

Environment Act Licence Loi sur l'environnement Licence

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Licence No./Licence n° 2687 R

Issue Date/Date de délivrance July 4, 2005

Revised: December 14, 2005

IN ACCORDANCE WITH THE ENVIRONMENT ACT (C.C.S.M. c. E125)
THIS LICENCE IS ISSUED PURSUANT TO SECTION 11(1) AND 14(2) TO:

**MANITOBA CONSERVATION, PARKS AND NATURAL AREAS; "the
Licence"**

for the construction, remediation and operation of the Development being a wastewater collection system and wastewater treatment lagoon located in southeast quarter section 18-12-5 EPM in Birds Hill Provincial Park with discharge of treated effluent to Shkolny Creek which empties into a municipal drainage ditch which eventually drains into the Red River Floodway and in accordance with the Proposal filed under The Environment Act on September 10, 2004 and the additional information submitted on January 20, 2005 and subject to the following specifications, limits, terms and conditions:

DEFINITIONS

In this Licence,

"access road" means a road that leads from a Provincial Trunk/Highway, Provincial Road, or a municipal road;

"accredited laboratory" means an analytical facility accredited by the Standard Council of Canada (SCC), or accredited by another accrediting agency recognized by Manitoba Conservation to be equivalent to the SCC, or be able to demonstrate, upon request, that it has the quality assurance/quality control (QA/QC) procedures in place equivalent to accreditation based on the international standard ISO/IEC 17025, or otherwise approved by the Director;

"approved" means approved by the Director in writing;

"as constructed drawings" means engineering drawings complete with all dimensions which indicate all features of the Development as it has actually been built;

****A COPY OF THE LICENCE MUST BE KEPT ON SITE AT THE DEVELOPMENT AT ALL TIMES****

“**ASAE**” means American Society of Agricultural Engineers;

“**ASTM**” means the American Society for Testing and Materials;

“**Director**” means an employee so designated pursuant to The Environment Act;

“**effluent**” means treated wastewater flowing or pumped out of the wastewater treatment lagoon or wastewater treatment plant;

“**Environment Officer**” means an employee so appointed pursuant to The Environment Act;

“**fecal coliform**” means aerobic and facultative, Gram-negative, nonspore-forming, rod-shaped bacteria capable of growth at 44.5°C, and associated with fecal matter of warm-blooded animals;

“**five-day biochemical oxygen demand**” means that part of the oxygen demand usually associated with biochemical oxidation of organic matter within five days at a temperature of 20°C;

“**former primary cell**” means the former primary cell of the wastewater treatment lagoon that is to be converted into the new secondary cell;

“**former secondary cell**” means the former secondary cell of the wastewater treatment lagoon that is to be decommissioned;

“**grab sample**” means a quantity of wastewater taken at a given place and time;

“**HDPE**” means high density polyethylene;

“**high water mark**” means the line on the interior surface of the primary and secondary cells which is normally reached when the cell is at the maximum allowable liquid level;

“**hydraulic conductivity**” means the quantity of water that will flow through a unit cross-sectional area of a porous material per unit of time under a hydraulic gradient of 1.0;

“**influent**” means water, wastewater, or other liquid flowing into a wastewater treatment facility;

“**mil**” means one-thousandth of an inch;

“**MPN Index**” means the most probable number of coliform organisms in a given volume of wastewater which, in accordance with statistical theory, would yield the observed test result with the greatest frequency;

“primary cell” means the first in a series of cells of the wastewater treatment lagoon system and which is the cell that receives the untreated wastewater;

“riprap” means small, broken stones or boulders placed compactly or irregularly on dykes or similar embankments for protection of earth surfaces against wave action or current;

“secondary cell” means a cell of the wastewater treatment lagoon system which is the cell that receives partially treated wastewater from the primary cell;

“septage” means the sludge produced in individual on-site wastewater disposal systems such as septic tanks;

“sewage” means household wastewater that contains human waste;

“sludge solids” means solids in sludge;

“sludge” means accumulated solid material containing large amounts of entrained water, which has separated from wastewater during processing;

