

Environment Act Licence

Manitoba
Environment



Licence No. 1759 R

Issue Date MARCH 15, 1994

(REVISED: APRIL 18, 1994)

VILLAGE OF TEULON: "the Licencee"

for the construction and operation of the Development being a wastewater collection system and a wastewater treatment lagoon located in the south half of Section 21, Township 16, Range 3 EPM in the Rural Municipality of Rockwood and with discharge of effluent to Netley Creek and subject to the following specifications, limits, terms and conditions:

DEFINITIONS

In this Licence,

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

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

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

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

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

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

"fecal coliform" means aerobic and facultative, Gram-negative, nonspore-forming, rod-shaped bacteria capable of growth at 44.5 °C, and associated with fecal matter of warm-blooded animals;

"five-day biochemical oxygen demand" means that part of the oxygen demand usually associated with biochemical oxidation of organic matter within 5 days at a temperature of 20°C;

"high water mark" means the line on the interior surface of the primary and secondary cells which is normally reached when the cell is at the maximum allowable liquid level;

“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;

“industrial use agreement” means an agreement to discharge industrial wastewater to municipal wastewater collection and treatment systems;

“industrial wastewater” means wastewater derived from industrial sources or processes;

“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 primary and secondary 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;

“primary cell” means the first in a series of cells of the wastewater treatment lagoon system and which is the cell that receives the untreated wastewater;

“riprap” means small, broken stones or boulders placed compactly or irregularly on dykes or similar embankments for protection of earth surfaces against wave action or current;

“secondary cell” means a cell of the wastewater treatment lagoon system which is the cell that receives partially treated wastewater from a primary cell;

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

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

“sludge solids” means solids in sludge;

“total coliform” means a group of aerobic and facultative anaerobic, Gram-negative, nonspore-forming, rod-shaped bacteria, that ferment lactose with gas and acid formation within 48 hours at 35 °C, and inhabit predominantly the intestines of man or animals, but are occasionally found elsewhere and include the sub-group of fecal coliform bacteria;

“waste disposal ground” means an area of land designated by a person, municipality, provincial government agency, or crown corporation for the disposal of waste and approved for use in accordance with Manitoba Regulation 150/91;

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

“wastewater treatment lagoon” means an impoundment into which wastewater is discharged for storage and treatment by natural oxidation;

“sewage” means household and commercial wastewater that contains human waste.

GENERAL REQUIREMENTS

1. The Licencee shall direct all wastewater generated within the Village of Teulon toward the wastewater treatment lagoon or other approved sewage treatment facilities.
2. The Licencee shall operate and maintain the wastewater treatment lagoon in such a manner that:
 - (a) the release of offensive odours is minimized;
 - (b) the organic loading on the primary cell, as indicated by the five-day biochemical oxygen demand, is not in excess of 45 kilograms per hectare per day between the 15th of May and the 15th day of November and 25 kilograms per hectare per day between the 15th of November and the 15th day of May of the following year; and
 - (c) the depth of liquid in the primary cell or secondary cell does not exceed 1.5 metres.
3. The Licencee shall limit the wastewater load on the wastewater treatment lagoon to the design capacities as follows:
 - (a) hydraulic loading shall not exceed 328,000 cubic metres from the 1st day of November to the 15th day June of the next year;
 - (b) biochemical oxygen demand (BOD₅) concentration shall not exceed 440 kilograms per day between the 15th day of May and the 15th day of November and 245 kilograms per day between the 15th day of November and the 15th day of May of the following year as determined by multiplying the unit flow by the concentration of BOD₅ from flow proportioned samples over a 24 hour period.
4. The Licencee shall ensure that septage is not discharged into the wastewater treatment lagoon between the 15th day of October of any year and the 1st day of June of the following year.

5. The Licencee shall, in case of physical or mechanical breakdown of the wastewater collection and/or treatment system:
 - (a) notify the Director immediately;
 - (b) identify the repairs required to the wastewater collection and/or treatment system;
 - (c) undertake all repairs to minimize unauthorized discharges of wastewater; and
 - (d) complete the repairs in accordance with any written instructions of the Director.

6. The Licencee shall install and maintain a fence around the wastewater treatment lagoon to control access. The Licencee shall erect and maintain warning signs along the fence indicating the nature of the facility and advising against trespassing. At least one sign shall be provided on each side of the facility and one for every 150 metres of its perimeter.

7. The Licencee shall not allow the discharge of any industrial wastewater into the wastewater collection system unless the industry discharging the wastewater has first entered into an industrial use agreement with the Licencee. These agreements shall specify the quality, quantity and timing of discharges into the wastewater collection system and shall require the industry to advise the Licencee of any changes to these parameters.

