



Conservation

Climate Change and Environmental Protection Division
Environmental Assessment and Licensing Branch
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CLIENT FILE NO.: 5480.00

December 22, 2010

Jeff Precourt, C.A.O.
Town of Snow Lake
Box 40
Snow Lake, MB
R0B 1M0

Dear Mr. Precourt:

Enclosed is **Environment Act Licence No. 2947** dated December 22, 2010 issued in accordance with The Environment Act to the **Town of Snow Lake** for the expansion and operation of the Development being a wastewater collection system and wastewater treatment plant located on Parcel A, Plan 7743 in Township 68, Range 17 WPM in the Town of Snow Lake, Manitoba, in accordance with the Proposal filed under Section 14 of The Environment Act on August 10, 2010 and additional information dated October 20, 2010.

In addition to the enclosed Licence requirements, please be informed that all other applicable federal, provincial and municipal regulations and by-laws must be complied with.

For further information on the administration and application of the Licence, please feel free to contact Rafiqul Chowdhury, Environmental Engineer at 204-945-2614.

Pursuant to Section 27 of The Environment Act, this licensing decision may be appealed by any person who is affected by the issuance of this Licence to the Minister of Conservation within 30 days of the date of the Licence.

Yours truly,

Tracey Braun, M. Sc.
Director
Environment Act

Enc.

c: Don Labossiere, Director, Environmental Operations
Saibal Basu, Ph. D, P. Eng., Stantec
Dave Shwaluk, P. Eng., MWSB
Public Registries

NOTE: Confirmation of Receipt of this Licence No. 2947 (by the Licensee only) is required by the Director of Environmental Assessment and Licensing. Please acknowledge receipt by signing in the space provided below and faxing a copy (letter only) to the Department by January 11, 2011.

On behalf of the Town of Snow Lake

Date

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

LICENCE

Licence No. / Licence n° 2947

Issue Date / Date de délivrance December 22, 2010

In accordance with The Environment Act (C.C.S.M. c. E125) /
Conformément à la Loi sur l'environnement (C.P.L.M. c. E125)

Pursuant to Section 11(1) and 14(1) / Conformément au Paragraphe 11(1) et 14(1)

THIS LICENCE IS ISSUED TO : / CETTE LICENCE EST DONNÉE À :

TOWN OF SNOW LAKE; "the Licencee"

for the expansion and operation of the Development being a wastewater collection system and wastewater treatment plant located on Parcel A, Plan 7743 in Township 68, Range 17 WPM in the Town of Snow Lake, Manitoba, in accordance with the Proposal filed under Section 14 of The Environment Act on August 10, 2010 and additional information dated October 20, 2010, 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;

"**aerobic digestion**" means the degradation of organic matter brought about through the action of microorganisms in the presence of elemental oxygen;

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

"**approved**" means approved by the Director in writing;

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

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

"bioassay" means a method of determining toxic effects of industrial wastes and other wastewaters by using viable organisms;

"composite sample" means a quantity of wastewater consisting of a minimum of 10 equal volumes of effluent, or flow proportional volumes collected over a 24-hour period, and may be collected manually or by means of an automatic sampling device;

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

"effluent" means treated wastewater flowing or pumped out of the sewage treatment plant or overflow detention pond;

"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" (BOD₅) means that part of oxygen usually associated with biochemical oxidation of organic material within 5 days at 20°C;

"five-day carbonaceous biochemical oxygen demand" (CBOD₅) means that part of the oxygen demand usually associated with biochemical oxidation of carbonaceous organic matter within 5 days at a temperature of 20°C, excluding BOD associated with nitrogenous organic matter;

"grab sample" means a quantity of wastewater taken at a given place and time;

"headworks" means the initial structures and devices of the sewage treatment plant;

"IFAS" means Integrated Fixed Film Activated Sludge;

"influent" means water, wastewater, or other liquid flowing into the sewage treatment plant;

"MPN index" means the most probable number of coliform organisms in a given volume of wastewater as determined by statistical estimation;

