

APPENDIX

B EXISTING ENVIRONMENT ACT LICENCE



Environmental Stewardship Division
Environmental Approvals Branch
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CLIENT FILE NO.: 2833.20

August 11, 2016

Anne Burns, CMMA, Chief Administrative Officer
Rural Municipality of La Broquerie
PO Box 130
La Broquerie, MB R0A 0W0

Dear Ms. Burns:

Enclosed is **revised Environment Act Licence No. 1198 RRR** issued to the **Rural Municipality of La Broquerie** for the expansion of an existing wastewater treatment lagoon located in the north half of 31-6-8 EPM in the Rural Municipality of La Broquerie consisting of the addition of two aeration cells and a wastewater treatment plant building to house an office and various wastewater treatment components, raising the dykes of the two south-most cells of the existing wastewater treatment lagoon, and other related ancillary components.

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. A Notice of Alteration must be filed with the Director for approval prior to any alteration to the Development as licensed.

For further information on the administration and application of the Licence, please feel free to contact Robert Boswick, Environmental Engineer, at 204-945-6030 regarding construction and expansion-related matters. Please contact Diane Oertel, Environment Officer, at 204-345-1486 for operation related matters.

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 Sustainable Development within 30 days of the date of the Licence.

Yours truly,

“original signed by”

Tracey Braun, M.Sc.
Director
Environment Act

c: Don Labossiere, Donna Smiley, Diane Oertel - Environmental Compliance and Enforcement
Jerry Cousin, J.R. Cousin Consultants Ltd.
Public Registries

NOTE: Confirmation of Receipt of this Licence No. 1198 RRR (by the Licencee only) is required by the Director of Environmental Approvals. Please acknowledge receipt by signing in the space below and provide a copy (letter only) to the Department by August 25, 2016

On behalf of the RM of La Broquerie

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



Licence No. / Licence n°	<u>1198 RRR</u>
Issue Date / Date de délivrance	<u>May 26, 1988</u>
Revised :	<u>February 11, 2003</u>
Revised :	<u>July 14, 2005</u>
Revised :	<u>August 11, 2016</u>

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

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

RURAL MUNICIPALITY OF LA BROQUERIE;
"the Licencee"

for the construction, operation and maintenance of the Development being a wastewater collection system, a forcemain connection, an existing wastewater treatment lagoon that will be altered to establish an aerated wastewater treatment lagoon system with a (180-day) hydraulic storage capacity of 182,255 cubic metres (1,012 cubic metres per day average) upon completion and a wastewater treatment plant that is located in NE and NW 31-6-8 EPM in the Rural Municipality of La Broquerie and with discharge from the wastewater treatment lagoon to the Seine River and in accordance with the Proposal filed under *The Environment Act* on December 19, 2014 and subsequent information provided in a letter dated March 20, 2015, electronic correspondences dated February 9, 2015, January 7, 2016 and January 21, 2016 and letters dated March 15, 2016 and April 26, 2016 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 Standards Council of Canada (SCC), or accredited by another accrediting agency recognized by Manitoba Sustainable Development 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;

"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);

"aerated" means the bringing about of intimate contact between air and a liquid by bubbling air through the liquid;

"aerated cell" means a cell of a wastewater treatment lagoon system in which mechanical or diffused-air aeration is used to supplement the oxygen supply;

"affected area" means a geographical area, excluding the property of the Development;

"approved" means approved by the Director or an assigned Environment Officer in writing;

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

"base" means the exposed and finished elevation of the bottom of any cell of the aerated wastewater treatment lagoon;

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

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

"cut-off" means a vertical-side trench filled with compacted clay or a sand and bentonite mixture or a wall constructed from compacted clay;

"day" means any 24-hour period;

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

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

"Environment Officer" means an employee so designated 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 (BOD₅)" means that part of the oxygen demand usually associated with biochemical oxidation of organic matter within 5 days at a temperature of 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 five days at a temperature of 20°C, excluding the oxygen demand usually associated with the biochemical oxidation of nitrogenous organic matter;

"flooding" means the flowing of water onto lands, other than waterways, due to the overtopping of a waterway or waterways;

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

"high water mark" means the line on the interior surface of the aerated and storage cells which is normally reached when the cell is at the maximum allowable liquid level or the line of the exterior of the perimeter dykes which is reached during local flooding;

"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;

"in-situ" means on the site;

"low water mark" means the line on the interior surface of the aerated and storage cells which is normally reached when the cell is discharged;

"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;

"noise nuisance" means an unwanted sound, in an affected area, which is annoying, troublesome, 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 unwanted sound

