

# Environment Act Licence Loi sur l'environnement Licence

Manitoba  
Conservation  
Conservation  
Manitoba



Licence No./Licence n° 2313 S2 R  
Issue Date/Date de délivrance November 2, 1998

Revised: June 15, 2005

IN ACCORDANCE WITH THE MANITOBA ENVIRONMENT ACT (C.C.S.M. c. E125)  
THIS LICENCE IS ISSUED PURSUANT TO SECTIONS 13(1) AND 14(2) TO:

THE TOWN OF ROBLIN; "the Licencee"

## STAGE 2 LICENCE

for the construction and operation of the Development, being a wastewater treatment lagoon, a low pressure pivot type irrigation system, an engineered wetland and hybrid poplar irrigation plantation proposed pursuant to The Environment Act on July 15, 1996, May 13, 1997, August 18, 1997, August 29, 1997, September 8, 1997 and May 2, 2005, located on the North East Quarter of Section 20, Township 25, Range 28 WPM, and the South West Quarter of Section 28, Township 25, Range 28 WPM, in the Rural Municipality of Shell River, and subject to the following specifications, limits, terms and conditions:

## DEFINITIONS

In this Licence,

"**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;

"**affected area**" means a geographical area excluding the property of the development;

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

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

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

**"engineered wetland"** means a designed and man-made system composed of a basin containing soil at the bottom with emergent and submergent vegetation, animal life, and water that simulates natural wetlands for treatment of wastewater effluent;

**"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;

**"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;

**"SAR"** means sodium adsorption ratio;

**"Sodium adsorption ratio"** means the dimensionless value where:

$$\text{SAR} = \frac{0.043 \times \text{Sodium concentration}}{\sqrt{(0.025) \text{ Calcium concentration} + (0.04) \text{ Magnesium concentration}}}; \text{ and}$$

**"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 SPECIFICATIONS

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 ensure that the existing wastewater treatment lagoon system is operated in such a manner that:
  - a) all the sewage generated within the Town of Roblin is directed towards the primary cell of the existing wastewater treatment lagoon;
  - b) the existing soil conditions of adjacent lands are not adversely impaired; and
  - c) the effluent irrigation does not degrade existing ambient groundwater conditions.
2. The Licencee shall dispose of waste solids and sewage sludge settled in the existing lagoon cells at a facility operated in accordance with the requirements of

The Environment Act and Regulations thereunder, or in a manner otherwise approved by the Director.

3. In addition to any of the 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 related to the Development, for such pollutants or ambient quality, aquatic toxicity, leachate characteristics and discharge or emission rates, for such duration and at such frequencies as may be specified;
  - b) determine the environmental impact associated with the release of any pollutants 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 any such other information related to the Development.
4. The Licencee shall:
  - a) participate on a Community Liaison Committee established by the Director for the purpose of facilitating:
    - i) the development of operating and maintenance plans;
    - ii) discharge procedures; and
    - iii) the exchange of information between the residents of the Shell River Valley and the Licencee; and
  - b) provide the Community Liaison Committee with information relating to the construction, operation and monitoring activities of the Development and such other matters authorized by this Licence.
5. The Licencee shall, in the event of a physical or mechanical breakdown of the wastewater collection system, treatment system, or effluent disposal system which may cause an exceedance of the concentration limits of parameters listed in Schedule 2 of this Licence, notify the Director, the Rural Municipality of Shell River, and the Rural Municipality of Shellmouth:
  - a) as soon as possible but no later than within 12 hours of the occurrence; or
  - b) before noon of the first business day following an occurrence on a weekend or statutory holiday.

Such notification shall be by facsimile or any other notification procedure approved by the Director, stating the nature of the occurrence, the time and estimated duration of the event, the reason for the occurrence and the proposed course of action for approval by the Director to deal with the matter.

6. The Licencee shall, in consultation with the Director, prepare and submit a baseline survey of the Shell River upstream and downstream of the municipal ditch outfall.