"odour nuisance" means a continuous or repeated odour, smell or aroma, in an affected area which is offensive, obnoxious, troublesome, annoying, unpleasant or disagreeable to a person:

- a) residing in an affected area;
- b) working in an affected area; or
- c) present at a location in an affected area which is normally open to members of the public;

if the odour, smell or aroma

- d) is the subject of at least 5 written complaints received by the Director in a form satisfactory to the Director and within a 90 day period, and from 5 different persons falling within clauses a), b) or c), who do not live in the same household; or
- e) is the subject of at least one written complaint, received by the Director in a form satisfactory to the Director, from a person falling within clauses a), b) or c), and the Director is of the opinion that if the odour, smell or aroma had occurred in a more densely populated area there would have been at least 5 written complaints received within a 90 day period from 5 different persons who do not live in the same household;

"sewage" means human body, toilet, liquid, waterborne culinary, sink or laundry waste;

"sewage effluent" means sewage after it has undergone at least one form of physical, or biological treatment;

"sewage treatment plant" means the component of this development which consists of the central facility, of the wastewater treatment facilities, which contains all treatment processes exclusive of the wastewater collection system;

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

"sludge solids" means solids in sludges;

"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;

"total coliform" means a group of aerobic and facultative anaerobic, gram-negative, non-spore 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;

"UV disinfection" means a disinfection process for treating wastewater using ultraviolet radiation;

"UV dose" means the unit of intensity of ultra violet light that is required to kill bacteria and viruses present in the sewage effluent;

"WAS" means waste activated sludge removed from the secondary clarifier;

"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 or a Licence pursuant to The Environment Act;

"waste solid" means a dissolved, suspended, or volatile substance that is contained in or removed from wastewater and that can no longer be used for its original purpose;

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

"wastewater collection system" means the sewer and pumping system used for the collection and conveyance of domestic, commercial and industrial wastewater; and

"wastewater treatment plant" means the central facility of wastewater treatment facilities which contains all treatment processes exclusive of the collection system.

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. 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, handling, treatment and disposal systems, for such pollutants, ambient quality, aquatic toxicity, seepage characteristics and discharge rates and for such duration and 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, bioassay data, flow rate measurements and such other information as may from time to time be requested.

2. The Licencee shall, unless otherwise specified in this Licence:
 - a) carry out all preservations and analyses of liquid samples in accordance with the methods prescribed in the Standard Methods for the Examination of Water and Wastewater, or in accordance with equivalent preservation and analytical methodologies approved by the Director;
 - b) have analytical determinations undertaken by an accredited laboratory; and
 - c) report the results to the Director, in writing, within 60 days of the samples being taken.

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, 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;
 - d) complete the repairs in accordance with any written instructions of the Director; and
 - e) submit a report to the Director about the causes of breakdown and measures taken, within one week of the repairs being done.
5. The Licencee shall operate the wastewater collection system and the sewage treatment plant in such a manner that:
 - a) all the sewage generated within the Town of Snow Lake is directed towards the Town of Snow Lake Sewage Treatment Plant or other approved wastewater treatment system;
 - b) only sewage as defined in this Licence is discharged into the sewage treatment plant; and
 - c) primary screenings are disposed in a waste disposal ground operated under:
 - i) a permit issued in accordance with Manitoba Regulation 150/91 or any future amendment thereof; or
 - ii) the authority of a Licence issued under The Environment Act.
6. The Licencee shall remove liquid from the WAS and other sludge and treated solid materials generated as waste by the sewage treatment plant and dispose of it at a waste disposal ground.
7. The Licencee shall not cause or permit an odour nuisance to be created as a result of the construction, operation or alteration of the Development, and shall take such steps as the Director may require to eliminate or mitigate an odour nuisance.
8. The Licencee shall install, operate, and maintain an effluent discharge pipeline from the sewage treatment plant into Snow Lake, and shall take the necessary steps to prevent freezing of the effluent in the pipeline.
9. The Licencee shall not spill, or allow to be spilled, wastewater and/or sludge in the area around the sewage treatment plant.
10. The Licencee shall construct an all-weather access road and dumping facility for truck hauled wastewater. The dump station shall be equipped with an influent pipe fitted with a quick-coupler. All trucks used to deliver wastewater to the sewage treatment plant are to be equipped with a flexible hose and matching adapters for the quick-coupler. All wastewater delivered to the sewage treatment plant is to be discharged through the hose and influent pipe into the wastewater influent pipe before the influent flow measuring device.
11. The Licencee shall ensure that, during construction and operation of the Development, spills of fuels or other contaminants are reported to an Environment

