Manitoba

Conservation

Environmental Stewardship Division
Environmental Assessment and Licensing Branch
123 Main Street, Suite 160, Winnipeg, Manitoba R3C 1A5
T 204 945-7100 F 204 945-5229
www.gov.mb.ca/conservation/envapprovals

FAXED

CLIENT FILE NO.: 2911.30

February 25, 2008

Jerome Mauws, CAO
Rural Municipality of East St. Paul
3021 Bird's Hill Road
East St. Paul MB R2E 1A7

Dear Mr. Mauws:

Enclosed is Environment Act **Licence No. 2804** dated February 25, 2008 issued in accordance with The Environment Act to the **Rural Municipality of East St. Paul** for the construction and operation of the Development being a wastewater collection system and a sewage treatment plant located on Parcels 1 and 2 on River Lots #100 and 101, Parish of St. Paul, Rural Municipality of East St. Paul and with discharge of treated effluent into the Red River, in accordance with the Proposals filed pursuant to The Environment Act on June 10, 1999 and on December 1, 2006, and subsequent information submitted on April 12, 2007, June 15, 2007 and August 15, 2007.

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 Robert Boswick, Environmental Engineer at (204) 945-6030.

Pursuant to Section 27 of The Environment Act, this licencing 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

Tracey Braun, M. Sc.
Director
Environment Act

Enc.

c: B. Gillespie, Regional Director, Central Region
Millennium Public Library/Manitoba Eco-Network
Selkirk-St. Andrews Regional Library
Saibal Basu, Stantec Consulting

NOTE: Confirmation of Receipt of this Licence No. 2804 *(by the Licencee 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 February 29, 2008.

On behalf of the RM of East St. Paul **Date**

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

THE ENVIRONMENT ACT
LOI SUR L'ENVIRONNEMENT

LICENCE

Manitoba

Licence No. / Licence n° 2804

Issue Date / Date de délivrance February 25, 2008

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 Sections 11(1) and 14(2)/ Conformément au Paragraphe 11(1) et 14(2)

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

RURAL MUNICIPALITY OF EAST ST. PAUL "the Licencee"

for the construction and operation of the Development being a wastewater collection system and a sewage treatment plant located on Parcels 1 and 2 on River Lots #100 and 101, Parish of St. Paul, Rural Municipality of East St. Paul and with discharge of treated effluent into the Red River, in accordance with the Proposals filed pursuant to The Environment Act on June 10, 1999 and on December 1, 2006, and subsequent information submitted on April 12, 2007, June 15, 2007 and August 15, 2007 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 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;

"acute lethality" means a toxic effect resulting in death in an organism by a substance or mixture of substances within a short exposure period (usually 96 hours or less);

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

"approved" means approved by the Director in writing;

"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;

"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;

"DPD method" means the diethyl-p-phenylenediamine colormetric method of determining chlorine residuals in accordance with the Standard Methods for the Examination of Water and Wastewater;

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

"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 (BOD_5)" 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 ($CBOD_5$)" 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;

"flow proportional composite sample" means a combination of not less than ten individual samples of equal volumes of wastewater taken at equal increments of wastewater flow over a specified period of time;

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

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

"mixing zone" means an area adjacent to a discharge where a receiving water may not meet all water quality objectives included in the most recent version of the "Manitoba Water Quality Standards, Objectives, and Guidelines";

"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;

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

"sewage" means human body, toilet, liquid, waterbourne 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 systems;

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

"sludge solids" means solids in sludge;

"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 germicidal dose" means the units of intensity of ultra violet light that is required to kill bacteria and viruses present in the sewage effluent.

"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; and

"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.

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. 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 operate the sewage treatment plant in such a manner that:
   a) all wastewater generated within the Rural Municipality of East St. Paul is directed toward the sewage treatment plant or other approved sewage treatment facilities;
   b) only wastewater as defined in this Licence is discharged into the sewage treatment plant;
   c) waste solids collected by the static screens in the sewage treatment plant headworks are disposed in a waste disposal ground;
   d) sewage sludge is disposed at the City of Winnipeg North End Water Pollution Control Centre or other licensed or Director approved sludge treatment facility; and
   e) sludge solids are transported in containers in such a manner to prevent loss of solids to the satisfaction of an Environment Officer.

