

**AMENDED ENVIRONMENTAL COMPLIANCE APPROVAL**

NUMBER 6045-ARDJS7

Issue Date: November 23, 2017

The Corporation of the Town of South Bruce Peninsula  
315 George St  
South Bruce Peninsula, Ontario  
N0H 2T0

Site Location: Wiarton Wastewater Treatment Plant  
441048 Elm Street (Lot 2, Concession 21E)  
Georgian Bluffs Township, County of Grey  
N0H 2T0

*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:*

Establishment, usage and operation of an existing municipal sewage works in accordance with Section 53 of OWRA, for the collection, transmission, treatment of sanitary sewage and disposal of effluent to Colpoys Bay via a Sewage Treatment Plant, Wiarton Wastewater Treatment Plant, located in Lot 2, Concession 21E, Township of Georgian Bluffs, as follows:

**Classification of Collection System:** Separate Sewer System

**Capacity of Sewage Treatment Plant:**

- **Rated Capacity** - Based on the commissioned Previous Works: 4,400 m<sup>3</sup>/d

**PROPOSED WORKS :**

**Septage Equalization Storage Pond**

- One (1) 8.4 L/s capacity pump conveying septage from the Septage Receiving Management System described below and discharging through one (1) 100 mm diameter 40 m long forcemain to the Septage Equalization Storage Pond described below;
- One (1) Septage Equalization Storage Pond having a total storage capacity of 2,000 m<sup>3</sup>,

consisting of a pond interior berm with 3H:1V slopes, pond bottom area of 250 m<sup>2</sup>, and pond top area of 1220 m<sup>2</sup>, providing a 0.6 m freeboard, equipped with 200 mm diameter pond drain pipe discharging by gravity to the filter backwash pumping station described below under Effluent Filtration Plant section;

- One (1) 56 kW air blowers providing 660 L/s @ 40 kPa of air for mixing of contents of the septage receiving and equalization storage pond described above, equipped with soundproof enclosures and silencers, to be located in the existing Filter and Disinfection Building;

#### **Standby Power Diesel Generator**

- One (1) 300 kW and 375 kVA capacity stand-by power diesel generator and one (1) 2,270 L capacity double-walled diesel storage tank, designed to provide 24-hour fuel supply, equipped with acoustic silencer and piping, and to be located outdoors; and

All in accordance with the submitted supporting documents listed in Schedule A.

#### **PREVIOUS WORKS APPROVED ON OCTOBER 6, 2015 UNDER ECA No. 6375-A2PKKS:**

##### **Septage Receiving Management System**

- One (1) septage reception station including piping and magnetic flow meter to be installed in an underground concrete chamber, equipped with controlled access and record keeping of septage being received, discharging to an existing filter backwash pumping station described below under Effluent Filtration Plant section;

##### **Screening of Raw Sewage**

- One (1) concrete channel with approximate dimensions of 0.5 m width x 1.1 m depth x 8.85 m length housing one (1) mechanical stainless steel fine screen (Escalator<sup>®</sup> Fine Screen or equivalent) with 6 mm openings operating in upstream water depth of 0.45 m, equipped with 0.5 hp screen drive motor, screen cleaning brush, and 2.0 hp screened solids compactor, discharging to the Moving Bed Biofilm Reactor (MBBR) described below;
- One (1) concrete channel located parallel to the mechanical screen channel described above, designed to handle overflows and having an approximate dimensions of 1.4 m depth x 1.05 m width x 8.5 m length, equipped with one (1) overflow weir, one (1) fixed screen with 12 mm x 12 mm openings, and one (1) fixed screen with 6 mm x 6 mm openings, discharging to the Moving Bed Biofilm Reactor (MBBR) described below;

##### **Moving Bed Biofilm Reactor (MBBR)**

- One (1) Moving Bed Biofilm Reactor (MBBR) consisting of three (3) concrete cells, with

Cell #1 having approximate dimensions of 11.0 m wide x 6.0 m deep x 5.3 m long, Cell #2 having approximate dimensions of 11.0 m wide x 6.0 m deep x 5.3 m long, and Cell #3 having approximate dimensions of 11.0 m wide x 6.0 m deep x 9.5 m long, consisting of:

- Cell #1 and Cell #2 to be used for BOD<sub>5</sub> removal providing a total reactor volume of 632.5 m<sup>3</sup> at 5.0 m liquid depth, filled with disk shaped free-floating carrier media (Anox<sup>TM</sup> K5 free-floating media or equivalent), providing a total of 233,990 m<sup>2</sup> media carrier surface area, equipped with two (2) medium bubble stainless steel aeration system in Cell 1, two (2) medium bubble stainless steel aeration system in Cell 2, and media retaining sieves with 6 mm diameter openings;
- Cell #3 to be used for nitrification providing a total reactor volume of 519.1 m<sup>3</sup> at 5.0 m liquid depth, filled with disk shaped free-floating carrier media (Anox<sup>TM</sup> K5 free-floating media or equivalent), providing a total of 183,152 m<sup>2</sup> media carrier surface area, equipped with three (3) medium bubble stainless steel aeration system and media retaining sieves with 6 mm diameter openings;
- Two (2) 30 hp air blowers (one duty, one standby) providing 1,675 Nm<sup>3</sup>/h at 7.9 Psi of air to the Moving Bed Biofilm Reactors (MBBR) equipped with soundproof enclosures and silencers; and

#### **Floating Islands Wetland and Lagoon Mixers**

- Installation of constructed Floating Treatment Wetlands in Waste Stabilization Lagoons (Cell #2 and Cell #3), consisting of approximately five thousand (5,000) modules of PhytoLinks floating treatment wetlands, each PhytoLinks module is an engineered hexagon-shaped floating material designed to grow emergent aquatic macrophytes hydroponically, installed downstream of the MBBR to provide effluent polishing;
- Installation of wastewater circulation devices with a combined total capacity of circulating up to 361,700 m<sup>3</sup>/d of wastewater, designed to provide passive mixing and aeration on the bottom of the lagoon to digest the sludge; and
- Including all controls and associated appurtenances.

