


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

NUMBER 7016-8D9LGL

Issue Date: April 1, 2011

Trout Lake Lodge Limited  
 108 Dellenor Rd  
 Post Office Box, No. 918  
 Red Lake, Ontario  
 P0V 2M0

Site Location: Trout Lake Lodge  
 CL 3907, RFD 201 Trout Lake Area  
 Municipality of Red Lake, District of Kenora

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

sewage works to serve Trout Lake Lodge, a remote fly in fishing camp operated all year round, comprising of a sewage treatment plant having a rated capacity of 16,500 L/d average day flow as follows:

- one (1) primary clarifier chamber with hydraulic capacity of 19.5 m<sup>3</sup> and sludge storage volume of 5.65 m<sup>3</sup>;
- one (1) biozone chamber with effective volume of 5.8 m<sup>3</sup> partially submerged in the rotating biological contactor unit;
- one (1) Rotating Biological Contactor (RBC) (Biodisk™ Model M-75) with a total surface area of 614 m<sup>2</sup> of biological support media arranged in three (3) separate stages for nutrient reduction and equipped with an effluent recycle between the stages;
- one (1) secondary clarifier chamber with an effective secondary settling volume of 19.5 m<sup>3</sup>, and sludge storage volume of 5.65 m<sup>3</sup>;
- one (1) UV disinfection system consisting of two (2) high intensity low pressure UV lamps, designed for 156 mJ/cm<sup>2</sup> at UV transmittance of 65%;
- two (2) 3.79 L/s capacity effluent pumps discharging to the effluent disposal area;
- effluent disposal via spray irrigation, comprising of approx. 3.44 acres of adjacent forest lands,

all other controls, electrical equipment, instrumentation, piping, pumps, valves and appurtenances essential for the proper operation of the aforementioned sewage *Works*;

all in accordance with the following submitted supporting documents:

1. Application for Approval of Municipal and Private Sewage Works dated March 3, 2011 submitted by Heather Green, President, Trout Lake Lodge.
2. Design report entitled 'Application for Certificate of Approval' dated February 10, 2010 prepared by Biodisk Corporation.

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

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

"*Average Concentration*" means the arithmetic mean of *Daily Concentrations* of a contaminant in the effluent sampled or measured during a period of effluent discharge from Cell #3 sampled after the UV disinfection system;

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

"*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;

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

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

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

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

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

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

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

"*Owner*" means Trout Lake Lodge Limited and includes its successors and assignees;

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

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

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

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

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

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

## **TERMS AND CONDITIONS**

### **1. GENERAL PROVISIONS**

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

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

supporting documents and plans and specifications as listed in this *Certificate*.

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

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

(5) The requirements of this *Certificate* are severable. If any requirement of this *Certificate*, or the application of any requirement of this *Certificate* to any circumstance, is held invalid or unenforceable, the application of such requirement to other circumstances and the remainder of this certificate shall not be affected thereby.

## 2. EXPIRY OF APPROVAL

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

## 3. CHANGE OF OWNER

(1) The *Owner* shall notify the *District Manager* and the *Director*, in writing, of any of the following changes within 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*.

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

## 4. UPON THE SUBSTANTIAL COMPLETION OF THE WORKS

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

(2) Within one (1) year of the *Substantial Completion* of the *Proposed Works*, a set of as-built drawings showing the works "as constructed" shall be prepared. These drawings shall be kept up to date through revisions undertaken from time to time and a copy shall be retained at the *Works* for the operational life of the *Works*.

## 5. EFFLUENT OBJECTIVES

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

<b>Table 1 - Effluent Objectives</b>	
<b>Effluent Parameter</b>	<b>Concentration Objective</b> (milligrams per litre unless otherwise indicated)
<i>CBOD5</i>	15.0
Total Suspended Solids	15.0

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

- (a) maintain the pH of the effluent from the *Works* within the range of 6.5 to 8.5, inclusive, at all times;
- (b) operate the works within the *Rated Capacity* of the *Works*;
- (c) ensure that the effluent from the *Works* is essentially free of floating and settleable solids and does not contain oil or any other substance in amounts sufficient to create a visible film or sheen or foam or discolouration on the receiving waters.

