant and there was no Bypass Event during the calendar month, then report and use this arithmetic mean as the Monthly Average Effluent Concentration for this parameter where applicable in this Approval;

d. If the arithmetic mean exceeds the compliance limit for the contaminant and there was Bypass Event(s) during the calendar month, then proceed to Step 2;

e. If the arithmetic mean does not exceed the compliance limit for the contaminant and there was Bypass Event(s) during the calendar month, the Owner may still elect to proceed to Step 2 calculation of the flow-weighted arithmetic mean.

Step 2: Calculate the flow-weighted arithmetic mean of all Single Sample Results of the concentration of a contaminant in the Final Effluent sampled or measured during a calendar month and proceed depending on the result of the calculation:

a. Group No Bypass Days (NBPD) data and Bypass Days (BPD) data during a calendar month separately

b. Calculate the arithmetic mean of all Single Sample Results of the concentration of a contaminant in the Final Effluent sampled or measured on all NBPD during a calendar month and record it as Monthly Average NBPD Effluent Concentration;

c. Obtain the “Total Monthly NBPD Flow” which is the total amount of Final Effluent discharged on all NBPD during the calendar month;

d. Calculate the arithmetic mean of all Single Sample Results of the concentration of a contaminant in the Final Effluent sampled or measured on all BPD during a calendar month and record it as Monthly Average BPD Effluent Concentration;

e. Obtain the “Total Monthly BPD Flow” which is the total amount of Final Effluent discharged on all BPD during the calendar month;

f. Calculate the flow-weighted arithmetic mean using the following formula:
[(Monthly Average NBPD Effluent Concentration × Total Monthly NBPD Flow) + (Monthly Average BPD Effluent Concentration × Total Monthly BPD Flow)] ÷ (Total Monthly NBPD Flow + Total Monthly BPD Flow)
It should be noted that in this method, if there are no Bypass Event for the month, the calculated result would be the same as the non-flow-weighted arithmetic mean method;

g. Report and use the lesser of the flow-weighted arithmetic mean obtained in Step 2 and the arithmetic mean obtained in Step 1 as the Monthly Average Effluent Concentration for this parameter where applicable in this Approval.

2. Annual Average Effluent Concentration

Step 1: Calculate the arithmetic mean of all Single Sample Results of the concentration of a contaminant in the Final Effluent sampled or measured during a calendar year and proceed as follows depending on the result of the calculation:

a. If the arithmetic mean does not exceed the compliance limit for the contaminant, then report and use this arithmetic mean as the Annual Average Effluent Concentration for this parameter where applicable in this Approval;

b. If the arithmetic mean exceeds the compliance limit for the contaminant and there was no Bypass Event during the calendar year, then report and use this arithmetic mean as the Annual Average Effluent Concentration for this parameter where applicable in this Approval;

c. If the arithmetic mean exceeds the compliance limit for the contaminant and there was Bypass Event(s) during the calendar year, then proceed to Step 2;

d. If the arithmetic mean does not exceed the compliance limit for the contaminant and there was Bypass Event(s) during the calendar year, the Owner may still elect to proceed to Step 2 calculation of the flow-weighted arithmetic mean.

Step 2: Calculate the flow-weighted arithmetic mean of all Single Sample Results of the concentration of a contaminant in the Final Effluent sampled or measured during a calendar year and proceed depending on the result of the calculation:

a. Group No Bypass Days (NBPD) data and Bypass Days (BPD) data during a calendar year separately;

b. Calculate the arithmetic mean of all Single Sample Results of the concentration of a contaminant in the Final Effluent sampled or measured on all NBPD during a calendar year and record it as Annual Average NBPD Effluent Concentration;

c. Obtain the “Total Annual NBPD Flow” which is the total amount of Final Effluent discharged on all NBPD during the calendar year;

d. Calculate the arithmetic mean of all Single Sample Results of the concentration of a contaminant in the Final Effluent sampled or measured on all BPD during a calendar year and record it as Annual Average BPD Effluent Concentration;

e. Obtain the “Total Annual BPD Flow” which is the total amount of Final Effluent discharged on all BPD during the calendar year;

f. Calculate the flow-weighted arithmetic mean using the following formula:
[(Annual Average NBPD Effluent Concentration × Total Annual NBPD Flow) + (Annual Average BPD Effluent Concentration × Total Annual BPD Flow)] ÷ (Total Annual NBPD Flow + Total Annual BPD Flow)
It should be noted that in this method, if there are no Bypass Event for the calendar year, the calculated result would be the same as the non-flow-weighted arithmetic mean method;

g. Report and use the lesser of the flow-weighted arithmetic mean obtained in Step 2 and the arithmetic mean obtained in Step 1 as the Annual Average Effluent Concentration for this parameter where applicable in this Approval.

3. Monthly Geometric Mean Density

Geometric mean is defined as the nth root of the product of n numbers. In the context of calculating Monthly Geometric Mean Density for E. coli, the following formula shall be used:

$$\sqrt[n]{(x_1 x_x x_3 \ldots x_n)}$$

(nth root of left-parenthesis x_1 multiplied by x_2 multiplied by x_3 multiplied by x_n right-parenthesis)

in which,
"n" is the number of samples collected during the calendar month; and
"x" is the value of each Single Sample Result.
For example, four weekly grab samples were collected and tested for E. coli during the calendar month. The E. coli densities in the Final Effluent were found below:

Sample Number	*E. coli* Densities* (CFU /100 mL)
1	10
2	100
3	300
4	50

The Geometric Mean Density for these data:

$$\sqrt[4]{(10 \times 100 \times 300 \times 50)} = 62$$

*If a particular result is zero (0), then a value of one (1) will be substituted into the calculation of the Monthly Geometric Mean Density. If the MPN method is utilized for E. coli analysis, values in the table shall be MPN/100 mL.

SCHEDULE 7

Schedule G

Municipal and Local Services Board Wastewater System Profile Information Form

Please contact the District Manager for a copy of the form entitled "Municipal and Local Services Board Wastewater System Profile Information Form".

Ontario

Ministry of the Environment
Ministère de l'Environnement

AMENDED CERTIFICATE OF APPROVAL
MUNICIPAL AND PRIVATE SEWAGE WORKS
NUMBER 4648-8DVSSR
Issue Date: April 8, 2011

The Corporation of the Municipality of Kincardine
1475 Concession 5
Rural Route, No. 5
Kincardine, Ontario
N2Z 2X6

Site Location: Kincardine Wastewater Treatment Plant
520 Bruce Avenue
Kincardine Municipality, County of Bruce

You have applied in accordance with Section 53 of the Ontario Water Resources Act for approval of:

upgrading of the existing disinfection facilities for the treatment of sanitary sewage and landfill leachate located at the intersection of Bruce Avenue and Mahood - Johnston Drive, rated at an *Average Daily Flow* of 5,910 m^3 /day, consisting of the following:

PROPOSED WORKS

Ultraviolet Disinfection System

modification of the existing chlorination building to house the proposed electrical and control equipment and modification of the existing chlorine contact chamber into ultraviolet irradiation (UV) disinfection channels and installation of a new UV disinfection unit consisting of an open channel equipped with two (2) banks of ultraviolet lamp modules, each module having a peak capacity of 12,000 m^3/d, including all required piping and modified flow-measurement weir, low liquid level sensor, automatic level controller and electrical system, submersible ultraviolet intensity monitoring probe, and tie-in to existing outfall pipe. The existing (Sodium Hypochlorite) disinfection system to be retained to provide standby disinfection if the UV disinfection system is inoperable.

and all associated appurtenances, piping, electrical and control systems necessary to operate the Works,

all in accordance with the following submitted supporting documents:

1. Application for Approval of Sewage Works submitted by the Corporation of the Municipality of Kincardine dated November 24, 2010 and revised on December 14, 2010

along with a related letter dated November 26, 2010, from Richard Anderson of B.M. Ross and Associates Ltd. to Director of the Ministry of the Environment, Environmental Assessment and Approvals Branch;

2. Electronic mail transmission dated December 14, 2009, from Richard Anderson of B.M. Ross and Associates Ltd. to Farina Pannu of the Ministry of the Environment;

3. Memo entitled "Application in Support of Increasing the Quantity of Leachate Received by the Kincardine Wastewater Treatment Plant" dated July 20, 2010, from Steve Burns of B.M. Ross and Associates Ltd. to Jim O'Rourke of Municipality of Kincardine Public Works Manager;

4. Specification for Ultraviolet Disinfection System dated October 2010, a Design Brief for the proposed ultraviolet disinfection system dated August 4, 2009 and revised November 26, 2010 and designed drawings dated November 26, 2010, prepared by B.M. Ross and Associates Ltd.;

5. Calgon Carbon Corporation Proposal to B.M. Ross and Associates Ltd. for a $C^3500^{TM}D$ Ultraviolet Disinfection System for Municipality of Kincardine Wastewater Treatment Plant dated October 28, 2010.

6. Electronic mail transmission dated February 18, 2011, from Richard Anderson of B.M. Ross and Associates Ltd. to Andrew Miernicki of the Ministry of the Environment;

EXISTING WORKS

consolidating Certificates of Approval Nos. 3-0178-76-006 issued on April 27, 1976, 3-0838--84-006 issued on October 26, 1984, 3-1963-90-927 issued on April 15, 1992, presently revoked and replaced Certificate of Approval No. 3-1539-94-956 issued on January 18, 1995 along with three subsequent Notices of amendment dated March 20, 1996 (Notice No. 1), July 25, 2002 (Notice No. 2) and October 21, 2004 (Notice No. 3) related to Kincardine Sewage Treatment Plant located in the Town of Kincardine, rated at average daily flow of 5,910 m^3/day consisting of:

Aerated Lagoon

an aerated lagoon cell with a design volume of approximately 24,000 m^3 and 0.85 Ha surface area, located south of Bruce Avenue and west of Valentine Avenue, in the Town of Kincardine and equipped with four (4) 11 kW (15 hp) aerators, an inlet structure with a Parshall flume for measuring incoming sewage flow, a control building and a distribution chamber for directing the discharge from the aerated lagoon cell to two (2) conventional stabilization ponds;

Conventional Stabilization Ponds

two (2) conventional stabilization ponds located adjacent to the aerated lagoon cell with a design volume of approximately 118,000 m^3 each and a total combined volume of 236,000 m^3;

Disinfection

an existing disinfection system approved by Certificate of Approval No. 3-1539-94-956 consisting of " a chlorination building and a 120 m^3 chlorine contact tank located on the south side of Bruce Avenue and west of east of Mahood - Johnston Drive to provide 15 minutes contact time at maximum flow of 136 L/s and (as per Notice No. 1 of March 20, 1996) a Hypochlorite disinfection system consisting of a 400 litre day tank and two (2) chemical metering pumps, each with a rated capacity of 2.6 L/h including associated valves and tubing." to be modified to provide the required channels and to house the electrical and control equipment for the proposed ultraviolet (UV) system as described in *Proposed Works* section above.

the existing (Sodium Hypochlorite) disinfection system to be retained to provide standby disinfection if the UV disinfection system is inoperable.

Phosphorus Removal

phosphorus removal system consisting of a 27 m^3 chemical storage tank equipped with two (2) chemical metering pumps, associated valves, piping and control system, enclosed in a 6.2 m x 6.2 m storage building;

Outfall Sewer

outfall sewer from the conventional stabilization pond outlet structures to ultraviolet irradiation (UV) disinfection channel located on Bruce Avenue to Lake Huron as follows:

On	From	To
Waste Stabilization Pond and former CNR Right-of-Way	pond outlets	Bruce Avenue
Bruce Avenue	former CNR Right-of-way	UV disinfection channels
Bruce Avenue	UV disinfection channels	Penetangore Row
Bruce Avenue and Lake Huron	Penetangore Row	Approx. 305 m into Lake Huron

all in accordance with the following:

1. All original applications for approval, including design calculations, engineering drawings, and reports prepared in support of the previous Certificate(s) of Approval and Notices of amendment.

For the purpose of this Certificate of Approval and the terms and conditions specified below, the following definitions apply:

"Act" means the Ontario Water Resources Act, R.S.O. 1990, Chapter 0.40, as amended;

"*Annual Average Concentration*" means the arithmetic mean of the *Monthly Average Concentrations* of a contaminant in the effluent calculated for any particular calendar year;

"*Annual Average Loading*" means the value obtained by multiplying the *Annual Average Concentration*

of a contaminant by the *Average Daily Flow* over the same calendar year;

"*Average Daily Flow*" means the cumulative total sewage flow to the sewage works during a calendar year divided by the number of days during which sewage was flowing to the sewage works that year;

"*Average Flow*" means the total flow to the sewage works during the period of operation opon which the report is based, divided by the number of days in the period;

"*BOD5*" (also known as $TBOD_5$) means five day biochemical oxygen demand measured in an unfiltered sample and includes carbonaceous and nitrogenous oxygen demand;

"*By-pass*" means any discharge from the *Works* that does not undergo any treatment or only receives partial treatment before it is discharged to the environment;

"*Certificate*" means this entire certificate of approval document, issued in accordance with Section 53 of the *Act,* and includes any schedules;

"*Daily Concentration*" means the concentration of a contaminant in the effluent discharged over any single day, as measured by a composite or grab sample, whichever is required;

"*Director*" means any *Ministry* employee appointed by the Minister pursuant to section 5 of the *Act;*

"*District Manager*" means the District Manager of the Owen Sound District Office of the Ministry;

"*E. Coli*" refers to the thermally tolerant forms of Escherichia that can survive at 44.5 degrees Celsius;

"*Existing Works*" means those portions of the sewage works previously constructed and approved under a certificate of approval;

"*Geometric Mean Density*" is the nth root of the product of multiplication of the results of n number of samples over the period specified;

"*Ministry*" means the Ontario Ministry of the Environment;

"*Monthly Average Concentration*" means the arithmetic mean of all *Daily Concentrations* of a contaminant in the effluent sampled or measured, or both, during a calendar month;

"*Monthly Average Loading*" means the value obtained by multiplying the *Monthly Average Concentration* of a contaminant by the *Monthly Average Daily Flow* over the same calendar month:

"*Owner*" means the Corporation of the Municipality of Kincardine and includes its successors and assignees;

"*Operating Authority* " means the *Owner* or the designated agent of the *Owner* ;

"*Peak Flow Rate*" means the maximum rate of sewage flow for which the plant or process unit was designed;

"*Proposed Works*" means the sewage works described in the *Owner* 's application, this *Certificate* and in the supporting documentation referred to herein, to the extent approved by this *Certificate;*

"*Rated Capacity*" means the *Average Daily Flow* for which the *Works* are approved to handle;

"*Regional Director*" means the Regional Director of the Southwestern Region of the Ministry;

"*Source Protection Plan*" means a drinking water source protection plan prepared under the Clean Water Act, 2006;

"*Substantial Completion*" has the same meaning as "*substantial performance*" in the Construction Lien Act; and

"*Works*" means the sewage works described in the *Owner* 's application, this *Certificate* and in the supporting documentation referred to herein, to the extent approved by this *Certificate* and includes both *Previous Works* and *Proposed Works.*

You are hereby notified that this approval is issued to you subject to the terms and conditions outlined below:

TERMS AND CONDITIONS

1. GENERAL PROVISIONS

(1) The *Owner* shall ensure that any person authorized to carry out work on or operate any aspect of the *Works* is notified of this *Certificate* and the conditions herein and shall take all reasonable measures to ensure any such person complies with the same.

(2) Except as otherwise provided by these Conditions, the *Owner* shall design, build, install, operate and maintain the *Works* in accordance with the description given in this *Certificate,* the application for approval of the works and the submitted supporting documents and plans and specifications as listed in this *Certificate.*

(3) Where there is a conflict between a provision of any submitted document referred to in this *Certificate* and the Conditions of this *Certificate,* the Conditions in this *Certificate* shall take precedence, and where there is a conflict between the listed submitted documents, the document bearing the most recent date shall prevail.

(4) Where there is a conflict between the listed submitted documents, and the application, the application shall take precedence unless it is clear that the purpose of the document was to amend the application.

(5) The requirements of this *Certificate* are severable. If any requirement of this *Certificate,* or the application of any requirement of this *Certificate* to any circumstance, is held invalid or unenforceable,

the application of such requirement to other circumstances and the remainder of this certificate shall not be affected thereby.

2. EXPIRY OF APPROVAL

The approval issued by this *Certificate* will cease to apply to those parts of the *Proposed Works* which have not been constructed within five (5) years of the date of this *Certificate.*

3. CHANGE OF OWNER

(1) The *Owner* shall notify the *District Manager* and the *Director,* in writing, of any of the following changes within thirty (30) days of the change occurring:

(a) change of *Owner;*

(b) change of address of the *Owner;*

(c) change of partners where the *Owner* is or at any time becomes a partnership, and a copy of the most recent declaration filed under the Business Names Act, R.S.O. 1990, c.B17 shall be included in the notification to the *District Manager;*

(d) change of name of the corporation where the *Owner* is or at any time becomes a corporation, and a copy of the most current information filed under the Corporations Informations Act, R.S.O. 1990, c. C39 shall be included in the notification to the *District Manager;*

(2) In the event of any change in ownership of the *Works,* other than a change to a successor municipality, the *Owner* shall notify in writing the succeeding owner of the existence of this *Certificate,* and a copy of such notice shall be forwarded to the *District Manager* and the *Director.*

4. UPON THE SUBSTANTIAL COMPLETION OF THE WORKS

(1) Upon the *Substantial Completion* of the *Proposed Works,* the *Owner* shall prepare a statement, certified by a Professional Engineer, that the works are constructed in accordance with this *Certificate,* and upon request, shall make the written statement available for inspection by Ministry personnel.

