

SUMMARY OF COMMENTS/RECOMMENDATIONS

PROPONENT: Town of Minitonas
PROPOSAL NAME: Wastewater Treatment Lagoon Expansion
CLASS OF DEVELOPMENT: 2
TYPE OF DEVELOPMENT: Wastewater Treatment Lagoon
CLIENT FILE NO.: 115.20

OVERVIEW:

On December 4, 2000, the Department received an Environment Act Proposal (EAP) on behalf of the Town of Minitonas to expand an existing 2-cell wastewater treatment lagoon located in SE 13 - 36 - 26WPM in the Rural Municipality of Minitonas. The expansion is to consist of constructing a new additional storage cell adjacent to the north and west dykes of the existing wastewater treatment lagoon. The expansion involves portions of land from all quarter sections of Section 13 – 36 – 26WPM. Treated wastewater from the expanded wastewater treatment lagoon will be discharged west to East Favel River via an existing drain between June 15th and November 1st of any year.

Following a series of correspondence exchanges with the consultant, the proposal and supplementary supporting documentation indicated that a soil liner will be located below each cell and a vertical cutoff will be located within the perimeter dykes of the new as well as the existing cells. Each component of the soil liner was identified as capable of meeting provincial standards regarding hydraulic conductivity of soils used for construction of wastewater treatment lagoons. Supporting documentation indicates that a layer of silty sand exists below the topsoil at the site. The report indicates that silty sand is underlain by clay type soil that is underlain by a very dense hard till type soil.

The Department, on March 18, 2003, placed copies of the EAP report in the Public Registries located at 123 Main St. (Union Station); the Centennial Public Library (Winnipeg), Manitoba Eco-Network and the North-West Regional Library and provided copies of the EAP report to the Canadian Environmental Assessment Agency (CEAA), the Clean Environment Commission, and TAC members. As well, the Department placed a public notification of the EAP in the Swan River Star and Times on Tuesday, March 25, 2003. The newspaper and TAC notifications invited responses until April 21, 2003.

On May 9, 2003 Manitoba Conservation forwarded comments that had been received from the TAC, the public and a federal government department to the proponent. Additional information that would address the requests presented in the comments was requested from the proponent.

On May 9, 2003, Manitoba Conservation submitted responses from the TAC members, the public and a federal government department to the appropriate Public

Registries. The responses consisted of comments and requests for additional information. There was one request for a public hearing.

On October 2, 2003, the consultant submitted responses to the comments and requests from TAC and the public.

On October 20, 2003 the consultant's responses were distributed to the TAC members, the public and federal government representation that had provided comments or requested additional information. There were no requests for a public hearing.

On November 24, 2003 and March 24, 2004 supplementary comments regarding mitigation measures that are expected by the Department of Fisheries and Oceans Canada were received. The comments relate to the need for the proponent to take efforts to minimize and monitor for any potential impacts on fish habitats in and around the area of the development. The draft Licence contains Clauses relative to these comments and expectations.

As of November 12, 2004, not all required land agreements and proposed design features had been submitted for inclusion with the review. The proponent was aware of the need to provide such information in order for the review to be completed.

On April 10, 2008 the consultant communicated to Manitoba Conservation that the initially proposed lagoon design would likely be altered as residents of the Rural Municipality of Minitonas would also be served by the lagoon.

In a May 14, 2010 transmittal, the consultant provided updated information regarding the design of the wastewater treatment lagoon and related land agreements.

On June 30, 2010 a draft Licence and Summary Report were distributed to the Technical Advisory Committee for comment. Related required adjustments to the draft Licence were completed.

On July 29, 2010 a copy of a draft Licence was forwarded to the consultant for review and comment. The consultant was requested to confirm the design before a Licence could be finalized.

In a December 23, 2010 letter, the consultant provided an update involving an alteration to the design of the liner system for the lagoon. The design alterations resulted in additional discussions between the consultant and Manitoba Conservation as well as additions and modifications to the draft Licence regarding the lagoon liner being made.

COMMENTS FROM THE PUBLIC:

| <u>Name</u> | <u>Address</u> | <u>Date</u> | <u>Comment(s)</u> |
|---------------------------------|-------------------------------------|--------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Danard, Irvine and Cecile | Box 156 Minitonas, MB ROL 1G0 | 03/04/04 | - Expressing concern regarding seepage from existing lagoon cells and concern that past lagoon improvement attempts have not improved soil conditions; and - Requesting a public hearing. |

Proponent Reponse (October 2, 2003):

- The lagoon expansion and existing cells will be constructed and upgraded to conform to the requirements for a liner with a hydraulic conductivity of 1×10^{-7} cm/s or less. This should prevent any noticeable leakage from the lagoon system and improve conditions in any areas presently experiencing leakage/seepage from the lagoon. The land requirement is not large, but assume purchase will be fair and equitable.