- 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, 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 unwanted sound 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;

"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, 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;

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

"rip rap" 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;

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

"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;

"storage cell" means a cell of the aerated wastewater treatment lagoon system which is a cell that receives partially treated wastewater from an aerated cell and retains the wastewater for a period of time;

"total residual chlorine" means the sum of free chlorine and combined chlorine, including inorganic chloramines;

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

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

"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;

"wastewater treatment lagoon" means the component of the development which consists of an impoundment into which wastewater is discharged for treatment and storage; and

"wastewater treatment plant" means the component of this development which consists of a facility which doses partially treated wastewater with chemicals to precipitate phosphorus, provides UV disinfection to partially treated wastewater, may discharge partially treated wastewater from the aerated cells of the development to the secondary cells of the development, and may release treated wastewater to the discharge route.

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 the Rural Municipality of La Broquerie and the Local Urban District of La Broquerie toward the wastewater treatment lagoon or other approved wastewater treatment facilities.
2. In addition to any of the limits, terms and conditions specified in this Licence, the Licencee shall, upon the request of the Director:
 - a) sample, monitor, analyze and/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 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 pollutant(s) from the Development;
 - c) conduct specific investigations in response to the data gathered during environmental monitoring programs; or
 - d) 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 or Environment Officer under this Licence, in written and electronic format, in such form (including number of copies), and of such content as may be required by the Director or Environment Officer, and each submission shall be clearly labelled with the Licence Number and Client File Number associated with this Licence.
4. The Licencee shall not cause or permit a noise 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 a noise nuisance.
5. 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.
6. 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* or any future amendment thereof.
7. The Licencee shall comply with the requirements of *Manitoba Regulation 62/2008 respecting Nutrient Management* or any future amendment thereof.

8. The Licencee shall comply with the provisions of the Department of Fisheries and Oceans Canada/Manitoba Natural Resources publication, "*Manitoba Stream Crossing Guidelines for the Protection of Fish and Fish Habitat*" (May, 1996).
9. The Licencee shall actively participate in any future watershed-based management study, plan and/or nutrient reduction program, approved by the Director, for the Seine River, the Red River and Lake Winnipeg and/or associated waterways and watersheds.
10. The Licencee shall, to the satisfaction of the Director, establish and maintain road access to private properties that are immediately adjoining the Development and that have or will become isolated from direct access by a public road as a result of the Development.
11. The Licencee shall, to the satisfaction of the Director, not stockpile materials associated with any construction and operation of the Development on private properties adjacent to the site of the Development unless otherwise in legal written agreement with the owners of private properties adjacent to the Development.
12. 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.

SPECIFICATIONS, LIMITS, TERMS AND CONDITIONS

Respecting Construction - General

13. 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(s) of construction and the name(s) of the contractor(s) responsible for the construction.
14. The Licencee shall:
 - a) conduct all ditch related work activities during no flow or dry conditions and not during the April 1 to June 15 fish spawning and incubation period;
 - b) not construct the aerated wastewater treatment lagoon or wastewater collection system during periods of heavy rain;
 - c) place and/or isolate all dredged and construction material where it will not erode into any watercourse;
 - d) implement effective long-term sediment and erosion control measures to prevent soil-laden runoff, and/or silt from entering any watercourse during construction and until vegetation is established;

- e) routinely inspect all erosion and sediment control structures and immediately complete any necessary maintenance or repair;
- f) revegetate soil exposed during the construction of the Development with native or introduced grasses or legumes. Native species shall be used to revegetate areas where native species existed prior to construction; and
- g) use rock that is free of silt and clay for riprap.

15. The Licencee shall, during construction of the Development, operate, maintain and store all materials and equipment in a manner that prevents any deleterious substances (fuel, oil, grease, hydraulic fluids, coolant, paint, uncured concrete and concrete wash water, etc.) from entering the wastewater treatment lagoon, the discharge route and associated watercourses, and have an emergency spill kit for in water use available on site during construction.

16. The Licencee shall dispose of non-reusable construction debris from the Development at a waste disposal ground operating under the authority of a permit issued pursuant to *Manitoba Regulation 150/91 respecting Waste Disposal Grounds*, or any future amendment thereof, or a Licence issued pursuant to *The Environment Act*.

17. The Licencee shall locate all fuel storage and equipment servicing areas established for the construction and operation 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 Petroleum Products and Allied Products Regulation* or any future amendment thereof.

18. The Licencee shall not alter local drainage patterns by the construction of the Development.

19. The Licencee shall, during construction and maintenance of the Development, prevent the introduction and spread of foreign aquatic and terrestrial biota by cleaning equipment prior to its delivery to the site of the Development.