Officer in accordance with the requirements of *Manitoba Regulation 439/87* respecting *Environmental Accident Reporting*.

12. The Licencee shall, during construction and operation of the Development:
 - a) immediately report any reportable spills to Manitoba Conservation's Accident Reporting Line at (204) 944-4888; and
 - b) provide a follow-up report to the Director on a reportable environmental accident outlining the cause(s) and proposing corrective action to prevent reoccurrence.
13. The Licencee shall obtain and maintain classification of the Development pursuant to *Manitoba Regulation 77/2003* respecting *Water and Wastewater Facility Operators* or any future amendment thereof and maintain compliance with all requirements of the regulation including, but not limited to, the preparation and maintenance of a Table of Organization, Emergency Response Plan and Standard Operating Procedures.
14. The Licencee shall carry out the operation of the Development with individuals properly certified to do so pursuant to *Manitoba Regulation 77/2003* respecting *Water and Wastewater Facility Operators* or any future amendment thereof.
15. The Licencee shall obtain all necessary provincial and federal permits and approvals for construction of relevant components of the Development prior to commencement of construction.
16. The Licencee shall install and maintain a security fence around all components of the sewage treatment plant and sludge dewatering facility that are not enclosed within secured buildings.

SPECIFICATIONS, LIMITS, TERMS AND CONDITIONS

17. The Licencee shall limit the wastewater load on the sewage treatment plant as follows:
 - a) hydraulic loading not to exceed 4149 m³ for any 24-hour period;
 - b) organic loading not to exceed 581 kilograms of five-day biochemical oxygen demand (BOD₅) for any 24-hour period; and
 - c) the release of offensive odour is minimized.
18. The Licencee shall subject all sludge to aerobic digestion, or an equivalent digestion process acceptable to the Director, where:
 - a) the digester contents have a minimum of 1 milligrams per litre dissolved oxygen during aeration;
 - b) the digester contents are maintained at a minimum temperature of 10°C; and
 - c) the digester provides a minimum solids retention time of 7 days.

19. The Licencee shall install instrumentation satisfactory to the Director to provide constant monitoring of the UV process to ensure compliance with the disinfection requirements. Such instrumentation shall include but not be limited to the following:
 - a) a UV sensor to monitor lamp intensity;
 - b) appropriate alarm and shutdown systems;
 - c) a lamp monitoring system to identify the location of individual lamp failures;
 - d) an hour meter which cannot be reset to display actual hours of UV lamp operation; and
 - e) protective circuits for overcurrent and ground current leakage detection.
20. The Licencee shall utilize UV lamps that have a rated output of at least 254 nanometres (nm) capable of delivering a germicidal dose in excess of 30,000 microwatt seconds/sq cm.
21. The Licencee shall operate and maintain the UV units to give a germicidal dose of 80% or more of the design germicidal dose, at the end of the lamp life.
22. The Licencee shall not discharge sewage effluent from the sewage treatment plant, where:
 - a) the organic content of the effluent, as indicated by the five-day carbonaceous biochemical oxygen demand (CBOD₅), is in excess of 25 milligrams per litre;
 - b) the fecal coliform content of the sewage effluent, as indicated by the MPN index, is in excess of 200 per 100 millilitres of sample at the final discharge point as determined by the monthly geometric mean of 3 grab samples collected at equal time intervals, once each week;
 - c) the total coliform content of the sewage effluent, as indicated by the MPN index, is in excess of 1500 per 100 millilitres of sample at the final discharge point as determined by the monthly geometric mean of 3 grab samples collected at equal time intervals, once each week;
 - d) the total suspended solids content of the effluent, as indicated by the non-filterable residue, is in excess of 25 milligrams per litre;
 - e) the total phosphorus content of the effluent is in excess of 1.0 milligram per litre, as determined by the thirty-day rolling average;
 - f) concentration of unionized ammonia in excess of 1.25 mg/L, expressed as nitrogen (N), at 15°C ± 1°C; or
 - g) if effluent is chlorinated, the total residual chlorine content of the effluent is in excess of 0.02 milligrams per litre, as determined by the monthly average.