8. The Licencee shall:
 - (a) construct and make available for use by an Environment Officer a secured and heated monitoring station building with direct access to the sewage conveyance system carrying all the wastewater transported by pipeline to the wastewater treatment lagoon;
 - (b) ensure that the monitoring station building is accessible to an Environment Officer at all times;
 - (c) install and maintain a flow measuring device in the location on the monitoring station building which is capable of measuring the volume of influent with an accuracy of ± 5 percent and if a flow meter is used, the Licencee shall have it recalibrated annually or on the request of an Environment Officer;
 - (d) ensure that the monitoring station building is equipped with a flow-proportional sampling device equipped to function with the flow measuring device and have the sampling device available on request for use by an Environment Officer; and

- (e) record the volume of influent on a daily, weekly and monthly basis.
- 9. The Licencee shall, after consulting with the Department of Natural Resources and the Rural Municipality of Rockwood, develop and implement a plan to mitigate the effects of wild birds on agricultural crops grown in the local area.
- 10. 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.
- 11. The Licencee shall annually remove by mechanical methods all reeds and rushes located above the low water mark in every cell of the wastewater treatment lagoon.

CONSTRUCTION SPECIFICATIONS

- 12. 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 cut-off will be constructed.
- 13. The Licencee shall construct:
 - (a) the wastewater treatment lagoon with a continuous clay liner under all interior surfaces of the structure in accordance with the following specifications:
 - (i) the liner shall be constructed of clay;
 - (ii) the liner shall be at least one metre in thickness;
 - (iii) the liner shall have a hydraulic conductivity of 1×10^{-7} centimetres per second or less;
 - (iv) the liner shall be constructed to an elevation of 2.5 metres above the floor elevation of the respective primary or secondary cell; and

- (b) a cut-off in the dykes of the wastewater treatment lagoon in accordance with the following specifications:
 - (i) the cut-off shall be constructed of clay which has been mechanically compacted;
 - (ii) the cut-off shall be at least one metre in thickness;
 - (iii) the cut-off shall have a hydraulic conductivity of 1×10^{-7} centimetres per second or less; and
 - (iv) the cut-off shall be constructed to an elevation of 2.5 metres above the floor elevation of the respective primary or secondary cell.

- 14. The Licencee shall ensure that if, in the opinion of the Director, significant erosion of the interior surfaces of the dykes occurs, rip rap shall be placed on the interior dyke surfaces from 0.6 metres above the high water mark to 0.6 metres below the low water mark to protect the dykes from wave action.

- 15. The Licencee shall construct and maintain an all-weather access road and a sewage and septage dumping station for truck hauled sewage and septage. The dumping facility shall have a inclined splash ramp with a flat, smooth and hard surface that can be easily washed free of solids.

DISCHARGE LIMITS, TERMS AND CONDITIONS

- 16. The Licencee shall not discharge effluent from the wastewater treatment lagoon:
 - (a) where the organic content of the effluent, as indicated by the five day biochemical oxygen demand, is in excess of 30 milligrams per litre;
 - (b) where the fecal coliform content of the effluent, as indicated by the MPN index, is in excess of 200 per 100 millilitres of sample;
 - (c) where the total coliform content of the effluent, as indicated by the MPN index, is in excess of 1500 per 100 millilitres of sample; or
 - (d) between the 1st day of November of any year and the 15th day of June of the following year.

MONITORING AND REPORTING SPECIFICATIONS

17. 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.
18. The Licencee shall subject undisturbed soil samples from the lagoon liner including the cut-off; to hydraulic conductivity tests, the number and location of samples to be specified by the designated Environment Officer up to a maximum of 60 samples.
19. The Licencee shall provide a drill rig which is acceptable to the designated Environment Officer to extract soil samples from the liner and the cut-off.
20. The Licencee shall ensure that all drill holes are sealed with bentonite pellets after the field drilling and sampling have been completed.
21. The Licencee shall, not less than two weeks before the wastewater treatment lagoon is placed in operation, submit to the Director the results of the tests carried out pursuant to Clause 18.
22. The Licencee shall, on or before the 1st day of December, 1995, provide to the Director "as constructed" drawings of the wastewater treatment lagoon and all appurtenances.
23. The Licencee shall maintain a record of all truck hauled sewage and septage, including the number of loads on a daily and weekly basis, the volume of each load, the name of the hauler, time of arrival at the wastewater treatment lagoon and the source of the contents of each load according to the type of wastewater and the name and location of each property serviced. The Licencee shall submit an annual report of all the waste hauling information to the Director by the 15th of January of the following year.
24. The Licencee shall:
 - (a) take flow proportional samples of the influent over a 24 hour period as follows:
 - (i) two samples during the period from the 15th day of May to the 15th day of November with a minimum separation time of 30 days between samples,

