


**AMENDED CERTIFICATE OF APPROVAL  
 MUNICIPAL AND PRIVATE SEWAGE WORKS**

NUMBER 4963-7ZTL9Y

Issue Date: January 26, 2010

1402994 Ontario Inc.  
 406 Whitestone Lake Rd R. R. 2  
 Hagerman, Ontario  
 P0A 1G0

Site Location: Whitestone Lake Resort  
 406 Whitestone Lake Rd 42R-13589 Parts 1, 2, 3  
 Whitestone Municipality, District of Parry Sound  
 P0A 1G0

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

establishment of sewage works with a total *Rated Capacity* of 54,400 L/day to service the Whitestone Lake Resort located on Parts 1, 2, and 3 of Lot 32, Concession XIV, in the geographic Township of Hagerman now part of the Municipality of Whitestone, District of Parry Sound, consisting of the following:

**PROPOSED WORKS:**

Constructing new sewage works with a total *Rated Capacity* of 41,600 L/day discharging to new subsurface sewage disposal systems to service thirteen (13) duplexes each duplex consisting of two 3-bedroom units (total of twenty six 3-bedroom units) located along the lake shore of the Whitestone Lake Resort consisting of the following:

**Sewage Treatment System No. 1**

A sewage treatment system with a *Rated Capacity* 9,600 L/day servicing three (3) duplexes (Duplex 1, 2, and 3) consisting of the following:

- one (1) 12,600 L capacity precast concrete dual-compartment primary treatment septic tank collecting raw sewage from three (3) duplexes ( six 3-bedroom units) discharging by gravity through 100 mm diameter PVC pipe to a WBS treatment system described below;
- two (2) WBS treatment systems (WBS<sup>R</sup> clean Model 1500), each system consisting of one (1) 5,700 L capacity 2.59 m diameter two-compartment precast concrete tank, one compartment equipped with polyethylene media providing a total of 1500 m<sup>2</sup> surface area for submerged biofilm growth and the second compartment equipped with fine bubble aeration system and one (1) sludge pump returning sludge back to the primary treatment septic tank described above, both WBS treatment systems discharging by gravity to an effluent pump chamber described below;
- one (1) 4,500 L capacity one-compartment precast concrete effluent pump chamber equipped with duplex pump system, each pump rated 90 L/min @ 7.1 m TDH dosing effluent via a 50 mm diameter PE forcemain to a subsurface sewage disposal system described below;
- one (1) area bed consisting of a 300 mm deep x 10 m wide x 20 m long stone layer with eight (8) runs x 18 m long of 100 mm diameter perforated distribution pipes spaced 1.2 m overlying a 900 mm deep of an unsaturated sand layer (T = 5 - 6 min/cm) with a total contact area of 33 m x 36.5 m placed on a native soil with a percolation rate of T = 50 min/cm) and a sand mantle extending 18 m with a slope of 8H:1V ;

**Sewage Treatment System No. 2**

A sewage treatment system with a *Rated Capacity* 9,600 L/day servicing three (3) duplexes (Duplex 4, 5, and 6) consisting of the following:

- one (1) 12,600 L capacity precast concrete dual-compartment primary treatment septic tank collecting raw sewage from three (3) duplexes ( six 3-bedroom units) discharging by gravity through 100 mm diameter PVC pipe to a WBS treatment system described below;
- two (2) WSB treatment systems (WBS<sup>R</sup> clean Model 1500), each system consisting of one (1)5,700 L capacity 2.59 m diameter two-compartment precast concrete tank, one compartment equipped with polyethylene media providing a total of 1500 m<sup>2</sup> surface area for submerged biofilm growth and the second compartment equipped with fine bubble aeration system and one (1) sludge pump returning sludge back to the primary treatment septic tank described above, both WBS treatment systems discharging by gravity to an effluent pump chamber described below;
- one (1) 4,500 L capacity one-compartment precast concrete effluent pump chamber equipped with duplex pump system, each pump rated 90 L/min @ 7.1 m TDH dosing effluent via a 50 mm diameter PE forcemain to a subsurface sewage disposal system described below;
- one (1) area bed consisting of a 300 mm deep x 10 m wide x 20 m long stone layer with eight (8) runs x 18 m long of 100 mm diameter perforated distribution pipes spaced 1.2 m overlying a 900 mm deep of an unsaturated sand layer (T = 5 - 6 min/cm) with a total contact area of 33 m x 36.5 m placed on a native soil with a percolation rate of T = 50 min/cm) and a sand mantle extending 18 m with a slope of 8H:1V ;