(2) Within one year of the *Substantial Completion* of the *Proposed Works* , a set of as-built drawings showing the works "as constructed" shall be prepared. These drawings shall be kept up to date through revisions undertaken from time to time and a copy shall be retained at the *Works* for the operational life of the *Works.*

5. BY-PASSES

(1) Any *By-pass* of sewage from any portion of the *Works* is prohibited, except where:

(a) it is necessary to avoid loss of life, personal injury, danger to public health or severe property damage;

(b) the *District Manager* agrees that it is necessary for the purpose of carrying out essential maintenance and the *District Manager* has given prior written acknowledgment of the *by-pass;* or

(c) the *Regional Director* has given prior written acknowledgment of the *By-pass.*

(2) The *Owner* shall collect at least one (1) grab sample of the *By-pass* and have it analyzed for the parameters outlined in Condition 7 using the protocols in Condition 10(5).

(3) The *Owner* shall maintain a logbook of all *By-pass* events which shall include, at a minimum, the time, location, duration, quantity of *By-pass,* the authority for *By-pass* pursuant to subsection (1), and the reasons for the occurrence.

(4) The *Owner* shall, in the event of a *By-pass* event pursuant to subsection (1), disinfect the by-passed effluent prior to it reaching the receiver such that the receiver is not negatively impacted.

6. EFFLUENT OBJECTIVES

(1) The *Owner* shall use best efforts to design, construct and operate the *Works* with the objective that the concentrations of the materials named below as effluent parameters are not exceeded in the effluent from the *Works.*

Table 1 - Effluent Objectives

Effluent Parameter	**Concentration Objective** (milligrams per litre unless otherwise indicated)
$CBOD_5$	25
Total Suspended Solids	30
Total Phosphorus	1.0
E-Coli	150 organisms/100 mL (Monthly *Geometric Mean Density*)

(2) The *Owner* shall use best efforts to:

(a) maintain the pH of the effluent from the *Works* within the range of 6.5 to 9.0, inclusive, at all times;

(b) operate the works within the *Rated Capacity* of the *Works;*

(c) ensure that the effluent from the *Works* is essentially free of floating and settleable solids and does not contain oil or any other substance in amounts sufficient to create a visible film or sheen or foam or discolouration on the receiving waters.

(3) The *Owner* shall include in all reports submitted in accordance with Conditions 10, a summary of the efforts made and results achieved under this Condition.

7. EFFLUENT LIMITS

(1) The *Owner* shall design and construct the *Proposed Works* and operate and maintain the *Works* such that the concentrations and waste loadings of the materials named below as effluent parameters are not exceeded in the effluent from the *Works*.

Table 2 - Effluent Limits		
Effluent Parameter	**Monthly Average Concentration** (milligrams per litre unless otherwise indicated)	**Monthly Average Waste Loading** (kilograms per day unless otherwise indicated)
Column 1	Column 2	Column 3
CBOD5	30.0	177.0
Total Suspended Solids	40.0	236.0
Total Phosphorus	1.0	5.9
E. *Coli*	200 E. Coli/100 mL (Monthly *Geometric Mean Density)*	-
pH of the effluent maintained between 6.0 to 9.5, inclusive, at all times		

(2) For the purposes of determining compliance with and enforcing subsection (1):

(a) The *Monthly Average Concentration* of $CBOD_5$, suspended solids, and total phosphorus in Column 1 of Table 2 in subsection (1) shall not exceed the corresponding maximum concentration set out in Column 2 of Table 2 in subsection (1).

(b) The *Monthly Average Loading* of $CBOD_5$, suspended solids, and total phosphorus in Column 1 of Table 2 in subsection (1) shall not exceed the corresponding average loading set out in Column 3 of Table 2 in subsection (1).

(c) The *Monthly Geometric Mean Density* of *E. Coli* named in Column 1 of subsection (1) shall not exceed the corresponding maximum density set out in Column 2 of subsection (1).

(d) The effluent shall be continuously disinfected so that the monthly *Geometric Mean Density* of *E. Coli* does not exceed 200 organisms per 100 millilitres of effluent discharged from the *works* .

(3) The effluent limits set out in subsections (1 and 2) shall apply upon the issuance of this *Certificate* .

(4) Only those monitoring results collected during the corresponding time period shall be used in calculating the *Monthly Average Concentrations* and *Monthly Average Loading* for this *Certificate.*

8. OPERATION AND MAINTENANCE

(1) The *Owner* shall exercise due diligence in ensuring that, at all times, the *Works* and the related equipment and appurtenances used to achieve compliance with this *Certificate* are properly operated and maintained. Proper operation and maintenance shall include effective performance, adequate funding, adequate operator staffing and training, including training in all procedures and other requirements of this *Certificate* and the *Act* and regulations, adequate laboratory facilities, process controls and alarms and the use of process chemicals and other substances used in the *Works*.

(2) The *Owner* shall prepare an operations manual within six (6) months of *Substantial Completion* of the *Proposed Works* , that includes, but not necessarily limited to, the following information:

(a) operating procedures for routine operation of the *Works;*

(b) inspection programs, including frequency of inspection, for the *Works* and the methods or tests employed to detect when maintenance is necessary;

(c) repair and maintenance programs, including the frequency of repair and maintenance for the *Works;*

(d) procedures for the inspection and calibration of monitoring equipment;

(e) a spill prevention control and countermeasures plan, consisting of contingency plans and procedures for dealing with equipment breakdowns, potential spills and any other abnormal situations, including notification of the *District Manager;* and

(f) procedures for receiving, responding and recording public complaints, including recording any follow-up actions taken.

(3) The *Owner* shall maintain the operations manual current and retain a copy at the location of the *Works* for the operational life of the *Works*. Upon request, the *Owner* shall make the manual available to *Ministry* staff.

(4) The *Owner* shall provide for the overall operation of the *Works* with an operator who holds a licence that is applicable to that type of facility and that is of the same class as or higher than the class of the facility in accordance with Ontario Regulation 129/04.

9. SPECIAL CONDITION - LOADING RATES FOR CO-TREATMENT

(1) The *Owner* shall operate and maintain the *Works* such that the design monthly average landfill leachate flow of 63 cubic metres per day (approximately 30 cubic metres per day from Valentine Avenue Landfill and approximately 33 cubic metres per day from the proposed Kincardine Waste Management Centre) and groundwater (contaminated) flow of approximately 200 cubic metres per day from Valentine Avenue Landfill for co-treatment at the *Works* is not exceeded.

(2) The *Owner* shall operate and maintain the *Works* such that the sum of all daily influent flows during a calendar year, including raw sewage, and groundwater (contaminated) and landfill leachate flow for co-treatment, does not exceed the Rated Capacity of the *Works* .

10. MONITORING AND RECORDING

The *Owner* shall, upon commencement of operation of the *Works,* carry out the following monitoring program:

(1) All samples and measurements taken for the purposes of this *Certificate* are to be taken at a time and in a location characteristic of the quality and quantity of the effluent stream over the time period being monitored.

(2) For the purposes of this condition, the following definitions apply:

(c) Bi-weekly means once every two weeks;
(g) Semi-annually means once every six months;

(3) Samples shall be collected at the following sampling points, at the frequency specified, by means of the specified sample type and analyzed for each parameter listed and all results recorded:

Table 3 - Raw Sewage Monitoring

Parameters	Sample Type	Frequency
BOD5	Grab	Bi-weekly
Total Suspended Solids	Grab	Bi-weekly
Total Phosphorus	Grab	Bi-weekly
Total Kjeldahl Nitrogen	Grab	Bi-weekly
Alkalinity	Grab	Bi-weekly

Table 4 - Final Effluent Monitoring (Samples to be collected from the lagoon outfall downstream of the UV disinfection unit)		
Parameters	**Sample Type**	**Frequency**
CBOD5	Grab	Bi-weekly
Total Suspended Solids	Grab	Bi-weekly
Total Phosphorus	Grab	Bi-weekly
Total Kjeldahl Nitrogen	Grab	Bi-weekly
Total Ammonia (Ammonia + Ammonium) Nitrogen	Grab	Bi-weekly
Nitrite	Grab	Bi-weekly
Nitrate	Grab	Bi-weekly
Alkalinity	Grab	Bi-weekly
E. Coli	Grab	Bi-weekly
pH	Grab	Bi-weekly
Temperature	Grab	Bi-weekly
Total Residual Chlorine (when in use)	Grab	Bi-weekly
Chloride	Grab	Semi-annually
COD	Grab	Semi-annually
DOC	Grab	Semi-annually
Hardness	Grab	Semi-annually
Phenols	Grab	Semi-annually
Metals (total): ICP Metal Scan	Grab	Semi-annually
Volatile Organic Compounds (VOC) US EPA 624 Parameters	Grab	Semi-annually
pH	Grab	Semi-annually
Conductivity	Grab	Semi-annually
Temperature	Grab	Semi-annually

(4) Samples of landfill leachate shall be collected at the following sampling points, at the frequency specified, by means of the specified sample type and analyzed for each parameter listed and all results recorded:

Table 5 - Landfill Leachate Monitoring*

(Samples of the leachate and groundwater contaminated with leachate to be collected from the Valentine Avenue Landfill and Kincardine Waste Management Centre leachate pumping station, the discharge end of the leachate forcemain, or at the point of addition to the sewer system or to the Works.)

Parameters	Sample Type	Frequency
Alkalinity	Grab	Semi-annually
BOD5	Grab	Semi-annually
Chloride	Grab	Semi-annually
COD	Grab	Semi-annually
DOC	Grab	Semi-annually
Hardness	Grab	Semi-annually
Nitrate	Grab	Semi-annually
Nitrite	Grab	Semi-annually
Total Kjeldahl Nitrogen	Grab	Semi-annually
Ammonia	Grab	Semi-annually
Metals (Total): ICP 24 Metal Scan	Grab	Semi-annually
Volatile Organic Compounds (VOC): US EPA 624 parameters	Grab	Semi-annually
pH	Grab	Semi-annually
Conductivity	Grab	Semi-annually
Temperature	Grab	Semi-annually

* Representative samples of landfill leachate shall be collected for analysis on a semi-annually basis, subject to availability of the leachate requiring co-treatment at the STP.

(5) The methods and protocols for sampling, analysis and recording shall conform, in order of precedence, to the methods and protocols specified in the following:

(a) the Ministry's Procedure F-10-1, "Procedures for Sampling and Analysis Requirements for Municipal and Private Sewage Treatment Works (Liquid Waste Streams Only), as amended from time to time by more recently published editions;

(b) the Ministry's publication "Protocol for the Sampling and Analysis of Industrial/Municipal Wastewater" (January 1999), ISBN 0-7778-1880-9, as amended from time to time by more recently published editions;

(c) the publication "Standard Methods for the Examination of Water and Wastewater" (21st edition), as amended from time to time by more recently published editions;

(6) The temperature and pH of the effluent from the *Works* shall be measured in the field on a fresh grab sample collected on the day of sampling for Total Ammonia Nitrogen. The concentration of un-ionized ammonia shall be calculated using the total ammonia concentration, pH and temperature using the methodology stipulated in "Ontario's Provincial Water Quality Objectives" dated July 1994, as amended, for ammonia (un-ionized).

(7) The *Owner* shall install, maintain and operate a sufficient number of flow measuring devices, calibrated at regular intervals not exceeding one year to ensure their accuracy to within plus or minus 5% of the full scale reading of the measuring devices, in order to measure:

(i) the quantity of sewage being conveyed to the sewage treatment plant;

(ii) the quantity of groundwater (contaminated) and leachate being conveyed to the sewage treatment plant;

(iii) the quantity of untreated sewage being bypassed without treatment and/or being bypassed to the disinfection facility;

(8) The *Owner* shall measure and record the daily quantities of leachate and groundwater (contaminated) waste received for co-treatment at the *works* and the flowrate at which the blended hauled sewage is fed into the inlet works for cotreatment.

(9) The *Owner* can use applicable existing samples collected from the Valentine Avenue Landfill site as specified in subsection (4), (5) and (6) of groundwater (contaminated) as required by the Certificate of Approval No. 3-0408-93-006 and of leachate as required by the Certificate of Approval No. 3-0354-94-006 and analyze for parameters as specified in subsections (4).

(10) The measurement frequencies specified in subsections (3)and (4) in respect to any parameter are minimum requirements which may, after 24 months of monitoring in accordance with this Condition, be modified by the *District Manager* in writing from time to time.

(11) The *Owner* shall retain for a minimum of three (3) years from the date of their creation, all records and information related to or resulting from the monitoring activities required by this *Certificate.*

11. REPORTING

(1) One week prior to the start up of the operation of the *Proposed Works* , the *Owner* shall notify the *District Manager* (in writing) of the pending start up date.

(2) Ten (10) days prior to the date of a planned *By-pass* being conducted pursuant to Condition 5 and as soon as possible for an unplanned *By-pass,* the *Owner* shall notify the *District Manager* (in writing) of the pending start date, in addition to an assessment of the potential adverse effects on the environment and the duration of the *By-pass.*

(3) The *Owner* shall report to the *District Manager* or designate, any exceedence of any parameter specified in Condition 7 orally, as soon as reasonably possible, and in writing within seven (7) days of the exceedence.

(4) In addition to the obligations under Part X of the Environmental Protection Act, the *Owner* shall, within ten (10) working days of the occurrence of any reportable spill as defined in Ontario Regulation 675/98, bypass or loss of any product, by-product, intermediate product, oil, solvent, waste material or any other polluting substance into the environment, submit a full written report of the occurrence to the *District Manager* describing the cause and discovery of the spill or loss, clean-up and recovery measures taken, preventative measures to be taken and schedule of implementation.

(5) The *Owner* shall, upon request, make all manuals, plans, records, data, procedures and supporting documentation available to *Ministry* staff.

(6) The *Owner* shall prepare, and submit to the *District Manager* , a performance report, on an annual basis, within ninety (90) days following the end of the period being reported upon. The first such report shall cover the first annual period following the commencement of operation of the *Works* and subsequent reports shall be submitted to cover successive annual periods following thereafter. The reports shall contain, but shall not be limited to, the following information:

(a) a summary and interpretation of all monitoring data and a comparison to the effluent limits outlined in Condition 7, including an overview of the success and adequacy of the *Works* , including the effectiveness of the cotreatment of leachate and groundwater (contaminated);

(b) a description of any operating problems encountered and corrective actions taken;

(c) a summary of all maintenance carried out on any major structure, equipment, apparatus, mechanism or thing forming part of the *Works;*

(d) a summary of any effluent quality assurance or control measures undertaken in the reporting period;

(e) a summary of the calibration and maintenance carried out on all effluent monitoring equipment;

(f) a description of efforts made and results achieved in meeting the Effluent Objectives of Condition 6;

(g) a tabulation of the quantity of groundwater (contaminated) and landfill leachate added to the *Works* for co-treatment during the reporting period;

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

(i) a summary of any complaints received during the reporting period and any steps taken to address the complaints;

(j) a summary of all *By-pass,* spill or abnormal discharge events; and

(k) any other information the *District Manager* requires from time to time.

(7) A final report for leachate cotreatment shall be submitted to the *District Manager* within three (3) months of end of the two year period commencing from the date that Kincardine Waste Management Centre is reopen to new waste and conveyance of leachate to the *works* is initiated. The report shall provide an assessment on the treatability of the leachate at the *works* and provide recommendations on any upgrade, if necessary to ensure the leachate is being effectively treated at the *rated capacity* of the plant.

12. REVOCATION OF EXISTING APPROVALS

(1) The descriptions of the approved *Works* and conditions of approval in this *Certificate* apply in place of all existing descriptions and conditions in the Certificates of Approval under the Ontario Water Resources Act for sewage works which are part of the *Works* approved by this *Certificate* .

(2) Notwithstanding subsection (1) above, the original applications for approval, including design calculations, engineering drawings and reports prepared in support of the existing Certificate(s) of Approval whose descriptions of the approved *Works* and conditions are now replaced pursuant to subsection (1) above, shall form part of this *Certificate* .

(3) Where an existing Certificate of Approval referred to in subsection (1) above applies to *Works* in addition to the *Works* approved by this *Certificate* , it shall continue to apply to those additional *Works* .

13. SOURCE WATER PROTECTION

The *Owner* shall, within sixty (60) calendar days of the Minister of the Environment posting approval of a *Source Protection Plan* on the environmental registry established under the Environmental Bill of Rights, 1993 for the area in which this *Certificate* is applicable, apply to the *Director* for an amendment to this *Certificate* that includes the necessary measures to conform with all applicable policies in the approved *Source Protection Plan.*

The reasons for the imposition of these terms and conditions are as follows:

1. Condition 1 is imposed to ensure that the *Works* are built and operated in the manner in which they were described for review and upon which approval was granted. This condition is also included to emphasize the precedence of Conditions in the *Certificate* and the practice that the Approval is based on the most current document, if several conflicting documents are submitted for review. The condition also advises the Owners their responsibility to notify any person they authorized to carry out work pursuant to this *Certificate* the existence of this *Certificate.*

2. Condition 2 is included to ensure that, when the *Works* are constructed, the *Works* will meet the standards applicable at the time of Approval of the *Works* are still applicable at the time of construction, to ensure the ongoing protection of the environment.

3. Condition 3 is included to ensure that the *Ministry* records are kept accurate and current with respect to the approved works and to ensure that subsequent owners of the *Works* are made aware of the *Certificate* and continue to operate the *Works* in compliance with it.

