


AMENDED ENVIRONMENTAL COMPLIANCE APPROVAL

 NUMBER 9907-8N7HDW
 Issue Date: November 22, 2011

 Bluewater Greenhouses Ltd.
 4075 North Service Road
 Lincoln, Ontario
 L0R 1B1

 Site Location: 4075 North Service Road
 Town of Lincoln, Regional Municipality of Niagara

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:

existing sewage works and proposed subsurface sewage disposal *Works* for the collection, transmission, treatment and disposal of domestic sewage with a *Rated Capacity* of **13,000 litres per day** located at the above site location, consisting of the following:

Proposed Works
Existing Building (Generating a flow of 4,625 litres per day)

Existing Septic Tanks

- two (2) existing **septic tanks** in series each having a capacity of approximately **10,000 litres** (for a total of 20,000 litres) receiving domestic sewage from the existing building and pumping effluent to the proposed recirculation and Aqua Wetland System (AWS) dosing pump chamber described below;

Proposed Recirculation and AWS Dosing Pump Chamber

- one (1) **pump chamber** with a capacity of **13,300 litres** complete with an high level audible/visual **alarm system**, and one (1) **effluent pump** capable of pumping 140 litres per minute at 6 metres total dynamic head, operating on demand via float, discharging to the existing AWS;

Existing Wetland Treatment System

- existing treatment wetland (AWS) with total area of **324 square metres**, consisting of three parallel trains, each train consisting of three cells of 6.0 metres x 6.0 metres (36 square metres) in series;

Proposed Wetland Effluent Pump Chamber

- one (1) 0.75 metre diameter **pump chamber** complete with an high level audible/visual alarm system, collecting wetland effluent with a **recirculation pump** capable of pumping at 63 litres per minute at 5 metres total dynamic head, recirculating effluent to the proposed recirculation and AWS dosing pump chamber described above and with an **effluent pump** capable of pumping 140 litres per minute at 6 metres total dynamic head, operating on demand via float, discharging to the proposed flow balancing and disposal bed dosing tank described below;

Proposed Flow Balancing and Disposal Bed Dosing Pump Chamber

- one (1) **pump chamber** with a capacity of **13,300 litres** complete with an high level audible/visual **alarm system**, and one (1) high-head **effluent pump** capable of pumping 200 litres per minute at 13 metres total dynamic head, operating on a timer to pump a maximum of 13,000 litres per day, discharging to the proposed subsurface sewage disposal system described below;

Proposed Area Bed

- one (1) partially raised **Area bed**, having a sand area of approximately **1,504 square metres**, and a stone area of

approximately **260 square metres**, consisting of four (4) distribution zones, each **65 square metres** with three (3) runs of 16.86 metres long 76 millimetre diameter perforated distribution pipes, installed in a continuous 276 millimetre deep layer of stone over a minimum of 350 millimetre deep filter medium complete with soil mantle of percolation time, T of 6 to 10 minutes per centimetre and at least 250 millimetre in depth extending at over 15 metres beyond the outer distribution pipes in the direction in which the effluent from the filter bed will move laterally;

including all appurtenances essential for the proper operation of the aforementioned sewage works;

all in accordance with the Application for Approval of Sewage Works submitted by Andrew Hellebust, P. Eng., of Rivercourt Engineering Inc., and signed by Wilhelm Martens, President, Bluewater Greenhouses Ltd., dated July 14, 2011 and all supporting documentation and information.

Previous Works

"Previous Works" approved under Approval No. 7296-7AUQ5L dated January 14, 2008 as follows:

Amendment of the Existing Approval Number 2111-4QTPKG, issued November 7, 2000

- to show the name of the *New Owner* of the *Works* and to remove the Condition No. 8 which was already satisfied with the amendment of the Approval Number 3-1507-97-986;

all in accordance with the transmittal letter addressed to the Director of the Environmental Assessment and Approvals Branch of the Ministry of the Environment from Lloyd Rozema, President of Aqua Treatment Technologies, dated October 3, 2007.

Works Previously Approved (Approval Number 2111-4QTPKG, issued November 7, 2000)

a wetland wastewater treatment system and associated appurtenances to be constructed to service the Niagara Under Glass Inc. commercial greenhouse for year round production of potted plants, located on Part of Lot 1, BF Concession 1, (22.57 acres); Part of Lots 5 and 7, BF Concession 1, (15.20 acres); Part of Part 2, Plan 30R-2807 (13.00 acres); Part of Part 4, Plan 30R-2001 and Lot 7, BF Concession 1, (25.00 acres); in the Town of Lincoln, Regional Municipality of Niagara, as follows:

Wetland Wastewater Treatment Facility

design capacities: Peak Daily Flow = 18 m³/d

Average Daily Flow = 13 m³/d

- two (2) - 10,000 L septic tanks, one for raw sewage and one for grey water, complete with inlet piping, effluent pumping and piping discharging to the wetlands;

- three (3) - 6.0 x 6.0 x 1.2 m deep - celled vertical flow sewage treatment wetland operating in series complete with plastic liner underlying all vertical flow wetland cells, perforated inlet and outlet piping, media sand, coarse sand and clear gravel as required;