“Standard Methods for the Examination of Water and Wastewater” means the most recent edition of Standard Methods for the Examination of Water and Wastewater published jointly by the American Public Health Association, the American Waterworks Association and the Water Environment Federation;

“supernatant” means the liquid remaining above the sludge solids after sedimentation;

“waste disposal ground” means an area of land designated by a person, municipality, provincial government agency, or crown corporation for the disposal of waste and approved for use in accordance with Manitoba Regulation 150/91;

“temporary dewatering cell” means a temporary structure used to contain wastewater while the sludge solids separate from the supernatant;

“total coliform” means a group of aerobic and facultative anaerobic, Gram-negative, nonspore-forming, rod-shaped bacteria, that ferment lactose with gas and acid formation within 48 hours at 35°C, and inhabit predominantly the intestines of man or animals, but are occasionally found elsewhere and include the sub-group of fecal coliform bacteria;

“wastewater” means the spent or used water of a community or industry which contains dissolved and suspended matter; and

“wastewater treatment lagoon” means the component of this development which consists of an impoundment into which wastewater is discharged for storage and treatment by natural oxidation.

GENERAL TERMS AND CONDITIONS

This Section of the Licence contains requirements intended to provide guidance to the Licencee in implementing practices to ensure that the environment is maintained in such a manner as to sustain a high quality of life, including social and economic development, recreation and leisure for present and future Manitobans.

1. The Licencee shall direct all wastewater generated within Birds Hill Provincial Park toward the primary cell of the wastewater treatment lagoon or other approved sewage treatment facility.
2. In addition to any of the following specifications, limits, terms and conditions specified in this Licence, the Licencee shall, upon the request of the Director:
 - a) sample, monitor, analyze or investigate specific areas of concern regarding any segment, component or aspect of pollutant storage, containment, treatment, handling, disposal or emission systems, for such pollutants, ambient quality, aquatic toxicity, leachate characteristics and discharge or emission rates, and for such duration and at such frequencies as may be specified;
 - b) determine the environmental impact associated with the release of any pollutant from the Development; or
 - c) provide the Director, within such time as may be specified, with such reports, drawings, specifications, analytical data, descriptions of sampling and analytical procedures being used, bioassay data, flow rate measurements and such other information as may from time to time be requested.
3. The Licencee shall submit all information required to be provided to the Director under this Licence, in writing, in such form (including number of copies) and of such content as may be required by the Director.
4. The Licencee shall, unless otherwise specified in this Licence:
 - a) carry out all preservations and analyses on liquid samples in accordance with the methods prescribed in "Standard Methods for the Examination of Water and Wastewater" or in accordance with an equivalent analytical methodology approved by the Director;
 - b) have all analytical determinations undertaken by an accredited laboratory; and
 - c) report the results to the Director, in writing or in a format acceptable to the Director, within 60 days of the samples being taken.
5. The Licencee shall ensure that the operation of the Development is carried out by individuals properly trained and qualified to do so.

6. The Licencee shall, in case of physical or mechanical breakdown of the wastewater collection and/or treatment system:
 - a) notify the Director immediately;
 - b) identify the repairs required to the wastewater collection and/or treatment system;
 - c) undertake all repairs to minimize unauthorized discharges of wastewater; and
 - d) complete the repairs in accordance with any written instructions of the Director.

SPECIFICATIONS, LIMITS, TERMS AND CONDITIONS

7. The Licencee shall notify the assigned Environment Officer not less than two weeks prior to beginning construction of the Development. The notification shall include the intended starting date of construction, the name of the contractor responsible for construction, and the on-site contact person.
8. The Licencee shall construct and maintain an all-weather access road to the wastewater treatment lagoon.
9. The Licencee shall construct a truck dumping station for truck hauled wastewater. The truck dumping facility shall have a surface splash ramp with a smooth hard surface that can be easily washed free of solids.
10. The Licencee shall install and maintain a fence with warning signs surrounding the wastewater treatment lagoon with a gate to control access.
11. The Licencee shall operate and maintain the wastewater treatment lagoon in such a manner that:
 - a) the release of offensive odours is minimized;
 - b) the organic loading on the primary cell, as indicated by the five-day biochemical oxygen demand, is not in excess of 56 kilograms per hectare per day;
 - c) the depth of liquid in the primary cell or secondary cells does not exceed 1.5 metres;
 - d) a 1.0 metre freeboard is maintained in primary and secondary cells at all times.
12. The Licencee shall, prior to the construction of the new primary cell and the remediation of the new secondary cell of the wastewater treatment lagoon:
 - a) remove all organic topsoil from the area where the dykes will be constructed;
or
 - b) remove all organic material for a depth of 0.3 metres and a width of 3.0 metres from the area where the liner will be constructed.