4. Condition 4 is included to ensure that the *Works* are constructed in accordance with the approval and that record drawings of the *Works* "as constructed" are maintained for future references.

5. Condition 5 is included to indicate that by-passes of untreated sewage to the receiving watercourse is prohibited, save in certain limited circumstances where the failure to *By-pass* could result in greater injury to the public interest than the *By-pass* itself where a *By-pass* will not violate the approved effluent requirements, or where the *By-pass* can be limited or otherwise mitigated by handling it in accordance with an approved contingency plan. The notification and documentation requirements allow the *Ministry* to take action in an informed manner and will ensure the *Owner* is aware of the extent and frequency of *By-pass* events.

6. Condition 6 is imposed to establish non-enforceable effluent quality objectives which the *Owner* is obligated to use best efforts to strive towards on an ongoing basis. These objectives are to be used as a mechanism to trigger corrective action proactively and voluntarily before environmental impairment occurs and before the compliance limits of Condition 7 are exceeded.

7. Condition 7 is imposed to ensure that the effluent discharged from the *Works* to the Lake Huron meets the *Ministry* 's effluent quality requirements thus minimizing environmental impact on the receiver and to protect water quality, fish and other aquatic life in the receiving water body.

8. Condition 8 is included to require that the *Works* be properly operated, maintained, funded, staffed and equipped such that the environment is protected and deterioration, loss, injury or damage to any person or property is prevented. As well, the inclusion of a comprehensive operations manual governing all significant areas of operation, maintenance and repair is prepared, implemented and kept up-to-date by the owner and made available to the *Ministry*. Such a manual is an integral part of the operation of the *Works*. Its compilation and use should assist the *Owner* in staff training, in proper plant operation and in identifying and planning for contingencies during possible abnormal conditions. The manual will also act as a benchmark for *Ministry* staff when reviewing the *Owner'* s operation of the work.

9. Condition 9 is included to ensure that the *Works* are operated within the design capacity, including groundwater (contaminated) and landfill leachate co-treatment capability and capacity.

10. Condition 10 is included to enable the *Owner* to evaluate and demonstrate the performance of the *Works* , on a continual basis, so that the *Works* are properly operated and maintained at a level which is consistent with the design objectives and effluent limits specified in the *Certificate* and that the *Works* does not cause any impairment to the receiving watercourse.

11. Condition 11 is included to provide a performance record for future references, to ensure that the *Ministry* is made aware of problems as they arise, and to provide a compliance record for all the terms and conditions outlined in this *Certificate,* so that the *Ministry* can work with the *Owner* in resolving any problems in a timely manner.

12. Condition 12 is included to stipulate that this *Certificate* replaces all previous approvals for the *Works* being the subject of this *Certificate* , and that the existing approvals remain in force for the purpose of any *Works* which are not subject to this *Certificate* .

13. Condition 13 is included to ensure that the works covered by this *Certificate* will conform to the significant threat policies and designated Great Lakes policies in the *Source Protection Plan.*

This Certificate of Approval revokes and replaces Certificate(s) of Approval No. 3-1539-94-956, Notice No. 1, Notice No. 2 and Notice No. 3 issued on January 18, 1995, March 20, 1996, July 25, 2002 and October 21, 2004, respectively.

In accordance with Section 100 of the Ontario Water Resources Act, R.S.O. 1990, Chapter 0.40, as amended, you may by written notice served upon me and the Environmental Review Tribunal within 15 days after receipt of this Notice, require a hearing by the Tribunal. Section 101 of the Ontario Water Resources Act, R.S.O. 1990, Chapter 0.40, provides that the Notice requiring the hearing shall state:

1. The portions of the approval or each term or condition in the approval in respect of which the hearing is required, and;
2. The grounds on which you intend to rely at the hearing in relation to each portion appealed.

The Notice should also include:

3. The name of the appellant;
4. The address of the appellant;
5. The Certificate of Approval number;
6. The date of the Certificate of Approval;
7. The name of the Director;
8. The municipality within which the works are located;

And the Notice should be signed and dated by the appellant.

This Notice must be served upon:

The Secretary*
Environmental Review Tribunal
655 Bay Street, 15th Floor
Toronto, Ontario
M5G 1E5

AND

The Director
Section 53, *Ontario Water Resources Act*
Ministry of the Environment
2 St. Clair Avenue West, Floor 12A
Toronto, Ontario
M4V 1L5

*** Further information on the Environmental Review Tribunal's requirements for an appeal can be obtained directly from the Tribunal at: Tel: (416) 314-4600, Fax: (416) 314-4506 or www.ert.gov.on.ca**

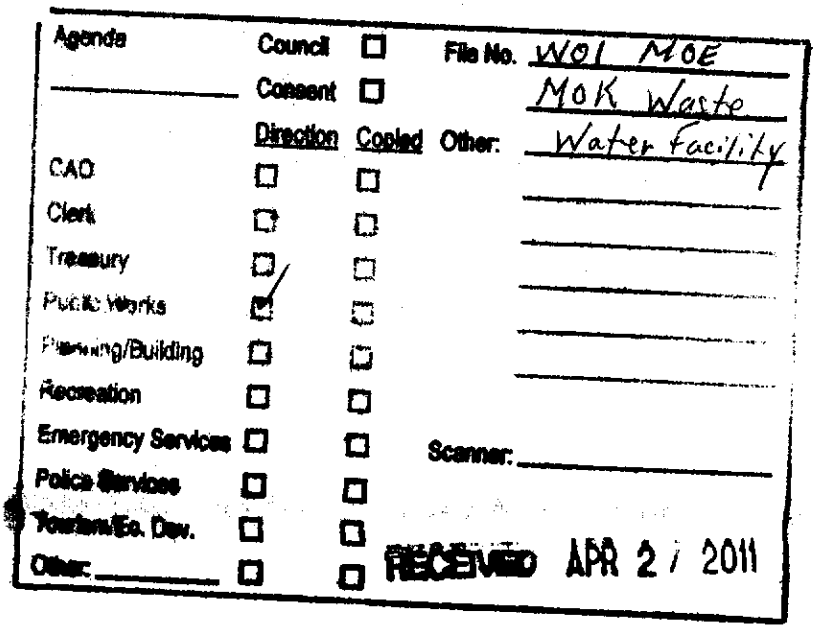
The above noted sewage works are approved under Section 53 of the Ontario Water Resources Act.

DATED AT TORONTO this 8th day of April, 2011

Ian Parrott, P.Eng.
Director
Section 53, *Ontario Water Resources Act*

AM/

c: District Manager, MOE Owen Sound
Richard R. Anderson, P.Eng., B. M. Ross and Associates Limited



Ontario

Ministry of the Environment and Climate Change
Ministère de l'Environnement et de l'Action en matière de changement climatique

AMENDED ENVIRONMENTAL COMPLIANCE APPROVAL

NUMBER 3066-APUHY9
Issue Date: November 14, 2017

The Corporation of the Municipality of Kincardine
1475 Concession 5
R.R. #5
Kincardine, Ontario
N2Z 2X6

Site Location: Connaught Park Sewage Pumping Station Trunk Sewer Project
133 Broadway Street
Municipality of Kincardine, County of Bruce

You have applied under section 20.2 of Part II.1 of the Environmental Protection Act, R.S.O. 1990, c. E. 19 (Environmental Protection Act) for approval of:

upgrades of the existing sanitary sewage pumping station including the replacement/construction of sanitary sewers and storm sewers and forcemain, in the Municipality of Kincardine, as follows:

Proposed Works

- sanitary sewers on Golf Course Trail easement, Cedar Lane, Shevchenko Blvd., Kingsway Street, Walkway and on Racetrack within Connaught Park discharging to the sewage pumping station;

- a wet well sewage pumping station located in Connaught Park, adjacent to the southeast portion of the former horse racing track, consisting of a two (2) cell wet well having a dimension of 8 m by 4 m, equipped with an automated rake bar screen, a 450 mm diameter inlet pipe and a 375 mm diameter emergency overflow pipe to a storm sewer located on Broadway Street, three (3) variable speed submersible pumps, two (2) duty, one (1) standby, having a firm design capacity of 88.5 L/s at 25.2 m Total Dynamic Head (TDH), one (1) space for future pump, complete with electrical and electronic control systems, a radar level transmitter with back-up float switches for each cell, discharge piping, ventilation system, air release valves and flow meter, a 150 kW standby diesel generator set, and all other appurtenances necessary to have a complete and operable pumping station;

- a 250 mm diameter forcemain from the sewage pumping and along Broadway Street to the existing sanitary sewer on Huron Terrace;

- decommissioning of the existing sewage pumping station and structures located at Broadway Street and Saugeen Street and removing the associated standby power facilities;

- storm sewers on Shevchenko Boulevard and Kingsway Street discharging to the existing storm sewer, storm sewers on Broadway Street discharging via an outlet structure with a headwall and energy dissipation blocks to Lake Huron;

including erosion/sedimentation control measures during construction and all other controls and appurtenances essential for the proper operation of the aforementioned Works;

all in accordance with the submitted supporting documents listed in Schedule "A", forming part of this Approval.

Previous Works

construction of sewage works for the Town of Kincardine as follows:

- sanitary sewers on Shevchenko Boulevard, Fairgrounds (Easement), Lovers Lane and Easement, Saugeen Street, Lambton Street, Durham Street, Broadway Street, Lane in Lot 1, MacDonald Street, Princess Street, Nelson Street, James Street, Mechanics Avenue, Sutton Street, King Street, including building sewers from the main sewer to the street line, together with the installation of a new 650 igpm pump in the existing main sewage pumping station located on Huron Terrace south of Harbour Street., a new sewage pumping station to be located at Broadway Street and Saugeen Street equipped with two 500 igpm pumps and standby power facilities, a forcemain from the new pumping station to the existing sewer south of Harbour Street. on Huron Terrace, all in accordance with the preliminary material submitted by B.M. Ross & Assoc. Ltd., at a total estimated cost, including engineering and contingencies and assessment, of THREE HUNDRED AND SEVEN THOUSAND SOLLARS ($307,000.00).

For the purpose of this environmental compliance approval, the following definitions apply:

1. "Approval" means this entire document and any schedules attached to it, and the application;

2. "BOD5"(also known as $TBOD_5$) means five day biochemical oxygen demand measured in an unfiltered sample and includes carbonaceous and nitrogenous oxygen demand;

3. "Director" means a person appointed by the *Minister* pursuant to section 5 of the EPA for the purposes of Part II.1 of the EPA;

4. "E. coli" refers to the thermally tolerant forms of Escherichia that can survive at 44.5 degrees Celsius;

5. "EPA" means the *Environmental Protection Act* , R.S.O. 1990, c.E.19, as amended;

6. "Emergency Situation" means a structural, mechanical or electrical failure that causes a temporary reduction in the capacity of the Sewage Pumping Station or an unforeseen flow condition that may result in:

    1. a danger to the health or safety of any person; or

    2. injury or damage to any property, or serious risk of injury or damage to any property;

7. "Equivalent Equipment" means a substituted equipment or like-for-like equipment that meets the required quality and performance standards of a named equipment;

8. "Event" means an action or occurrence at the Sewage Pumping Station that causes a Sewage Pumping Station Overflow. An Event ends when there is no recurrence of a Sewage Pumping Station Overflow in the 12-hour period following the last Sewage Pumping Station Overflow. Two Events are separated by at least 12 hours during which there has been no recurrence of a Sewage Pumping Station Overflow;

9. "Limited Operational Flexibility" (LOF) means any modifications that the Owner is permitted to make to the Works under this Approval;

10. "Ministry" means the ministry of the government of Ontario responsible for the EPA and OWRA and includes all officials, employees or other persons acting on its behalf;

11. "Notice of Modifications" means the form entitled "Notice of Modification to Sewage Works";

12. "Owner" means The Corporation of the Municipality of Kincardine, and includes its successors and assignees;

13. "OWRA" means the *Ontario Water Resources Act* , R.S.O. 1990, c. O.40, as amended;

14. "Professional Engineer" means a person entitled to practice as a Professional Engineer in the Province of Ontario under a licence issued under the *Professional Engineers Act* ;

15. "Sewage Pumping Station Overflow" means any discharge from a Sewage Pumping Station to the environment that does not undergo any treatment or only receives partial treatment before it is discharged to the environment;

16. "Substantial Completion" has the same meaning as "substantial performance" in the *Construction Lien Act;*

17. "Previous Works" means the those portions of the sewage Work previously approved under an Approval;

18. "Water Supervisor" means the Water Supervisor of the appropriate local office of the Safe Drinking Water Branch of the Ministry, where the Works are geographically located;

19. "Works" means the sewage works described in the Owner's application, this Approval, and the modifications made under Limited Operational Flexibility.

You are hereby notified that this environmental compliance approval is issued to you subject to the terms and conditions outlined below:

TERMS AND CONDITIONS

1. GENERAL CONDITIONS

1. The Owner shall ensure that any person authorized to carry out work on or operate any aspect of the Works is notified of this Approval and the conditions herein and shall take all reasonable measures to ensure any such person complies with the same.

2. Except as otherwise provided by these Conditions, the Owner shall design, build, install, operate and maintain the Works in accordance with the description given in this Approval, and the application for approval of the Works.

3. Where there is a conflict between a provision of any document in the schedule referred to in this Approval and the conditions of this Approval, the conditions in this Approval shall take precedence, and where there is a conflict between the documents in the schedule, the document bearing the most recent date shall prevail.

4. Where there is a conflict between the documents listed in Schedule 'A' and the application, the application shall take precedence unless it is clear that the purpose of the document was to amend the application.

5. The conditions of this Approval are severable. If any condition of this Approval, or the application of any requirement of this Approval to any circumstance, is held invalid or unenforceable, the application of such condition to other circumstances and the remainder of this Approval shall not be affected thereby.

2. EXPIRY OF APPROVAL

1. This Approval will cease to apply to those parts of the Works which have not been constructed within five (5) years of the date of this Approval.

2. In the event that completion and commissioning of any portion of the Works is anticipated to be delayed beyond the specified expiry period, the Owner shall submit an application of extension to the expiry period, at least twelve (12) months prior to the end of the period. The application for extension shall include the reason(s) for the delay, whether there is any design change(s) and

a review of whether the standards applicable at the time of Approval of the Works are still applicable at the time of request for extension, to ensure the ongoing protection of the environment.

3. CHANGE OF OWNER

1. The Owner shall notify the Water Supervisor and the Director, in writing, of any of the following changes within thirty (30) days of the change occurring:

   a. change of Owner;

   b. change of address of the Owner;

   c. change of partners where the Owner is or at any time becomes a partnership, and a copy of the most recent declaration filed under the *Business Names Act* , R.S.O. 1990, c.B17 shall be included in the notification to the Water Supervisor; or

   d. change of name of the corporation where the Owner is or at any time becomes a corporation, and a copy of the most current information filed under the *Corporations Information Act* , R.S.O. 1990, c. C39 shall be included in the notification to the Water Supervisor.

2. In the event of any change in ownership of the Works, other than a change to a successor municipality, the Owner shall notify in writing the succeeding owner of the existence of this Approval, and a copy of such notice shall be forwarded to the Water Supervisor and the Director.

3. The Owner shall ensure that all communications made pursuant to this condition refer to the number at the top of this Approval.

4. UPON THE SUBSTANTIAL COMPLETION OF SEWAGE PUMPING STATION

1. Upon the Substantial Completion of the Works, the Owner shall prepare a statement, certified by a Professional Engineer, that the works are constructed in accordance with this Approval, and upon request, shall make the written statement available for inspection by Ministry personnel.

2. Within six (6) months of the Substantial Completion of the Works, a set of as-built drawings showing the works "as constructed" shall be prepared. These drawings shall be kept up to date through revisions undertaken from time to time and a copy shall be retained at the Works for the operational life of the Works.

5. SEWAGE PUMPING STATION OVERFLOW

1. Any Sewage Pumping Station Overflow is prohibited, except:

   a. in an Emergency Situation; and

b. where the Sewage Pumping Station Overflow is a direct and unavoidable result of a planned maintenance procedure, the Owner having notified the Water Supervisor at least fifteen (15) days prior to the occurrence of the Sewage Pumping Station Overflow and the Water Supervisor having given written consent of the Sewage Pumping Station Overflow.

2. The Owner shall forthwith notify the Spills Action Centre (SAC) and the Medical Officer of Health of all Events as soon as possible. This notice shall include, at a minimum, the following information:

   a. the date, time, and duration of the Event;

   b. the location of the Sewage Pumping Station Overflow and the receiver;

   c. the measured or estimated volume of the Event (unless the Event is ongoing); and

   d. the reason for the Event.

3. The Owner shall submit a summary report of the Sewage Pumping Station Overflow Events to the Water Supervisor on a quarterly basis, no later than each of the following dates for each calendar year: February 14, May 15, August 14, and November 15. The summary reports shall be in a format specified by the Ministry, which shall include, at a minimum, the following information on any Events that occurred during the preceding quarter:

   a. the date of the Event(s);

   b. the measured or estimated volume of the Event(s);

   c. the duration of the Event(s);

   d. the location of the Sewage Pumping Station Overflow and the receiver;

   e. the reason for the Event(s); and

   f. the impact of the Event(s) on the receiver(s).

4. The Owner shall use best efforts to collect a representative sample consisting of a minimum of two (2) grab samples of the Sewage Pumping Station Overflow and have it analyzed for the parameters outlined in Condition 7 using the protocols specified in Condition 7, one at the beginning of the Event and the second approximately near the end of the Event, to best reflect the effluent quality of the Sewage Pumping Station Overflow.