All in accordance with the submitted supporting documents listed in Schedule A.

**PREVIOUS WORKS APPROVED ON SEPTEMBER 23, 2011 UNDER ECA No. 8533-8L3HJ3 :**

#### **Lagoon Influent Distribution Chamber**

Decommissioning of the existing lagoon influent distribution chamber and installation of a new concrete influent distribution chamber with overall approximate dimension of 5.35 m

long x 4.00 m wide x 3.00 m high equipped with the following:

- One (1) 300 mm diameter PVC influent inlet forcemain and one (1) spare 300 mm diameter PVC influent inlet forcemain, both equipped with a 300 mm diameter knife gate valves, discharging to an influent chamber described below;
- One (1) 165 m long 300 mm diameter PVC influent bypass forcemain equipped with a 300 mm diameter knife gate valve discharging to Lagoon Cell No. 2;
- One (1) 150 mm diameter PVC filter backwash inlet forcemain equipped with a 150 mm diameter knife gate valves discharging to an influent chamber described below;
- One (1) 25 m long 150 mm diameter PVC filter backwash bypass forcemain equipped with a 150 mm diameter knife gate valve discharging to Lagoon Cell No. 2;
- One (1) influent inlet chamber with approximate dimension of 3.40 m wide x 1.20 m long x 1.2 m high equipped with two (2) aluminium sluice gate valves discharging to two (2) influent outlet chambers described below:
- One (1) influent outlet chamber with approximate dimension of 1.60 m wide x 1.20 m long x 1.2 m high discharging through a 40 m long 400 mm diameter PVC influent pipe to Lagoon Cell No. 1;
- One (1) influent outlet chamber with approximate dimension of 1.60 m wide x 1.20 m long x 1.2 m high discharging through a 25 m long 450 mm diameter PVC overflow pipe to Lagoon Cell No. 1; and
- Including all controls and associated appurtenances.

All in accordance with the submitted supporting documents listed in Schedule A.

#### **PREVIOUS WORKS APPROVED ON APRIL 26, 2006:**

##### **Sewage Pumping Station No. 1 (Taylor Street Pumping Station)**

Upgrades to the existing Sewage Pumping Station No.1 located at No. 524 Taylor Street, approximately 60 m south of George Street consisting of:

- An existing wet well with two compartments, each approximately 3.1 m x 2.35 m x 0.95 m (operating depth for duty pump) with flow control gates, emergency isolating sluice gate, access ladders, railing, platform and ventilation;
- Installation of two (2) new 60 hp 1775 rpm sewage pumps located in a dry well each with a rated capacity of 103.0 L/sec at a TDH of 29.0 m (one duty, one standby) and a combined rated capacity of 130.0 L/sec at a TDH of 39.0 m;

- Installation of a forcemain air relief and/or vacuum relief valve in the dry well;
- Installation of three (3) new air relief and/or vacuum relief valve chambers along the forcemain between Sewage Pumping Stations No. 1 and No. 2;
- One (1) existing flow meter; and
- Including minor modifications to pump inlet and discharge piping, electrical, pump controls, and associated appurtenances and other mechanical upgrades.

### **Sewage Lagoons**

- Add a second outlet pipe from the splitter box into Cell No. 1 to prevent any sewage overflow;

All in accordance with the submitted supporting documents listed in Schedule A.

### **PREVIOUS WORKS APPROVED ON OR BEFORE NOVEMBER 9, 2005:**

#### **TRUNK SEWERS**

Construction of a trunk sewer as follows:

| STREET          | FROM   | TO  |
|-----------------|--|---|
| Blue Water Park | William St. approx. 135 m East of Claude St.   | Brown St. approx. 200 m north of George St.   |
| Easement        | Brown St. approx. 200 m north of George St.    | Scott St. approx. 70 m north of George St.    |
| Easement        | Scott St. 70 m north of George St.             | George St. approx. 125 m east of Scott St.    |
| Easement        | George St. approx. 125 m east of Scott St.     | Pumping Station (# 524 Taylor St.)            |
| George St.      | Existing Pumping Station George St./Taylor St. | George St. approx. 125 m east of Scott Street |

#### **SEWAGE PUMPING STATIONS**

##### **Sewage Pumping Station No. 2**

Sanitary Sewage Pumping Station No. 2 to be constructed on a site on the southwest corner of the intersection of Elm Street and Taylor Street, consisting of:

- An inground divided wet well equipped with three (3) submersible sewage pumps each with a rated capacity of 116 L/sec at a TDH of 30.5 m (one duty, two standby) and two (2) pumps in parallel having a rated capacity of 164.81 L/sec at a TDH of 36.68 m (two duty, one standby);
- Ultrasonic liquid level float control system with alarms and backup float control system, piping, inlet bar screen, lockable access hatchway, ladder, benching, mechanical

ventilation system c/w two (2) goosenecked vents with bird screens;

- An overflow to Elm Street, connecting sanitary sewer from Elm Street and connecting inlet and outlet sanitary forcemain discharge piping to Taylor Street;
- A separate attached inground valve chamber housing a valved bypass piping, valves and piping, and a goose-necked vent with bird screen; and
- An above ground Control Building located on the southwest corner of the intersection of Elm Street and Taylor Street adjacent to and east of the Sanitary Sewage Pumping Station No. 2 housing a 250 kW diesel generator set, control panel, ventilation, etc., together with a below floor level pipe chase housing a flowmeter and valves and piping;

### **STANDBY POWER AND EMERGENCY OVERFLOW SYSTEM**

- Emergency station overflow sewer 600 mm diameter approximately 120 m in length from the pumping station to manhole at Taylor Street / George Street and manhole connection to the Marine outfall at the intersection of Tyson Street / George Street, with control sluice gate;
- Standby power to be provided by a 125 kW diesel generator set to be located at the station;
- Provision of an emergency bypass connection on the discharge forcemain;
- Including all the necessary appurtenances and controls, heating, ventilation, and electrical works.

### **WASTE STABILIZATION LAGOONS**

#### **Sewage Lagoons**

Expansion of the existing three-cell waste stabilization pond (total 6 ha) from an existing 760 m<sup>3</sup>/day at a nominal operating depth of 1.52 m to 2006 m<sup>3</sup>/day with continuous discharge to Colpoy's Bay, located on Lot 1, Concession 21, Township of Keppel, County of Grey, and consisting of:

- Improvements to existing berms by addition of fill material, grading, and seeding;
- New control structure (inlet, outlet, and inter-cell);
- Installation of additional interconnecting pipes between adjacent cells;

## **Lagoon Aeration System**

Installation of a submerged air diffusion system consisting of header feeder pipes, and distribution diffusion tubes installed across the cells as follows:

- Cell No. 1 - 37 lines at spacings varying from 3.05 m to 6.1 m centre to centre;
- Cell No. 2 - 10 lines at spacing of 17 m centre to centre;
- Cell No. 3 - 5 lines at spacing of 38 m centre to centre;
- Two (2) rotary positive displacement blowers, each rated at 165 L/sec against a head of 42 kPa (one as standby) and belt driven by 15 kW motors;
- Installation of new fine-bubble aeration system in Cell 1, including new air header and lateral pipes and membrane diffusion tubes;
- Replacement of all aeration tubes in Cells 2 and 3 with new ones;
- Modification of piping and ventilation system in existing blower building;

## **PHOSPHORUS REMOVAL SYSTEM**

- Installation of a 22,700 L chemical storage tank for storage of phosphorus removal chemical;
- Installation of two (2) positive displacement type chemical metering pumps (one on standby) each capable of pumping 41 L/hr at 1034 kPa, for dosing phosphorus removal chemical to the sewage at a dosing point located in the outlet forcemain;

## **EFFLUENT FILTRATION PLANT**

Construction of an Effluent Filtration Plant with a peak design flow capacity of 5,734 m<sup>3</sup>/day located in a filtration building consisting of the following:

- Three (3) effluent filter cells, each cell having two (2) filter modules, providing a total filtration area of 27.9 m<sup>2</sup> and filtration depth of 2.0 m, equipped with air compressors for continuous filter backwash, influent flow measurement weir with ultrasonic level detector, and a bypass weir to allow filter bypass during events of high peak flows exceeding 5,734 m<sup>3</sup>/day;
- One (1) 3.0 m diameter and 6.5 m deep precast concrete wet well for receiving filter backwash and septage, equipped with two (2) submersible pumps each with a capacity of 23.3 L/sec @ 19.5 m TDH and a 2.7 m x 2.1 m precast valve chamber, discharging into Cell No. 1 through a 200 mm diameter forcemain;

- One (1) 12,000 L capacity coagulant storage tank (2.13 m diameter x 3.5 m high), equipped with two (2) coagulant metering pumps (one duty and one standby) dosing coagulant at a flow paced rate upstream of the filtration units;
- Installation of a third rotary positive displacement blower rated at 165 L/sec against a head of 42 kPa and belt driven by 15 kW motors (standby blower); and
- Including controls, instrumentation, and associated appurtenances.

## **EFFLUENT DISINFECTION SYSTEM**

installation of an Ultraviolet Disinfection System (Wedeco Model TAK55M 6-2 or Equivalent) designed for a of 8,000 m<sup>3</sup>/day, consisting of:

- One (1) UV disinfection unit with approximate dimensions of 2.0 m long x 0.470 m wide x 0.684 m minimum water depth, containing one (1) UV bank with two (2) UV modules each with twelve (12) high intensity low pressure UV lamps ( a total of 24 lamps), designed to provide a 30.0 mJ/cm<sup>2</sup> UV dosage at 55 % Transmittance at 254 nm during peak design flow of 8,000 m<sup>3</sup>/day;
- Provision of a hypochlorite solution storage tank complete with 100% spill containment, and an 11.36 L/hr capacity metering pump for seasonal chlorination of lagoon effluent (before filtration and UV disinfection) for control of algae growth between May and September of each year.

