

# Environment Act Licence

Manitoba  
Environment



Licence No. 1704  
Issue Date SEPTEMBER 8, 1993

In accordance with the Manitoba Environment Act (C.C.S.M. c. E125)

THIS LICENCE IS ISSUED TO:

**DEPARTMENT OF NORTHERN AFFAIRS: "the Licencee"**  
**PELICAN RAPIDS WASTEWATER TREATMENT LAGOON**

for the expansion and operation of the Development being a wastewater collection system and a wastewater treatment lagoon located on Section 34 and 35, Township 43, Range 23 WPM and with discharge of treated effluent into Shoal River Bay on Lake Winnipegosis and subject to the following specifications, limits, terms and conditions:

## DEFINITIONS

In this Licence,

**"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;

**"appurtenances"** means machinery, appliances, or auxiliary structures attached to a main structure to enable it to function, but not considered an integral part of it;

**"ASTM"** means the American Society for Testing and Materials;

**"bentonite"** means specially formulated standard mill grade sodium bentonite conforming to American Petroleum Institute Specification 13-A;

**"cut-off"** means a vertical-side trench filled with compacted clay or a wall constructed from compacted clay;

**"Director"** means an employee so designated pursuant to the Environment Act;

**"effluent"** means treated wastewater flowing or pumped out of the wastewater treatment lagoon;

**"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 5 days at a temperature of 20°C;

**"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;

**"in-situ"** means on the site;

**"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;

**"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;

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

**"sludge solids"** means solids in sludge;

**"supernatant"** means the liquid remaining above the sludge solids after sedimentation;

**"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;

**"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;

**"wastewater treatment lagoon"** means an impoundment into which wastewater is discharged for storage and treatment by natural oxidation.

## GENERAL REQUIREMENTS

1. The Licencee shall direct all sewage generated within the community of Pelican Rapids toward the wastewater treatment lagoon or other approved sewage treatment facilities.

2. 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; and
  - (c) the depth of liquid in the primary cell does not exceed 1.5 metres.
  
3. 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.
  
4. The Licencee shall install and maintain a fence around the wastewater treatment lagoon to limit access.

### **CONSTRUCTION SPECIFICATIONS**

5. The Licencee shall, prior to the construction of the dykes for the expansion to 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.
  
6. The Licencee shall construct the wastewater treatment lagoon with a continuous clay liner under all interior surfaces of the structure in accordance with the following specifications:

- (a) the liner shall be constructed of clay;
  - (b) the liner shall be at least 1 metre in thickness;
  - (c) the liner shall have a hydraulic conductivity of  $1 \times 10^{-7}$  centimetres per second or less; and
  - (d) the liner shall be constructed to an elevation of 2.5 metres above the floor elevation of each primary and secondary cells.
7. The Licencee shall seal all holes located on the inside face of the dykes of secondary cells No. 1 and No. 2, as identified in Appendix A attached to this Licence, with bentonite.

#### **DISCHARGE LIMITS, TERMS AND CONDITIONS**

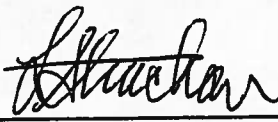
8. The Licencee shall, after the primary cell, as identified in Appendix A attached to this Licence, is completed in accordance with this Licence:
- (a) isolate secondary cell No. 1, as identified in Appendix A attached to this Licence, from the wastewater flow and remove all the supernatant from the cell;
  - (b) dewater and remove the sludge solids from secondary cell No. 1; and
  - (c) dispose of the sludge solids at a waste disposal ground operating under a permit issued in accordance with Manitoba Regulation 150 / 91.
9. The Licencee shall cover the sludge solids deposited at the waste disposal ground with soil to a minimum depth of 15 centimetres.
10. 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; or
  - (d) between the 1st day of November of any year and the 1st day of June of the following year.

### MONITORING AND REPORTING SPECIFICATIONS

11. The Licencee shall arrange with the designated Environment Officer a mutually acceptable time and date for any required soil sampling between the 15th day of May and the 15th day of October of any year.
12. The Licencee shall subject undisturbed soil samples from the liner to hydraulic conductivity tests; with the number and location of samples to be specified by the designated Environment Officer up to a maximum of twenty samples.
13. The Licencee shall, not less than 2 weeks before the wastewater treatment lagoon is placed in operation, submit to the Director the results of the tests carried out pursuant to Clause 12 of this Licence.
14. The Licencee shall, on or before 1st day of July, 1995, provide to the Director "as constructed" drawings of the wastewater treatment lagoon and all appurtenances.
15. This Licence replaces Licence No. 401 which is hereby rescinded.

### REVOCATION

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 herein, the Director may revoke, temporarily or permanently, this Licence.

  
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Larry Strachan, P. Eng.  
Director  
Environment Act

FILE: 772.10

Appendix A to Licence No. 1704