(3) The *Owner* shall include in all reports submitted in accordance with Condition 9 a summary of the efforts made and results achieved under this Condition.

## **6. EFFLUENT LIMITS**

(1) The *Owner* shall design and construct the *Proposed Works* and operate and maintain the *Works* such that the concentrations of the materials named below as effluent parameters are not exceeded in the effluent from the *Works* (i.e., from the outlet of the UV disinfection system).

<b>Table 2 - Effluent Limits</b>	
<b>Effluent Parameter</b>	<b>Monthly Average Concentration</b> (milligrams per litre unless otherwise indicated)
Column 1	Column 2
<i>CBOD5</i>	20.0
Total Suspended Solids	20.0
pH of the effluent maintained between 6.0 to 9.5, inclusive, at all times	

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

- (a) The *Average Concentration* of a parameter named in Column 1 of subsection (1) shall not exceed the corresponding maximum monthly average concentration set out in Column 2 of subsection (1).
- (b) The pH of the effluent shall be maintained within the limits outlined in subsection (1), at all times.

(3) Notwithstanding subsection (1), the *Owner* shall operate and maintain the *Works* such that the effluent is continuously disinfected and the *Owner* shall not allow any of the effluent from the *Works* to be spray irrigated on to the spray field if the *Geometric Mean Density* of *E. Coli* based on the monitoring results obtained under Condition 8(3) exceeds 100 organisms per 100 millilitres of effluent.

(4) The effluent limits set out under this Condition shall apply upon the issuance of the *Certificate*.

## **7. OPERATION AND MAINTENANCE**

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

facilities, process controls and alarms and the use of process chemicals and other substances used in the *Works*.

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

- (a) operating procedures for routine operation of the *Works*;
- (b) inspection programs, including frequency of inspection, for the *Works* and the methods or tests employed to detect when maintenance is necessary;
- (c) repair and maintenance programs, including frequency of repair and maintenance for the *Works*;
- (d) procedures for the inspection and calibration of monitoring equipment;
- (e) a spill prevention control and countermeasures plan, consisting of contingency plans and procedures for dealing with equipment breakdowns, potential spills and any other abnormal situations, including notification of the *District Manager*; and
- (f) procedures for receiving, responding and recording public complaints, including recording any follow-up actions taken.

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

(4) In order to prevent or minimize any unacceptable liquid discharges and gas and odour emissions in the natural environment, the *Owner* shall ensure that contingency plans and procedures are established and adequate equipment and materials are available for dealing with emergency and upset conditions including equipment breakdowns at the sewage works, flooding, overflows or raw and partly treated sewage and spills of sludge or chemicals into or out of the sewage works. The *Owner* shall establish notification procedures to be used to contact the *District Manager* and other relevant authorities in the case of an emergency and upset conditions.

(5) The *Owner* shall ensure that the spray irrigation system spraying the effluent from the *Works* is operated such that:

- (a) the disposal of effluent is via spray irrigation only and effluent is applied only on the spray irrigation field; and
- (b) no spray irrigation is to take place:

- i) on frozen ground or between **November 1 and May 14** of any calendar year;
- ii) with the occurrence of rainfall, aerosol drift off the property or surface ponding; and
- iii) during periods when wind speed exceeds 15 km/hr;

(c) the *Owner* shall provide and maintain:

- i) a fence around the entire spray irrigation field which will be spray irrigated with treated sewage effluent;
- ii) suitably posted signs on all points of access to the spray irrigation field, indicating that treated sewage effluent is disposed off on the spray irrigation field;

(d) The *Owner* shall ensure that there should be no spray irrigation with treated sewage effluent during hours when there may be around the vicinity of the spray irrigation field. Depending on the performance of the UV disinfection system and levels of E. Coli analytical results, the *District Manager* may review the irrigation periods and impose additional restrictions if deemed necessary.