7. The Licencee shall prepare and submit for approval, by the Director, on or before April 1, 1999, an operating and maintenance plan containing discharge procedures for the Development. The Licencee may submit, to the Director for approval, amendments to the plan. The Licencee shall implement any amendments approved by the Director in a manner and within the time frames specified by the Director.
8. 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 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, or in accordance with an equivalent analytical methodology approved by the Director; and
  - b) ensure that all analytical determinations are undertaken by an accredited laboratory.
9. The Licencee shall, prior to March 31, 1999, submit to the Director a plan of water conservation measures designed to reduce the volume of wastewater generated within the Town of Roblin and the level of chlorides and sodium in the said wastewater. The plan shall report on means to reduce infiltration of extraneous flows into the sewerage system, leak detection and water loss monitoring, metering, pricing, ongoing public awareness, measures to promote low water use devices and other measures which may be used to promote water conservation. The Licencee may submit, to the Director for approval, amendments to the plan. The Licencee shall implement any amendments approved by the Director in a manner and within the time frames specified by the Director.
10. The Licencee shall ensure that hybrid poplars are planted along the west side and north side of the existing primary cells.

#### **MONITORING AND REPORTING**

11. The Licencee shall report any information requested through the provisions of this Licence in a manner and form acceptable to the Director.
12. The Licencee shall prepare and submit for approval, by the Director, on or before December 31, 1998, a sampling and monitoring program containing the location of sampling points and the frequency of sampling to monitor the level of each parameter listed in Schedule 1 attached to this Licence in the liquid treated in the secondary cell of the wastewater treatment lagoon. The Licencee may submit, to the Director for approval, proposed amendments to the program and implement

any amendments approved by the Director in a manner and within the time frames specified by the Director.

13. The Licencee shall prepare and submit for approval, by the Director, on or before December 31, 1998, a sampling and monitoring program containing the location of sampling points and the frequency of sampling to monitor the level of each parameter listed in Schedule 2 of this Licence in the liquid treated in the engineered wetland. The Licencee may submit, to the Director for approval, proposed amendments to the program and implement any amendments approved by the Director in a manner and within the time frames specified by the Director.
14. The Licencee shall submit the results of any monitoring to the Director within 60 days of each sampling event unless otherwise prescribed, or approved in advance by the Director.

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

#### **Wastewater Lagoon**

15. The Licencee shall ensure that:
  - a) the organic loading, in terms of five-day biochemical oxygen demand, on the primary cell of the wastewater treatment lagoon does not exceed 56 kilograms per hectare per day;
  - b) the depth of sewage in the primary cell of the wastewater treatment lagoon does not exceed a depth of 1.5 metres; and
  - c) the sewage effluent from the wastewater treatment lagoon is disposed of by irrigation onto designated agricultural land or into the engineered wetland.

#### **Engineered Wetland**

16. The Licencee shall ensure that the engineered wetland is operated in such a manner that:
  - a) the maximum hydraulic design flow through rate on the engineered wetland shall not exceed 228 m<sup>3</sup> per hectare per day;
  - b) the maximum organic loading on the wetland shall not exceed 56 kg BOD<sub>5</sub> per hectare per day;
  - c) the liquid depth in the wetland does not exceed 45 cm;
  - d) any pesticide or herbicide used to control insects and algae, receive prior approval from the Director before use;
  - e) the outlet structures prevent ice damage to control points and prevent ice from closing control points during freezing weather; and

- f) the condition of the effluent being discharged to the environment is not anoxic or anaerobic.
17. The Licencee shall, unless otherwise approved by the Director, ensure that prior to any discharge of effluent from the engineered wetland to any surface water bodies, the liquid to be discharged from the engineered wetland system is sampled at the outlet pipe of the system and the sample is analyzed for the parameters listed in Schedule 2 of this Licence and the following additional parameters:
- a) total chlorine content;
  - b) fecal coliform content;
  - c) organic content, in terms of five-day biochemical oxygen demand;
  - d) electrical conductivity;
  - e) sodium adsorption ratio;
  - f) phosphorous; and
  - g) un-ionized ammonia.
18. The Licencee shall, unless otherwise approved by the Director, at the approximate midpoint of the duration of any effluent discharge period from the engineered wetland to any surface water bodies, sample the liquid being discharged from the engineered wetland system at the outlet pipe of the system and analyze the sample for the following parameters:
- a) fecal coliform content;
  - b) organic content, in terms of five-day biochemical oxygen demand; and
  - c) un-ionized ammonia.