### **Sewage Treatment System No. 3**

A sewage treatment system with a *Rated Capacity* 9,600 L/day servicing three (3) duplexes (Duplex 7, 8, and 9) consisting of the following:

- one (1) 12,600 L capacity precast concrete dual-compartment primary treatment septic tank collecting raw sewage from three (3) duplexes ( six 3-bedroom units) discharging by gravity through 100 mm diameter PVC pipe to a WBS treatment system described below;
- two (2) WSB treatment systems (WBS<sup>R</sup> clean Model 1500), each system consisting of one (1)5,700 L capacity 2.59 m diameter two-compartment precast concrete tank, one compartment equipped with polyethylene media providing a total of 1500 m<sup>2</sup> surface area for submerged biofilm growth and the second compartment equipped with fine bubble aeration system and one (1) sludge pump returning sludge back to the primary treatment septic tank described above, both WBS treatment systems discharging by gravity to an effluent pump chamber described below;
- one (1) 4,500 L capacity one-compartment precast concrete effluent pump chamber equipped with duplex pump system, each pump rated 90 L/min @ 7.1 m TDH dosing effluent via a 50 mm diameter PE forcemain to a subsurface sewage disposal system described below;
- one (1) area bed consisting of a 300 mm deep x 10 m wide x 20 m long stone layer with eight (8) runs x 18 m long of 100 mm diameter perforated distribution pipes spaced 1.2 m overlying a 900 mm deep of an unsaturated sand layer (T = 5 - 6 min/cm) with a total contact area of 33 m x 36.5 m placed on a native soil with a percolation rate of T = 50 min/cm) and a sand mantle extending 18 m with a slope of 8H:1V ;

### **Sewage Treatment System No. 4**

A sewage treatment system with a *Rated Capacity* 12,800 L/day servicing four (4) duplexes (Duplex 10, 11, 12, and 13) consisting of the following:

- one (1) 18,200 L capacity precast concrete dual-compartment primary treatment septic tank collecting raw sewage from four (4) duplexes ( eight 3-bedroom units) discharging by gravity through 100 mm diameter PVC pipe to a WBS treatment system described below;
- two (2) WSB treatment systems (WBS<sup>R</sup> clean Model 1500), each system consisting of one (1) 7,600 L capacity

## CONTENT COPY OF ORIGINAL

2.59 m diameter two-compartment precast concrete tank, one compartment equipped with polyethylene media providing a total of 1500 m<sup>2</sup> surface area for submerged biofilm growth and the second compartment equipped with fine bubble aeration system and one (1) sludge pump returning sludge back to the primary treatment septic tank described above, both WBS treatment systems discharging by gravity to an effluent pump chamber described below;

- one (1) 4,500 L capacity one-compartment precast concrete effluent pump chamber equipped with duplex pump system, each pump rated 90 L/min @ 8.1 m TDH dosing effluent via a 50 mm diameter PE forcemain to a subsurface sewage disposal system described below;
- one (1) area bed consisting of a 300 mm deep x 10 m wide x 20 m long stone layer with eight (8) runs x 18 m long of 100 mm diameter perforated distribution pipes spaced 1.2 m overlying a 900 mm deep of an unsaturated sand layer (T = 5 - 6 min/cm) with a total contact area of 33 m x 36.5 m placed on a native soil with a percolation rate of T = 50 min/cm) and a sand mantle extending 18 m with a slope of 8H:1V ;

all in accordance with the application for Approval of Municipal and Private Sewage Works submitted by 1402994 Ontario Inc. dated September 10, 2009 and design specifications and drawings prepared by Georgian Engineering, Parry Sound, Ontario and the following document.

1. "Design Report for the Sewage System at Whitestone Lake Resort in the Municipality of Whitestone, District of Parry Sound" dated August 28, 2009, prepared by Georgian Engineering, Parry Sound, Ontario.