5. The Owner shall maintain a logbook of all Sewage Pumping Station Overflows, which shall contain, at a minimum, the types of information set out in sub-conditions 2(a) to 2(d) in respect of each Sewage Pumping Station Overflow.

6. OPERATION AND MAINTENANCE (SEWAGE PUMPING STATION)

1. The Owner shall exercise due diligence in ensuring that, at all times, the Works and the related equipment and appurtenances used to achieve compliance with this Approval are properly operated and maintained. Proper operation and maintenance shall include effective performance, adequate funding, adequate operator staffing and training, including training in all procedures and other requirements of this Approval and the EPA and regulations, adequate laboratory facilities, process controls and alarms and the use of process chemicals and other substances used in the Works.

2. The Owner shall prepare an operations manual within six (6) months of Substantial Completion of the Works, that includes, but is not necessarily limited to, the following information:

   a. operating and maintenance procedures for routine operation of the Works;

   b. inspection programs, including frequency of inspection, for the Works and the methods or tests employed to detect when maintenance is necessary;

   c. repair and maintenance programs, including the frequency of repair and maintenance for the Works;

   d. procedures for the inspection and calibration of monitoring equipment;

   e. a spill prevention control and countermeasures plan, consisting of contingency plans and procedures for dealing with equipment breakdowns, potential spills and any other abnormal situations, including notification to the Spills Action Centre (SAC), the Medical Officer of Health, and the Water Supervisor; and

   f. procedures for receiving, responding and recording public complaints, including recording any follow-up actions taken.

3. The Owner shall maintain the operations manual current and retain a copy at the location of the Works for the operational life of the Works. Upon request, the Owner shall make the manual available to Ministry staff.

4. The Owner shall provide for the overall operation of the Works an operator who holds a licence that is applicable to that type of facility and that is of the same class as or higher than the class of the facility in accordance with Ontario Regulation 129/04.

7. MONITORING AND RECORDING

The Owner shall, upon commencement of operation of the Works, carry out the following monitoring program:

1. All samples and measurements taken for the purposes of this Approval are to be taken at a time and in a location characteristic of the quality and quantity of the Sewage Pumping Station Overflow stream over the time period being monitored.

2. Samples shall be collected at the following sampling points, at the frequency specified, by means of the specified sample type and analyzed for each parameter listed and all results recorded, as outlined in Schedule C.

3. The methods and protocols for sampling, analysis and recording shall conform, in order of precedence, to the methods and protocols specified in the following:

   a. the Ministry's Procedure F-10-1, "Procedures for Sampling and Analysis Requirements for Municipal and Private Sewage Treatment Works (Liquid Waste Streams Only)", as amended from time to time by more recently published editions;

   b. the Ministry's publication "Protocol for the Sampling and Analysis of Industrial/Municipal Wastewater" (January 1999), ISBN 0-7778-1880-9, as amended from time to time by more recently published editions; and

   c. the publication "Standard Methods for the Examination of Water and Wastewater" (21st edition), as amended from time to time by more recently published editions.

8. REPORTING

1. One (1) week prior to the start-up of the operation of the Works, the Owner shall notify the Water Supervisor (in writing) of the pending start-up date.

2. The Owner shall, upon request, make all manuals, plans, records, data, procedures and supporting documentation available to Ministry staff.

3. The Owner shall prepare and submit a performance report to the Water Supervisor on an annual basis, within ninety (90) days following the end of the period being reported upon. The first such report shall cover the first annual period following the commencement of operation of the Works and subsequent reports shall be submitted to cover successive annual periods following thereafter. The reports shall contain, but shall not be limited to, the following information:

   a. a summary and interpretation of all monitoring data, including an overview of the success and adequacy of the Works;

   b. a description of any operating problems encountered and corrective actions taken;

   c. a summary of all maintenance carried out on any major structure, equipment, apparatus, mechanism or thing forming part of the Works;

d. a summary of the calibration and maintenance carried out on all monitoring equipment;

e. a summary of any complaints received during the reporting period and any steps taken to address the complaints;

f. a summary of all Sewage Pumping Station Overflows, spill or abnormal discharge events;

g. a copy of all Notice of Modifications submitted to the Water Supervisor as a result of Schedule B, Section 1, with a status report on the implementation of each modification;

h. a report summarizing all modifications completed as a result of Schedule B, Section 3; and

i. any other information the Water Supervisor requires from time to time.

4. The Owner shall, within thirty (30) calendar days of issuance of this Approval, submit a Municipal Wastewater System Profile Information Form, and shall resubmit the updated document every time a notification is provided to the Water Supervisor in compliance with requirements of change of ownership under this Approval.

9. LIMITED OPERATIONAL FLEXIBILITY

1. The Owner may make modifications to the Works in accordance with the Terms and Conditions of this Approval and subject to the Ministry's "Limited Operational Flexibility Criteria for Modifications to Sewage Works", included under Schedule B of this Approval, as amended.

2. Sewage works proposed under Limited Operational Flexibility shall adhere to the design guidelines contained within the Ministry's publication "Design Guidelines for Sewage Works 2008", as amended.

3. The Owner shall ensure at all times, that the Works, related equipment and appurtenances which are installed or used to achieve compliance are operated in accordance with all Terms and Conditions of this Approval.

4. For greater certainty, the following are not permitted as part of Limited Operational Flexibility:

   a. modifications to the Works that result in an increase of the approved Rated Capacity of the Works;

   b. modifications to the Works that may adversely affect the approved effluent quality criteria or the location of the discharge/outfall;

   c. modifications to the treatment process technology of the Works, or modifications that involve construction of new reactors (tanks) or alter the treatment train process design;

d. modifications to the Works approved under s.9 of the EPA; and

e. modifications to the Works pursuant to an order issued by the Ministry.

5. Implementation of Limited Operational Flexibility is not intended to be used for piecemeal measures that result in major alterations or expansions.

6. If the implementation of Limited Operational Flexibility requires changes to be made to the Emergency Response, Spill Reporting and Contingency Plan, the Owner shall, as deemed necessary in consultation with the Water Supervisor, provide a revised copy of this plan to the local fire services authority prior to implementing Limited Operational Flexibility.

7. For greater certainty, any modification made under the Limited Operational Flexibility may only be carried out after other legal obligations have been complied with, including those arising from the *Environmental Protection Act, Niagara Escarpment Planning and Development Act, Oak Ridges Moraine Conservation Act, Lake Simcoe Protection Act* and *Greenbelt Act.*

8. Prior to implementing Limited Operational Flexibility, the Owner shall complete a Notice of Modifications describing any proposed modifications to the Works and submit it to the Water Supervisor.

Schedule A

1. Application for Environmental Compliance Approval, dated March 23, 2017 and revised on August 8, 2017, submitted by The Corporation of the Municipality of Kincardine

2. Connaught Park Sewage Pumping Station Design Brief, dated March 23, 2017, and Supplemental Design Brief for Storm Sewers on Broadway Street and Shevchenko Blvd., dated August 21, 2017, prepared by B. M. Ross and Associates Limited.

3. Engineering Drawings and Pipe Data Form prepared by B. M. Ross and Associates Limited.

4. Additional supporting information and documentation provided by B. M. Ross and Associates Limited.

SCHEDULE 'B'

Limited Operational Flexibility Criteria for Modifications to Municipal Sewage Works

1. The modifications to sewage works approved under an Environmental Compliance Approval (*Approval*) that are permitted under the *Limited Operational Flexibility* (LOF), are outlined below and are subject to the LOF conditions in the *Approval* , and require the submission of the *Notice of Modifications* . If there is a conflict between the sewage works listed below and the Terms and Conditions in the *Approval* , the Terms and Conditions in the *Approval* shall take precedence.

    1. Sewage Pumping Stations

        a. Alter pumping capacity by adding or replacing equipment where new equipment is located within an existing sewage pumping station site, provided that the modifications do not result in an increase of the pumping station's Rated Capacity and the existing flow process and/or treatment train are maintained, as applicable.

        b. Forcemain relining and replacement with similar pipe size where the nominal diameter is not greater than 1,200 millimetres.

    2. Pilot Systems

        1. Installation of pilot systems for new or existing technologies provided that:

            a. any effluent from the pilot system is discharged to the inlet of the sewage pumping station or hauled off-site for proper disposal;

            b. any effluent from the pilot system discharged to the inlet of the sewage pumping station or sewage conveyance system does not significantly alter the composition/concentration of the influent sewage to be treated in the downstream process; and that it does not add any inhibiting substances to the downstream process; and

            c. the pilot system's duration does not exceed a maximum of two (2) years; and a report with results is submitted to the *Director* and *Water Supervisor* three (3) months after the completion of the pilot project.

2. Sewage works that are exempt from section 53 of the *OWRA* by O. Reg. 525/98 continue to be exempt and are not required to follow the notification process under this *Limited Operational Flexibility* .

3. Normal or emergency operational modifications, such as repairs, reconstructions, or other improvements that are part of maintenance activities, including cleaning, renovations to existing approved sewage works equipment, provided that the modification is made with *Equivalent Equipment* , are considered pre-approved.

4. The modifications noted in section (3) above are not required to follow the notification protocols under *Limited Operational Flexibility* , provided that the number of pieces and description of the equipment as described in the *Approval* does not change.

Ontario
Ministry of
the Environment

Notice of Modification to Sewage Works

RETAIN COPY OF COMPLETED FORM AS PART OF THE ECA AND SEND A COPY TO THE WATER SUPERVISOR (FOR MUNICIPAL) OR DISTRICT MANAGER (FOR NON-MUNICIPAL SYSTEMS)

Part 1 – Environmental Compliance Approval (ECA) with Limited Operational Flexibility
(Insert the ECA's owner, number, issuance date and notice number, which should start with "01" and consecutive numbers thereafter)

ECA Number	Issuance Date (mm/dd/yy)	Notice number (if applicable)

ECA Owner	Municipality

Part 2: Description of the modifications as part of the Limited Operational Flexibility
(Attach a detailed description of the sewage works)

Description shall include:
1. A detail description of the modifications and/or operations to the sewage works (e.g. sewage work component, location, size, equipment type/model, material, process name, etc.)
2. Confirmation that the anticipated environmental effects are negligible.
3. List of updated versions of, or amendments to, all relevant technical documents that are affected by the modifications as applicable, i.e. submission of documentation is not required, but the listing of updated documents is (design brief, drawings, emergency plan, etc.)

Part 3 – Declaration by Professional Engineer

I hereby declare that I have verified the scope and technical aspects of this modification and confirm that the design:
1. Has been prepared or reviewed by a Professional Engineer who is licensed to practice in the Province of Ontario;
2. Conforms with the Limited Operational Flexibility as per the ECA;
3. Has been designed consistent with Ministry's Design Guidelines, adhering to engineering standards, industry's best management practices, and demonstrating ongoing compliance with s.53 of the Ontario Water Resources Act; and other appropriate regulations.

I hereby declare that to the best of my knowledge, information and belief the information contained in this form is complete and accurate.

Name (Print)	PEO License Number

Signature	Date (mm/dd/yy)

Name of Employer

Part 4 – Declaration by Owner

I hereby declare that:
1. I am authorized by the Owner to complete this Declaration;
2. The Owner consents to the modification; and
3. These modifications to the sewage works are proposed in accordance with the Limited Operational Flexibility as described in the ECA.
4. The Owner has fulfilled all applicable requirements of the *Environmental Assessment Act.*

I hereby declare that to the best of my knowledge, information and belief the information contained in this form is complete and accurate.

Name of Owner Representative (Print)	Owner representative's title (Print)

Owner Representative's Signature	Date (mm/dd/yy)

Schedule C

Table 1 - Monitoring during a Sewage Pumping Station Overflow Event
(Samples to be collected from the Sewage Pumping Station Overflow stream)

Sample Type	Grab
Frequency	One sample at the beginning of the Event and the second sample approximately near the end of the Event
Parameters	BOD5, Total Suspended Solids, Total Phosphorus, Total Ammonia Nitrogen, E. coli(Note 1 see below), and pH

Note 1: Sampling and analysis shall be performed only for Events that occur between April 1 and October 31 inclusive

The reasons for the imposition of these terms and conditions are as follows:

1. Condition 1 is imposed to ensure that the Works are constructed and operated in the manner in which they were described and upon which approval was granted. This condition is also included to emphasize the precedence of conditions in the Approval and the practice that the Approval is based on the most current document, if several conflicting documents are submitted for review.

2. Condition 2 is included to ensure that, when the Works are constructed, the Works will meet the standards that apply at the time of construction to ensure the ongoing protection of the environment.

3. Condition 3 is included to ensure that the Ministry records are kept accurate and current with respect to approved Works and to ensure that subsequent owners of the Works are made aware of the Approval and continue to operate the Works in compliance with it.

4. Condition 4 is included to ensure that the Works are constructed in accordance with the Approval and that record drawings of the Works "as constructed" are updated and maintained for future references.

5. Condition 5 is included to indicate that Sewage Pumping Station Overflows are prohibited, except in circumstances where the failure to overflow could result in greater injury to the public interest than the Sewage Pumping Station Overflow itself. The notification and documentation requirements allow the Ministry to take action in an informed manner and ensure that the Owner is aware of the extent and frequency of Events.

6. Condition 6 is included to ensure that the Works are properly operated, maintained, funded, staffed and equipped such that the environment is protected and deterioration, loss, injury or damage to any person or property is prevented. The Condition also ensures that a comprehensive operations manual governing all significant areas of operation, maintenance and repair is prepared, implemented and kept up-to-date by the Owner and is made available to the Ministry. Such a manual is an integral part of the operation of the Works. Its compilation and use should assist the Owner in staff training, proper plant operation, and identification and planning for contingencies during abnormal conditions. The manual will also act as a benchmark for Ministry staff when reviewing the operation of the Works.

7. Condition 7 is included to provide additional details on the monitoring of Sewage Pumping Station Overflows.

8. Condition 8 is included to provide a performance record for future references, to ensure that the Ministry is made aware of problems as they arise, and to provide a compliance record for all the terms and conditions outlined in this Approval, so that the Ministry can work with the Owner in resolving any problems in a timely manner.

9. Condition 9 is included to ensure that the Works are operated in accordance with the application and supporting documentation submitted by the Owner, and not in a manner which the Director has not been asked to consider. These conditions are also included to ensure that a Professional Engineer has reviewed the proposed modifications and attests that the modifications are in line with that of Limited Operational Flexibility, and provide assurance that the proposed modifications comply with the Ministry's requirements stipulated in the terms and conditions of this Approval, Ministry policies, guidelines, and industry engineering standards and best management practices.

Upon issuance of the environmental compliance approval, I hereby revoke Approval No(s). 2-0000-00-700262 issued on December 4, 1970.

In accordance with Section 139 of the Environmental Protection Act, you may by written Notice served upon me and the Environmental Review Tribunal within 15 days after receipt of this Notice, require a hearing by the Tribunal. Section 142 of the Environmental Protection Act provides that the Notice requiring the hearing shall state:

a. The portions of the environmental compliance approval or each term or condition in the environmental compliance approval in respect of which the hearing is required, and;
b. The grounds on which you intend to rely at the hearing in relation to each portion appealed.

Pursuant to subsection 139(3) of the Environmental Protection Act, a hearing may not be required with respect to any terms and conditions in this environmental compliance approval, if the terms and conditions are substantially the same as those contained in an approval that is amended or revoked by this environmental compliance approval.

The Notice should also include:

1. The name of the appellant;
2. The address of the appellant;
3. The environmental compliance approval number;
4. The date of the environmental compliance approval;
5. The name of the Director, and;
6. The municipality or municipalities within which the project is to be engaged in.

And the Notice should be signed and dated by the appellant.

This Notice must be served upon:

The Secretary*
Environmental Review Tribunal
655 Bay Street, Suite 1500
Toronto, Ontario
M5G 1E5

AND

The Director appointed for the purposes of Part II.1 of the Environmental Protection Act
Ministry of the Environment and Climate Change
135 St. Clair Avenue West, 1st Floor
Toronto, Ontario
M4V 1P5

*** Further information on the Environmental Review Tribunal's requirements for an appeal can be obtained directly from the Tribunal at: Tel: (416) 212-6349, Fax: (416) 326-5370 or www.ert.gov.on.ca**

The above noted activity is approved under s.20.3 of Part II.1 of the Environmental Protection Act.