Disposition:

- Limits, terms and conditions regarding construction and operation requirements for standard wastewater treatment lagoons are components of the draft Environment Act Licence and apply to the existing cells and proposed cell of the lagoon. In particular, as with all lagoon Licences, the soil liner must be constructed such that it complies with dimensional and performance requirements of the Licence.

COMMENTS FROM THE TECHNICAL ADVISORY COMMITTEE:

Agriculture and Food

- *No concerns.*

Health

- *No concerns.*

Historic Resources

- *No concerns.*

Water Stewardship - Sustainable Resource Management Branch

Initial Review

- *The boundary of the expanded lagoon should be a minimum of 30 m from the East Favel River;*

- *The flow estimation for the East Favel River used to estimate the water quality impacts appears to be based on projected average flow conditions, rather than low flow conditions. Consequently, the analysis presented in Table 9.2 probably underestimates the impact of the effluent on river quality. In addition, the proponent has used the ambient river data from 1976 and 1977. It is likely that river quality has changed over the past 26 years and this data may not represent current conditions. If the assumption is made that the river quality has not changed, then the projected effluent discharge will result in a significant increase in the concentration of ammonia and phosphorus in the receiving stream. Effluent limits with respect to ammonia should be set to ensure that the discharge does not exceed the Manitoba Water Quality Objectives, Standards and Guidelines with the East Favel River;*
- *Effluent should not be released before June 15 or after November 1 of any year; and*
- *The proponent should be required to actively participate in any future watershed based management study, plan/or nutrient reduction program, approved by the Director, for the East Favel River, the Roaring River, Swan River, Swan Lake and associated waterways and watersheds.*

Proponent Responses (October 2, 2003):

- The boundary of the expanded lagoon will be a minimum of 30 m from the East Favel River;
- As there is no flow data for the East Favel River, numbers were generated based on data from other rivers in the area. This analysis has been reviewed and additional work has been undertaken. Several rivers in the area were considered based on watershed size, slope and topography. The Birch River was chosen as the best-fit and 7Q10 flows were generated for the summer, and fall discharge periods. The resulting flow estimates are 0.166 m³/s for the summer, and 0.091 m³/s for the fall discharge period. The 1976/77 river water quality data is the only data available. If we had sampled the river it would be a one-time effort that may or may not be representative of actual conditions. It is expected there would be natural variation based on flows and activities along the river. As well, the lagoon water quality parameters were mostly from a spring discharge sampling in May 18, 1989. Quality should be significantly better for a properly sized facility discharging after June 15, which would be the new requirement. The lagoon effluent quality expected has been revised to similar facilities for a June discharge which is usually a poorer quality discharge than the October discharge. A comparison of the expected ammonia value is within the MWQSOG values shown for a range of pH and temperature values. Other values will increase as shown in Table 9.2 which is meant to show the low flow conditions;

• Table 9.2

| Parameter | Unit | River | Lagoon | Combined |
|------------------|-------------------|-------|--------|----------|
| Ammonia – N | mg/l | 0.06 | 2.5 | 0.70 |
| BOD ₅ | mg/l | 1.3 | 15 | 4.87 |
| Nitrate – N | mg/l | 0.03 | 0.5 | 0.15 |
| Phosphorus | mg/l | 0.03 | 2.0 | 0.54 |
| TKN | mg/l | 0.65 | 8.0 | 2.57 |
| pH | | 8.3 | 8.7 | 8.4 |
| Flow | m ³ /s | 0.17 | 0.06 | 0.23 |

**TIER II WATER QUALITY OBJECTIVES FOR TOTAL AMMONIA – N MG/L
FOR THE PROTECTION OF AQUATIC LIFE – EQUATION 2**

pH

| Temperature | 7.5 | 8.0 | 8.5 | 8.7 |
|-------------|-------|------|------|------|
| 0 | 10.91 | 6.08 | 2.72 | 1.95 |
| 5 | 10.91 | 6.08 | 2.72 | 1.95 |
| 10 | 10.91 | 6.08 | 2.72 | 1.95 |
| 15 | 10.58 | 5.90 | 2.64 | 1.89 |
| 20 | 7.66 | 4.27 | 1.91 | 1.37 |

- We have based the sizing of the storage and above flow projections on this basis; and
- This has become a standard clause in all licences and is expected.