### **WORKS APPROVED UNDER CERTIFICATE OF APPROVAL NO. 1665-4RZQWU ON JANUARY 23, 2001:**

Construction of a 12,800 L/day rated subsurface sewage disposal system to service the Whitestone Lake Resort which includes 80 seat restaurant, 14 motel rooms and 2 two-bedroom apartments, consisting of the following:

- One (1) 3,600 to 4,500 litre three-compartment grease interceptor receiving flows from all kitchen sinks and discharging into a pre-treatment tank described below;
- One (1) 13,500 litre single compartment concrete pre-treatment tank ( 4.5 m long x 2.5 m wide x 1.8 m high) receiving flows from all bathrooms and kitchen sinks, and discharging into a sewage treatment system described below;
- Three (3) Norweco Model 960/1200 sewage treatment systems with a total rated capacity of 14,200 L/day, each unit having a 4,730 litre pre-treatment chamber, a two-cell 4,920 litre aeration chamber equipped with two (2) 1.42 L/sec aspirator aerators, a 1,140 litre settling chamber equipped with two (2) sludge returns, and three (3) patented filtration units (Bio-Kinetic), all units discharging into an equalization tank described below;
- One (1) 43,800 litre single compartment flow equalization concrete tank (6.10 m long x 3.05 m wide x 3.05 m high) equipped with a pump discharging through a 50 mm diameter forcemain into a distribution box of a leaching bed described below; and
- One (1) raised conventional leaching bed consisting of two cells, each having eight (8) runs of 26 metres of 75 mm diameter distribution pipes ( 416 m total), sand filled trenches ( 0.5 m wide, 0.6 to 0.9 m deep, and 1.6 m apart) having a permeability of 10 min/cm, and imported sand mantle extending 15 m beyond the last run of the distribution pipe.

all in accordance with the application for Approval of Municipal and Private Sewage Works submitted by 1402994 Ontario Inc. dated November 10, 2000 and design specifications and drawings prepared by Jagger Hims Limited, Environmental Consulting Engineers, Newmarket, Ontario.

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

"*BOD5*" (also known as TBOD<sub>5</sub>) 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;

## CONTENT COPY OF ORIGINAL

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

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

"*District Manager*" means the District Manager of the North Bay District Office of the Ministry;

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

"*Owner*" means 1402994 Ontario Inc. and includes its successors and assignees; and

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

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

### **TERMS AND CONDITIONS**

#### **1. GENERAL PROVISIONS**

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

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

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

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

#### **2. EXPIRY OF APPROVAL**

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

#### **3. CHANGE OF OWNER**

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

(a) change of *Owner*;

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

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

(d) change of name of the corporation where the *Owner* is or at any time becomes a corporation, and a copy

of the most current information filed under the Corporations Information Act, R.S.O. 1990, c. C39 shall be included in the notification to the *District Manager*;

**4. CONSTRUCTION**

- (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.
- (2) 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 *Certificate*, and upon request, shall make the written statement available for inspection by *Ministry* staff and staff of the local municipality.
- (3) Within six (6) months of the completion of the *Sewage* work construction, a set of as-built drawings showing the works “as constructed” shall be prepared. These drawings shall be kept up to date through revisions undertaken from time to time and a copy shall be retained at the *Works* for the operational life of the *Works*.

**5. MONITORING AND RECORDING**

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

- (1) All samples and measurements taken for the purposes of this *Certificate* are to be taken at a time and in a location characteristic of the quality and quantity of the effluent stream over the time period being monitored.
- (2) Samples shall be collected at the locations and frequencies as specified below, by means of the specified sample type and analyzed for each parameter listed and all results recorded:

|                              |   |
|------------------------------|---|
| <b>Table 1</b>               |   |
| <b>Raw Sewage Monitoring</b> |   |
| <b>Frequency</b>             | Quarterly   |
| <b>Sample Type</b>           | Grab  |
| <b>Parameters</b>            | <i>BOD5</i> , Total Suspended Solids, Total Kjeldahl Nitrogen |

|   |  |
|---|--|
| <b>Table 2</b>  |  |
| <b>Effluent Monitoring - (Effluent discharged to subsurface sewage disposal system)</b> |  |
| <b>Frequency</b>  | Quarterly  |
| <b>Sample Type</b>  | Grab   |
| <b>Parameters</b>   | <i>CBOD5</i> , Total Suspended Solids, Total Phosphorus, Total Ammonia Nitrogen, Nitrate and Nitrite |

- (3) The *Owner* shall, upon commencement of operation of the *Works*, measure and record daily volume of effluent being discharged to subsurface disposal system.
- (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:
  - (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" (21<sup>st</sup> edition), as amended from time to time by more recently published editions.

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

(6) Following two (2) full years of operation of the sewage works as approved by this *Certificate*, the frequency of sampling may be reduced by the *District Manager* at his discretion if the quality of the effluent discharged to the subsurface disposal system satisfies the objectives stipulated in Condition 6 (1) and the satisfactory performance of the subsurface disposal system as evidenced by the results of the monitoring program.