## 8. MONITORING AND RECORDING

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

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

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

(a) monthly means once every month;

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

<b>Table 3 - Influent Monitoring</b> Sampling Location: influent to the RBC unit		
<b>Parameters</b>	<b>Sample Type</b>	<b>Frequency</b>
<i>BOD5</i>	grab	once a month during the operating season
Total Suspended Solids	grab	once a month during the operating season
Total Phosphorus	grab	once a month during the operating season
Total Kjeldahl Nitrogen	grab	once a month during the operating season

<b>Table 4 - Effluent Monitoring</b> Sampling Location: effluent from the UV disinfection unit		
<b>Parameters</b>	<b>Sample Type</b>	<b>Frequency</b>
<i>CBOD5</i>	grab	once a month during the operating season
Total Suspended Solids	grab	once a month during the operating season
Total Phosphorus	grab	once a month during the operating season
Total Ammonia Nitrogen	grab	once a month during the operating season
<i>E. Coli</i>	grab	once a month during the operating season
pH	grab	once a month during the operating season

(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;

(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;

(5) The *Owner* shall install and maintain (a) continuous flow measuring device(s), to measure the flowrate of the effluent from the *Works* with an accuracy to within plus or minus 15 per cent (+/- 15%) of the actual flowrate for the entire design range of the flow measuring device, and record the flowrate at a daily frequency.

(6) 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*.

(7) The measurement frequencies specified in subsection (2) in respect to any parameter are minimum requirements which

may, after twelve (12) months of monitoring in accordance with this Condition, be modified by the *District Manager* in writing from time to time.

(8) The Owner shall monitor the spray irrigation area on a monthly basis, at a minimum, during the operating season to verify that there is no overland flow or any adverse effect resulting from the operation of the spray irrigation and record of the findings be kept for inspection by Ministry staff.

## 9. REPORTING

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

(2) The *Owner* shall report to the *District Manager* or designate, any exceedence of any parameter specified in Condition 6 orally, as soon as reasonably possible, and in writing within seven (7) days of the exceedence.

(3) 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, bypass or loss of any product, by-product, intermediate product, oil, solvent, waste material or any other polluting substance into the environment, submit a full written report of the occurrence to the *District Manager* describing the cause and discovery of the spill or loss, clean-up and recovery measures taken, preventative measures to be taken and schedule of implementation.

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

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

(a) a summary and interpretation of all monitoring data and a comparison to the effluent limits outlined in Condition 6, including an overview of the success and adequacy of the *Works*;

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

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

(d) a description of efforts made and results achieved in meeting the Effluent Objectives of Condition 5;

(e) a summary of spray irrigation activities tabulated on a monthly basis by spray irrigation site, date of spray irrigation, hours and spray volumes for each irrigation site;

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

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

*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 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.

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

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

5. Condition 5 is imposed to establish non-enforceable effluent quality objectives which the *Owner* is obligated to use best efforts to strive towards on an ongoing basis. These objectives are to be used as a mechanism to trigger corrective action proactively and voluntarily before environmental impairment occurs and before the compliance limits of Condition 6 are exceeded..

6. Condition 6 is imposed to ensure that the effluent discharged from the *Works* for golf course irrigation meets the *Ministry's* effluent quality requirements thus minimizing environmental impact on the receiver and to protect water quality, fish and other aquatic life in the receiving water body.

7. Condition 7 is included to require that the *Works* be properly operated, maintained, funded, staffed and equipped such that the environment is protected and deterioration, loss, injury or damage to any person or property is prevented. As well, the inclusion of a comprehensive operations manual governing all significant areas of operation, maintenance and repair is prepared, implemented and kept up-to-date by the owner and made available to the *Ministry*. Such a manual is an integral part of the operation of the *Works*. Its compilation and use should assist the *Owner* in staff training, in proper plant operation and in identifying and planning for contingencies during possible abnormal conditions. The manual will also act as a benchmark for *Ministry* staff when reviewing the *Owner's* operation of the work.

8. Condition 8 is included to enable the *Owner* to evaluate and demonstrate the performance of the *Works*, on a continual basis, so that the *Works* are properly operated and maintained at a level which is consistent with the design objectives and effluent limits specified in the *Certificate* and that the *Works* does not cause any impairment to the natural environment.

9. Condition 9 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. 5784-7E8GEH issued on May 6, 2008.**

*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 1st day of April, 2011

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

HV/  
c: District Manager, MOE Kenora District Office  
Tom Smith, Biodisk Corporation