## **OUTFALL AND OVERFLOW SEWERS**

- Construction of outfall (including marine section) and overflow sewers as follows:

| STREET        | FROM              | TO                                      |
|---------------|-------------------|---|
| Lagoon Site   | Effluent Chambers | Elm Street / Taylor Street intersection |
| Taylor Street | Elm Street        | George Street                           |
| Taylor Street | Pumping Station   | George Street                           |
| George Street | Taylor Street     | Tyson Street                            |
| George Street | Isaac Street      | Tyson Street                            |

- Construction of a new section of 300 mm diameter outfall sewer north of Cell 3 and conversion of an existing 200 mm diameter back-up forcemain to a second effluent outfall sewer;
- Including all the necessary appurtenances.



## LAGOON FACILITY CONTROL BUILDING

Construction of a 10.6 m x 6.9 m building to accommodate the following:

- Two (2) motor driven blowers complete with connecting pipework and all necessary appurtenances;
- Motor control centre; and
- Including yard piping, electrical power supply and equipment, heating and ventilation equipment and all other necessary appurtenances and controls.

All in accordance with the submitted supporting documents listed in Schedule A.

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

1. "Annual Average Effluent Concentration" means 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, weighted by the quantity of the Final Effluent discharged over the days deemed to be represented by each sample;
2. "Annual Average Daily Effluent Flow" means the cumulative total Final Effluent discharged during a calendar year divided by the number of days during which Final Effluent was discharged that year;
3. "Annual Average Daily Effluent Loading" means the value obtained by multiplying the Annual Average Effluent Concentration of a contaminant by the Annual Average Daily Effluent Flow over the same calendar year;
4. "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;
5. "Approval" means this entire document and any schedules attached to it, and the application;
6. "BOD5" (also known as TBOD5) means five day biochemical oxygen demand measured in an unfiltered sample and includes carbonaceous and nitrogenous oxygen demands;
7. "Bypass" means diversion of sewage around one or more unit processes 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;
8. "CBOD5" means five day carbonaceous (nitrification inhibited) biochemical oxygen demand measured in an unfiltered sample;
9. "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;

10. "*E. coli* " refers to the thermally tolerant forms of Escherichia that can survive at 44.5 degrees Celsius;
11. "EPA" means the *Environmental Protection Act* , R.S.O. 1990, c.E.19, as amended;
12. "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;
13. "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;
14. "Final Effluent" means effluent that are 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;
15. "Geometric Mean Density" means the geometric mean of all Single Sample Results of density measurement in the samples taken over the period specified;
16. "Imported Sewage" means portable toilet waste, holding tank waste, leachate, septage, processed organics hauled to the Sewage Treatment Plant by licensed waste management system operators and at the specific characteristics and quantities approved for co-treatment in the Sewage Treatment Plant;
17. "Influent" means flows to the Sewage Treatment Plant from the collection system and Imported Sewage but excluding process return flows;
18. "Limited Operational Flexibility" (LOF) means the protocol under which the Owner shall follow in order to undertake any modification that is pre-approved in this Approval;
19. "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;
20. "Monthly Average Effluent Concentration" means 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, weighted by the quantity of the Final Effluent discharged over the days deemed to be represented by each sample;
21. "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;

22. "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;
23. "Overflow" means a discharge to the environment from the Works at a location other than the approved effluent disposal facilities or via the effluent disposal facilities downstream of the Final Effluent sampling point;
24. "Owner" means The Corporation of the Town of South Bruce Peninsula and its successors and assignees;
25. "OWRA" means the *Ontario Water Resources Act* , R.S.O. 1990, c. O.40, as amended;
26. "Peak Daily Flow Rate" (also referred to as maximum daily flow or maximum day flow) means the largest volume of flow to be received during a one-day period for which the sewage treatment process unit or equipment is designed to handle;
27. "Peak Hourly Flow Rate" (also referred to as maximum hourly flow or maximum hour flow) means the largest volume of flow to be received during a one-hour period for which the sewage treatment process unit or equipment is designed to handle;
28. "Peak Instantaneous Flow Rate" means the instantaneous maximum flow rate as measured by a metering device for which the sewage treatment process unit or equipment is designed to handle;
29. "Preliminary Treatment System" means all facilities in the Sewage Treatment Plant associated with screening and grit removal;
30. "Previous Works" means those portions of the Works included in the Approval that have been constructed previously;
31. "Primary Treatment System" means all facilities in the Sewage Treatment Plant associated with the primary sedimentation unit process and includes chemically enhanced primary treatment;
32. "Proposed Works" means those portions of the Works included in the Approval that are under construction or to be constructed;
33. "Rated Capacity" means the Annual Average Daily Influent Flow for which the Sewage Treatment Plant is designed to handle;
34. "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;
35. "Secondary Treatment System" means all facilities in the Sewage Treatment Plant associated with

biological treatment, secondary sedimentation and phosphorus removal unit processes;

36. "Sewage Treatment Plant" means the entire sewage treatment excluding the Final Effluent disposal facilities;
37. "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;
38. "Water Supervisor" means the Water Compliance Supervisor for the Safe Drinking Water Branch (SDWB) for the London office of the Ministry;
39. "Works" means the approved sewage works, and includes Proposed Works, Previous Works and 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 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 terms and conditions herein and shall take all reasonable measures to ensure any such person complies with the same.
2. The Owner shall design, construct, operate and maintain the Works in accordance with the conditions of this Approval.
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 OPERATOR**