DATED AT TORONTO this 14th day of November, 2017

C. Labarge

Christina Labarge, P.Eng.
Director
appointed for the purposes of Part II.1 of the
Environmental Protection Act

LW/
c: DWMD Supervisor, MOECC Owen Sound
Ryan Steckly, P.Eng., B.M. Ross and Associates Limited

Agenda	Council		File No. E01
_____	Consent		Kincardine Sanitary Sewers
	Direction	Copied	Other:
CAO	☐	☐	
Clerk	☐	☐	
Treasury	☐	☐	
Public Works	☑	☐	
Building/Planning	☐	☐	
Recreation	☐	☐	
Emergency Services	☐	☐	Scanner:
Police Services	☐	☐	
Tourism/Comm.Serv.	☐	☐	RECEIVED NOV 2 1 2017
Other:_____	☐	☐	

APPENDIX C

Average Monthly Analytical Results Spreadsheet and

Monitoring Schedules

AVERAGE MONTHLY ANALYTICAL RESULTS

Kincardine Wastewater Treatment Plant

2022	INFLUENT FLOWS			RAW INFLUENT						FINAL EFFLUENT												
				Monthly Average						Monthly Average												
Month	Total Flow m3	Max Flow m3/day	Avg. Flows m3/Day	BOD5 mg/L	TSS mg/L	TKN mg/L	Total P mg/L	pH	Alkalinity CaCO3 mg/L	CBOD5 mg/L	TSS mg/L	TKN mg/L	Total P mg/L	Alkalinity CaCO3 mg/L	Nitrite NO2 mg/L	Nitrate NO3 mg/L	Ammonia+ Ammonium NH3+NH4 mg/L	E-Coli /100 mL (Geomean)	pH	Temper-ature C	Conduct-ivity u S/cm	Unionized Ammonia ug/L
January	104328	4282	3365.4	105	122	20.9	2.13	7.90	279	16.0	19.5	18.7	0.24	254	0.07	0.58	18.0	2	7.65	5.6	1055	0.1055
February	121689	9454	4346	125	122	34.0	3.55	7.80	323	8.0	15.0	23.0	0.30	248	0.07	0.16	22.4	2	7.60	7.4	1115	0.1350
March	149870	6421	4834.5	123	119	32.8	3.32	7.40	304	12.5	21.0	19.6	0.36	225	0.11	0.42	18.0	2	7.10	5.7	1055	0.0300
April	131975	5349	4399.2	116	142	31.9	3.25	7.70	307	8.5	16.5	14.4	0.22	206	0.07	0.59	13.5	2	7.25	11.0	935	0.0605
May	102989	3981	3322.2	91	125	32.1	3.00	7.83	321	25.0	31.0	14.4	0.27	176	0.25	0.54	11.8	4	7.67	18.3	960	0.1870
June	93442	3740	3114.7	80	143	24.4	2.70	7.70	252	11.0	9.5	19.9	0.30	202	0.25	0.22	17.9	6	7.40	20.2	550	0.1800
July	96716	3994	3119.9	101	124	23.4	2.27	7.40	242	15.0	22.0	23.0	0.32	175	0.42	0.32	19.4	3	7.60	22.6	1040	0.3630
August	96715	4342	3119.8	131	143	34.9	3.39	7.35	272	21.5	42.4	13.5	0.26	121	0.30	0.58	10.9	14	7.42	24.1	890	0.1565
September	106586	11192	3552.9	99	141	36.9	3.14	7.65	257	15.5	46.0	10.8	0.34	99	0.18	0.54	8.9	10	7.40	21.4	850	0.1035
October	131011	8583	4226.2	129	146	37.0	3.75	7.95	302	17.5	27.5	13.1	0.23	130	0.26	0.83	10.3	3	8.10	12.5	795	0.3005
November	97824	4499	3260.8	118	101	40.0	3.23	7.90	341	19.3	26.0	14.2	0.20	189	0.10	0.83	12.5	2	8.13	7.9	927	0.2637
December	117350	7209	3785.5	144	121	18.6	1.67	7.85	288	14.0	23.0	18.2	0.18	217	0.04	0.43	17.2	3	7.90	3.5	985	0.1965
Annual	1350495	11191.7	3703.9	113	129	30.6	2.95	7.70	290	15.3	25.0	16.9	0.27	187	0.18	0.50	15.1	4	7.60	13.3	930	0.1735

refers to <

Wastewater Sampling Requirements

		Bi-weekly	Monthly	Quarterly	Semi-annual	Annual
Kincardine WWTP	Raw	**Grab Samples:** **3 - 500 mL chemical bottles** BOD5 Total Suspended Solids Total Phosphorous Total Kjeldahl Nitrogen Alkalinity				
	Final Effluent	**Grab Samples:** **5 - 500 mL chemical bottles** CBOD5 Total Suspended Solids Total Phosphorous Total Kjeldahl Nitrogen Total Ammonia Nitrogen as N Provincial Unionized Ammonia NO2/NO3 Alkalinity **1 - bacti bottle for:** E. coli **Field Tests:** pH Temperature			Chloride COD DOC Hardness Phenols ICP 24 metal scan US EPA 624 parameters VOC **Field Tests:** pH Conductivity Temperature	Acute Lethality Testing (WSER)
Bruce Energy Centre Lagoons	Raw	**24-hour composite samples:** **3 - 500 mL chemical bottles** BOD5 Total Suspended Solids Total Phosphorous Total Kjeldahl Nitrogen				
	Final Effluent	**Grab samples:** **4 - 500 mL chemical bottles** CBOD5 Total Suspended Solids Total Phosphorous Total Kjeldahl Nitrogen Total Ammonia Nitrogen NO2/NO3 Alkalinity **1 - bacti bottle for:** E. coli **Field Tests:** pH Temperature **Calculate:** Provincial Un-ionized Ammonia				
Valentine Ave. Landfill	Groundwater Collection System				**CRA Sampling As per GWCS C of A:** BOD5 Suspended Solids Total Phosphorous TKN Ammonia Heavy metals	
	Leachate Collection System			**As per LCS C of A:** BOD5 Total Phosphorous Suspended Solids NO2/NO3 Ammonia TKN VOCs COD DOC Alkalinity Chloride Hardness Phenols Metals **Field Tests:** pH Conductivity Temperature	**As per WWTP C of A:** BOD5 Chloride COD DOC Hardness Alkalinity NO2/NO3 TKN Ammonia ICP 24 metal scan US EPA 624 parameters VOC **Field Tests:** pH Conductivity Temperature	
Kincardine Waste Management Centre Leachate Treatment Facility	Influent		**Grab Samples:** **3 - 500 mL chemical bottles** BOD5 Total Suspended Solids Total Phosphorous Total Kjeldahl Nitrogen			
	Effluent	**Grab samples:** **4 - 500 mL chemical bottles** CBOD5 Total Suspended Solids Total Phosphorous Total Ammonia Nitrogen Nitrate Nitrogen **1 - bacti bottle for:** E. coli **Field Tests:** pH Temperature **Calculate:** Provincial Un-ionized Ammonia				**Spring sampling:** **Grab samples** BOD5 COD DOC Phenol VOCs Inorganics
	SW4 (Surface Water 4)	**Grab samples:** **1 - 500 mL chemical bottles** Nitrate Nitrogen				
Kincardine Waste Management Centre	Leachate Hauled to BEC	BOD5 Total Phosphorous Total Suspended Solids TKN Boron Zinc Iron Field Tests: pH Temperature				

Wastewater Sampling Requirements 2023

		Bi-weekly	Monthly	Quarterly	Semi-annual	Annual
Kincardine WWTP	Raw	**Grab Samples:** **3 - 500 mL chemical bottles** BOD5 Total Suspended Solids Total Phosphorous Total Kjeldahl Nitrogen Alkalinity				
	Final Effluent	**Grab Samples:** **5 - 500 mL chemical bottles** CBOD5 Total Suspended Solids Total Phosphorous Total Ammonia Nitrogen as N Total Kjeldahl Nitrogen NO2/NO3 Alkalinity Provincial Unionized Ammonia **1 - bacti bottle for:** E. coli **Field Tests:** pH Temperature			As per ECA Chloride COD DOC Hardness Phenols ICP 24 metal scan US EPA 624 parameters VOC **Field Tests:** pH Conductivity Temperature (April and October)	Acute Lethality Testing (WSER) November
Bruce Energy Centre Lagoons	Raw	**24-hour composite samples:** **3 - 500 mL chemical bottles** BOD5 Total Suspended Solids Total Phosphorous Total Kjeldahl Nitrogen				
	Final Effluent	**Grab samples:** **4 - 500 mL chemical bottles** CBOD5 Total Suspended Solids Total Phosphorous Total Kjeldahl Nitrogen Total Ammonia Nitrogen NO2/NO3 Alkalinity **1 - bacti bottle for:** E. coli **Field Tests:** pH Temperature **Calculate:** Provincial Un-ionized Ammonia				
	Septage	BOD5 Total Phosphorous Total Suspended Solids TKN Oil and Grease Field Tests: pH Temperature **(During Each event-Grab sample)**				
	Leachate Hauled to BEC	BOD5 Total Phosphorous Total Suspended Solids TKN Boron Zinc Iron Field Tests: pH Temperature **(Only as required if LTF is out of service)**				
Valentine Ave. Landfill	Groundwater Collection System				**Sampling As per GWCS C of A:** BOD5 Suspended Solids Total Phosphorous TKN Ammonia Heavy metals **(GHD Samples)**	
	Leachate Collection System			**As per LCS C of A:** BOD5 Total Phosphorous Suspended Solids NO2/NO3 Ammonia TKN VOCs COD DOC Alkalinity Chloride Hardness Phenols Metals **Field Tests:** pH Conductivity Temperature **(GHD samples May and November)**	**As per WWTP ECA:** Alkalinity BOD5 Chloride COD DOC Hardness NO2/NO3 TKN Ammonia ICP 24 metal scan US EPA 624 parameters VOC **Field Tests:** pH Conductivity Temperature (January and July-covers quarterly samples for this time frame too) **MOK Samples**	
Kincardine Waste Management Centre Leachate Treatment Facility	Influent		**Grab Samples:** **3 - 500 mL chemical bottles** BOD5 Total Suspended Solids Total Phosphorous Total Kjeldahl Nitrogen			
	Effluent (Clarifier Discharge)	**Grab samples:** **4 - 500 mL chemical bottles** CBOD5 Total Suspended Solids Total Phosphorous Total Ammonia Nitrogen Nitrate Nitrogen **1 - bacti bottle for:** E. coli **Field Tests:** pH Temperature **Calculate:** Provincial Un-ionized Ammonia				**Spring sampling:** **Grab samples** BOD5 COD DOC Phenol VOCs Inorganics (Table 6 of ECA) (Due April)
	SW4 (Surface Water 4)	Grab samples: 1-500mL chemical bottles Nitrate Nitrogen				

Revision 2023-01 November 30, 2022

APPENDIX D

Imported Sewage Sample Results

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

12-April-2022

Mun of Kincardine (Bruce Energy Centre Lagoons)
Attn : Lisa Crimmings

155 Durham St.
Kincardine, ON
N2Z 1A4, Canada

Phone: 519-396-4660
Fax:

Date Rec. : 06 April 2022
LR Report: **CA12248-APR22**

Copy: #1

CERTIFICATE OF ANALYSIS
Final Report

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Completed Date	4: Analysis Completed Time	9: Bruce Power Wastewater
Sample Date & Time					05-Apr-22 10:15
Temperature Upon Receipt [°C]	---	---	---	---	8.0
Field pH [no unit]	---	---	---	---	7.5
Field Temperature [celcius]	---	---	---	---	9.9
Biochemical Oxygen Demand (BOD5) [mg/L]	07-Apr-22	16:58	12-Apr-22	12:17	91
Total Suspended Solids [mg/L]	08-Apr-22	08:24	12-Apr-22	10:38	48
Phosphorus (total) [mg/L]	07-Apr-22	18:03	11-Apr-22	19:50	2.74
Total Kjeldahl Nitrogen [as N mg/L]	07-Apr-22	16:16	11-Apr-22	19:22	33.6
Oil & Grease (total) [mg/L]	07-Apr-22	13:18	11-Apr-22	10:50	10

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

OnLine LIMS

0002861810

APPENDIX E

Leachate Semi-Annual Results

Final Effluent Semi-Annual Results

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

Works #: 110000864

02-February-2022

Mun of Kincardine (WWTP)
Attn : Lisa Crimmings

155 Durham St.
Kincardine, ON
N2Z 1A4, Canada

Phone: 519-396-4660
Fax:

Date Rec. : 26 January 2022
LR Report: **CA13941-JAN22**

Copy: #1

CERTIFICATE OF ANALYSIS

Final Report

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Completed Date	4: Analysis Completed Time	5: Leachate
Sample Date & Time					25-Jan-22 11:00
Temperature Upon Receipt [°C]	---	---	---	---	1.0
Field pH [no unit]	---	---	---	---	6.0
Field Temperature [celcius]	---	---	---	---	5
Field Conductivity [uS/cm]	---	---	---	---	880
Biochemical Oxygen Demand (BOD5) [mg/L]	26-Jan-22	16:26	31-Jan-22	14:16	44
Alkalinity [mg/L as CaCO3]	28-Jan-22	08:16	31-Jan-22	09:19	882
Total Suspended Solids [mg/L]	27-Jan-22	10:38	28-Jan-22	10:46	63
Chemical Oxygen Demand [mg/L]	27-Jan-22	08:42	31-Jan-22	14:17	88
Dissolved Organic Carbon [mg/L]	27-Jan-22	13:33	28-Jan-22	10:11	24
Chloride [mg/L]	28-Jan-22	06:44	31-Jan-22	08:48	97
Nitrite (as N) [mg/L]	27-Jan-22	17:13	28-Jan-22	16:03	< 0.03
Nitrate (as N) [mg/L]	27-Jan-22	17:13	28-Jan-22	16:03	< 0.06
Nitrate + Nitrite (as N) [mg/L]	27-Jan-22	17:13	28-Jan-22	16:03	< 0.06
4AAP-Phenolics [mg/L]	27-Jan-22	10:25	28-Jan-22	08:47	0.004
Total Kjeldahl Nitrogen [as N mg/L]	28-Jan-22	07:47	31-Jan-22	11:59	39.8
Ammonia+Ammonium (N) [as N mg/L]	26-Jan-22	21:47	27-Jan-22	09:23	37.4
Hardness [mg/L as CaCO3]	01-Feb-22	08:00	02-Feb-22	11:16	748
Silver (total) [mg/L]	01-Feb-22	08:00	02-Feb-22	11:16	0.00006
Aluminum (total) [mg/L]	01-Feb-22	08:00	02-Feb-22	11:16	0.052
Arsenic (total) [mg/L]	01-Feb-22	08:00	02-Feb-22	11:16	0.0053
Barium (total) [mg/L]	01-Feb-22	08:00	02-Feb-22	11:16	0.188
Beryllium (total) [mg/L]	01-Feb-22	08:00	02-Feb-22	11:16	0.000009
Boron (total) [mg/L]	01-Feb-22	08:00	02-Feb-22	11:16	0.340
Bismuth (total) [mg/L]	01-Feb-22	08:00	02-Feb-22	11:16	0.00003
Calcium (total) [mg/L]	01-Feb-22	08:00	02-Feb-22	11:16	194
Cadmium (total) [mg/L]	01-Feb-22	08:00	02-Feb-22	11:16	0.000088
Cobalt (total) [mg/L]	01-Feb-22	08:00	02-Feb-22	11:16	0.00254
Chromium (total) [mg/L]	01-Feb-22	08:00	02-Feb-22	11:16	0.00339
Copper (total) [mg/L]	01-Feb-22	08:00	02-Feb-22	11:16	0.0066

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Works #: 110000864

LR Report : **CA13941-JAN22**

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Completed Date	4: Analysis Completed Time	5: Leachate
Iron (total) [mg/L]	01-Feb-22	08:00	02-Feb-22	11:16	18.6
Potassium (total) [mg/L]	01-Feb-22	08:00	02-Feb-22	11:16	33.0
Lithium (total) [mg/L]	01-Feb-22	08:00	02-Feb-22	11:16	0.0083
Magnesium (total) [mg/L]	27-Jan-22	07:22	02-Feb-22	11:16	1.00
Manganese (total) [mg/L]	01-Feb-22	08:00	02-Feb-22	11:16	0.500
Molybdenum (total) [mg/L]	01-Feb-22	08:00	02-Feb-22	11:16	0.00065
Sodium (total) [mg/L]	01-Feb-22	08:00	02-Feb-22	11:16	92.4
Nickel (total) [mg/L]	01-Feb-22	08:00	02-Feb-22	11:16	0.0067
Phosphorus (total) [mg/L]	01-Feb-22	08:00	02-Feb-22	11:16	0.915
Lead (total) [mg/L]	01-Feb-22	08:00	02-Feb-22	11:16	0.00081
Antimony (total) [mg/L]	01-Feb-22	08:00	02-Feb-22	11:16	< 0.0009
Selenium (total) [mg/L]	01-Feb-22	08:00	02-Feb-22	11:16	0.00018
Silicon (total) [mg/L]	01-Feb-22	08:00	02-Feb-22	11:16	7.40
Tin (total) [mg/L]	01-Feb-22	08:00	02-Feb-22	11:16	0.00031
Strontium (total) [mg/L]	01-Feb-22	08:00	02-Feb-22	11:16	1.44
Titanium (total) [mg/L]	01-Feb-22	08:00	02-Feb-22	11:16	0.00468
Thallium (total) [mg/L]	01-Feb-22	08:00	02-Feb-22	11:16	< 0.000005
Uranium (total) [mg/L]	01-Feb-22	08:00	02-Feb-22	11:16	0.001000
Vanadium (total) [mg/L]	01-Feb-22	08:00	02-Feb-22	11:16	0.00477
Tungsten (total) [mg/L]	01-Feb-22	08:00	02-Feb-22	11:16	0.00014
Yttrium (total) [mg/L]	01-Feb-22	08:00	02-Feb-22	11:16	0.00027
Zinc (total) [mg/L]	01-Feb-22	08:00	02-Feb-22	11:16	1.13
Benzene [ug/L]	27-Jan-22	19:05	01-Feb-22	14:55	0.7
Bromodichloromethane [ug/L]	27-Jan-22	19:05	01-Feb-22	14:55	< 0.5
Bromoform [ug/L]	27-Jan-22	19:05	01-Feb-22	14:55	< 0.5
Bromomethane [ug/L]	27-Jan-22	19:05	01-Feb-22	14:55	< 0.5
Carbon tetrachloride [ug/L]	27-Jan-22	19:05	01-Feb-22	14:55	< 0.2
Chlorobenzene [ug/L]	27-Jan-22	19:05	01-Feb-22	14:55	< 0.5
Chloroethane [ug/L]	27-Jan-22	19:05	01-Feb-22	14:55	< 5
Chloroform [ug/L]	27-Jan-22	19:05	01-Feb-22	14:55	< 0.5
Chloromethane [ug/L]	27-Jan-22	19:05	01-Feb-22	14:55	< 5
Dibromochloromethane [ug/L]	27-Jan-22	19:05	01-Feb-22	14:55	< 0.5
1,2-Dichlorobenzene [ug/L]	27-Jan-22	19:05	01-Feb-22	14:55	< 0.5
1,3-Dichlorobenzene [ug/L]	27-Jan-22	19:05	01-Feb-22	14:55	< 0.5
1,4-Dichlorobenzene [ug/L]	27-Jan-22	19:05	01-Feb-22	14:55	< 0.5
1,1-Dichloroethane [ug/L]	27-Jan-22	19:05	01-Feb-22	14:55	< 0.5
1,2-Dichloroethane [ug/L]	27-Jan-22	19:05	01-Feb-22	14:55	< 0.5
1,1-Dichloroethylene [ug/L]	27-Jan-22	19:05	01-Feb-22	14:55	< 0.5
1,2-Dichloropropane [ug/L]	27-Jan-22	19:05	01-Feb-22	14:55	< 0.5
trans-1,2-Dichloroethene [ug/L]	27-Jan-22	19:05	01-Feb-22	14:55	< 0.5
cis-1,2-Dichloroethene [ug/L]	27-Jan-22	19:05	01-Feb-22	14:55	< 0.5
cis-1,3-Dichloropropene [ug/L]	27-Jan-22	19:05	01-Feb-22	14:55	< 0.5
trans-1,3-Dichloropropene [ug/L]	27-Jan-22	19:05	01-Feb-22	14:55	< 0.5
Ethylbenzene [ug/L]	27-Jan-22	19:05	01-Feb-22	14:55	< 0.5