## 6. EFFLUENT OBJECTIVES

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

| <b>Table 3</b>             |   |
|----------------------------|---|
| <b>Effluent Objectives</b> |   |
| <b>Effluent Parameter</b>  | <b>Concentration Objective</b><br>(milligrams per litre unless otherwise indicated) |
| <i>CBOD5</i>               | 10  |
| Total Suspended Solids     | 10  |

## 7. OPERATIONS AND MAINTENANCE

(1) The *Owner* shall prepare a revised operations manual within six (6) months of the introduction of sewage to the *Proposed 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.

(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.

(3) The *Owner* shall prepare and make available for inspection by *Ministry* staff, a maintenance agreement with the manufacturer for the treatment process/technology or a licensed contractor who is authorized by the manufacturer of the sewage treatment system, within six (6) months of the introduction of sewage to the *Works*.

## 8. REPORTING

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

(2) The *Owner* shall prepare, and submit upon request, a performance report, on an annual basis, within ninety (90) days following the end of the period being reported upon. The first such report shall cover the first annual period following the

commencement of operation of the *Works* and subsequent reports shall be submitted to cover successive annual periods following thereafter. The reports shall contain, but shall not be limited to, the following information:

- (a) a summary and interpretation of all monitoring data and a comparison to the effluent objectives outlined in Condition 6;
- (b) a tabulation of the daily volumes of effluent disposed through the subsurface disposal system during the reporting period;
- (c) a summary of all maintenance carried out on any major structure, equipment, apparatus, mechanism or thing forming part of the *Works*; and
- (d) a description of any operating problems encountered and corrective actions taken.

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

1. Condition 1 is imposed to ensure that the *Works* are built and operated in the manner in which they were described for review and upon which approval was granted. This condition is also included to emphasize the precedence of Conditions in the *Certificate* and the practice that the Approval is based on the most current document, if several conflicting documents are submitted for review. The condition also advises the Owners their responsibility to notify any person they authorized to carry out work pursuant to this *Certificate* the existence of this *Certificate*.
2. Condition 2 is included to ensure that, when the *Works* are constructed, the *Works* will meet the standards that apply at the time of construction to ensure the ongoing protection of the environment.
3. Condition 3 is included to ensure that the *Ministry* records are kept accurate and current with respect to the approved works and to ensure that subsequent owners of the *Works* are made aware of the *Certificate* and continue to operate the *Works* in compliance with it.
4. Condition 4 is included to ensure that the works are constructed, 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.
5. Condition 5 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 the *Certificate* and that the *Works* does not cause any impairment to the receiving watercourse.
6. Condition 6 is imposed to establish non-enforceable effluent quality objectives which the *Owner* is obligated to use best efforts to strive towards on an ongoing basis. These objectives are to be used as a mechanism to trigger corrective action proactively and voluntarily before environmental impairment occurs.
7. Condition 7 is included to require that the *Works* be properly operated, maintained, and equipped such that the environment is protected. As well, the inclusion of an operations manual, maintenance agreement with the manufacturer for the treatment process/technology and a complete set of "as constructed" drawings governing all significant areas of operation, maintenance and repair is prepared, implemented and kept up-to-date by the owner and made available to the *Ministry*. Such a information is an integral part of the operation of the *Works*. Its compilation and use should assist the *Owner* in staff training, in proper plant operation and in identifying and planning for contingencies during possible abnormal conditions. The manual will also act as a benchmark for *Ministry* staff when reviewing the *Owner's* operation of the work.
8. Condition 8 is included to provide a performance record for future references, to ensure that the *Ministry* is made aware of problems as they arise, and to provide a compliance record for all the terms and conditions outlined in this *Certificate*, so that the *Ministry* can work with the *Owner* in resolving any problems in a timely manner.

**This Certificate of Approval revokes and replaces Certificate(s) of Approval No. 1665-4RZQWU issued on January 23, 2001**

**CONTENT COPY OF ORIGINAL**

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

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

*The Notice should also include:*

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

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

*This Notice must be served upon:*

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

AND

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

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

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

DATED AT TORONTO this 26th day of January, 2010

Mansoor Mahmood, P.Eng.  
Director  
Section 53, *Ontario Water Resources Act*

SH/  
c: District Manager, MOE North Bay  
Robert Hughes, Georgian Engineering