1. The Owner shall, within thirty (30) calendar days of issuance of this Approval, prepare/update and submit to the Water Supervisor the Municipal and Local Services Board Wastewater System Profile Information Form (obtainable from the Water Supervisor) under any of the following situations:
  - a. the form has not been previously submitted for the sewage works;

- b. this Approval is issued for extension, re-rating or process treatment upgrade of the sewage works;
  - c. every time when a notification is provided to the Water Supervisor in compliance with requirements of change of Owner or operator under this condition.
- 2. 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 address of Owner;
  - b. change of Owner, including address of new 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. B.17* , as amended, shall be included in the notification;
  - 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. C.39* , as amended, shall be included in the notification.
- 3. The Owner shall notify the Water Supervisor, in writing, of any of the following changes within thirty (30) days of the change occurring:
  - a. change of address of operator;
  - b. change of operator, including address of new operator.
- 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 Water Supervisor.
- 5. The Owner shall ensure that all communications made pursuant to this condition refer to the number at the top of this Approval.

### **3. TIMING FOR 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 cease to apply in respect of any portions of the Works not in operation.
- 2. One (1) week prior to commissioning operation of any portion of the Proposed Works, the Owner shall notify the Water Supervisor, in writing, of the pending start up date. The

notification shall include a statement, certified by a Professional Engineer, that the portion of the Proposed Works to be commissioned 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 retained at the Works for the operational life of the Works.
4. 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 in paragraph 1 of this condition, 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).

#### **4. BYPASSES**

1. Any Bypass is prohibited, except:
  - a. in an emergency situation 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; and
  - b. where the Bypass is a direct and unavoidable result of a planned repair and maintenance procedure or other circumstance(s), the Owner having notified the Water Supervisor 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 Water Supervisor has given written consent of the Bypass.
2. 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 date and time of the beginning of the Bypass;
  - b. the location of the Bypass and the treatment process(es) bypassed;
  - c. the reason(s) for the Bypass.
3. Upon confirmation of the end 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 date and time of the end of the Bypass;
  - b. the measured or estimated volume of Bypass.
4. 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, following the same protocol specified in the Monitoring and Recording condition as for the regular samples. The sample(s) shall be in addition to the regular Final Effluent samples required under the monitoring and recording condition, except when the Event occurs on a scheduled routine monitoring day.
  5. The Owner shall submit a summary report of the Bypass Event(s) to the Water Supervisor 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 Subsections (2), (3) and (4) and assessment of the impact of the Event(s) on Final Effluent, plant operation and the receiver, and planned mitigation strategies, as appropriate.

## **5. OVERFLOWS**

1. Any Overflow is prohibited, except:
  - a. 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. where the Overflow is a direct and unavoidable result of a planned repair and maintenance procedure or other circumstance(s), the Owner having notified the Water Supervisor 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 Water Supervisor has given written consent of the Overflow;
2. At the beginning of an Overflow 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 date and time of the beginning of the Overflow;

- b. the location of the Overflow and the receiver and disinfection status of the Overflow;
  - c. the reason(s) for the Overflow.
- 3. Upon confirmation of the end of an Overflow 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 date and time of the end of the Overflow;
  - b. the measured or estimated volume of the Overflow;
  - c. the mitigation measures taken.
- 4. For any Overflow Event 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, 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. For any Overflow Event at a sewage pumping station in the collection system, the Owner shall collect at least one (1) grab sample representative of the Overflow Event and have it analyzed for BOD5, total suspended solids, total phosphorus and total Kjeldahl nitrogen.
- 5. The Owner shall submit a summary report of the Overflow Event(s) to the Water Supervisor 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 Subsections (2), (3) and (4) and assessment of the impact of the Event(s) on plant operation and the receiver, and planned mitigation strategies, as appropriate.

## **6. DESIGN OBJECTIVES**

- 1. The Owner shall design and 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.

2. The Owner shall make an assessment of the issues and recommendations for pro-active actions if any is required under the following situations and include in the annual report to the Water Supervisor:
  - a. when any of the design objectives is not achieved more than 50% of the time in a year;
  - b. when the Annual Average Daily Influent Flow reaches 80% of the Rated Capacity.

## **7. COMPLIANCE LIMITS**

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

## **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 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 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 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 and contingency plan, consisting of contingency plans and procedures for dealing with equipment breakdowns, potential spills and any other abnormal situations,

- including notification of the Water Supervisor;
- f. 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 retain a copy at the location of the Works for the operational life of the Works and upon request, make the manual available to Ministry staff.
  4. The Owner shall provide for the overall operation of the Works an operator who possesses the level of knowledge, training and experience sufficient to allow for the safe and environmentally sound operation of the Works in accordance with the requirements of this Approval and, where required by regulation, holds a licence that is applicable to those type and class of the facilities included in the Works. At least three (3) months prior to commissioning of the Works, the Owner shall submit a statement of qualifications of the person to be appointed as the operator of the Works, including copies of certificates, license as required, to the Water Supervisor for review and approval of the appointment.