- a 10,000 m³ storage volume extended detention wetland No. 1 designed to collect runoff from the parking lot, loading docks and treated effluent from the vertical flow sewage treatment wetlands; and

- a 12,000 m³ storage volume extended detention wetland No. 2 to collect runoff from the greenhouse and grass areas as well as the effluent from extended detention wetland No. 1 complete with a controlled discharge to the municipal ditches (during prolonged rainfall only);

all in accordance with the investigation report and feasibility study on the use of the constructed wetlands for treatment of stormwater and sewage generated at "Niagara Under Glass", entitled "Wetlands for Wastewater Treatment", dated July, 1997, as prepared by Lloyd R. Rozema, Geotechnical Investigation Niagara Under Glass Project, Vineland, Ontario, as prepared by Shaheen & Peaker Limited and Conceptual Site Plan, as prepared by The Landplan Collaborative Ltd.

CONTENT COPY OF ORIGINAL

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

"*Approval*" means this Environmental Compliance Approval, including the application and supporting documentation listed herein;

"*BOD5*" (also known as TBOD5) means five day biochemical oxygen demand measured in an unfiltered sample and includes carbonaceous and nitrogenous oxygen demand;

"*CBOD5*" means five day carbonaceous (nitrification inhibited) biochemical oxygen demand measured in an unfiltered sample;

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

"*District Manager*" means the District Manager of the Niagara District Office of the Ministry;

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

"licensed installer" means a person who holds a licence under Article 2.12.3.1 of the Ontario Building Code;

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

"*Owner*" means Bluewater Greenhouses Ltd., and includes its successors and assignees;

"*Previous Works*" means those portions of the sewage works previously constructed;

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

"*Proposed Works*" means the sewage works described in this *Approval*;

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

"*Works*" means the sewage works described in this *Approval*, and includes both *Previous Works* and *Proposed Works*.

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

1.1 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.

1.2 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*, the application for approval of the *Works* and the submitted supporting documents and plans and specifications as listed in this *Approval*.

1.3 Where there is a conflict between a provision of any submitted document 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 listed submitted documents, the document bearing the most recent date shall prevail.

1.4 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.

1.5 The requirements of this *Approval* are severable. If any requirement of this *Approval*, or the application of any

requirement of this *Approval* to any circumstance, is held invalid or unenforceable, the application of such requirement to other circumstances and the remainder of this *Approval* shall not be affected thereby.

1.6 The issuance of, and compliance with the conditions of, this *Approval* does not:

- a) relieve any person of any obligation to comply with any provision of any applicable statute, regulation or other legal requirement, including, but not limited to, the obligation to obtain approval from the local conservation authority necessary to construct or operate the sewage works; or
- b) limit in any way the authority of the *Ministry* to require certain steps be taken to require the *Owner* to furnish any further information related to compliance with this *Approval*.

2. CHANGE OF OWNER

2.1 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*; and
- (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 *District Manager*.

3. CONSTRUCTION

3.1 The *Owner* shall ensure that the construction of the *Works* is supervised by a *licensed installer* or a *Professional Engineer*, as defined in the Professional Engineers Act.

3.2 The *Owner* shall ensure that the *Works* are installed by the authorized Installer.

3.3 Upon construction of the *Works*, the *Owner* shall prepare a statement, certified by a licensed installer or a Professional Engineer, that the *Works* are constructed in accordance with this *Approval*, and shall submit a written statement to the *District Manager*.

3.4 Within **three (3) months** of completing construction of the approved *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*.

4. OPERATIONS AND MAINTENANCE

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

- (a) operating procedures for routine operation of the *Works*; and
- (b) inspection programs, including frequency of inspection, for the *Works* and the methods or tests employed to detect when maintenance is necessary.

4.2 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.

4.3 The *Owner* shall have a maintenance agreement with the manufacturer for the treatment process/technology. The

maintenance agreement must be retained at the site and kept current.

4.4 The *Owner* shall ensure that the AQUA Wetland System (**AWS**) will be inspected annually by the **AWS** authorized personnel and maintained according to Aqua Treatment Technologies Ltd. recommendations.

4.5 The *Owner* shall ensure that adequate steps are taken to ensure that the area of the *Works* are protected from all forms of vehicle traffic and are not used for any purpose other than sewage disposal.

4.6 In the event a break-out is observed from a bed, the *Owner* shall do the following:

- (a) sewage discharge to that subsurface disposal system shall be discontinued;
- (b) incident immediately reported verbally to the Spills Action Centre (SAC) at (416) 325-3000 or 1-800-268-6060;
- (c) followed by a written report to the *District Manager* within **one (1) week** of the break-out;
- (d) during the time remedial actions are taking place the sewage generated at the site shall not be allowed to discharge to a surface water body or to the environment; and
- (e) sewage generated at the site shall be safely collected and disposed of through a licensed waste hauler to an approved sewage disposal site.