- (ii) one sample during the period from the 15th day of November to the 22nd day of November, and
 - (iii) two samples during the period from the 22nd day of November to the 1st day of May of the following year with a minimum separation time of 30 days between samples;
 - (b) have the samples analyzed for biochemical oxygen demand using methods from the latest edition of Standard Methods for the Examination of Water and Wastewater or using other methods approved by the Director; and
 - (c) report the results to the Director within 60 days of the samples being taken.
25. The Licence shall:
- (a) take three sets of samples of the effluent on each occasion when a secondary cell of the wastewater treatment system is being discharged as follows:
 - (i) the first set of samples shall be taken when the liquid level is near the high water mark in the secondary cell being discharged,
 - (ii) the second set of samples shall be taken when the liquid level is near the mid-point between the high water mark and the low water mark in the secondary cell being discharged, and
 - (iii) the third set of samples shall be taken when the liquid level is near the low water mark in the secondary cell being discharged;
 - (b) have the samples analyzed for: conductivity, pH, temperature, ammonia, biochemical oxygen demand, total coliform content and fecal coliform content using methods from the latest edition of Standard Methods for the Examination of Water and Wastewater or using other methods approved by the Director; and
 - (c) report the results to the Director within 60 days of the samples being taken.
26. The Licencee shall conduct a monitoring program along the effluent discharge route and the monitoring program shall include:
- (a) a minimum five year monitoring period during which water and effluent are flowing in Netley Creek;
 - (b) a minimum of two sample collections during the effluent discharge period, with a minimum time period of 48 hours between sample collections, at a minimum of four sample collection sites located at:
 - (i) the point of discharge from the wastewater treatment lagoon;

- (ii) upstream of the point at which the effluent discharges into the Netley Creek at a point near PTH 17;
 - (iii) immediately downstream of the junction of Netley Creek and Crescent Lake Overflow Channel; and
 - (iv) at the junction of Netley Creek and PTH No. 8; and
- (c) the sample analysis and calculations for the following parameters:
- (i) temperature,
 - (ii) pH,
 - (iii) ammonia and the calculated value of un-ionized ammonia,
 - (iv) BOD₅,
 - (v) total chlorine, if chlorine has been used during effluent treatment,
 - (vi) total and fecal coliform content and
 - (vii) suspended solids.
27. The Licencee shall, not less than 60 days after the results of the sample analysis are available, submit to the Director the results of the monitoring program carried out pursuant to Clause 26.
28. The Licencee shall submit and obtain approval from the Director for a contingency plan to effectively manage changes in industrial wastewater discharges that may threaten the safe operation of the wastewater treatment lagoon or the receiving environment.
29. The Licencee shall measure the volume of sewage flowing into the wastewater treatment lagoon through the influent pipe between the 15th day of June and the 1st day of November and the 1st day of November and the 15th day of June of the following year. The Licencee shall prepare an annual report on the sewage flow measurement including all field measurements and shall file a copy of the report with the Director.

DECOMMISSIONING

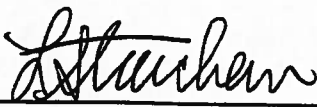
30. The Licencee shall, after placing the Development into operation, prevent any

additional wastewater or septage from being discharged into the old wastewater treatment lagoon located on the southeast quarter of Section 22, Township 16, Range 3 EPM.

31. The Licencee shall:
- (a) remove the wastewater from the old wastewater treatment lagoon and transport it to the new wastewater treatment lagoon located in the southwest quarter of Section 21, Township 16, Range 3 EPM;
 - (b) remove all sludge solids from the old wastewater treatment lagoon;
 - (c) stockpile the sludge solids on the site of the old wastewater treatment lagoon;
 - (d) level the site to the original grade; and
 - (e) distribute the sludge solids evenly over the entire site of the old wastewater treatment lagoon and incorporate the sludge solids into the soil.
32. The Licencee shall ensure that the property owner of the site restricts the use of the land to the growing of the following agricultural crops for three years after the sludge solids have been applied:
- (a) a cereal crop;
 - (b) a forage crop; or
 - (c) an oil seed crop.
33. This Licence replaces Licence No. 455VO which is hereby rescinded.

REVOCATION

If in the opinion of the Director the Licencee has exceeded or is exceeding or has or is failing to meet the specifications, limits, terms, or conditions set out herein, the Director may revoke, temporarily or permanently, this Licence.



Larry Strachan, P. Eng.
Director
Environment Act

FILE: 3627.00

JUSTIFICATION FOR ALTERATION
TO
THE RECOMMENDATIONS OF THE CLEAN ENVIRONMENT
COMMISSION

The Manitoba Clean Environment Commission recommendations were included in the Licence to the Village of Teulon respecting the Proposed Development of a wastewater treatment lagoon except for number 3 which reads as follows:

3. An effluent sampling procedure will be specified in the licence. The quality of the influent entering the stabilization pond and the effluent quality discharged shall be sampled and reported to Manitoba Environment on a planned basis. Effluent will not be discharged until it meets the Manitoba Surface Water Quality Objectives for Netley Creek.

Influent and effluent sampling programs have been specified in the Licence. Effluent quality limits and discharge terms and conditions have been included. Effluent discharge would not be permitted until the effluent quality limits are met. The effluent quality limits are not equivalent to the Manitoba Water Quality Objectives (MWQO). The MWQO were developed to provide guidance relative to protecting specific water uses. The MWQO were developed on the basis that mixing zones would be permitted for effluent discharges. Therefore discharge limits should not be confused with water quality objectives.



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