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Works #: 110000864

LR Report : **CA13941-JAN22**

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Completed Date	4: Analysis Completed Time	5: Leachate
Ethylenedibromide [ug/L]	27-Jan-22	19:05	01-Feb-22	14:55	< 0.2
Dichloromethane [ug/L]	27-Jan-22	19:05	01-Feb-22	14:55	< 0.5
Styrene [ug/L]	27-Jan-22	19:05	01-Feb-22	14:55	< 0.5
1,1,2,2-Tetrachloroethane [ug/L]	27-Jan-22	19:05	01-Feb-22	14:55	< 0.5
Tetrachloroethene [ug/L]	27-Jan-22	19:05	01-Feb-22	14:55	< 0.5
Toluene [ug/L]	27-Jan-22	19:05	01-Feb-22	14:55	< 0.5
Trichloroethylene [ug/L]	27-Jan-22	19:05	01-Feb-22	14:55	< 0.5
Vinyl Chloride [ug/L]	27-Jan-22	19:05	01-Feb-22	14:55	< 0.2
Trichlorofluoromethane [ug/L]	27-Jan-22	19:05	01-Feb-22	14:55	< 5
1,1,1-Trichloroethane [ug/L]	27-Jan-22	19:05	01-Feb-22	14:55	< 0.5
1,1,2-Trichloroethane [ug/L]	27-Jan-22	19:05	01-Feb-22	14:55	< 0.5
Xylene (total) [ug/L]	27-Jan-22	19:05	01-Feb-22	14:55	1.2
o-xylene [ug/L]	27-Jan-22	19:05	01-Feb-22	14:55	< 0.5
m/p-xylene [ug/L]	27-Jan-22	19:05	01-Feb-22	14:55	1.0
2-Chloroethylvinylether [ug/L]	31-Jan-22	17:25	01-Feb-22	15:26	< 5
1,1,1,2-Tetrachloroethane [ug/L]	27-Jan-22	19:05	01-Feb-22	14:56	< 0.5

Carrie Greenlaw
Project Specialist,
Environment, Health & Safety

OnLine LIMS

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Works #: 110000864

22-July-2022

Mun of Kincardine (WWTP)
Attn : Lisa Crimmings

155 Durham St.
Kincardine, ON
N2Z 1A4, Canada

Phone: 519-396-4660
Fax:

Date Rec. : 13 July 2022
LR Report: **CA13592-JUL22**

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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: Leachate
Sample Date & Time					12-Jul-22 08:40
Temperature Upon Receipt [°C]	---	---	---	---	10.0
Field pH [no unit]					7.4
Field Temperature [celcius]					17.6
Field Conductivity [uS/cm]					2.80
Biochemical Oxygen Demand (BOD5) [mg/L]	14-Jul-22	17:19	19-Jul-22	13:14	78
Alkalinity [mg/L as CaCO3]	14-Jul-22	06:55	15-Jul-22	12:54	1140
Total Suspended Solids [mg/L]	14-Jul-22	10:40	20-Jul-22	11:37	18
Chemical Oxygen Demand [mg/L]	14-Jul-22	07:44	19-Jul-22	13:14	145
Dissolved Organic Carbon [mg/L]	14-Jul-22	21:50	18-Jul-22	11:38	14
Chloride [mg/L]	14-Jul-22	11:49	18-Jul-22	15:21	280
Nitrite (as N) [mg/L]	14-Jul-22	15:49	15-Jul-22	20:20	1.10
Nitrate (as N) [mg/L]	14-Jul-22	15:49	20-Jul-22	09:33	1.70
Nitrate + Nitrite (as N) [mg/L]	14-Jul-22	15:49	20-Jul-22	09:33	2.80
4AAP-Phenolics [mg/L]	21-Jul-22	14:10	22-Jul-22	08:13	0.011
Total Kjeldahl Nitrogen [as N mg/L]	15-Jul-22	16:06	19-Jul-22	13:39	97.7
Ammonia+Ammonium (N) [as N mg/L]	14-Jul-22	22:30	19-Jul-22	13:09	89.4
Aluminum (total) [mg/L]	19-Jul-22	16:36	20-Jul-22	15:04	0.109
Arsenic (total) [mg/L]	19-Jul-22	16:36	20-Jul-22	15:04	0.0038
Barium (total) [mg/L]	19-Jul-22	16:36	20-Jul-22	15:04	0.237
Beryllium (total) [mg/L]	19-Jul-22	16:36	20-Jul-22	15:04	< 0.000007
Boron (total) [mg/L]	19-Jul-22	16:36	20-Jul-22	15:04	0.737
Bismuth (total) [mg/L]	19-Jul-22	16:36	20-Jul-22	15:04	< 0.00001
Calcium (total) [mg/L]	19-Jul-22	16:36	20-Jul-22	15:04	128
Cadmium (total) [mg/L]	19-Jul-22	16:36	20-Jul-22	15:04	0.000015
Cobalt (total) [mg/L]	19-Jul-22	16:36	20-Jul-22	15:04	0.00459
Chromium (total) [mg/L]	19-Jul-22	16:36	20-Jul-22	15:04	0.00519
Copper (total) [mg/L]	19-Jul-22	16:36	20-Jul-22	15:04	0.0023
Iron (total) [mg/L]	19-Jul-22	16:36	20-Jul-22	15:04	4.42
Potassium (total) [mg/L]	19-Jul-22	16:36	20-Jul-22	15:04	97.8
Lithium (total) [mg/L]	19-Jul-22	16:36	20-Jul-22	15:04	0.0093
Magnesium (total) [mg/L]	19-Jul-22	16:36	20-Jul-22	15:04	76.6

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Works #: 110000864

LR Report : **CA13592-JUL22**

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Completed Date	4: Analysis Completed Time	5: Leachate
Manganese (total) [mg/L]	19-Jul-22	16:36	20-Jul-22	15:04	0.176
Molybdenum (total) [mg/L]	19-Jul-22	16:36	20-Jul-22	15:04	0.00082
Sodium (total) [mg/L]	19-Jul-22	16:36	20-Jul-22	15:04	196
Nickel (total) [mg/L]	19-Jul-22	16:36	20-Jul-22	15:04	0.0106
Phosphorus (total) [mg/L]	19-Jul-22	16:36	20-Jul-22	15:04	0.394
Lead (total) [mg/L]	19-Jul-22	16:36	20-Jul-22	15:04	0.00041
Antimony (total) [mg/L]	19-Jul-22	16:36	20-Jul-22	15:04	< 0.0009
Selenium (total) [mg/L]	19-Jul-22	16:36	20-Jul-22	15:04	0.00032
Silicon (total) [mg/L]	19-Jul-22	16:36	20-Jul-22	15:04	13.0
Tin (total) [mg/L]	19-Jul-22	16:36	20-Jul-22	15:04	0.00029
Strontium (total) [mg/L]	19-Jul-22	16:36	20-Jul-22	15:04	1.65
Titanium (total) [mg/L]	19-Jul-22	16:36	20-Jul-22	15:04	0.0125
Thallium (total) [mg/L]	19-Jul-22	16:36	20-Jul-22	15:04	< 0.000005
Uranium (total) [mg/L]	19-Jul-22	16:36	20-Jul-22	15:04	0.000220
Vanadium (total) [mg/L]	19-Jul-22	16:36	20-Jul-22	15:04	0.00659
Tungsten (total) [mg/L]	19-Jul-22	16:36	20-Jul-22	15:04	0.00046
Yttrium (total) [mg/L]	19-Jul-22	16:36	20-Jul-22	15:04	0.00034
Zinc (total) [mg/L]	19-Jul-22	16:36	20-Jul-22	15:04	1.13
Benzene [ug/L]	15-Jul-22	07:44	18-Jul-22	10:52	< 20
Bromodichloromethane [ug/L]	15-Jul-22	07:44	18-Jul-22	10:52	< 20
Bromoform [ug/L]	15-Jul-22	07:44	18-Jul-22	10:52	< 20
Bromomethane [ug/L]	15-Jul-22	07:44	18-Jul-22	10:52	< 20
Carbon tetrachloride [ug/L]	15-Jul-22	07:44	18-Jul-22	10:52	< 8
Chlorobenzene [ug/L]	15-Jul-22	07:44	18-Jul-22	10:52	< 20
Chloroethane [ug/L]	15-Jul-22	07:44	18-Jul-22	10:52	< 200
Chloroform [ug/L]	15-Jul-22	07:44	18-Jul-22	10:52	< 20
Chloromethane [ug/L]	15-Jul-22	07:44	18-Jul-22	10:52	< 200
Dibromochloromethane [ug/L]	15-Jul-22	07:44	18-Jul-22	10:52	< 20
1,2-Dichlorobenzene [ug/L]	15-Jul-22	07:44	18-Jul-22	10:52	< 20
1,3-Dichlorobenzene [ug/L]	15-Jul-22	07:44	18-Jul-22	10:52	< 20
1,4-Dichlorobenzene [ug/L]	15-Jul-22	07:44	18-Jul-22	10:52	< 20
1,1-Dichloroethane [ug/L]	15-Jul-22	07:44	18-Jul-22	10:52	< 20
1,2-Dichloroethane [ug/L]	15-Jul-22	07:44	18-Jul-22	10:52	< 20
1,1-Dichloropropene [ug/L]	15-Jul-22	07:44	18-Jul-22	10:52	< 40
1,2-Dichloropropane [ug/L]	15-Jul-22	07:44	18-Jul-22	10:52	< 20
trans-1,2-Dichloroethene [ug/L]	15-Jul-22	07:44	18-Jul-22	10:52	< 20
cis-1,2-Dichloroethene [ug/L]	15-Jul-22	07:44	18-Jul-22	10:52	< 20
cis-1,3-Dichloropropene [ug/L]	15-Jul-22	07:44	18-Jul-22	10:52	< 20
trans-1,3-Dichloropropene [ug/L]	15-Jul-22	07:44	18-Jul-22	10:52	< 20
Ethylbenzene [ug/L]	15-Jul-22	07:44	18-Jul-22	10:52	< 20
Ethylenedibromide [ug/L]	15-Jul-22	07:44	18-Jul-22	10:52	< 8
Dichloromethane [ug/L]	15-Jul-22	07:44	18-Jul-22	10:52	< 20
Styrene [ug/L]	15-Jul-22	07:44	18-Jul-22	10:52	< 20
1,1,2,2-Tetrachloroethane [ug/L]	15-Jul-22	07:44	18-Jul-22	10:52	< 20
Tetrachloroethene [ug/L]	15-Jul-22	07:44	18-Jul-22	10:52	< 20
Toluene [ug/L]	15-Jul-22	07:44	18-Jul-22	10:52	< 20
Trichloroethylene [ug/L]	15-Jul-22	07:44	18-Jul-22	10:52	< 20

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Works #: 110000864

LR Report : **CA13592-JUL22**

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Completed Date	4: Analysis Completed Time	5: Leachate
Vinyl Chloride [ug/L]	15-Jul-22	07:44	18-Jul-22	10:52	< 8
Trichlorofluoromethane [ug/L]	15-Jul-22	07:44	18-Jul-22	10:52	< 200
1,1,1-Trichloroethane [ug/L]	15-Jul-22	07:44	18-Jul-22	10:52	< 20
1,1,2-Trichloroethane [ug/L]	15-Jul-22	07:44	18-Jul-22	10:52	< 20
Xylene (total) [ug/L]	15-Jul-22	07:44	18-Jul-22	10:52	< 20
o-xylene [ug/L]	15-Jul-22	07:44	18-Jul-22	10:52	< 20
m/p-xylene [ug/L]	15-Jul-22	07:44	18-Jul-22	10:52	< 20
1,1,1,2-Tetrachloroethane [ug/L]	15-Jul-22	07:44	18-Jul-22	10:52	< 20

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

OnLine LIMS

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Works #: 110000864

29-April-2022

Mun of Kincardine (WWTP)
Attn : Lisa Crimmings

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N2Z 1A4, Canada

Phone: 519-396-4660
Fax:

Date Rec. : 20 April 2022
LR Report: **CA13605-APR22**

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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: Final Effluent
Sample Date & Time					19-Apr-22 10:45
Temperature Upon Receipt [°C]	---	---	---	---	9.0
Chloride [mg/L]	21-Apr-22	12:17	28-Apr-22	14:48	150
Chemical Oxygen Demand [mg/L]	21-Apr-22	08:02	22-Apr-22	09:43	49
Dissolved Organic Carbon [mg/L]	21-Apr-22	14:25	22-Apr-22	09:58	8
4AAP-Phenolics [mg/L]	21-Apr-22	13:05	22-Apr-22	12:09	< 0.002
Hardness [mg/L as CaCO3]	25-Apr-22	11:38	27-Apr-22	10:24	236
Silver (total) [mg/L]	25-Apr-22	11:38	27-Apr-22	10:24	< 0.00005
Aluminum (total) [mg/L]	25-Apr-22	11:38	27-Apr-22	10:24	0.809
Arsenic (total) [mg/L]	25-Apr-22	11:38	27-Apr-22	10:24	0.0004
Barium (total) [mg/L]	25-Apr-22	11:38	27-Apr-22	10:24	0.0117
Beryllium (total) [mg/L]	25-Apr-22	11:38	27-Apr-22	10:24	< 0.000007
Boron (total) [mg/L]	25-Apr-22	11:38	27-Apr-22	10:24	0.097
Bismuth (total) [mg/L]	25-Apr-22	11:38	27-Apr-22	10:24	0.00004
Calcium (total) [mg/L]	25-Apr-22	11:38	27-Apr-22	10:24	65.8
Cadmium (total) [mg/L]	25-Apr-22	11:38	27-Apr-22	10:24	< 0.000003
Cobalt (total) [mg/L]	25-Apr-22	11:38	27-Apr-22	10:24	0.000155
Chromium (total) [mg/L]	25-Apr-22	11:38	27-Apr-22	10:24	0.00013
Copper (total) [mg/L]	25-Apr-22	11:38	27-Apr-22	10:24	0.0022
Iron (total) [mg/L]	25-Apr-22	11:38	27-Apr-22	10:24	0.120
Potassium (total) [mg/L]	25-Apr-22	11:38	27-Apr-22	10:24	8.19
Lithium (total) [mg/L]	25-Apr-22	11:38	27-Apr-22	10:24	0.0024
Magnesium (total) [mg/L]	25-Apr-22	11:38	27-Apr-22	10:24	17.4
Manganese (total) [mg/L]	25-Apr-22	11:38	27-Apr-22	10:24	0.0262
Molybdenum (total) [mg/L]	25-Apr-22	11:38	27-Apr-22	10:24	0.00068
Sodium (total) [mg/L]	25-Apr-22	11:38	27-Apr-22	10:24	81.3
Nickel (total) [mg/L]	25-Apr-22	11:38	27-Apr-22	10:24	0.0010
Phosphorus (total) [mg/L]	25-Apr-22	11:38	27-Apr-22	10:24	0.305
Lead (total) [mg/L]	25-Apr-22	11:38	27-Apr-22	10:24	0.00013
Antimony (total) [mg/L]	25-Apr-22	11:38	27-Apr-22	10:24	< 0.0009
Selenium (total) [mg/L]	25-Apr-22	11:38	27-Apr-22	10:24	0.00027
Silicon (total) [mg/L]	25-Apr-22	11:38	27-Apr-22	10:24	1.91