Disposition:

- Limits, terms and conditions as well as monitoring and reporting requirements for wastewater treatment lagoons are components of the draft Environment Act Licence.
- A clause in the draft Environment Act Licence requires that the lagoon be discharged in such manner as possible that increased nutrient uptake from the effluent may occur along the discharge route.

Transportation and Government Services (now Infrastructure and Transportation)

- *No concerns.*

COMMENTS FROM FEDERAL REPRESENTATION:

Department of Fisheries and Oceans Canada

November 24, 2003

- *The focus of my comments relate to the lack of an effective erosion and sediment control plan for this project. Due to the proximity of the proposed expansion area for the wastewater treatment plan to the East Favel River, there is a requirement for the implementation of effective short and long-term erosion and sediment control measures. The slopes of the proposed dykes need to be effectively stabilized to ensure that sediment will not enter any watercourse during any time.*

March 24, 2004

- *DFO-Dauphin must be notified of all effluent discharges;*
- *Based on the information provided, DFO-Dauphin concludes the proposed work will not likely result in the harmful alteration, disruption or destruction of fish habitat provided the work is carried out as described and the following mitigation measures are adhered to:*
 - *All activities related to this project should be undertaken in accordance with “Manitoba Stream Crossing Guidelines for the Protection of Fish and Fish Habitat” (Manitoba Natural Resources, 1996);*
 - *Construction should be halted in heavy rains;*
 - *Sediment and erosion control measures should be implemented by persons adequately trained and experienced in environmental protection practices appropriate for wastewater treatment expansion projects. Contractors undertaking work activities on this project should comply with environmental protection and contingency plans, along with all other measures, which may become necessary for the protection of fish and fish habitat;*
 - *Effective sediment and erosion control measures should be used during the construction, and operation phases of this project to prevent soil-laden runoff and silt from entering the creek, or any other water body;*
 - *All areas disturbed during the construction and operation should be stabilized, seeded as appropriate, and reclaimed to vegetation within one growing season. Suitable erosion control measures (e.g. straw blankets, silt fences, etc.) should be installed where required to ensure disturbed areas of the water course are not subject to erosion prior to establishment of vegetation;*
 - *The construction site should be monitored following project completion to evaluate the effectiveness of sediment and erosion control measures. If erosion is identified, immediate steps are taken to rectify the problem;*

- *The deposit of deleterious substances into water frequented by fish is prohibited under the Fisheries Act. Appropriate precautions should therefore be taken to ensure deleterious substances (sediment, fuel, etc.) do not enter the watercourse;*
- *Equipment operating near any waterbody should be free of external fluid leaks, grease and oil. The cleaning, fueling and servicing of equipment (e.g. backhoes, bobcats, generators, compressors, etc.) should be conducted at least 100 m away from any watercourse;*
- *Machinery should be equipped with emergency spill kits suitable to contain any possible spills or leaks of fuel, oil, hydraulic fluid or coolant during the project. The operators of the equipment should be familiar with how to properly use the spill kits in the event of an emergency. Any spilled materials should be cleaned up immediately and disposed of in an environmentally appropriate manner;*
- *Please notify the DFO-Dauphin District office a minimum of five days prior to the commencement of works on this project, citing file number: MB-03-0555. It is recommended that a copy of this letter be kept at the work site during construction, and is provided to contractors prior to commencing work.*

Disposition:

- Where practical, the concerns identified by DFO have been addressed through limits, terms and conditions as well as through specific monitoring and reporting requirements of the draft Environment Act Licence.

Canadian Environmental Assessment Agency

- *CEAA responses have indicated that application of The Canadian Environmental Assessment Act with respect to this proposal will be required. Department of Fisheries and Oceans Canada and Environment Canada would be able to provide specialist advice in accordance with Section 12(3) of the Act.*
- *The Canada-Manitoba Infrastructure Secretariat has requested to be kept abreast of the environmental assessment activities related to this project.*

Disposition:

- The CEAA representatives have been kept abreast of the environmental assessment activities.

PUBLIC HEARING:

There was one request for a public hearing following the initial review of the proposal. The request was related to a reported history of failed attempts to control seepage from the existing lagoon. The proposed remediation activities for the existing cells are expected to enhance the performance of the soil liner such that standard criteria for such

liners are achieved. There were no additional requests for a public hearing following review of the supplementary information provided by the consultant.

RECOMMENDATION:

An Environment Act Licence be issued in accordance with the attached draft. Enforcement of the Licence should be assigned to the Environmental Assessment and Licensing Branch until testing of the soil liner has been completed.

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April 11, 2011

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