#### **Effluent Irrigation Onto Agricultural Land**

19. The Licencee shall ensure that:
- a) irrigation does not take place on designated agricultural lands:
    - i) during or for at least 7 days prior to harvesting of crops; and
    - ii) during or for 30 days prior to grazing by livestock other than dairy cattle;
  - b) only forage crops, cereal grain and oil seed crops are grown on the designated agricultural land provided that where corn is grown its use shall be restricted to silage;
  - c) no direct runoff of sewage effluent is permitted;
  - d) if surface ponding or surface runoff occurs during irrigation, the gross depth of effluent applied per revolution of the centre pivot shall be reduced;
  - e) there is no sewage effluent irrigation in circumstances where effluent spray may be carried onto a public road or onto private property not owned or controlled by the landowner using the irrigation system;
  - f) prior to any discharge of the wastewater treatment lagoon effluent onto designated agricultural land, the liquid to be discharged from the wastewater treatment lagoon system is sampled at the outlet pipe of the

secondary cell of the lagoon and the sample is analyzed for the parameters listed in Schedule 1 of this Licence and the following additional parameters:

- i) total chlorine content;
  - ii) fecal coliform content;
  - iii) organic content, in terms of five-day biochemical oxygen demand;
  - iv) electrical conductivity;
  - v) sodium adsorption ratio;
  - vi) phosphorous; and
  - vii) un-ionized ammonia;
- g) there is no discharge of effluent from the wastewater treatment lagoon onto designated agricultural land from the first day of November to the first day of May in any year;
  - h) the fecal coliform content, as indicated by the MPN index, of the wastewater treatment lagoon effluent discharged onto designated agricultural land does not exceed 200 per 100 millilitres of sample;
  - i) the total coliform content, as indicated by the MPN index, of the wastewater treatment lagoon effluent discharged onto designated agricultural land does not exceed 1500 per 100 millilitres of sample;
  - j) the total chlorine content of the wastewater treatment lagoon effluent discharged onto designated agricultural land is not detectable;
  - k) the electrical conductivity ( $EC_w$ ) of the wastewater treatment lagoon effluent discharged onto designated agricultural land does not exceed 2000  $\mu S/cm$ ;
  - l) the sodium adsorption ratio of the wastewater treatment lagoon effluent discharged onto designated agricultural land does not exceed 10; and
  - m) the maximum concentration of elements in the effluent used for irrigation does not exceed the limits as indicated in Schedule 1 attached to this Licence.
20. The Licencee shall advise operators and researchers to receive appropriate immunization as determined by the Department of Health, where such operators and researchers may be in contact with sewage effluent being used for irrigation. Such notification shall be by letter or any other notification procedure approved by the Director.

#### **Wetland Discharge To Town's Property**

21. The Licencee shall ensure that the engineered wetland and hybrid poplar plantation are operated in such a manner that:
- a) there is no discharge of effluent from the said engineered wetland;
    - i) between the first day of November of any year and the first day of May of the following year; or

- ii) in an eastwardly direction through the chain of natural water bodies without prior written agreement with the land owners along the chain of natural water bodies;
- b) the fecal coliform content of the engineered wetland effluent, as indicated by the MPN index, does not exceed 200 per 100 millilitres of sample;
- c) the total chlorine content of the engineered wetland effluent is not detectable;
- d) the electrical conductivity ( $EC_w$ ) of the engineered wetland effluent does not exceed 2500  $\mu\text{S}/\text{cm}$ ;
- e) the sodium adsorption ratio of the engineered wetland effluent does not exceed 10;
- f) the organic content of the engineered wetland effluent, as indicated by the five-day biochemical oxygen demand, is not in excess of 10 milligrams per litre;
- g) the total phosphorus content of the engineered wetland effluent is not in excess of 0.15 milligrams per litre;
- h) the un-ionized ammonia content of the engineered wetland effluent is not in excess of 0.05 milligrams per litre; and
- i) the maximum concentration of metals of the engineered wetland effluent does not exceed the limits as indicated in Schedule 2 of this Licence.