OnLine LIMS

0002882054

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

Works #: 110000864

LR Report : **CA13605-APR22**

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Completed Date	4: Analysis Completed Time	5: Final Effluent
Tin (total) [mg/L]	25-Apr-22	11:38	27-Apr-22	10:24	0.00008
Strontium (total) [mg/L]	25-Apr-22	11:38	27-Apr-22	10:24	0.598
Titanium (total) [mg/L]	25-Apr-22	11:38	27-Apr-22	10:24	0.00104
Thallium (total) [mg/L]	25-Apr-22	11:38	27-Apr-22	10:24	< 0.000005
Uranium (total) [mg/L]	25-Apr-22	11:38	27-Apr-22	10:24	0.000414
Vanadium (total) [mg/L]	25-Apr-22	11:38	27-Apr-22	10:24	0.00026
Tungsten (total) [mg/L]	25-Apr-22	11:38	27-Apr-22	10:24	< 0.00002
Yttrium (total) [mg/L]	25-Apr-22	11:38	27-Apr-22	10:24	< 0.00002
Zinc (total) [mg/L]	25-Apr-22	11:38	27-Apr-22	10:24	0.007
Benzene [ug/L]	27-Apr-22	11:16	28-Apr-22	17:13	< 0.5
Bromodichloromethane [ug/L]	27-Apr-22	11:16	28-Apr-22	17:13	< 0.5
Bromoform [ug/L]	27-Apr-22	11:16	28-Apr-22	17:13	< 0.5
Bromomethane [ug/L]	27-Apr-22	11:16	28-Apr-22	17:13	< 0.5
Carbon tetrachloride [ug/L]	27-Apr-22	11:16	28-Apr-22	17:13	< 0.2
Chlorobenzene [ug/L]	27-Apr-22	11:16	28-Apr-22	17:13	< 0.5
Chloroethane [ug/L]	27-Apr-22	11:16	28-Apr-22	17:13	< 5
Chloroform [ug/L]	27-Apr-22	11:16	28-Apr-22	17:13	< 0.5
Chloromethane [ug/L]	27-Apr-22	11:16	28-Apr-22	17:13	< 5
Dibromochloromethane [ug/L]	27-Apr-22	11:16	28-Apr-22	17:13	< 0.5
1,2-Dichlorobenzene [ug/L]	27-Apr-22	11:16	28-Apr-22	17:13	< 0.5
1,3-Dichlorobenzene [ug/L]	27-Apr-22	11:16	28-Apr-22	17:13	< 0.5
1,4-Dichlorobenzene [ug/L]	27-Apr-22	11:16	28-Apr-22	17:13	< 0.5
1,1-Dichloroethane [ug/L]	27-Apr-22	11:16	28-Apr-22	17:13	< 0.5
1,2-Dichloroethane [ug/L]	27-Apr-22	11:16	28-Apr-22	17:13	< 0.5
1,1-Dichloroethylene [ug/L]	27-Apr-22	11:16	28-Apr-22	17:13	< 0.5
1,2-Dichloropropane [ug/L]	27-Apr-22	11:16	28-Apr-22	17:13	< 0.5
trans-1,2-Dichloroethene [ug/L]	27-Apr-22	11:16	28-Apr-22	17:13	< 0.5
cis-1,2-Dichloroethene [ug/L]	27-Apr-22	11:16	28-Apr-22	17:13	< 0.5
cis-1,3-Dichloropropene [ug/L]	27-Apr-22	11:16	28-Apr-22	17:13	< 0.5
trans-1,3-Dichloropropene [ug/L]	27-Apr-22	11:16	28-Apr-22	17:13	< 0.5
Ethylbenzene [ug/L]	27-Apr-22	11:16	28-Apr-22	17:13	< 0.5
Ethylenedibromide [ug/L]	27-Apr-22	11:16	28-Apr-22	17:13	< 0.2
Dichloromethane [ug/L]	27-Apr-22	11:16	28-Apr-22	17:13	< 0.5
Styrene [ug/L]	27-Apr-22	11:16	28-Apr-22	17:13	< 0.5
1,1,2,2-Tetrachloroethane [ug/L]	27-Apr-22	11:16	28-Apr-22	17:13	< 0.5
Tetrachloroethene [ug/L]	27-Apr-22	11:16	28-Apr-22	17:13	< 0.5
Toluene [ug/L]	27-Apr-22	11:16	28-Apr-22	17:13	< 0.5
Trichloroethylene [ug/L]	27-Apr-22	11:16	28-Apr-22	17:13	< 0.5
Vinyl Chloride [ug/L]	27-Apr-22	11:16	28-Apr-22	17:13	< 0.2
Trichlorofluoromethane [ug/L]	27-Apr-22	11:16	28-Apr-22	17:13	< 5
1,1,1-Trichloroethane [ug/L]	27-Apr-22	11:16	28-Apr-22	17:13	< 0.5
1,1,2-Trichloroethane [ug/L]	27-Apr-22	11:16	28-Apr-22	17:13	< 0.5
Xylene (total) [ug/L]	27-Apr-22	11:16	28-Apr-22	17:13	< 0.5
o-xylene [ug/L]	27-Apr-22	11:16	28-Apr-22	17:13	< 0.5
m/p-xylene [ug/L]	27-Apr-22	11:16	28-Apr-22	17:13	< 0.5
2-Chloroethylvinylether [ug/L]	27-Apr-22	11:16	28-Apr-22	17:13	< 5
1,1,1,2-Tetrachloroethane [ug/L]	27-Apr-22	11:16	28-Apr-22	17:13	< 0.5

OnLine LIMS

0002882054

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

Works #: 110000864

LR Report : **CA13605-APR22**

Carrie Greenlaw
Project Specialist,
Environment, Health & Safety

OnLine LIMS

0002882054

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

Works #: 110000864

01-November-2022

Mun of Kincardine (WWTP)
Attn : Lisa Crimmings

155 Durham St.
Kincardine, ON
N2Z 1A4, Canada

Phone: 519-396-4660
Fax:

Date Rec. : 19 October 2022
LR Report: **CA12694-OCT22**

Copy: #1

CERTIFICATE OF ANALYSIS

Final Report

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Completed Date	4: Analysis Completed Time	5: Final Effluent
Sample Date & Time					18-Oct-22 10:06
Temperature Upon Receipt [°C]	---	---	---	---	11.0
Chloride [mg/L]	20-Oct-22	10:05	25-Oct-22	17:48	94
Chemical Oxygen Demand [mg/L]	25-Oct-22	07:23	26-Oct-22	08:57	65
Dissolved Organic Carbon [mg/L]	23-Oct-22	13:30	24-Oct-22	08:49	8
4AAP-Phenolics [mg/L]	20-Oct-22	08:08	21-Oct-22	08:54	0.004
Hardness [mg/L as CaCO3]	28-Oct-22	18:00	31-Oct-22	16:32	196
Silver (total) [mg/L]	28-Oct-22	18:00	31-Oct-22	16:32	< 0.00005
Aluminum (total) [mg/L]	28-Oct-22	18:00	31-Oct-22	16:32	0.523
Arsenic (total) [mg/L]	28-Oct-22	18:00	31-Oct-22	16:32	0.0004
Barium (total) [mg/L]	28-Oct-22	18:00	31-Oct-22	16:32	0.0128
Beryllium (total) [mg/L]	28-Oct-22	18:00	31-Oct-22	16:32	< 0.000007
Boron (total) [mg/L]	28-Oct-22	18:00	31-Oct-22	16:32	0.149
Bismuth (total) [mg/L]	28-Oct-22	18:00	31-Oct-22	16:32	0.00004
Calcium (total) [mg/L]	28-Oct-22	18:00	31-Oct-22	16:32	56.6
Cadmium (total) [mg/L]	28-Oct-22	18:00	31-Oct-22	16:32	< 0.000003
Cobalt (total) [mg/L]	28-Oct-22	18:00	31-Oct-22	16:32	0.000277
Chromium (total) [mg/L]	28-Oct-22	18:00	31-Oct-22	16:32	< 0.00008
Copper (total) [mg/L]	28-Oct-22	18:00	31-Oct-22	16:32	0.0014
Iron (total) [mg/L]	28-Oct-22	18:00	31-Oct-22	16:32	0.063
Potassium (total) [mg/L]	28-Oct-22	18:00	31-Oct-22	16:32	10.8
Lithium (total) [mg/L]	28-Oct-22	18:00	31-Oct-22	16:32	0.0029
Magnesium (total) [mg/L]	28-Oct-22	18:00	31-Oct-22	16:32	13.2
Manganese (total) [mg/L]	28-Oct-22	18:00	31-Oct-22	16:32	0.0245
Molybdenum (total) [mg/L]	28-Oct-22	18:00	31-Oct-22	16:32	0.00092
Sodium (total) [mg/L]	28-Oct-22	18:00	31-Oct-22	16:32	67.1
Nickel (total) [mg/L]	28-Oct-22	18:00	31-Oct-22	16:32	0.0012
Phosphorus (total) [mg/L]	28-Oct-22	18:00	31-Oct-22	16:32	0.442
Lead (total) [mg/L]	28-Oct-22	18:00	31-Oct-22	16:32	0.00011
Antimony (total) [mg/L]	28-Oct-22	18:00	31-Oct-22	16:32	< 0.0009
Selenium (total) [mg/L]	28-Oct-22	18:00	31-Oct-22	16:32	0.00019
Silicon (total) [mg/L]	28-Oct-22	18:00	31-Oct-22	16:32	1.63

OnLine LIMS

0003104263

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

Works #: 110000864

LR Report : **CA12694-OCT22**

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Completed Date	4: Analysis Completed Time	5: Final Effluent
Tin (total) [mg/L]	28-Oct-22	18:00	31-Oct-22	16:32	0.00009
Strontium (total) [mg/L]	28-Oct-22	18:00	31-Oct-22	16:32	1.01
Titanium (total) [mg/L]	28-Oct-22	18:00	31-Oct-22	16:32	0.00036
Thallium (total) [mg/L]	28-Oct-22	18:00	31-Oct-22	16:32	< 0.000005
Uranium (total) [mg/L]	28-Oct-22	18:00	31-Oct-22	16:32	0.000231
Vanadium (total) [mg/L]	28-Oct-22	18:00	31-Oct-22	16:32	0.00034
Tungsten (total) [mg/L]	28-Oct-22	18:00	31-Oct-22	16:32	< 0.00002
Yttrium (total) [mg/L]	28-Oct-22	18:00	31-Oct-22	16:32	0.00002
Zinc (total) [mg/L]	28-Oct-22	18:00	31-Oct-22	16:32	0.005
Benzene [ug/L]	19-Oct-22	17:04	20-Oct-22	10:49	< 0.5
Bromodichloromethane [ug/L]	19-Oct-22	17:04	20-Oct-22	10:49	< 0.5
Bromoform [ug/L]	19-Oct-22	17:04	20-Oct-22	10:49	< 0.5
Bromomethane [ug/L]	19-Oct-22	17:04	20-Oct-22	10:49	< 0.5
Carbon tetrachloride [ug/L]	19-Oct-22	17:04	20-Oct-22	10:49	< 0.2
Chlorobenzene [ug/L]	19-Oct-22	17:04	20-Oct-22	10:49	< 0.5
Chloroethane [ug/L]	19-Oct-22	17:04	20-Oct-22	10:49	< 5
Chloroform [ug/L]	19-Oct-22	17:04	20-Oct-22	10:49	< 0.5
Chloromethane [ug/L]	19-Oct-22	17:04	20-Oct-22	10:49	< 5
Dibromochloromethane [ug/L]	19-Oct-22	17:04	20-Oct-22	10:49	< 0.5
1,2-Dichlorobenzene [ug/L]	19-Oct-22	17:04	20-Oct-22	10:49	< 0.5
1,3-Dichlorobenzene [ug/L]	19-Oct-22	17:04	20-Oct-22	10:49	< 0.5
1,4-Dichlorobenzene [ug/L]	19-Oct-22	17:04	20-Oct-22	10:49	< 0.5
1,1-Dichloroethane [ug/L]	19-Oct-22	17:04	20-Oct-22	10:49	< 0.5
1,2-Dichloroethane [ug/L]	19-Oct-22	17:04	20-Oct-22	10:49	< 0.5
1,1-Dichloroethylene [ug/L]	19-Oct-22	17:04	20-Oct-22	10:49	< 0.5
1,2-Dichloropropane [ug/L]	19-Oct-22	17:04	20-Oct-22	10:49	< 0.5
trans-1,2-Dichloroethene [ug/L]	19-Oct-22	17:04	20-Oct-22	10:49	< 0.5
cis-1,2-Dichloroethene [ug/L]	19-Oct-22	17:04	20-Oct-22	10:49	< 0.5
cis-1,3-Dichloropropene [ug/L]	19-Oct-22	17:04	20-Oct-22	10:49	< 0.5
trans-1,3-Dichloropropene [ug/L]	19-Oct-22	17:04	20-Oct-22	10:49	< 0.5
Ethylbenzene [ug/L]	19-Oct-22	17:04	20-Oct-22	10:49	< 0.5
Ethylenedibromide [ug/L]	19-Oct-22	17:04	20-Oct-22	10:49	< 0.2
Dichloromethane [ug/L]	19-Oct-22	17:04	20-Oct-22	10:49	< 0.5
Styrene [ug/L]	19-Oct-22	17:04	20-Oct-22	10:49	< 0.5
1,1,2,2-Tetrachloroethane [ug/L]	19-Oct-22	17:04	20-Oct-22	10:49	< 0.5
Tetrachloroethene [ug/L]	19-Oct-22	17:04	20-Oct-22	10:49	< 0.5
Toluene [ug/L]	19-Oct-22	17:04	20-Oct-22	10:49	< 0.5
Trichloroethylene [ug/L]	19-Oct-22	17:04	20-Oct-22	10:49	< 0.5
Vinyl Chloride [ug/L]	19-Oct-22	17:04	20-Oct-22	10:49	< 0.2
Trichlorofluoromethane [ug/L]	19-Oct-22	17:04	20-Oct-22	10:49	< 5
1,1,1-Trichloroethane [ug/L]	19-Oct-22	17:04	20-Oct-22	10:49	< 0.5
1,1,2-Trichloroethane [ug/L]	19-Oct-22	17:04	20-Oct-22	10:49	< 0.5
Xylene (total) [ug/L]	19-Oct-22	17:04	20-Oct-22	10:49	< 0.5
o-xylene [ug/L]	19-Oct-22	17:04	20-Oct-22	10:49	< 0.5
m/p-xylene [ug/L]	19-Oct-22	17:04	20-Oct-22	10:49	< 0.5
2-Chloroethylvinylether [ug/L]	20-Oct-22	10:37	21-Oct-22	06:09	< 5
1,1,1,2-Tetrachloroethane [ug/L]	19-Oct-22	17:04	20-Oct-22	10:49	< 0.5

SGS Canada Inc.
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Works #: 110000864

LR Report : **CA12694-OCT22**

Carrie Greenlaw
Project Specialist,
Environment, Health & Safety

OnLine LIMS

0003104263

APPENDIX F

Flow Meter Calibration Records

IndusControl Inc
3170 Ridgeway Drive, Unit 11
Mississauga, ON, L5L 5R4

VERIFICATION REPORT - **OCM III**
OPEN CHANNEL FLOW MEASUREMENT

Customer Name:	Municipality of Kincardine	Site/Plant Address:	520, Bruce Avenue
Plant Name:	Kincardine WWTP		Kincardine, ON, N2Z 1A4

Device Information		Service Information	
Make:	Siemens	Date:	June 6, 2022
Model:	Miltronics OCM III	Report No:	CO1337-2206-09
Tag:	WWTP Influent	Job No:	CO1337-2206

Flow Details	
Unit:	L/S
Flow Range:	0-368
Current Output:	4-20 mA
4 mA Set Point	0
20 mA Set Point	368

Inst. Reading	AS FOUND	AS LEFT
TOTALIZER (m3)	14969X1000	15015X1000
FLOW (L/S)	0.85	82.33

Maintenance Checklist				Remarks
Visual Inspection:	☑	OK	☐ NOT OK	
Electrical Inspection:	☑	OK	☐ NOT OK	

Programming Parameter of Instrument

Parameter	Discription	Value	Parameter	Discription	Value
F0	Access Code	0	P7	Height of Max. Head	0.504
P1	Dimension Unit (m)	3	P32	Totalizer Multiplier	1X1000
P3	Exponential Device	0	P42	Head by OCM III	0
P4	Cal. Method -Ratiometric	1	P45	Low Flow Cut-off	0
P5	Flow Unit	l/sec	P46	Range at Zero Head	1.112
P6	Max Flow rate	368.07	P47	Blanking Distance	0.305

Instrument Test Information and Results

Input (%)	Calculated Flow(L/S)	Calculated Input (mA)	Flow on UUT (L/S)	UUT Measured Output (mA)	Deviation (mA)
0	0.00	4.00	0.00	3.99	0.01
25	92.02	8.00	91.28	8.00	0.00
50	184.03	12.00	183.23	11.99	0.01
75	276.05	16.00	274.97	15.98	0.02
100	368.07	20.00	366.39	19.97	0.03

Information of Tools used for Verification of the Instruments

Device Description:	Manufacturer	Model
Electrical Multimeter	Fluke	179

* Refer Calibration Tools Certificates submittal for more Information

Verification Test Result:	☑ Passed	☐ Fail	☐ Not Verified

Overall Remarks:	Program parameters verified/Limited verification Performed, Measurement works as per specification

Service Technician :	Sanket Trada	Stamp/Signature	
Printed Date:	June 6, 2022		

End of Report

IndusControl Inc
3170 Ridgeway Drive, Unit 11
Mississauga, ON, L5L 5R4

VERIFICATION REPORT - **OCM III**
OPEN CHANNEL FLOW MEASUREMENT

Customer Name:	Municipality of Kincardine	Site/Plant Address:	169 Mahood - Johnson Dr
Plant Name:	Kincardine WWTP		Kincardine, ON, N2Z 1A4