## **9. MONITORING AND RECORDING**

1. The Owner shall, upon commencement of operation of the Works, carry out a routine 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. a schedule of the day of the week/month and time of the day for the routine sampling shall be forwarded to the Water Supervisor for record. The sampling schedule shall be revised and updated every year through rotation of the day of the week/month and time of the day for the routine sampling program.
  - c. definitions and preparation requirements for each sample type are included in document referenced in paragraph 4.b.
  - d. definitions for frequency:
    - i. Daily means once every day;
    - ii. Weekly means once every week;
    - iii. Bi-weekly means once every two weeks;
    - iv. Monthly means once every month;
    - v. Quarterly means once every three months; and

vi. Annually means once every year.

2. In addition to the routine monitoring program required in paragraph 1, the Owner shall collect samples of the Final Effluent, by means of the specified sample type and analyzed for each parameter listed in the tables under the monitoring program included in Schedule D on any day when there is any abnormal operating conditions with or without occurrence of Bypass or Overflow.
3. The Single Sample Results obtained on any routine monitoring day are deemed to be representative of the quality of the Final Effluent on that day and the calendar days that followed until the next routine monitoring day, except for any intervening day(s) when abnormal operating conditions occurred.
4. 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:
  - 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.
5. The temperature and pH of the Final Effluent shall be determined in the field at the time 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.
6. The Owner shall monitor and record the flow rate and daily quantity of the following sewage streams with an accuracy to within plus or minus 15 per cent (+/- 15%) of the actual flowrate:
  - a. Influent flow to the Sewage Treatment Plant by continuous flow measuring devices and instrumentations/pumping rates, 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/pumping rates, 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. Each type of Imported Sewage received for co-treatment at the Sewage Treatment Plant by

flow measuring devices and instrumentations/pumping rates/haul truck manifests.

7. 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 pumping stations and Sewage Treatment Plant of the Works in accordance with the document "Limited Operational Flexibility - Protocol for Pre-Authorized Modifications to Municipal Sewage Works", included as Schedule E of this Approval, 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, MOE 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" (included in Schedule E) shall be completed with declarations from a Professional Engineer and the Owner and submitted to the Water Supervisor at least thirty (30) days prior to the scheduled implementation date. The notification shall also include technical memorandum, engineering plans and specifications, as applicable and appropriate to support the declarations that the modifications conform with LOF.
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 involves 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 involves addition of or change in technology of a treatment process or that may involve reassessment of the treatment train process design;
  - d. Modifications that requires 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 Water Supervisor 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 *Environmental Protection Act*, submit a full written report of the occurrence to the Water Supervisor 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 Ont. 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 Water Supervisor 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 and Imported Sewage monitoring data, including sewage characteristics, flow rates and a comparison to the values used in the design of the Works;
  - 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;

- g. a summary of efforts made to achieve the design objectives;
- h. a tabulation of the volume of sludge generated, an outline of anticipated volumes to be generated in the next reporting period and a summary of the locations to where the sludge was disposed;
- i. a summary of any complaints received and any steps taken to address the complaints;
- j. a summary of all Bypasses, Overflows, spills within the meaning of Part X of EPA and abnormal discharge events, and other abnormal operating conditions;
- k. a copy of all Notice of Modifications to Sewage Works submitted to the Water Supervisor under paragraph 1.d. of Condition 10, with a summary report on status of implementation of all modification.

*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 operator is included to ensure that the Ministry records are kept accurate and current with respect to ownership and operator 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 timing for 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 that prior to the commencement of construction of the portion of the Works that are approved in principle only, the Director will have the opportunity to review detailed design drawings, specifications and an engineer's report containing detailed design calculations for that portion of the Works, to determine capability to comply with the Ministry's requirements stipulated in the terms and conditions of the Approval, 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.

## **Schedule A**

### **PREVIOUS WORKS APPROVED ON OR BEFORE NOVEMBER 9, 2005:**

1. Application for Approval of Municipal and Private Sewage Works submitted by The Town of South Bruce Peninsula.
2. Environmental Assessment Report, design brief, plans and specifications together with associated pipework, mechanical and electrical works, instrumentation and controls prepared by Henderson, Paddon & Associates Limited.
3. Application for Approval of Municipal and Private Sewage Works submitted by the Town of South Bruce Peninsula dated August 30, 2002, and drawing and design specifications prepared by Henderson, Paddon & Associates Limited in the document titled "Design Brief - Effluent Filtration System for Former Town of Wiarton Wastewater Treatment Lagoons - Town of South Bruce Peninsula" dated September 2002.
4. Application for Approval of Municipal and Private Sewage Works submitted by the Town of South Bruce Peninsula dated June 3, 2005, and drawing and design specifications prepared by Henderson, Paddon & Associates Limited.
5. "Design Summary - Effluent Filtration System for Former Town of Wiarton Wastewater Treatment Lagoons - Installation of UV Disinfection System, Town of South Bruce Peninsula" dated March 2003.

### **PREVIOUS WORKS APPROVED ON APRIL 26, 2006:**

1. Application for Approval of Municipal and Private Sewage Works submitted by The Town of South Bruce Peninsula dated January 17, 2006, and design specifications and drawings prepared by Henderson, Paddon & Associates Limited, Consulting Engineers, Owen Sound, Ontario.
2. "Design Report, Upgrades to Existing Sanitary Sewage Pumping Station No. 1, Former Town of Wiarton, Town of Bruce Peninsula" dated January 2006, prepared by Henderson, Paddon & Associates Limited, Consulting Engineers.