20. The Licencee shall install and maintain a fence around the wastewater treatment lagoon to limit access. The fence shall be a minimum of 1.2 meters high and have a locking gate, which shall be locked at all times except to allow access to the aerated wastewater treatment lagoon.

21. The Licencee shall construct and maintain an all-weather access road and a wastewater dumping station for truck handled wastewater. The dumping facility shall have a surface splash ramp with a smooth hard surface that can be easily washed free of solids.

Respecting Construction – Liners

22. The Licencee shall, prior to the construction of the dykes for 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 liners will be constructed.

Respecting Construction – Liners – Wastewater Treatment Lagoon

23. The Licencee shall construct and maintain the wastewater treatment lagoon, with continuous liners under all interior surfaces of the cells in accordance with the following specifications:

- a) the liners shall be made of clay;
- b) the liners shall be at least one metre in thickness;
- c) the liners shall have a hydraulic conductivity of 1×10^{-7} centimetres per second or less at all locations; and
- d) the liners shall be constructed to an elevation of 2.5 metres above the floor elevations of the primary cells and the secondary cells.

Respecting Construction – Liners – Aerated Wastewater Treatment Lagoon

24. The Licencee shall construct and maintain the aerated cells and the storage cells of the aerated wastewater treatment lagoon as indicated on Schedule “A” to this Licence with a continuous liner, including cut-offs, under all interior surfaces of the cell in accordance with the following specifications:

- a) the liner shall be made of clay;
- b) the liner shall be at least one metre in thickness;
- c) the liner shall have a hydraulic conductivity of 1×10^{-7} centimetres per second or less at all locations;
- d) the liners of Storage Cell #1 and Storage Cell #2 as indicated on Schedule “A” to this Licence shall be constructed to an elevation of 2.5 metres above the floor elevations of these cells;
- e) the cut-offs shall be constructed of clay which has been mechanically compacted;
- f) the cut-offs shall be keyed into the underlying clay liner a minimum of 0.3 metres;
- g) the cut-offs of Aeration Cell #1 and Aeration Cell #2 as indicated on Schedule “A” to this Licence shall be constructed to an elevation of 5.0 metres above the bases of these cells; and

- h) the cut-offs of Storage Cell #3 and Storage Cell #4 as indicated on Schedule "A" to this Licence shall be constructed to an elevation of 3.4 metres above the bases of these cells.

Respecting Operation – General

- 25. 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.
- 26. 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.
- 27. The Licencee shall not discharge septage into the wastewater treatment lagoon between the 15th day of October of any year and the 1st day of June of the following year.

Respecting Operation – Wastewater Treatment Lagoon

- 28. The Licencee shall, prior to putting into operation the aerated wastewater treatment lagoon as shown on Schedule "A" to this Licence, operate and maintain the wastewater treatment lagoon in such a manner that:
 - a) the organic loading on any primary cell, as indicated by the five-day biochemical oxygen demand, is not in excess of 56 kilograms per hectare per day;
 - b) the depth of liquid in any primary cell or in any secondary cell does not exceed 1.5 metres; and
 - c) the release of offensive odours is minimized.
- 29. The Licencee shall, prior to the putting into operation the aerated wastewater treatment lagoon as indicated on Schedule "A" to this Licence, not discharge effluent from the existing wastewater treatment lagoon:
 - a) where the organic content of the effluent, as indicated by the five day carbonaceous biochemical oxygen demand, is in excess of 25 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 suspended solids content of the effluent is in excess of 25 milligrams per litre, unless the exceedance is caused by algae;

- d) where the total phosphorus content of the effluent is in excess of 1.0 milligrams per litre;
- e) between the 1st day of November of any year and the 15th day of June of the following year;
- f) when flooding from any cause is occurring along the effluent drainage route; or
- g) when such a discharge would cause or contribute to flooding in or along the effluent drainage route.

Respecting Operation – Aerated Wastewater Treatment Lagoon

30. The Licencee shall, subsequent to the putting into operation the aerated wastewater treatment lagoon as shown on Schedule “A” to this Licence, operate and maintain the aerated wastewater treatment lagoon in such a manner that:

- a) the organic loading on the aerated wastewater treatment lagoon, in terms of the five-day biochemical oxygen demand, is not in excess of 306.1 kilograms per day;
- b) a minimum of 2 milligrams of dissolved oxygen per litre is detectable at all times in the top 2.0 metres of the liquid in Aerated Cells No. 1 and No. 2 as identified in Schedule “A” to this Licence;
- c) the depth of liquid in Aerated Cells No. 1 and No. 2, as identified in Schedule “A” to this Licence, does not exceed 4.0 metres;
- d) the depth of liquid in Storage Cells No. 1 and No. 2, as identified in Schedule “A” to this Licence, does not exceed 1.5 metres;
- e) the depth of liquid in Storage Cells No. 3 and No. 4, as identified in Schedule “A” to this Licence, does not exceed 2.1 metres; and
- f) a minimum 1.0 metre freeboard is maintained in each cell at all times.