Device Information		Service Information	
Make:	Siemens	Date:	June 6, 2022
Model:	Miltronics OCM III	Report No:	CO1337-2206-10
Tag:	WWTP Effluent	Job No:	CO1337-2206

Flow Details	
Unit:	L/S
Flow Range:	0-400.5
Current Output:	4-20 mA
4 mA Set Point	0
20 mA Set Point	400.5

Inst. Reading	AS FOUND	AS LEFT
TOTALIZER (m3)	8292X1000	8322X1000
FLOW (L/S)	20.70	20.75

Maintenance Checklist				Remarks
Visual Inspection:	☑	OK	☐ NOT OK	
Electrical Inspection:	☑	OK	☐ NOT OK	

Programming Parameter of Instrument

Parameter	Discription	Value	Parameter	Discription	Value
F0	Access Code	0	P7	Height of Max. Head	61.00
P1	Dimension Unit (cm)	0	P32	Totalizer Multiplier	1X1000
P3	Exponential Device	0	P42	Head by OCM III	0
P4	Cal. Method -Ratiometric	1	P45	Low Flow Cut-off	0
P5	Flow Unit	l/sec	P46	Range at Zero Head	143.776
P6	Max Flow rate	400.5	P47	Blanking Distance	50

Instrument Test Information and Results

Input (%)	Calculated Flow(L/S)	Calculated Input (mA)	Flow on UUT (L/S)	UUT Measured Output (mA)	Deviation (mA)
0	0.00	4.00	0.00	3.98	0.02
25	100.00	8.00	97.78	7.99	0.01
50	200.00	12.00	197.57	11.91	0.09
75	300.00	16.00	297.00	15.93	0.07
100	400.00	20.00	398.00	19.97	0.03

Information of Tools used for Verification of the Instruments

Device Description:	Manufacturer	Model
Electrical Multimeter	Fluke	179

* Refer Calibration Tools Certificates submittal for more Information

Verification Test Result:	☑ Passed	☐ Fail	☐ Not Verified

Overall Remarks:	Program parameters verified/Limited verification Performed, Measurement works as per specification

Service Technician :	Sanket Trada	Stamp/Signature	
Printed Date:	June 6, 2022		

End of Report

IndusControl Inc
3170 Ridgeway Drive, Unit 11
Mississauga, ON, L5L 5R4

VERIFICATION REPORT- LEVEL MEASUREMENT
MULTIRANGER PLUS

Customer Name:	Municipality of Kincardine	Site/Plant Address:	139 Valentine Avenue
Plant Name:	Kincardine PS		Kincardine, ON, N2Z 2Y6

Device Information		Service Information	
Make:	Milltronics	Date:	June 6, 2022
Model:	Multiranger Plus	Report No:	CO1337-2206-15
Order Code:	N/A	Job No:	CO1337-2206
Serial No.:	071890074-14		
Tag:	N/A		
Job Location:	Groundwater Lift		

Inst. Reading	AS FOUND	AS LEFT
Level (m)	1.639	1.650

Flow Details	
Unit:	Meter
Level Range:	0-1.8
Current Output:	4-20 mA
4 mA Set Point	0
20 mA Set Point	1.8

Maintenance Checklist			Remarks
Visual Inspection:	☑ OK	☐ NOT OK	
Electrical Inspection:	☑ OK	☐ NOT OK	

Programming Parameter of Instrument

Parameter	Discription	Value	Parameter	Discription	Value
F0	Access Code	0.00000	P40	Parshall Flume	N/A
P1	Dimension Unit (m)	1.000	P41	flow rate (per day)	4.00
P2	Mode	4	P42	OCM exponent	0.00
P3	Empty Distance	2.20	P43	Flume dimension	1
P4	Span	1.80	P45	Maximum head	1.80
P5	near blanking	0.4	P46	Maximum flow rate	1000.00

Instrument Test Information and Results

Input (%)	Calculated Distance (m)	Calculated Input (mA)	Level on UUT Display (m)	UUT Measured Output (mA)	Deviation (mA)
0	0.00	4.00	0.00	4.00	0.00
25	0.45	8.00	0.44	7.97	0.03
50	0.90	12.00	0.90	12.00	0.00
75	1.35	16.00	1.34	16.00	0.00
100	1.80	20.00	1.80	19.99	0.01

Information of Tools used for Verification of the Instruments

Device Description:	Manufacturer	Model
Electrical Multimeter	Fluke	179

* Refer Calibration Tools Certificates submittal for more Information

Verification Test Result:	☑ Passed	☐ Fail	☐ Not Verified

Overall Remarks:	Program parameters verified. Instrument works within specification.

Service Technician :	Sanket Trada	Stamp/Signature	
Printed Date:	June 6, 2022		

End of Report

Version: 19-12

IndusControl Inc
3170 Ridgeway Drive, Unit 11
Mississauga, ON, L5L 5R4

VERIFICATION REPORT- LEVEL MEASUREMENT
MULTIRANGER PLUS

Customer Name:	Municipality of Kincardine	Site/Plant Address:	139 Valentine Avenue
Plant Name:	Kincardine PS		Kincardine, ON, N2Z 2Y6

Device Information		Service Information	
Make:	Milltronics	Date:	June 6, 2022
Model:	Multiranger Plus	Report No:	CO1337-2206-16
Order Code:	N/A	Job No:	CO1337-2206
Serial No.:	06-19-97 169MW		
Tag:	N/A		
Job Location:	Leachate Lift		

Inst. Reading	AS FOUND	AS LEFT
Level (m)	3.50	7.50

Flow Details	
Unit:	Meter
Level Range:	0-3.9
Current Output:	4-20 mA
4 mA Set Point	0
20 mA Set Point	3.9

Maintenance Checklist			Remarks
Visual Inspection:	☑ OK	☐ NOT OK	
Electrical Inspection:	☑ OK	☐ NOT OK	

Programming Parameter of Instrument

Parameter	Discription	Value	Parameter	Discription	Value
F0	Access Code	0.00000	P40	Parshall Flume	1.00
P1	Dimension Unit (m)	1.000	P41	flow rate (per day)	4.00
P2	Mode	4	P42	OCM exponent	1.55
P3	Empty Distance	4.29	P43	Flume dimension	1
P4	Span	3.99	P45	Maximum head	3.99
P5	near blanking	0.3	P46	Maximum flow rate	1000.00

Instrument Test Information and Results

Input (%)	Calculated Distance (m)	Calculated Input (mA)	Level on UUT Display (m)	UUT Measured Output (mA)	Deviation (mA)
0	0.00	4.00	0.00	3.99	-0.01
25	0.98	8.00	0.97	7.99	-0.01
50	1.95	12.00	1.93	11.97	-0.03
75	2.93	16.00	2.93	16.00	0.00
100	3.90	20.00	3.90	20.00	0.00

Information of Tools used for Verification of the Instruments

Device Description:	Manufacturer	Model
Electrical Multimeter	Fluke	179

* Refer Calibration Tools Certificates submittal for more Information

Verification Test Result:	☑ Passed	☐ Fail	☐ Not Verified

Overall Remarks:	Program parameters verified. Limited Verification Performed as Sensor Immersed in water. Transmitter Test Passed.

Service Technician :	Sanket Trada	Stamp/Signature	
Printed Date:	June 6, 2022		

End of Report

Version: 19-12

APPENDIX G

Annual By-pass and Leak Report

Municipality of Kincardine
Quarterly Report of Wastewater Bypasses and Overflows
Kincardine Wastewater System
2022

Date	Start Time	End Time	Location	Bypass/Overflow	Planned /Emergency	Reason	Duration (minutes)	Quantity (m3)	Estimated or Measured Volume	Treatment Processes Gone Through	Efforts Made to Maximize Flow through Treatment Process	Samples Collected	Grab or Composite	BOD mg/L	CBOD mg/L	TSS mg/L	TP mg/L	TKN mg/L	Alkalinity mg/L	Ammonium mg/L	Nitrate mg/L	Nitrite mg/L	pH	E. coli per 100 mL	Sample date and type
January 20, 2022	0308	0440	321 Bruce Avenue Air Relief Valve chamber SVC-06	Overflow/Spill	Emergency	Air Relief Valve failure	90	15.36	Estimated	None	Diverted sewage by pumping to gravity main nearby until repaired.	Yes	grab		47	75	1.32						7.38	86000	Jan 20-raw
February 17, 2022	1530	1730	Durham St PS	Overflow/Spill	Emergency	Snow Melt/Equipment Failure	120	475	Estimated	None	None	Yes	grab		820	24400	9.5						7.3	2900000 UAL	Feb 17-raw
March 5, 2022	0030	0200	Kincardine Effluent Station	Bypass	Emergency	Power Failure	90	175	Estimated	All but disinfection	None	Yes	grab		11	22	0.4							1680 UAL	March 5-effluent
June 14-17, 2022	0800	0945	Kincardine WW Treatment	Bypass	Planned	New forcemain tie in	4425	9866	Estimated	Lagoons and UV disinfection	Bypassed the aeration cell only-raw sewage directed into lagoon cells and still flowed through final effluent UV treatment	Yes	grab	147		158	6.2	80.7	358				8.2		June 14-raw
June 14-17, 2022 continued	0800	0945	Kincardine WW Treatment	Bypass	Planned	--	--	--	--	--	--	initial raw	grab	14		12	0.26	17.6	201				7.9		June 14-cell 2 discharge
June 14-17, 2022 continued	0800	0945	Kincardine WW Treatment	Bypass	Planned	--	--	--	--	--	--	daily effluent	grab		11	9	0.33	23.8	205	16.7	0.27	0.23	7.6	<2	June 14-effluent
June 14-17, 2022 continued	0800	0945	Kincardine WW Treatment	Bypass	Planned	--	--	--	--	--	--	daily effluent	grab		10	9	0.29	17.8	197	16.8	0.34	0.32	7.5	8	June 15-effluent
June 14-17, 2022 continued	0800	0945	Kincardine WW Treatment	Bypass	Planned	--	--	--	--	--	--	daily effluent	grab		11	12	0.35	27.3	187	17.2	0.10	0.19	7.5	<2	June 16-effluent
June 14-17, 2022 continued	0800	0945	Kincardine WW Treatment	Bypass	Planned	--	--	--	--	--	--	daily effluent	grab		19	14	0.36	20.5	193	18.0	0.08	0.15	7.5	2	June 17-effluent
June 14-17, 2022 followup	0800	0945	Kincardine WW Treatment	Bypass	Planned	--	--	--	--	--	--	planned bypass followup	grab	98		102	3.59	48.8	324				7.7		June 23-raw
June 14-17, 2022 followup	0800	0945	Kincardine WW Treatment	Bypass	Planned	--	--	--	--	--	--	planned bypass followup	grab	18		16	0.28	28.5	199						June 23-cell 2 discharge
August 24, 2022	1320	1330	Huron Terrace PS	Spill	Emergency	New construction-tie in piping to new building and fitting leaked	10	0.003	Estimated	None	Pumped down wetwell and repaired fitting. Contaminated soil removed and area disinfected	No													
September 27, 2022	0615	1830	Kincardine WW Treatment	Overflow/Spill	Emergency	Heavy Precipitation and manhole plugged with roots	735	498.96	Estimated	All treatment including UV		1st sample	grab		19	41	0.26	11.3	94	8.6	0.57	0.42	8.1	<20	Sept 27/22 09:30
September 27, 2022 continued	0615	1830	Kincardine WW Treatment	Overflow/Spill	Emergency	--	--	--	--	--	--	2nd sample	grab		33	39	0.3	11.6	96	9	0.6	0.48	8.2	<20	Sept 27/22 14:25
																								UAL-Unreliable	

APPENDIX H

Complaints Summary

Description	Address	Comments	Actual Finish
Wastewater Backup/Blockage	452 MURRAY BLVD	wastewater was backing up in floor drain when water used so checked up and downstream manholes which were clear so owner was going to call a plumber	2022-03-05 08:55 PM
Wastewater Backup/Blockage	805 MACKENDRICK DR	Was asked to camera the lateral. Since the lateral was underwater we tried the clean out to find it was plugged. This property shares a section of the lateral with 801 MacKendricks. We sent the camera down 801 Mackendricks thru their clean out i	2022-03-17 02:00 PM
Wastewater Backup/Blockage	1058 Huron Terece	Checked both man hole this morning and both were flowing fine. Did not check them yesterday because the plumber had a look into the clean out at the property line and it was dry.	2022-04-11 11:45 PM
Wastewater Backup/Blockage	305 PRINCES ST S	Opened manhole. The sanitary was clear. Told home owner that it was on them.	2022-06-03 10:49 AM
Wastewater Backup/Blockage	216 LAMBTON ST	Home owner call after hours emergency line Home ower said toilet had sewage coming back. I went to 216 Lampton to investigate found backed up toilet was not in basement it was on an uper floor. there was no water in basement. Instructed home owner t	2022-07-12 07:25 AM
Wastewater Backup/Blockage	222 HARBOUR ST	Home owner at 222 harbour St. called after hours emergency services. they said they had a toilet and a shower backed up. i called the home owner and instructed them to call a plumber and when the drain was clear to scheduled a lateral camera inspecti	2022-07-12 11:55 PM
Wastewater Backup/Blockage	240 Goderich St	See wo's 12326, 12327 and 12342	2022-08-17 12:00 PM
Wastewater Backup/Blockage	12 HURON RIDGE CR	had slow drain plumber would like us to check manholes in street to ensure they are flowing	2022-08-22 02:27 PM
Wastewater Backup/Blockage	6 MOUNT FOREST AVE	Answering service called at 2003. Spoke to Carman at 2005 to be informed of sewer back up. She had a lot of sewage in the basement. On site at 2043. Checked both upstream and downstream man hole as well as their clean out that is located on the roads	2022-08-26 09:45 PM
Wastewater Backup/Blockage	767 Olde Victoria St	Repaired by Kemptons.	2022-09-02 10:13 AM
Wastewater Backup/Blockage	731 PRINCES ST	checked upstream and downstream manholes both were ok	2022-09-07 02:00 PM
Wastewater Backup/Blockage	1120 SUTTON ST	called by Answering Service, plumber had been trying to snake t and unsuccessful. lateral goes directly into manhole when i checked it all ok but could be grease coming out of lateral, informed plumber and pizza hut manager that it would have to be j	2022-09-22 05:30 PM
Wastewater Backup/Blockage	759 WALSH ST	both upstream and downstream manholes ok, talked to lady at place, the issue is only the one laundry tub in basement. no water coming from any floor drains, so probably a plugged sink drain	2022-09-28 12:10 PM
Wastewater Leak	1117 SUTTON ST	Holding tanks were full of water, Porters came and sucked it out for Ideal Supply. Inspected to manhole infront of store, had an employee flush the toilet and ran the sink, entered the manhole fine. Went inside to look at holding tank, had them flush	2022-10-04 01:30 PM
Wastewater Backup/Blockage	1 Kearns Lane	Checked manhole with jz,ok	2022-10-04 04:00 PM
Wastewater Backup/Blockage	846 Andrew Malcolm Dr	No time charged to this call.	2022-10-13 02:00 PM
Wastewater Backup/Blockage	176 NELSON ST	checked manholes and everything ok, they had a plumber on site to snake the lateral and never heard back from them	2022-11-02 11:52 AM
Wastewater Backup/Blockage	846 ANDREW MALCOLM DR	I have asked all the operators if they recall ever being called to camera the lateral. No one has been there to camera this. Plus I checked the memory stick and Lateral files and there is nothing on file. Mu guess is the homeowner has forgot to reach out	2022-12-21 12:00 PM
Wastewater Backup/Blockage	171 Kingsway St, N2Z 1C4	Homeowner never called back	2022-11-30 10:48 AM
Wastewater Backup/Blockage	951 William St, N2Z 2G9	Spoke to Joel. Joel was on site when Kempton's were doing the repair. Once the lateral was located and opened up the camera was sent down to verify municipal side. Everything was good, no issue observed. Kempton's then proceeded to make the repair.	2022-12-02 05:00 PM
Wastewater Backup/Blockage	591 McGaw Drive	Had couple operators camera this. After inspecting it i passed along to Jeff for viewing. It appears to be a check valve that is stuck open. Will investigate it further	2022-03-08 03:50 PM
Wastewater Backup/Blockage	456 MCLEOD AVE	Found roots about 10 m in. informed homeowner and put a flag where our locator picked up the camera head. right along front flowerbed along house	2022-05-19 03:56 PM
Wastewater Backup/Blockage	6 MOUNT FOREST AVE	Darin and I attempted to send our snake down at the roadside cleanout with no luck. It did not want to make the 90 degree turn. Ended up sending the camera down the initial clean out. Used the camera to unplug the issue. Ran the camera all the way to	2022-05-30 02:00 PM
Wastewater Backup/Blockage	216 LAMBTON ST	Keith Pollock given the results on July 15 by Jeff. They are going back to snake the line again.	2022-07-14 02:10 PM
Wastewater Backup/Blockage	779 Princes St	there was a rock at start of cleanout and when tried to push it out to main it got stuck on something 46m out which is about 1.5 m from main, unable to get either to move, unable to tell what it is that rock is stuck on	2022-10-31 02:16 PM
Wastewater Backup/Blockage	221 BROADWAY ST	Company was camering lateral for natural gas. Told homeowner there was blockage in lateral.	2022-04-08 09:52 AM