### **PREVIOUS WORKS APPROVED ON SEPTEMBER 23, 2011 UNDER ECA No. 8533-8L3HJ3 :**

1. Application for Approval of Sewage Works submitted by The Town of South Bruce Peninsula dated July 29, 2011 and design specifications and drawings prepared by Gamsby and Mannerow Limited, Guelph, Ontario;
2. "Warton Sewage Lagoons Influent Distribution Chamber Replacement Design Brief" dated July 2011, prepared by Gamsby and Mannerow Limited, Guelph, Ontario.

### **PREVIOUS WORKS APPROVED ON ON OCTOBER 6, 2015 UNDER ECA No. 6375-A2PKKS:**



1. Application for Environmental Compliance Approval submitted by The Town of South Bruce Peninsula dated July 6, 2015 and design brief and engineering drawings prepared by Exp Services Inc., Brampton, Ontario.
2. Completion of Study Completion of Municipal Class EA for the proposed expansion of the Wiarton Wastewater Treatment Plant dated April 30, 2015.
3. Class EA, Detailed Design and Contract Administration for Expansion / Upgrade of Wiarton Wastewater Treatment System - MOE Meeting and Meeting Minutes - October 3, 2014.

**PROPOSED WORKS:**

1. Application for Environmental Compliance Approval submitted by The Town of South Bruce Peninsula dated December 22, 2016 and design brief and engineering drawings prepared by B. M. Ross and Associates Ltd., Town of Goderich, Ontario.

## Schedule B

### Final Effluent Design Objectives

#### Concentration Objectives - Commissioned Previous Works

| Final Effluent Parameter                           | Averaging Calculator                   | Objective<br>(maximum unless otherwise indicated) |
|--|--|---|
| CBOD5  | Monthly Average Effluent Concentration | 10.0 mg/L   |
| Total Suspended Solids                             | Monthly Average Effluent Concentration | 10.0 mg/L   |
| Total Phosphorus                                   | Monthly Average Effluent Concentration | 0.15 mg/L   |
| Total Ammonia Nitrogen<br>(May 1 to October 31)    | Monthly Average Effluent Concentration | 3.0 mg/L  |
| Total Ammonia Nitrogen<br>(November 1 to April 30) | Monthly Average Effluent Concentration | 6.0 mg/L  |

## Schedule C

### Final Effluent Compliance Limits

#### Concentration Limits

| <b>Final Effluent Parameter</b>                    | <b>Averaging Calculator</b>            | <b>Limit</b><br>(maximum unless otherwise indicated) |
|--|--|--|
| CBOD5  | Monthly Average Effluent Concentration | 15.0 mg/L  |
| Total Suspended Solids                             | Monthly Average Effluent Concentration | 15.0 mg/L  |
| Total Phosphorus                                   | Monthly Average Effluent Concentration | 0.3 mg/L   |
| Total Ammonia Nitrogen<br>(May 1 to October 31)    | Monthly Average Effluent Concentration | 3.0 mg/L   |
| Total Ammonia Nitrogen<br>(November 1 to April 30) | Monthly Average Effluent Concentration | 6.0 mg/L   |
| <i>E. coli</i><br>(May 15 - September 15)          | Monthly Geometric Mean Density         | 200 organisms per 100 mL                             |
| pH   | Single Sample Result                   | between 6.0 - 9.5 inclusive                          |

#### Loading Limits

| <b>Final Effluent Parameter</b>                    | <b>Averaging Calculator</b>      | <b>Limit</b><br>(maximum unless otherwise indicated) |
|--|----------------------------------|--|
| CBOD5  | Monthly Average Effluent Loading | 66.0 kg/d  |
| Total Suspended Solids                             | Monthly Average Effluent Loading | 66.0 kg/d  |
| Total Phosphorus                                   | Monthly Average Effluent Loading | 1.32 kg/d  |
| Total Ammonia Nitrogen<br>(May 1 to October 31)    | Monthly Average Effluent Loading | 13.2 kg/d  |
| Total Ammonia Nitrogen<br>(November 1 to April 30) | Monthly Average Effluent Loading | 26.4 kg/d  |

## Schedule D

### Monitoring Program

#### Influent - Influent sampling point

| Parameters              | Sample Type | Frequency |
|-------------------------|-------------|-----------|
| BOD5                    | Grab        | Monthly   |
| Total Suspended Solids  | Grab        | Monthly   |
| Total Phosphorus        | Grab        | Monthly   |
| Total Kjeldahl Nitrogen | Grab        | Monthly   |

#### Final Effluent - Final Effluent sampling point

| Parameters             | Sample Type      | Frequency |
|------------------------|------------------|-----------|
| CBOD5                  | 8 hour composite | Biweekly  |
| Total Suspended Solids | 8 hour composite | Biweekly  |
| Total Phosphorus       | 8 hour composite | Biweekly  |
| Total Ammonia Nitrogen | 8 hour composite | Biweekly  |
| <i>E. coli</i>         | Grab             | Biweekly  |
| pH                     | Grab             | Biweekly  |
| Temperature            | Grab             | Biweekly  |