Respecting Operation – Aerated Wastewater Treatment Lagoon and Wastewater Treatment Plant

31. The Licencee shall, subsequent to the putting into operation the aerated wastewater treatment lagoon and wastewater treatment plant as indicated on Schedule “A” to this Licence, not discharge effluent from the cells of the aerated wastewater treatment lagoon or from the wastewater treatment plant to the discharge routes:

- a) where the organic content of the effluent, as indicated by the five day carbonaceous biochemical oxygen demand, is in excess of 25 milligrams per litre;
- b) where the total suspended solids content of the effluent is in excess of 25 milligrams per litre, unless the exceedance is caused by algae;
- c) where the fecal coliform content of the effluent, as indicated by the MPN index, is in excess of 200 per 100 millilitres of sample;
- d) where the total phosphorus content of the effluent is in excess of 1.0 milligrams per litre;

- e) where the unionized ammonia content of the effluent is in excess of 1.25 mg/L, expressed as nitrogen (N), at $15^{\circ}\text{C} \pm 1^{\circ}\text{C}$;
- f) between the 1st day of November of any year and the 16th day of April of the following year;
- g) when flooding from any cause is occurring along the effluent drainage route; or
- h) when such a discharge would cause or contribute to flooding in or along the effluent drainage route.

32. The Licencee shall not discharge effluent from the aerated wastewater treatment lagoon to the discharge routes between the 16th day of April and the 15th day of June of the same year where the total ammonia content of the effluent expressed as nitrogen (N) in milligrams per litre is in excess of the concentration specified in Schedule "B" attached to this Licence, as determined by the pH of the effluent.

33. The Licencee shall submit a Notice of Alteration for approval by the Director prior to increasing the operating depth of Storage Cell No. 3 and Storage Cell No. 4 as identified on Schedule "A" to this Licence and adding aeration to the storage cells or modifying the operation of any cell of the aerated wastewater treatment lagoon.

Respecting Operation – Wastewater Treatment Plant

34. The Licencee shall not discharge effluent from the wastewater treatment plant to the discharge route where the total ammonia content of the effluent expressed as nitrogen (N) in milligrams per litre is in excess of the concentration specified in Schedule "B" attached to this Licence, as determined by the pH of the effluent.

Respecting Aeration System – Aerated Wastewater Treatment Lagoon

35. The Licencee shall:

- a) inspect the operation of the aeration system blowers once each week;
- b) annually inspect the aeration system and make any necessary repairs at least once each year;
- c) maintain a record of aeration system inspection dates, observations, maintenance and repairs completed; and
- d) make the record of aeration system inspection dates, observations, maintenance and repairs completed available to an Environment Officer upon request.

36. The Licencee shall maintain records of the aeration system operation and/or maintenance requirements including, but not limited to, the aeration system pumps daily elapsed time and make these records available to the designated Environment Officer on request.

Respecting Disinfection – General

37. The Licencee shall, when chlorine is used as a disinfecting agent:
 - a) notify the Director in advance;
 - b) dechlorinate effluent prior to discharge;
 - c) obtain grab samples prior to and daily during the discharge period and have them analyzed for total residual chlorine; and
 - d) not discharge effluent where the concentration of the total residual chlorine is in excess of 0.02 milligrams per litre.

Respecting UV Disinfection –Wastewater Treatment Plant

38. The Licencee shall install instrumentation to provide constant monitoring of the UV process to demonstrate 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.
39. 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.
40. 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.

Respecting Maintenance – General – Wastewater Treatment Lagoon

41. The Licencee shall, if in the opinion of the Director significant erosion of the interior surfaces of the dykes occurs, place riprap 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.
42. 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.

43. 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.
44. The Licencee shall implement an ongoing program to remove burrowing animals from the site of the wastewater treatment lagoon.

MONITORING AND REPORTING

General

45. 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) carry out all sampling of, and preservation and analyses on, soil or other samples in accordance with methodologies approved by the Director;
 - c) have all analytical determinations undertaken by an accredited laboratory; and
 - d) report the results to the Director, in writing or in a format acceptable to the Director, within 60 days of the samples being taken.