13. The Licencee shall construct and maintain a continuous liner, including cover material, underlying the primary and secondary cells of the wastewater treatment lagoon, such that:
 - a) the liner is constructed from HDPE geomembrane;
 - b) the liner has a minimum thickness of 60 mils;
 - c) all sections of the liner are joined by double channel fusion seaming;
 - d) the liner is installed in accordance with ASAE Standard EP340.2 for the Installation of Flexible Membrane Linings;
 - e) the liner shall be installed to a minimum elevation of 2.0 metres above the base of both the primary and secondary cells;
 - f) the liner is free of holes and has a hydraulic conductivity not exceeding 3.0×10^{-9} centimetres per second over the entire surface area of the liner;
 - g) the liner is tested for the integrity of all field seams by the air lance or ultrasonic pulse echo test method, in accordance with ASTM Standard D 4437-99, and a testing report is prepared and submitted to the Director for approval; and
 - h) the liner shall be covered with sand or other granular cover material to a minimum depth of 0.3 metre measured perpendicular to the surface of the liner.
14. The Licencee shall construct and maintain an effective gas relief system under the liner for the primary and secondary cells of the wastewater treatment lagoon.
15. The Licencee shall notify the Director one week prior to commencing the installation of the liner and the gas relief system.
16. The Licencee shall not cover the seams of the HDPE liner or use the wastewater treatment lagoon until receiving the approval of the Director of the report submitted pursuant to sub-Clause 13 g) of this Licence.
17. The Licencee shall, if in the opinion of the Director, significant erosion of the interior surfaces of the dykes occurs, repair the dyke and install riprap as necessary. The riprap shall be placed on the interior dyke surfaces from 0.6 metres above the high water mark to at least 0.6 metres below the low water mark to protect the dykes from wave action.
18. The Licencee shall not discharge or permit the discharge of septage into the wastewater treatment lagoon between the 1st day of November of any year and the 15th day of June the following year.
19. The Licencee shall provide and maintain a grass cover on the dykes of the wastewater treatment lagoon and shall regulate the growth of the vegetation so that the height of the vegetation does not exceed 0.3 metres on all dykes.

20. The Licencee shall annually remove by mechanical methods all reeds, rushes and trees located above the low water mark in every cell of the wastewater treatment lagoon.
21. The Licencee shall implement an ongoing program to remove burrowing animals from the site of the wastewater treatment lagoon.
22. The Licencee shall, during construction and operation of the Development, report spills of fuels or other contaminants to an Environment Officer in accordance with the requirements of *Manitoba Regulation 439/87* respecting *Environmental Accident Reporting*.
23. The Licencee shall, during construction and operation of the Development, locate fuel storage and equipment servicing areas a minimum distance of 100 metres from any waterbody, and shall comply with the requirements of *Manitoba Regulation 188/2001* respecting *Storage and Handling of Petroleum Products and Allied Products*.