4. The Licencee shall install, operate and maintain an effluent discharge pipeline from the sewage treatment plant into the Red River such that freezing of the effluent in the pipeline is prevented.

5. The Licencee shall not spill, or allow to be spilled, wastewater and/or sludge in the area around the sewage treatment plant.

6. The Licencee shall have the operation of the Development carried out by individuals properly trained and qualified to do so.

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 have adequate instrumentation installed to provide constant monitoring of the UV process to ensure compliance with the UV 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.

9. The Licencee shall actively participate in any future watershed based management study, plan or nutrient reduction program, approved by the Director, for the Red River and associated waterways and watersheds.

SPECIFICATIONS, LIMITS, TERMS AND CONDITIONS

10. The Licencee shall notify the assigned Environment Officer prior to beginning construction of the sewage treatment plant. The notification shall include the intended starting date of construction and the name of the Licencee's contact person at the construction site.

11. The Licencee shall operate and maintain the sewage treatment plant in such a manner that:
a) the maximum daily flow rate is not in excess of 14,748 cubic metres over any 24-hour period;
b) the organic loading is not in excess of 917.1 kilograms of five-day biochemical oxygen demand over any 24-hour period; and
c) the release of offensive odours is minimized.

12. The Licencee shall utilize UV lamps in the UV disinfection process 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.

13. The Licencee shall operate and maintain the UV disinfection system to give a germicidal dose of 80% or more of the design UV germicidal dose, at the end of the lamp life.

14. The Licencee shall locate fuel storage and equipment servicing areas established for the construction of the Development 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 Gasoline and Associated Products.

15. The Licencee shall install and maintain a security fence around all components of the sewage treatment plant that are not enclosed within secured buildings.

16. The Licencee shall not discharge effluent from the sewage treatment plant, as sampled at the monitoring station located after UV disinfection and chlorine disinfection, where:

a) the organic content of the effluent, as indicated by the five-day carbonaceous biochemical oxygen demand ($CBOD_5$), is in excess of 25 milligrams per litre;
b) the fecal coliform content of the effluent, as indicated by the MPN index, is in excess of 200 per 100 millilitres of sample;
c) the total coliform content of the effluent, as indicated by the MPN index, is in excess of 1500 per 100 millilitres of sample;
d) the total suspended solids content of the effluent, as indicated by the non-filterable residue is in excess of 30 milligrams per litre;
e) the total phosphorus is in excess of 1.0 milligram per litre based on a 30-day rolling average;
f) the total chlorine residual content is in excess of 0.02 milligram per litre; and
g) the ammonia nitrogen content (as N) of the effluent is in excess of the following limits:

Period	**Ammonia Nitrogen (as N) in Wastewater Effluent (kilograms/any 24 hour period)**
Month of January	65.5
Month of February	65.5
Month of March	65.5
Month of April	65.5
Month of May	65.5
Month of June	47.3
Month of July	32.8
Month of August	32.8
Month of September	40.0
Month of October	54.5
Month of November	65.5
Month of December	65.5

17. The Licencee shall not release a quality of effluent from the wastewater treatment plant which:
a) on any day, causes, or contributes to, the mixing zone for the effluent in the Red River being acutely lethal to aquatic life passing through the mixing zone; or
b) can be demonstrated to be acutely lethal to fish within the mixing zone for the effluent in the Red River by using a 96-hour static acute lethality test which results in mortality to more than 50 percent of the test fish exposed

to 100 percent concentration of effluent, with the test carried out in accordance with the protocol outlined in Environment Canada's "Biological Test Method: Reference Method for Determining Acute Lethality of Effluents to Rainbow Trout: EPS 1/RM/13 Second Edition – December 2000" or any future amendment thereof.

18. The Licencee shall install and maintain rip rap on the river bed and bank at the location of the outfall of the effluent discharge pipeline to prevent erosion of the river bed and bank to the satisfaction of an Environment Officer.

