

SUMMARY OF COMMENTS/RECOMMENDATIONS

PROPOSER: City of Brandon
PROPOSAL NAME: IWWTF Biosolids to Farmland
CLASS OF DEVELOPMENT: Class 2
TYPE OF DEVELOPMENT: Waste Disposal
CLIENT FILE NO.: 4602.00

OVERVIEW:

An Environment Act Proposal, dated December 19, 2000, respecting a biosolids to agricultural land Proposal submitted by the City of Brandon, was received by the Department on January 3, 2001. The biosolids in this case, relate to those biosolids accumulating in the anaerobic reactor of the industrial wastewater treatment facility (IWWTF) which receives and treats the process and sanitary wastewaters from the Maple Leaf Meats plant at Brandon. While the Proposal was submitted by the City of Brandon (the proponent) the supporting material for the Proposal was prepared by Brent Hansen Environmental Business Consulting Ltd.

The City of Brandon proposes for each year to semi-annually extract anaerobically digested sludge from the anaerobic basin of their industrial wastewater treatment facility, and to apply the sludge at an agronomic loading rate in the spring and fall of each year as biosolids onto neighbouring agricultural land by means of subsurface injection. The land proposed for receiving the biosolids in the spring of 2001 is 65 ha on the NW1/4 of Sec. 7, Twp 11, Rge 17 WPM.

Lands contemplated by the City of Brandon for the future application of biosolids in the fall of 2001, and thereafter, are located to the south-east of Brandon, to the east and west of HWY No. 344 within the townships of 8, 9, and 10 in the ranges of 17, 18 and 19. Subsequent lands to be used in the future would be identified and discussed in detail in the respective annual Operating Plans for the next year's activities.

The Proposal was advertised in the Brandon Sun on February 10, 2001. As well, copies of the Proposal were placed in Public Registries at: the Environment Library (Main) in Winnipeg; the Centennial Public Library in Winnipeg; the Manitoba Eco-Network, and the Western Manitoba Regional Library in Brandon. The closing date for the receipt of public comments was specified as March 6, 2001.

Copies of the Proposal were sent to the applicable members of the interdepartmental Technical Advisory Committee for their review and comment by no later than March 6, 2001.

COMMENTS FROM THE PUBLIC:

No comments were received from the public in response to the advertisement.

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COMMENTS FROM THE TECHNICAL ADVISORY COMMITTEE:

Historic Resources Branch commented that they have no concerns with regard to this project's potential to impact heritage resources.

Manitoba Agriculture and Food commented:

- Greater than 84% of NW7-11-17W is classified "slightly saline" within the rooting zone, which can reduce yields of most annual crops such that the utilization of sludge nutrients may be impeded.
- What has been the historical yield potential of this land?
- Will the sludge application increase soil salinity?
- Tadpole slightly saline phase (Td/xxxs) is reported to comprise 33.2 acres (~20.8%), which must refer to the proportion of the entire quarter (NW7-11-17W) and not the effective application area; therefore, Td/xxxs would actually comprise a proportion of the effective area greater than this value. This becomes significant in the event of a prolonged presence of free water at the soil surface due to poor drainage. If heavy precipitation or snowmelt inundates this portion of the application area for the entire spring, and it is staked off with a 15m buffer (as proposed) the effective application area may be reduced by below the required 51 ha. In such an event, what are the alternatives?
- A preliminary review of reconnaissance soil survey maps, for areas (Twp's 8, 9 and 10 in Rge's 17, 18 and 19) identified for future sludge applications, indicated the presence of soils whose properties may pose limitations for this particular land use. These properties include light-textured surface and subsurface soil, as well as salinity within the rooting zone.
- Appendix D identifies the available P in the 0-60 cm sample of soil. The 0-15 cm available P can therefore not be determined to compare to the maximum allowable criteria. Is this a reporting or an analytical error?
- There is an absence of detailed information on soil and sludge sampling procedures, as well as the absence of soil fertility recommendations from the lab for determining the appropriate application rate based on agronomic considerations.

Disposition

The comments were referred to the proponent for consideration and response. The proponent responded on April 12, 2001, and the responses were forwarded to Agriculture and Food for review. Agriculture and Food responded that the proponent did not include any detailed discussion of soil and sludge sampling methodology, as requested. Also, again no information was provided on the

historical crop productivity on the receiving farmland, hence the potential for nutrient uptake. These questions were referred back to the proponent for comment. On April 30, 2001, the Proponent responded and the responses were referred back to Agriculture. No further comments were received back from Agriculture.