MONITORING AND SPECIFICATIONS

24. The Licencee shall prior to each effluent discharge campaign obtain grab samples of the treated wastewater from the wastewater treatment lagoon and have them analyzed for:
 - a) the organic content as indicated by the five day biochemical oxygen demand and expressed as milligrams per litre;
 - b) the fecal coliform content as indicated by the MPN index and expressed as MPN per 100 millilitres per sample; and
 - c) the total coliform content as indicated by the MPN index and expressed as MPN per 100 millilitres per sample.
25. The Licencee shall:
 - a) during each year maintain records of:
 - i) wastewater sample dates;
 - ii) original copies of laboratory analytical results of the sampled wastewater;
 - iii) effluent discharge dates;
 - b) make the records being maintained pursuant to sub-Clause 25 a) of this Licence available to an Environment Officer upon request; and
 - c) keep the maintained records of any one calendar year available for inspection for a period of three years following the respective calendar year in which they were recorded.
26. The Licencee shall not discharge effluent from the wastewater treatment lagoon:
 - a) where the organic content of the effluent, as indicated by the five day biochemical oxygen demand, is in excess of 30 milligrams per litre;

- b) where the fecal coliform content of the effluent, as indicated by the MPN index, is in excess of 200 per 100 millilitres of sample;
 - c) where the total coliform content of the effluent, as indicated by the MPN index, is in excess of 1500 per 100 millilitres of sample;
 - d) between the 1st day of November of any year and the 15th day of June of the following year; or
 - e) when such a discharge would cause or contribute to flooding in or along the effluent drainage route.
27. The Licencee shall submit to the Director for approval, within six months of the date of this Licence, an operation and maintenance plan for the Development, to be carried out as approved by the Director.
28. The Licencee shall actively participate in any future watershed-based management study, plan and/or nutrient reduction program, approved by the Director, for the Red River, Lake Winnipeg and/or associated waterways and watersheds.
29. The Licencee shall:
- a) prepare "as constructed drawings" for the Development and shall label the drawings "As Constructed"; and
 - b) provide to the Director, on or before 1st day of January 2007, two sets of the "as constructed drawings" of the Development.

DECOMMISSIONING

30. The Licencee shall, after placing the primary and secondary cell of the wastewater treatment lagoon into operation, prevent any additional wastewater from being discharged into the former secondary cell of wastewater treatment lagoon.
31. The Licencee shall decommission the former secondary cell of the wastewater treatment lagoon within one year of commencing operation of the Development.
32. The Licencee shall:
- a) discharge treated effluent from the former secondary cell of the wastewater treatment lagoon in accordance with the lagoon discharge requirements of this Licence;
 - b) removed accumulated sludge in the both the former secondary cell and former primary cell of the wastewater treatment lagoon;
 - c) dewater the sludge in the former secondary cell which will act as a temporary dewatering cell;
 - d) after placing the sludge in the temporary dewatering cell, remove all the supernatant from the sludge and return the supernatant to the wastewater treatment lagoon, so that only sludge solids remain;
 - e) dispose of the dewatered sludge at a waste disposal ground, operating under a permit issued in accordance with Manitoba Regulation 150 / 91; and

- f) level the site of the former secondary cell of the wastewater treatment lagoon to the original grade and ensure the site is successfully seeded with grass.
33. The Licencee shall:
- a) test all sludge solids to be transported from the temporary dewatering cell to a waste disposal ground in accordance with C.S.A. Standard Test Method A23.2-5C; and
 - a) not transport sludge solids unless the slump test criteria for waste, having a slump of less than 150 mm, is met.
34. The Licencee shall:
- a) have all sewage sludge slump testing performed by an independent testing laboratory accredited to perform the slump test specified;
 - b) record all slump test results; and
 - c) submit slump test result data to the regional Environment Officer upon request.
35. The Licencee shall transport sludge solids in containers in such a manner to prevent loss of sludge solids to the satisfaction of an Environment Officer.

REVIEW AND REVOCATION

- A. This Licence replaces Licence No. 2687 which is hereby rescinded.
- B. If, in the opinion of the Director, the Licencee has exceeded or is exceeding or has or is failing to meet the specifications, limits, terms, or conditions set out in this Licence, the Director may, temporarily or permanently, revoke this Licence.
- C. If the Licencee has not commenced construction of the Development within three years of the date of this Licence, the Licence is revoked.
- D. If, in the opinion of the Director, new evidence warrants a change in the specifications, limits, terms or conditions of this Licence, the Director may require the filing of a new proposal pursuant to Section 11 of The Environment Act.


Tracey Braun, M.Sc.
Director
Environment Act

Client File No.: 166.10