

Environment Act Licence

Manitoba
Environment and
Workplace Safety
and Health



Licence No. 1296

Issue Date AUGUST 16, 1989

In accordance with the Manitoba Environment Act (C.C.S.M. c. E125)

THIS LICENCE IS ISSUED TO:

CITY OF PORTAGE LA PRAIRIE; APPLICANT
(WASTEWATER TREATMENT LAGOON)

The following limits, terms, and conditions shall be complied with in connection with the operation of a sewage sludge processing, handling and disposal operation in the Rural Municipality of Portage la Prairie:

1. The Applicant shall ensure that untreated sewage, undigested sewage sludge, dewatered sewage sludge and septage are not added to the sludge storage cell.
2. The Applicant shall ensure that the contents of the sludge storage cell is mixed thoroughly on a daily basis in both vertical and horizontal directions prior to the removal of the sewage sludge.
3. The Applicant shall develop and carry out a sewage sludge sampling and analysis program, acceptable to the Director, to determine the volume and the solids content of the sludge removed on a daily basis and the volume and the solids content of sludge applied to each field. The Applicant shall make this information available to the designated Environment Officer on request.
4. The Applicant shall provide to the Director on or before the 15th day of January, legal descriptions for all farmland on which sewage sludge is to be applied in the current calendar year.
5. The Applicant shall ensure that, on or before the 15th day of January, a public notice is printed in the local newspaper to advise the local residents of the intended application sites for the current calendar year. Lands previously identified in the proposal for this Licence are exempt from this requirement.
6. The Applicant shall ensure that all containers, on vehicles used to transport sewage sludge from the sludge storage cell to a field application site, are totally enclosed to prevent odour emissions and are constructed and maintained to prevent leakage of sewage sludge to the satisfaction of the designated Environment Officer.
7. The Applicant shall ensure that all sewage sludge applied to agricultural land is injected into the soil and that the depth at which the sewage sludge is introduced into the soil is a minimum of 15 centimetres below the soil surface.

.../2

8. The Applicant shall limit the volumetric application rate to ensure that the sewage sludge remains in the furrow opening and that the surface expression of the sludge is acceptable to the designated Environment Officer.
9. The Applicant shall not apply sewage sludge to frozen soil.
10. The Applicant shall develop and carry out a field monitoring program on the sewage sludge disposal operation, which is acceptable to the Director, to determine:
 - (a) the sodium bicarbonate extractable phosphorous, as P, in the upper 15 centimetres of the soil;
 - (b) the nitrate-nitrogen and total nitrogen in the upper 15 centimetres of the soil;
 - (c) the pH of the soil;
 - (d) the surface slope of the land;
 - (e) the presence of clay and clay till to a depth of 1.5 metres;
 - (f) the number of hectares in each field that can receive sludge in accordance with this Licence; and
 - (g) the number of hectares on which sludge was applied on a daily basis.

The Applicant shall make this information available to the designated Environment Officer on request.

11. The Applicant shall ensure that the annual application rate of sewage sludge does not exceed 12 tonnes per hectare on a dry weight basis.
12. The Applicant shall ensure that sewage sludge is not applied to land where prior to the intended application:
 - (a) the concentration of sodium bicarbonate extractable phosphorus, as P, exceeds 60 micrograms per gram in the upper 15 centimeters of the soil;
 - (b) the level of nitrate-nitrogen exceeds 67 kilograms per hectare in the upper 15 centimetres of soil;
 - (c) the pH of the soil is less than 6;
 - (d) the surface slope of the land is greater than 3 percent.

13. The Applicant shall not permit the application of sewage sludge:
 - (a) less than 300 metres from any occupied residence (other than the residence occupied by the owner of the land on which the sludge is to be applied);
 - (b) less than 1 kilometre from a residential area;
 - (c) less than 15 metres from a First Order Waterway;
 - (d) less than 30 metres from a Second, or higher Order Waterway;
 - (e) on land that is subject to flooding.

14. The Applicant shall ensure that sewage sludge is not applied on land:
 - (a) with a depth of clay or clay till of less than 1 metre between the bottom of any furrow opening and the water table; and
 - (b) within 100 metres of an identifiable boundary of an aquifer which is exposed to the ground surface.

15. The Applicant shall ensure that on all agricultural land onto which sewage sludge has been applied, one of the following crops is planted at the commencement of the next growing season following such application and only these crops are grown for a period of three years from the date of application of the sewage sludge:
 - (a) a cereal crop;
 - (b) a forage crop;
 - (c) an oil seed crop; and
 - (d) field peas and lentils.

16. The Applicant shall ensure that cattle are not allowed to pasture on land on which sewage sludge has been applied, for a period of three years from the date of application of the sewage sludge.