#### Imported Sewage - Imported Sewage (Septage) Receiving Station

| Parameters  | Sample Type | Frequency <sup>*NOTE 1</sup> |
|---|-------------|------------------------------|
| BOD5  | Grab        | Monthly                      |
| Total Suspended Solids  | Grab        | Monthly                      |
| Total Phosphorus  | Grab        | Monthly                      |
| Total Kjeldahl Nitrogen   | Grab        | Monthly                      |
| Total Ammonia Nitrogen  | Grab        | Monthly                      |
| Chemical Oxygen Demand  | Grab        | Monthly                      |
| <b>Metals:</b> Aluminum, Arsenic, Barium, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Mercury, Nickel, Potassium, Selenium, Silver, Sodium, Tin, Zinc *NOTE 2 |             |                              |
| <b>Organics:</b> Acetone, Benzene, Ethylbenzene, Isopropyl alcohol, Methyl alcohol, Methylene chloride, Methyl ethyl ketone, Toluene, Xylene *NOTE 1  |             |                              |

\*NOTE 1: The Owner shall record the quantity of septage received at the Works and sample the septage at least at a monthly frequency when a septage is received.

\*NOTE 2: Sample Type is Grab and Frequency is Quarterly

## **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 Water Supervisor 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 prior notification**

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 notification
- 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) 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 sewage 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 and 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. 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 and 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 and installation of channel aeration systems, including air blowers, air supply main, air headers, air laterals, air distribution grids and diffusers.

## 4. Primary Treatment System

- a. Replacement of existing sludge removal mechanism, including sludge chamber;
- b. Replacement and installation of scum removal mechanism, including scum chamber;
- c. Replacement and 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.

## 5. 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 and installation of scum removal mechanism, including scum chamber;
- c. Replacement and 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.

## 6. Tertiary 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.

## 7. 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 and installation of chemical storage tanks, provided that the tanks are provided with effective spill containment.

## 8. Supplementary Treatment Systems



## 1. Chemical systems

- a. Replacement, relocation and installation of chemical storage tanks for existing chemical systems only, provided that the tanks are sited with effective spill containment;
- b. Replacement and 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..

## 9. Final Effluent Disposal Facilities

- a. Replacement and 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.

## 10. Sludge Management System

### 1. Sludge Holding and Thickening

- a. Replacement and 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 and 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.

11. Standby Power System

1. Replacement and 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:
  - i. 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;
  - ii. no proprietary treatment process or propriety chemical is involved in the pilot study;
  - iii. 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;
  - iv. the pilot study will not have any negative impacts on the operation of the sewage treatment plant or cause a deterioration of effluent quality;
  - v. the pilot study does not exceed a maximum of two years and a notification of completion shall be submitted to the Water Supervisor 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 and install interconnecting pipes and chambers between cells, provided that the process design operating sequence is not changed;
- d. replace and 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.

This page contains an image of the form entitled "Notice of Modification to Sewage Works"



## 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<br><i>(Insert the ECA's owner, number and issuance date and notice number, which should start with "01" and consecutive numbers thereafter)</i> |                          |                               |
|---|--------------------------|-------------------------------|
| 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<br><i>(Attach a detailed description of the sewage works)</i>  |
|--|
| <p>Description shall include:</p> <ol style="list-style-type: none"><li>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.)</li><li>2. Confirmation that the anticipated environmental effects are negligible.</li><li>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.)</li></ol> |

| Part 3 – Declaration by Professional Engineer  |                    |
|--|--------------------|
| <p>I hereby declare that I have verified the scope and technical aspects of this modification and confirm that the design:</p> <ol style="list-style-type: none"><li>1. Has been prepared or reviewed by a Professional Engineer who is licensed to practice in the Province of Ontario;</li><li>2. Has been designed in accordance with the Limited Operational Flexibility as described in the ECA;</li><li>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.</li></ol> <p>I hereby declare that to the best of my knowledge, information and belief the information contained in this form is complete and accurate</p> |                    |
| Name (Print)   | PEO License Number |
| Signature  | Date (mm/dd/yy)    |
| Name of Employer   |                    |

| Part 4 – Declaration by Owner   |                                      |
|---|--------------------------------------|
| <p>I hereby declare that:</p> <ol style="list-style-type: none"><li>1. I am authorized by the Owner to complete this Declaration;</li><li>2. The Owner consents to the modification; and</li><li>3. This modifications to the sewage works are proposed in accordance with the Limited Operational Flexibility as described in the ECA.</li><li>4. The Owner has fulfilled all applicable requirements of the <i>Environmental Assessment Act</i>.</li></ol> <p>I hereby declare that to the best of my knowledge, information and belief the information contained in this form is complete and accurate</p> |                                      |
| Name of Owner Representative (Print)  | Owner representative's title (Print) |
| Owner Representative's Signature  | Date (mm/dd/yy)                      |

EAB Form December 2, 2013



Notice of Modifications Dec-2013.pdf

**Upon issuance of the environmental compliance approval, I hereby revoke Approval No(s).  
6211-AGEU4W issued on February 24, 2017**

*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](http://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 23rd day of November, 2017



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Fariha Pannu, P.Eng.  
Director  
appointed for the purposes of Part II.1 of the  
*Environmental Protection Act*

SH/  
c: DWMD Supervisor, MOECC Owen Sound  
Andrew Garland, BM Ross and Associates Ltd., The Corporation of the Town of South Bruce Peninsula



Notice of Modifications Dec-2013.pdf