MONITORING AND REPORTING SPECIFICATIONS

23. The Licencee shall monitor, and make the records of such monitoring available to the Director as may be requested, the sewage treatment process for the following parameters:
 - a) total flow rate(s) into the plant;
 - b) flow rate(s) from the truck haul receiving station;
 - c) water level in the influent channel entering the headworks screen;

- d) pH, dissolved oxygen, temperature, and tank liquid levels of the digestion processes;
 - e) water level in the hauled wastewater holding tank;
 - f) flow rate(s) into and through the UV disinfection system;
 - g) hydrocarbons at the truck haul receiving station; and
 - h) other process parameters approved or required by the Director.
24. The Licencee shall provide a heated and secured effluent monitoring station acceptable to the Director and equipped with:
- a) a direct access way for an effluent sampling line to a location near the discharge from the UV disinfection chamber; and
 - b) an electrical power source of 15 amperes at 110 volts.
25. The Licencee shall arrange for the taking of samples of influent at the headworks inlet chamber and of treated sewage effluent at the effluent monitoring station.
26. The Licencee shall:
- a) take one composite sample of effluent from the sewage treatment plant during the discharge period once each month;
 - b) have the composite effluent sample analyzed for five day carbonaceous biochemical oxygen demand, field temperatures, field pH, ammonia, total phosphorus and total suspended solids;
 - c) take three (3) grab samples of effluent from the sewage treatment plant during the discharge period at equal time intervals once each week;
 - d) have the grab samples analyzed for fecal coliform content and total coliform content;
 - e) report the results to the Director within 60 days of the samples being taken; and
 - f) notwithstanding sub-clause e) above, if the results of the fecal coliform and/or total coliform analysis exceed the discharge criteria specified in Clause 22 of this licence, report the results to the Director within 48 hours of receipt of the results.
27. The Licencee shall, in case of physical or mechanical breakdown of the wastewater collection and/or treatment system, including the UV disinfection system:
- a) notify the Director immediately;
 - b) identify the repairs required to the waste collection and/or treatment system;
 - c) complete the repairs in accordance with the written instructions of the Director; and
 - d) submit a report to the Director about the causes of breakdown and measures taken, within one week of the repairs being done.
28. The Licencee shall submit to the Director for approval, not later than December 30, 2011, a detailed sampling and monitoring program for determining the quality of the effluent and water from Snow Lake for a period of 3 years following the commissioning of the sewage treatment plant. The program shall

contain the frequency and location of sampling of the water quality of Snow Lake with respect to the following parameters:

- a) ammonia;
 - b) pH;
 - c) temperature; and
 - d) other parameters, specified by the Director, resulting from sewage treatment system upset or malfunction.
29. The Licencee shall, not more than 60 days after the results of the sample analysis are received, submit to the Director the results of the monitoring program for each year of the monitoring program carried out pursuant to Clause 28 of this Licence.
30. The Licencee shall actively participate in any future watershed based management study, plan and/or nutrient reduction program approved by the Director, for the Snow Lake or any downstream watercourse or waterbody.
31. The Licencee shall:
- a) prepare "as constructed drawings" for the Development, including the sewage treatment facility and the effluent discharge pipeline complete with final elevations, and shall label the drawings "As Constructed"; and
 - b) provide to the Director, on or before December 30, 2012, two sets of "As Constructed Drawings" of the Development.
32. The Licencee shall, during the first year of operation of the Development following the construction and expansion of the sewage treatment plant, obtain grab samples of the effluent which shall be analyzed and reported in accordance with Schedule "A" attached to this licence.