Respecting Monitoring – Wastewater Treatment Lagoon and Aerated Wastewater Treatment Lagoon

46. The Licencee shall prior to each effluent discharge campaign from the wastewater treatment lagoon obtain grab samples of the treated wastewater and have them analyzed for:
 - a) the organic content as indicated by the five-day carbonaceous 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;
 - c) the total suspended solids content expressed as milligrams per litre;
 - d) the total phosphorus content expressed as milligrams per litre; and
 - e) the unionized ammonia nitrogen expressed as milligrams per litre.

Respecting Monitoring – Aerated Wastewater Treatment Lagoon

47. The Licencee shall prior to each effluent discharge campaign from the aerated wastewater treatment lagoon between the 16th day of April and the 15th day of June of the same year obtain grab samples of the treated wastewater and have them analyzed for:

- a) total ammonia as nitrogen (N) expressed as milligrams per litre;
- b) pH; and
- c) temperature.

Respecting Monitoring and Recording – Wastewater Treatment Plant – Monitoring Stations

48. The Licencee shall, prior to operation of the wastewater treatment plant:

- a) construct and make available for use by an Environment Officer, secured and heated monitoring stations, allowing direct accesses to the effluent discharge pipeline following 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 effluent with an accuracy of ± 2 percent;
- d) have the flow measuring devices re-calibrated on the request of an Environment Officer;
- e) equip the monitoring stations with 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.

49. The Licencee shall arrange for the taking of samples of effluent at locations that are accessible during all weather conditions and have been approved by the Director.

50. The Licencee shall, when discharging through the wastewater treatment plant building, take grab samples of effluent from the effluent monitoring station once each week and have them analyzed for:

- a) fecal coliform content as indicated by the MPN index and expressed as MPN per 100 millilitres per sample; and
- b) total phosphorus content expressed as milligrams per litre;

51. The Licencee shall, when discharging through the wastewater treatment plant building, take grab samples of effluent from the effluent monitoring station once each month and have them analyzed for:

- a) organic content as indicated by the five-day carbonaceous biochemical oxygen demand (CBOD₅) and expressed as milligrams per litre;
- b) total suspended solids content expressed as milligrams per litre;
- c) total ammonia expressed as nitrogen (N) as milligrams per litre;
- d) pH; and
- e) temperature.

52. The Licencee shall, when discharging through the wastewater treatment plant building during the months of April and May and the first 15 days of June, take grab samples of effluent from the effluent monitoring station once each day and have them analyzed for:
 - a) total ammonia expressed as Nitrogen (N) as milligrams per litre;
 - b) pH; and
 - c) temperature.
53. The Licencee shall, when disinfection of the effluent is occurring in the wastewater treatment plant building of the Development, record:
 - a) flow rate(s) into and through the UV disinfection system; and
 - b) other process parameters approved or required by the Director.

Respecting Records Maintenance and Reporting

54. The Licencee shall during each year maintain the following records and retain them for a minimum period of five calendar years:
 - a) reports of visual inspections conducted at a minimum of once per month;
 - b) wastewater sample dates;
 - c) original copies of laboratory analytical results of the sampled wastewater and water;
 - d) a summary of laboratory analytical results;
 - e) effluent discharge dates;
 - f) estimated effluent discharge volumes;
 - g) maintenance and repairs; and
 - h) a summary of any sanitary sewer overflows.
55. The Licencee shall submit an annual report to the Environment Officer by February 28 of the following year including all records required by Clause 54 of this Licence.

Respecting Operating Depth and Freeboard Non-Compliance Events

56. The Licencee shall immediately notify the Director each time the operating depth of any cell of the wastewater treatment lagoon does not comply with the maximum operating depth and minimum freeboard requirements for that cell as specified in Clause 28 and Clause 30 of this Licence.
57. The Licencee shall, if reporting is required pursuant to Clause 56 of this Licence in two consecutive years:
 - a) engage the services of a qualified consultant, acceptable to the Director, to undertake an investigation of the wastewater treatment lagoon and related infrastructure, to determine the ability or inability of the existing system to meet

the hydraulic loading capacity of the community. The investigation shall include but not be necessarily limited to:

- i) diagnosis of the cause(s) of the recent exceedances of maximum operating depth;
- ii) sources of infiltration into the wastewater system including the municipal infrastructure;
- iii) current hydraulic loading of the system;
- iv) lack of storage capacity due to sludge build-up within existing cells;
- v) the organic loading on the primary cell in terms of the five day biochemical oxygen demand; and
- vi) operating procedures;

- b) provide to the Director, within four months of the notification given pursuant to Clause 56 of this Licence, an engineering report describing in detail the results and observations concluded by virtue of the investigation; and
- c) provide to the Director, within four months of the report provided pursuant to sub-Clause b) of this section, a remedial action plan in the form of a detailed engineering report describing recommended modifications, repairs or upgrading works to overcome excessive hydraulic loading of the system.