Health recommended:

- odour control and monitoring;
- the enforcement of gasoline and diesel regulations, if applicable;
- only non-vegetable crops be affected; and
- that the groundwater be monitored on a regular basis by monitoring nearby wells, particularly the residence within the 300 metre buffer.

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Policy Co-ordination Branch of Manitoba Conservation commented;

- The statement in the proposal, "Subsurface injecting residual slurries eliminate the potential for runoff and impacts to surface water" may be somewhat questionable. It would be preferable that a site further removed from creeks or drains was chosen. Whatever site is chosen, surface water monitoring should be carried out, at least during the initial years of the operation, to ensure that nutrient loading of surface water is not occurring.

Disposition

The comments were referred to the proponent for consideration and response. The proponent responded on April 12, 2001, and the responses were forwarded to the Policy Coordination Branch for review. They indicated on May 2, 2001, that that the proponent's response generated no comments.

Water Quality Management commented that:

- The intended subsurface injection technique should be satisfactory provided that there is no flowing or standing water present on the application area, or that the soil is not already saturated with moisture.
- The disposal field is in a groundwater hazard area, and there are potential receiving water bodies in relatively close proximity.
- There is no intent expressed in this Proposal to monitor either surface or groundwater. At least during the initial application period, some monitoring should take place to provide pre and post application documentation to ensure that contamination of ground and surface water is not occurring and will likely not occur in the future due to this disposal practice. Such monitoring should be done for nitrates and nitrites as well as bacteria, and also for metals where significant metal content is indicated in samples tested from the sludge. The proponent should provide a plan of how such monitoring might take place.

Disposition

The comments were referred to the proponent for consideration and response. The proponent responded on April 12, 2001, and the responses were forwarded to the Water Quality Management (WQM) for their review. WQM responded that their concerns have been met.

Park-West Region commented:

- There is reason for concern due to the proximity of first order and third order drains.
- The proposed initial acreage on NW 7-11-17 WPM is designated as a groundwater pollution hazard area. Well logs on two wells immediately east show sand and gravel from near surface to depths of approximately 4.5 metres. Static water levels from the 6 metre deep wells before test pumping were as shallow as 1.8 metres below surface. As little as 1 foot of topsoil may be present over the coarser sands and gravel.
- Digital orthophotography confirms the amount of acreage for application as approximately 65 Ha which is in excess of the required acreage for a spring application.
- The proposed rate of application is 100 kg of available nitrogen per hectare. However, existing available nitrogen in the soil, in conjunction with further release of available nitrogen during mineralization may result in levels exceeding 101

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kg/ha in the top 0.6 metres.

- Since common injection equipment utilizes a shank which opens the soil for injection but fails to close the soil opening, injection should be conducted in favourable soil moisture conditions with little rain in the forecast.
- The small sloughs in the NE corner of the field should be avoided as these areas tend to accumulate runoff resulting in more concentration of contaminants.
- Any abandoned wells within the sludge injection area should be properly sealed to prevent possible contamination of the aquifer.
- Due to the sensitivity of the site on potential groundwater contamination, shallow injection is recommended, and crops with deep rooting systems and high demand for nitrogen should be utilized.
- If this acreage (NW 7-11-17 WPM) will be subjected to future sludge applications, groundwater monitoring should be required.

Disposition

The comments were referred to the proponent for consideration and response. The proponent responded on April 12, 2001, and the responses were forwarded to the Park-West Region for review. The Park-West Region commented that the proponent's responses satisfactorily addressed their concerns.

Canadian Environmental Assessment Agency (CEAA) commented that the application of the Canadian Environmental Assessment Act with respect to this project will not be required.

PUBLIC HEARING:

No requests were made by the public for a public hearing.

RECOMMENDATION:

A draft Environment Act Licence, authorizing the operation of the proposed Development is attached for the consideration of the Director of Environmental Approvals. It is recommended that the licence, if approved, be assigned to the Park-West Region for administration, surveillance, monitoring, ongoing compliance evaluation and enforcement responsibilities.

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