4.7 In the event the **AWS** experiences operational problems during its service life, the *Owner* shall do the following:

- (a) sewage discharge to the subsurface disposal system shall be discontinued;
- (b) incident immediately reported verbally to the *District Manager*, followed by a written report within **one (1) week**;
- (c) during the time remedial actions are taking place the sewage generated at the site shall not be allowed to discharge to a surface water body or to the environment; and
- (d) sewage generated at the site shall be safely collected and disposed of through a licensed waste hauler to an approved sewage disposal site.

5. EFFLUENT OBJECTIVES

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

Table 1 – Effluent Objectives	
Effluent Parameter	Concentration Objective (milligrams per litre unless otherwise indicated)
BOD5	15.0
CBOD5	10.0
Nitrate	8.0
Suspended Solids	10.0

5.2 The *Owner* shall include in all reports submitted in accordance with Condition 6 a summary of the efforts made and results achieved under this Condition.

6. MONITORING AND RECORDING

The *Owner* shall, upon the issuance of this *Approval*, carry out the following monitoring program:

6.1 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 effluent stream over the time period being monitored.

6.2 Samples shall be collected (i.e. from the Flow Balancing and Leaching Bed Dosing Chamber) of the effluent being discharged **from** the **AWS** at the frequency specified, in Table 2, by means of the specified sample type and analyzed for each parameter listed and all results recorded:

Table 2 - Effluent Monitoring	
Frequency	Four times in a year (twice in spring season and twice in fall season)
Sample Type	Grab
Parameters	Ammonia, CBOD ₅ , BOD ₅ , Nitrate, Suspended Solids and Total Phosphorus.

6.3 Samples of surface water shall be collected from the proposed surface water monitoring stations (i.e. SW-1 and SW-2) and sampled at the frequency specified, in Table 4, by means of the specified sample type and analyzed for each parameter listed and all results recorded:

Table 3 - Surface water Monitoring	
Frequency	Four times in a year (twice after snow melt or rain event and twice under dry condition)
Sample Type	Grab
Parameters	Dissolved Oxygen*, <i>E. Coli</i> , Nitrate Nitrogen, Nitrite Nitrogen, pH*, Temperature*, Total Ammonia Nitrogen, Total Kjeldahl Nitrogen, Total Phosphorus, Total Suspended Solids, and Specific Conductance*.

* at the time of sampling, dissolved oxygen, pH, temperature and specific conductance should be measured in the field.

6.4 The monitoring outlined pursuant to Conditions 6.2 and 6.3 shall be undertaken for a period of at least **three (3) years** following the start up of the *Works*.

6.5 The *Owner* shall measure and record the daily volume of effluent being discharged to subsurface disposal system.

6.6 The *Owner* shall ensure that the average daily flow of sewage discharged into the AWS and area bed does not exceed **13,000 litres per day** (i.e. the *Rated Capacity* of the sewage *Works*).

6.7 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.

6.8 The measurement frequencies specified in Conditions 6.2 and 6.3 in respect to any parameter are minimum requirements which may be modified by the District Manager in writing from time to time.

6.9 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 *Approval*.

7. REPORTING

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

7.2 In addition to the obligations under Part X of the Environmental Protection Act, the *Owner* shall, within **10 working days** of the occurrence of any reportable spill as defined in Ontario Regulation 675/98, 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.

7.3 The *Owner* shall prepare, and submit 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 issuance of this *Approval* 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, analysis and interpretation of all monitoring data by a qualified individual, including recommendations with respect to the need for continued monitoring;
- (b) an overview of the success and adequacy of the *Works*;
- (c) a tabulation of the daily volumes of effluent disposed through the subsurface disposal system during the reporting period;
- (d) a summary of all maintenance carried out on any major structure, equipment, apparatus, mechanism or thing forming part of the *Works*; and
- (e) a description of any operating problems encountered and corrective actions taken.

8. SOURCE WATER PROTECTION

8.1 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 *Approval* is applicable, apply to the *Director* for an amendment to this *Approval* 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 *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 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.
3. Condition 3 and 4 are included to ensure that the *Works* are constructed, and may be operated and maintained such that the environment is protected and deterioration, loss, injury or damage to any person or property is prevented.
4. Condition 5 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.
5. Condition 6 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 specified in this *Approval* and that the *Works* does not cause any impairment to the receiving watercourse.
6. Condition 7 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.

7. Condition 8 is included to ensure that the works covered by this *Approval* will conform to the significant threat policies and designated Great Lakes policies in the *Source Protection Plan*.

Upon issuance of the environmental compliance approval, I hereby revoke Approval No(s). 7296-7AUQ5L issued on January 14, 2008.

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:

1. 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;
2. 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:

3. The name of the appellant;
4. The address of the appellant;
5. The environmental compliance approval number;
6. The date of the environmental compliance approval;
7. The name of the Director, and;
8. 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
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) 212-6349, Fax: (416) 314-4506 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 22nd day of November, 2011

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

AA/
c: District Manager, MOE Niagara District Office
Andrew Hellebust, P. Eng., Rivercourt Engineering Inc.