Respecting Hauling Records

58. The Licencee shall maintain a record of all septage and wastewater hauled to the wastewater treatment lagoon, including the number of loads on a daily and weekly basis, the volume of each load, the name of the hauler, and the source of the contents of each load according to the type of waste and the name and location of each property serviced. The Licencee shall retain this record and provide it to an Environment Officer upon request.

Respecting Soil Liner Sampling, Testing and Reporting

59. 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, unless otherwise approved by the Environment Officer.

60. The Licencee shall take and test undisturbed soil samples, in accordance with Schedule "C" attached to this Licence, from the liners of the aerated wastewater treatment lagoon; the number and location of samples and test methods to be specified by the designated Environment Officer up to a maximum of 40 samples.

61. The Licencee shall, not less than 2 weeks before any new or altered clay-lined cell of the aerated wastewater treatment lagoon is placed in operation, submit to the Director the results of the tests carried out pursuant to Clause 60 of this Licence.

Respecting Breakdown or Process Upset Reporting

62. The Licencee shall, in the case of physical or mechanical equipment breakdown or process upset where such breakdown or process upset results or may result in the release of a pollutant in an amount or concentration, or at a level or rate of release, that causes or may cause a significant adverse effect, immediately report the event by calling the 24-hour environmental accident reporting line at 204-944-4888 (toll-free 1-855-944-4888). The report shall indicate the nature of the event, the time and estimated duration of the event and the reason for the event.
63. The Licencee shall, following the reporting of an event pursuant to Clause 62:
 - a) identify the repairs required to the mechanical equipment;
 - b) undertake all repairs to minimize unauthorized discharges of a pollutant;
 - c) complete the repairs in accordance with any 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.

Respecting Initial Characterization

64. The Licencee shall, during the first year of operation of the Development following the construction of the components of the aerated wastewater treatment lagoon that a discharge must occur, obtain and analyze grab samples of the effluent during each effluent discharge campaign and report the results of the analysis in accordance with Schedule "D" attached to this Licence.

Respecting Monitoring – Seine River

65. The Licencee shall, for a period of at least three years following the commencement of operation of the aerated wastewater treatment lagoon or wastewater treatment plant under this Licence, during each effluent discharge campaign that occurs in the months of April, May and June, obtain samples of water from the Seine River upstream and downstream of the Seine River's confluence with the lagoon discharge ditch and have them analyzed for:
 - a) total ammonia expressed as Nitrogen (N) as milligrams per litre;
 - b) field temperature; and
 - c) field pH.
66. The Licencee shall report the results from the sampling required by Clause 65 of this Licence to the Director in accordance with the requirements of Clause 45 d) of this Licence.

Respecting Record Drawings

67. The Licencee shall:

- a) prepare updated "record drawings" for the Development and shall label the drawings "record drawings "; and
- b) provide to the Director, within four months of the Environment Officer's approval of the reports required by Clause 61 of this Licence, two sets of "record drawings" of the Development.

REVIEW AND REVOCATION

- A. Licence No. 1198 RR 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, 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*.

“original signed by”