#### **Wetland Discharge To Shell River**

22. The Licencee may, unless otherwise indicated in writing by the Director, discharge effluent from the wetland to the Shell River provided that:
- a) there is no discharge of effluent from the said sewage lagoon system and engineered wetland system from the first day of November of any year to the first day of May of the following year;
  - b) the quality of effluent prior to being discharged from the said sewage lagoon and engineered wetland system is such that:
    - i) the total chlorine residual content is not greater than 11  $\mu\text{g}/\text{L}$  in the receiving stream (Shell River);
    - ii) the organic content, as indicated by the five-day biochemical oxygen demand, is not in excess of 30 milligrams per litre;
    - iii) the fecal coliform content of the effluent discharged during the period from the 16th day of May to the 14th day of June, as indicated by the MPN index, is not in excess of 200 per 100 millilitres of sample;
    - iv) the fecal coliform content of effluent discharged during the period from the 15th day of June to the 31st day of October, as indicated by the MPN index, is not in excess of 100 per 100 millilitres of sample;



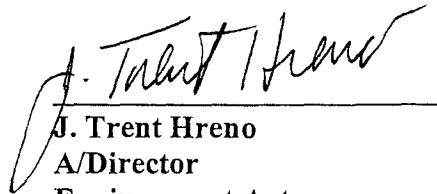
- v) the maximum concentration of Trace Metals in the effluent shall be approved by the Director prior to the release of effluent to the Shell River;
  - vi) the un-ionized ammonia content of the engineered wetland effluent is not in excess of 0.05 milligrams per litre; and
  - vii) the total phosphorus content of the engineered wetland effluent is not in excess of 0.15 milligrams per litre; and
- c) flooding or erosion of the Municipal ditch adjoining and North of PR #583 does not occur as a result of the effluent discharge.
23. The Licencee shall, not less than 5 days prior to commencement of any discharge of effluent from the engineered wetland to the Shell River, provide to the Director the results of the pre-discharge sampling and analyses regarding sub-Clauses 17 b), c) and g) of this Licence.

**As Constructed Drawings**

24. The Licencee shall, on or before the first day of June, 2000, provide to the Director "as constructed" drawings of the engineered wetland, hybrid poplar plantation and all appurtenances.

**REVOCATION**

- A. This Licence replaces Licence No. 2313 S2 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. This Licence shall be reviewed on or before April 1, 2008.

  
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J. Trent Hreno  
A/Director  
Environment Act

**Schedule 1**  
**To Environment Act Licence No. 2313 S2 R**  
**Maximum Concentrations in Irrigation Water**

Parameter	Concentration for continual use on all soils (mg/l)	Concentration for use up to 20 years on fine-textured soils of pH 6.0 to 8.5 (mg/l)
Aluminum, Al	5.0	20.0
Arsenic, As (Total)	0.10	2.0
Beryllium, Be (Total)	0.10	0.50
Boron, Bo (Soluble)	0.5	2.0
Cadmium, Cd (Total)	0.01	.01
Chloride, Cl (Soluble)	350	-
Cobalt, Co (Total)	0.050	5.0
Chromium, Cr (Total)	0.10	1.0
Copper, Cu (Total)	0.20	5.0
Fluoride, F (Total)	1.0	15
Iron, Fe (Total)	5.0	20.0
Lithium, Li (Total)	2.5	2.5
Manganese, Mn (Total)	0.5	10.0
Molybdenum, Mo (Total)	0.01	.01
Nickel, Ni (Total)	0.20	2.0
Lead, Pb (Total)	5.0	10.0
Selenium, Se (Total)	0.020	.05
Vanadium, V (Total)	0.1	1.0
Zinc, Zn	2.0	10.0

**Schedule 2**  
**To Environment Act Licence No. 2313 S2 R**  
**Maximum Concentrations in Engineered Wetland Effluent**

Parameter	Concentration (mg/l)
Aluminum, Al	5.0
Arsenic, As (Total)	0.10
Beryllium, Be (Total)	0.10
Boron, Bo (Soluble)	0.5
Cadmium, Cd (Total)	0.01
Cobalt, Co (Total)	0.050
Chromium, Cr (Total)	0.10
Copper, Cu (Total)	0.20
Fluoride, F (Total)	1.0
Iron, Fe (Total)	5.0
Lithium, Li (Total)	2.5
Manganese, Mn (Total)	0.5
Molybdenum, Mo (Total)	0.01
Mercury, Hg (Total)	0.003
Nickel, Ni (Total)	0.20
Lead, Pb (Total)	0.1
Selenium, Se (Total)	0.020
Vanadium, V (Total)	0.1
Zinc, Zn	2.0