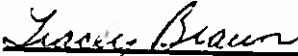
DECOMMISSIONING OF EXISTING SEWAGE TREATMENT PLANT AND ASSOCIATED WORKS

33. The Licencee shall, within one year following successful commissioning of the wastewater treatment plant, decommission the retired sewage treatment plant components, namely, the existing un-insulated building over existing rectangular clarifiers', components associated with the existing headworks/chlorination room, components associated with the circular aeration tanks, as follows:
- a) remove and dispose of or abandon and cap all existing connection piping of the components of the retired sewage treatment plant that will no longer be used;
 - b) remove and dewater, and dispose of at a waste disposal ground, or by other means approved by the Director, the contents of the existing un-insulated building over existing rectangular clarifiers', components associated with the existing headworks/chlorination room, components associated with the circular aeration tanks and all ancillary components being decommissioned;

- c) remove, and dispose of at a waste disposal ground, or by other means approved by the Director, the mechanical and miscellaneous metals from the circular aeration tanks;
- d) demolish, and dispose of at a waste disposal ground, or by other means approved by the Director, the existing un-insulated building over existing rectangular clarifiers;
- e) remove and dispose of at a waste disposal ground, or by other means approved by the Director, all process, electrical, mechanical equipment and building components associated with the existing headworks/chlorination room; and
- f) within 90 days of the completion of the decommissioning activities required in sub-clauses a) through e), submit a Closure Report to the Director for approval.

REVIEW AND REVOCATION

- A. Licence No. 1156 is rescinded upon approved commissioning of the upgraded sewage treatment plant.
- 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, 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.: 5480.00

Schedule "A" to Environment Act Licence No. 2947

Initial Characterization of Wastewater

Facility Size: small (greater than 500 m³/day - 2,500 m³/day)

Facility Type: Sewage Treatment Plant - Continuous discharge

Effluent Sampling:

During the first year of operation:

1. a grab sample shall be collected on a monthly basis;
2. a grab sample shall be collected on a quarterly basis; and
3. a grab sample shall be collected on a daily basis, if chlorine is used.

Effluent Analysis:

1. Have the monthly sample analyzed for:
 - a) the organic content as indicated by the five-day biochemical oxygen demand and expressed as milligrams per litre;
 - b) the organic content as indicated by the five-day carbonaceous biochemical oxygen demand and expressed as milligrams per litre;
 - c) the total suspended solids content expressed as milligrams per litre;
 - d) the *Esherichia coli* (*E. Coli*) content as indicated by the MPN index and expressed as MPN per 100 millilitres per sample;
 - e) the fecal coliform content as indicated by the MPN index and expressed as MPN per 100 millilitres per sample;
 - f) the total coliform content as indicated by the MPN index and expressed as MPN per 100 millilitres per sample;
 - g) total ammonia nitrogen expressed as milligrams per litre;
 - h) nitrate-nitrite nitrogen expressed as milligrams per litre;
 - i) total Kjeldahl nitrogen, TKN (ammonia + organic N) expressed as milligrams per litre;
 - j) dissolved phosphorus expressed as milligrams per litre;
 - k) total phosphorus expressed as milligrams per litre;
 - l) Temperature; and
 - m) pH.
2. Have the quarterly sample analyzed for:
 - a) acute toxicity; and
 - b) chronic toxicity.
3. Have the daily sample analyzed for Total Residual Chlorine (TRC), if required.

Effluent Reporting:

1. Report the results to the Director, in writing or in an electronic format acceptable to the Director within 60 days of the sampling date. The report shall include the sampling date, sample temperature, the dates of the effluent discharge, and copies of the laboratory analytical results of the sampled effluent.