17. The Applicant shall in case of physical or mechanical breakdown of the sludge mixing, pumping, transportation and/or injection systems:
- (a) notify the Director immediately;
 - (b) identify the repairs required; and
 - (c) complete the repairs in accordance with the written instructions of the Director.
18. This Licence shall terminate on November 1, 1991.
19. For purposes of this Licence, the following definitions will apply:
- (a) "Aquifer" means a water saturated geologic unit that will yield water to wells or springs at a sufficient rate so that the wells or springs can serve as practical sources of water supply;
 - (b) "First Order Waterways" means drains or watercourses serving a watershed with a drainage area of up to one square mile;
 - (c) "Second Order Waterways" means drains or watercourses serving a watershed with a drainage area greater than one square mile or having a tributary or tributaries of the First Order;
 - (d) "Flooding" means the flowing of water onto lands, other than waterways, due to the overtopping of a waterway or waterways.
 - (e) "Water table" means the upper surface of the zone of saturation of a water bearing geologic unit.



C.B. Orcutt
Director
Environmental Control Services

FILE NO: 3011.00

CITY OF PORTAGE LA PRAIRIE
JUSTIFICATION FOR ALTERATION OF COMMISSION
RECOMMENDATIONS

The Recommendations of the Manitoba Clean Environment Commission have been incorporated into the Licence with the following exceptions:

1. CEC Recommendation 2.

"That the program can start in September of 1989, providing that the pathogen levels in the sludge are acceptable to the Department of Environment and the Department of Health."

has not been included.

Justification

1. It is recognized that the pathogen levels will be high because raw sludge was added to the storage cell within the last year and the treatment capability to stabilize the sludge is inadequate.
2. The proposal is for a temporary program to dispose of the inventory of sewage sludge. Current sludge production is being disposed of at an approved landfill.
3. Restrictions on application site selection, land application methods and cropping practices should provide reasonable environmental protection for this short term disposal program.

2. CEC Recommendation 4

"That sludge be applied to soil by subsurface injection at a rate of 12 dry tonnes/hectare (range 8.4 - 16.8 tonnes/hectare), and that liquid rates of application up to 200,000 litres/hectare be allowed."

has been changed to the following Clauses:

- "7. The Applicant shall ensure that all sewage sludge applied to agricultural land is injected into the soil and that the depth at which the sewage sludge is introduced into the soil is a minimum of 15 centimetres below the soil surface."
- "8. The Applicant shall limit the volumetric application rate to ensure that the sewage sludge remains in the furrow opening and that the surface expression of the sludge is acceptable to the designated Environment Officer."
- "11. The Applicant shall ensure that the annual application rate of sewage sludge does not exceed 12 tonnes per hectare on a dry weight basis."

Justification

1. The scientific convention used to describe measurements of contaminants in sewage sludge is a weight to weight relationship. A limit on the rate of sludge application expressed as a specific dry weight can be used to limit the application of contaminants.

2. Sludge should not be applied at a rate which will cause it to flow out of the furrow openings. It is impossible to determine if an application rate of 200,000 litres per hectare would be appropriate for all field conditions.

3. CEC Recommendation 7

"That monitoring of the sludge disposal program including pre and post sludge application soil testing, be carried out as specified in the proposal, subject to approval by the Department of Environment."

has been changed to:

"3. The Applicant shall develop and carry out a sewage sludge sampling and analysis program, acceptable to the Director, to determine the volume and the solids content of the sludge removed on a daily basis and the volume and the solids content of sludge applied to each field. The Applicant shall make this information available to the designated Environment Officer on request."

"10. The Applicant shall develop and carry out a field monitoring program on the sewage sludge disposal operation, which is acceptable to the Director, to determine:

- (a) the sodium bicarbonate extractable phosphorous, as P, in the upper 15 centimetres of the soil;
- (b) the nitrate-nitrogen and total nitrogen in the upper 15 centimetres of the soil;
- (c) the pH of the soil;
- (d) the surface slope of the land;
- (e) the presence of clay and clay till to a depth of 1.5 metres;
- (f) the number of hectares in each field that can receive sludge in accordance with this Licence; and
- (g) the number of hectares on which sludge was applied on a daily basis."

Justification

Post sludge application monitoring was not included because the annual sludge application rate which is limited to 12 tonnes per hectare can be considered a crop utilization rate that will apply for the period of the disposal program (ie. approximately 2 years).

.../3

4. CEC Recommendation 8

"That routes taken by vehicles used to Transport sludge and road maintenance including dust control programs be acceptable to the Rural Municipality of Portage la Prairie."

has not been included.

Justification

Control over the use and maintenance of municipal roads is a responsibility of the Rural Municipality of Portage la Prairie. The municipality can imposed appropriate requirements on the Applicant if it is deemed necessary.



C.B. Orcutt
Director
Environment Control Services

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