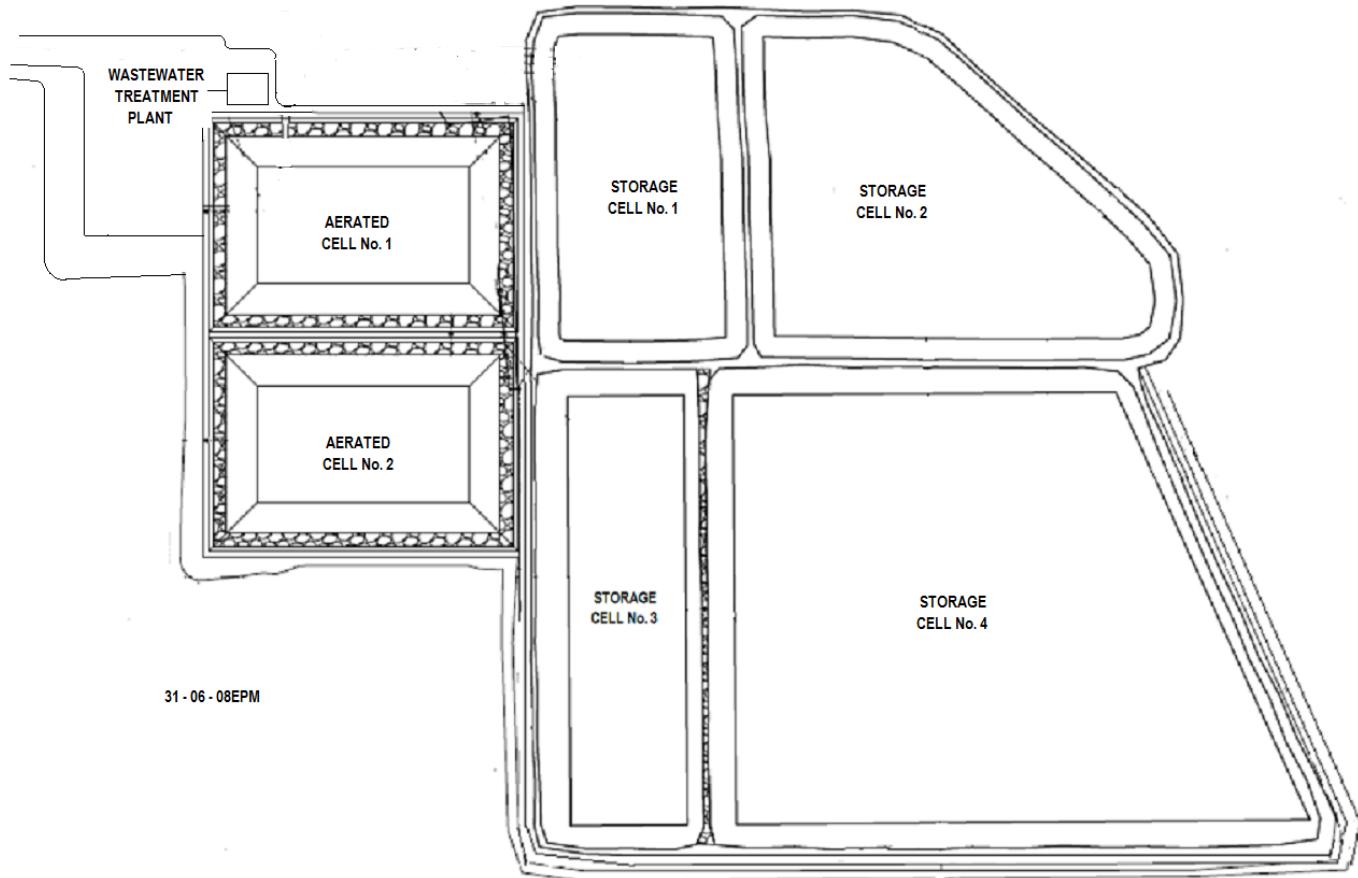
Tracey Braun, M.Sc.
Director
Environment Act

Client File No.: 2833.20

Schedule "A" to Environment Act Licence No. 1198 RRR

A
N

Not to Scale



Schedule “B” to Environment Act Licence No. 1198 RRR

Total Ammonia as N Effluent Limits Pursuant to Clauses 32 and 34

Effluent pH	Total Ammonia as N (mg/L)
6.50	48.83
6.60	46.84
6.70	44.57
6.80	42.00
6.90	39.16
7.00	36.09
7.10	32.86
7.20	29.54
7.30	26.21
7.40	22.97
7.50	19.89
7.60	17.03
7.70	14.44
7.80	12.14
7.90	10.13
8.00	8.41
8.10	6.95
8.20	5.73
8.30	4.71
8.40	3.88
8.50	3.20
8.60	2.65
8.70	2.20
8.80	1.84
8.90	1.56
9.00	1.32

Schedule "C" to Environment Act Licence No. 1198 RRR

Liner Sampling and Testing Requirements Pursuant to Clause 60.

Soil Sampling:

1. The Licencee shall provide a drilling rig, acceptable to the designated Environment Officer, to extract soil samples from the liner which is not placed or found at the surface of the lagoon structure. This includes all wastewater treatment lagoons constructed with clay cutoffs at the interior base of the dyke or with a clay cutoff in the centre of the dyke. The drill rig shall have the capacity to drill to the maximum depth of the clay cutoff plus an additional 2 metres. The drill rig shall be equipped with both standard and hollow stem augers. The minimum hole diameter shall be 5 inches.
2. For lagoon liners placed or found at the surface of the lagoon structure, the Licencee shall provide a machine, acceptable to the designated Environment Officer, capable of pressing a sampling tube into the liner in a straight line motion along the centre axis line of the sample tube and without sideways movement.
3. Soil samples shall be collected and shipped in accordance with ASTM Standard D 1587 (Standard Practice for Thin-Walled Tube Sampling of Soils), D 4220 (Standard Practice for Preserving and Transporting Soil Samples) and D 3550 (Standard Practice for Ring-Lines Barrel Sampling of Soils). Thin-walled tubes shall meet the stated requirements including length, inside clearance ratio and corrosion protection. An adequate venting area shall be provided through the sampling head.
4. At the time of sample collection, the designated Environment Officer shall advise the Licencee as to the soil testing method that must be used on each sample. The oedometer method may be used for a sample where the Environment Officer determines that the soil sample is taken from an undisturbed clay soil which has not been remoulded and which is homogeneous and unweathered. The triaxial test shall be used for all samples taken from disturbed and remoulded soils or from non homogenous and weathered soils.
5. The Licencee shall provide a report on the collection of soil samples to the designated Environment Officer and to the laboratory technician which includes but is not limited to the following: a plot plan indicating all drill holes, onsite visual observations, sample location, depth or elevation of sample, length of advance of the sample tube, length of soil sample contained in the tube after its advancement, the soil test method specified by the Environment Officer for each soil sample and all necessary instructions from the site engineer to the laboratory technician.
6. All drill and sample holes shall be sealed with bentonite pellets after the field drilling and sampling has been completed.

Schedule "C" to Environment Act Licence No. 1198 RRR (cont'd)

Soil Testing Methods:

1. Triaxial Test Method

- a) The soil samples shall be tested for hydraulic conductivity using ASTM D 5084 (Standard Test Method for Measurement of Hydraulic Conductivity of Saturated Porous Materials Using a Flexible Wall Permeameter).
- b) Soil specimens shall have a minimum diameter of 70 mm (2.75 inches) and a minimum height of 70 mm (2.75 inches). The soil specimens shall be selected from a section of the soil sample which contains the most porous material based on a visual inspection. The hydraulic gradient shall not exceed 30 during sample preparation and testing. Swelling of the soil specimen should be controlled to adjust for the amount of compaction measured during sample collection and extraction from the tube and the depth or elevation of the sample. The effective stress used during saturation or consolidation of the sample shall not exceed 40 kPa (5.7 psi) or the specific stress level, that is expected in the field location where the sample was taken, whichever is greater.
- c) The complete laboratory report, as outlined in ASTM D 5084, shall be supplied for each soil sample collected in the field.

2. Oedometer Test Method

- a) The soil samples shall be tested for hydraulic conductivity using ASTM D 2435 (Standard Test Method for One-Dimensional Consolidation Properties of Soils).
- b) Soil specimens shall have a minimum diameter of 50 mm (2 inches) and a minimum height of 20 mm (0.8 inches). The soil specimens shall be selected from a section of the soil sample which contains the most porous material based on a visual inspection. The soil specimen shall be taken from an undisturbed soil sample. The soil specimen shall be completely saturated.
- c) The complete laboratory report, as outlined in ASTM D 2435, shall be supplied for each soil sample collected in the field.

Schedule "D" to Environment Act Licence No. 1198 RRR

Initial Characterization of Wastewater Pursuant to Clause 64

Facility Size: Small (500 - 2500 m³/day)

Facility Type: Facultative wastewater treatment lagoon – intermittent discharge

Effluent Sampling:

During the first year of operation:

1. Obtain a representative grab sample of the discharging effluent near the beginning of the discharge period and near the end of the discharge period (i.e., two samples for each discharge event);
2. Obtain a representative grab sample of the discharging effluent on a quarterly basis for each quarter there was effluent discharged; and
3. Determine the temperature of each sample at the time of sampling.

Effluent Analysis:

1. Have the discharge period grab samples 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 *Escherichia 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) if chlorine was used as a disinfecting agent, total residual chlorine expressed as milligrams per litre;
 - h) total ammonia nitrogen expressed as milligrams per litre;
 - i) nitrate-nitrite nitrogen expressed as milligrams per litre;
 - j) total Kjeldahl nitrogen (TKN) expressed as milligrams per litre;
 - k) dissolved phosphorus expressed as milligrams per litre;
 - l) total phosphorus expressed as milligrams per litre;
 - m) temperature; and
 - n) pH.
2. Have the quarterly grab samples analyzed for:
 - a) acute toxicity; and
 - b) chronic toxicity.

Schedule "D" to Environment Act Licence No. 1198 RRR (cont'd)

Effluent Reporting:

1. For each grab sample, 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.