MONITORING AND REPORTING SPECIFICATIONS

19. 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) flow rates into and through the rotating biological contactor components of the sewage treatment plant;
    b) flow rates into and through the sequencing batch reactor components of the sewage treatment plant;
    c) flow rates into and through the chlorine disinfection system;
    d) flow rates into and through the UV disinfection system; and
    e) other process parameters approved or required by the Director.

20. The Licencee shall:
    a) construct and make available for use by an Environment Officer, secured and heated monitoring stations, allowing direct accesses to:
        i) the influent sewage pipelines; and
        ii) the effluent discharge pipeline following UV disinfection and chlorine disinfection;
    b) have the monitoring stations accessible to an Environment Officer at all times;
    c) install and maintain flow measuring devices at the monitoring stations or at locations acceptable to the Director which are capable of measuring the volumes of influent and effluent with an accuracy of ± 2 percent;
    d) have the flow measuring devices re-calibrated biannually or on the request of an Environment Officer;
    e) equip the monitoring stations with flow-proportional sampling devices equipped to function with the flow measuring device and have the sampling devices available on request for use by an Environment Officer; and
    f) equip the monitoring stations with an electrical power source of 15 amperes at 110 volts.

21. The Licencee shall arrange for the taking of samples of influent sewage before the sewage enters the sewage treatment plant and of the effluent at locations that are accessible during all weather conditions.

22. The Director shall approve the sampling locations for the influent sewage and the treated sewage effluent.

23. The Licencee shall:
    a) take one flow proportional composite sample of effluent from the effluent monitoring station during the discharge period once each week;
    b) take three grab samples of the effluent from the effluent monitoring station during the discharge period once each week;
    c) have the flow proportional composite effluent sample analyzed for:
        i) carbonaceous biochemical oxygen demand ($CBOD_5$);
        ii) total suspended solids;
        iii) ammonia nitrogen;
        iv) total Kjeldahl nitrogen;
        v) nitrate-nitrite nitrogen;
        vi) total dissolved phosphorus;
        vii) pH; and
        viii) temperature; and
    d) have the grab samples analyzed for:
        i) fecal coliform content; and
        ii) total coliform content.

24. The Licencee shall report the results from the sampling required by Clause 23 of this Licence to the Director in accordance with the requirements of Clause 2 c) of this Licence.

25. The Licencee shall:
    a) take one flow proportional composite sample of effluent over a 24 hour period from the effluent monitoring station every day;
    b) have the flow proportional composite effluent sample analyzed for total phosphorus;
    c) calculate the thirty-day rolling average value for total phosphorus for the day during which sample was collected;
    d) prepare a monthly report on the thirty-day rolling average total phosphorus load; and
    e) file a copy of the report with the Director within 30 days of the end of each month during which the concentrations were determined.

26. The Licencee shall monitor the chlorination process of the sewage treatment plant on a daily basis, using the DPD method or equivalent, and shall submit the results to the Director upon request.

27. The Licencee shall:
    a) take one flow proportional composite sample of effluent from the sewage treatment plant over a 24 hour period every three months of any year with a minimum separation time of 90 days between samples;
    b) have the bioassay sample of the effluent analyzed at 100 percent concentration for acute lethality in accordance with the protocol outlined in Environment Canada's "Biological Test Method: Reference Method for Determining Acute Lethality of Effluents to Rainbow Trout: EPS 1/RM/13 Second Edition – December 2000", or any future amendment thereof; and
    c) report the results to the Director within 30 days of the end of the month during which the samples were taken.

28. The Licencee shall in case of physical or mechanical breakdown of the Development:
    a) notify the Director immediately;
    b) identify the repairs required to the wastewater collection system and/or sewage treatment plant; and
    c) complete the repairs in accordance with the written instructions of the Director.

29. The Licencee shall:
    a) prepare "as constructed drawings" for the Development, including the effluent discharge pipeline, complete with final elevations, and shall label the drawings "as constructed"; and
    b) provide to the Director, on or before April 30, 2009, two sets of "as constructed drawings" of the Development.

REVIEW AND REVOCATION

A. Environment Act Licence No. 2428 is rescinded upon successful commissioning of the sequencing batch reactor and UV disinfection components of the 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 the Licencee has not commenced construction of the Development within two 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.: 2911.30