

## **SUMMARY OF COMMENTS/RECOMMENDATIONS**

**PROPONENT:** Rural Municipality of Lorne  
**NAME OF DEVELOPMENT:** Swan Lake Wastewater Treatment Lagoon  
**CLASS OF DEVELOPMENT:** Two  
**TYPE OF DEVELOPMENT:** Wastewater Treatment Lagoon  
**CLIENT FILE NO.:** 5187.00

### **OVERVIEW:**

The Proposal was received on April 6, 2006. It was dated March, 2006. The advertisement of the proposal was as follows:

“A Proposal has been filed by J. R. Cousin Consultants Ltd. on behalf of the Rural Municipality of Lorne for the construction and operation of a wastewater treatment lagoon for the community of Swan Lake. The facility would be located in SE 19-5-10W immediately southwest of the existing facility. Swan Lake would be serviced by a new forcemain to the facility from the existing lift station south of the community. Septage from the surrounding rural area would also be accommodated at the facility. Treated effluent would be discharged to the same waterway as the existing facility. This waterway is a tributary of the Pembina River. Discharges would take place after June 15 and before November 1 each year. Construction of the project is proposed for 2006. The existing facility would be decommissioned once the new lagoon was completed.”

The Proposal was advertised in the Treherne Times on Monday, May 8, 2006, and the Pilot Mound Sentinel Courier on Tuesday, May 9, 2006. It was placed in the Main, Winnipeg Public Library, Eco-Network, South Central Regional Library (Morden) public registries and in the office of the R. M. of Lorne as a registry location. The Proposal was distributed to TAC members on May 2, 2006. The closing date for comments from members of the public and TAC members was June 8, 2006.

### **COMMENTS FROM THE PUBLIC:**

No public comments were received.

### **COMMENTS FROM THE TECHNICAL ADVISORY COMMITTEE:**

**Manitoba Conservation – Sustainable Resource Management** No concerns.

**Manitoba Conservation – Red River Region** No concerns.

**Manitoba Water Stewardship**

- The proposed wastewater treatment lagoon at SE19-5-10W is located within an area typical of thin clay and till overburden underlain by shale bedrock (Odanah member) of the Riding Mountain formation. The upper portion of the shale bedrock is typically fractured and acts as a source of groundwater supply for rural, private well users in the area. The lack of natural overburden protection to the underlying shale aquifer and the relatively shallow depth of the aquifer make it vulnerable to sources of potential groundwater contamination. As such, the development of a wastewater treatment lagoon within this type of hydrogeological environment should require a groundwater assessment to determine the risk to the local groundwater resources. A well planned groundwater monitoring system should also be established to allow long-term monitoring of the performance of the lagoon.
- The proposal states that “no impacts to groundwater are anticipated as the lagoon will be a geomembrane liner and will have a hydraulic conductivity of less than  $1 \times 10^{-7}$  cm/sec as required by Manitoba Conservation guidelines”. Although the lagoon liner may meet the guideline requirements for hydraulic conductivity, there is no information or assessment supporting the statement that there will be no groundwater impacts. For example, the proposal does not include any information on regional hydrogeology, the local hydrogeological conditions of the proposed site, or the source water supply for Swan Lake or other rural residents in close proximity to the lagoon. This information should be provided and risks to the groundwater and source water supplies of Swan Lake and any nearby rural residents should be assessed in the event of potential leakage from the lagoon.
- The proponent should submit a proposal to establish a groundwater monitoring system at the site of the proposed wastewater treatment lagoon. The rationale behind the design and operation of the monitoring system as related to the hydrogeological conditions of the site should be included. The monitoring system should be carefully planned and take into consideration the objectives for monitoring, the site specific geology, the type of aquifer materials (i.e., fractured shale), groundwater flow direction, the types of potential contaminants to be monitored and the potential for transport of contaminants to underlying aquifers and water well users. The groundwater monitoring proposal should also include but not necessarily be limited to information on well locations, well depths, construction details, sampling protocol and reporting. It is recommended that groundwater monitoring be initiated prior to the operation of the lagoon to allow collection of baseline geochemical data for long-term trend monitoring.
- It is recommended that any groundwater risk assessment and groundwater monitoring system design be undertaken by an experienced hydrogeologist registered with the Association of Professional Engineers and Geoscientists of Manitoba.

- The proposal refers to water sewer line works. As per the Public Health Act, Regulation 331/88R (waterworks, sewerage and sewage disposal regulation) sewer line extensions require certificate of approvals prior to construction. The Office of Drinking Water can be contacted for information on the approval process and submission requirements.
- We want to ensure that the effluent discharge would not impact surface water quality as there is the potential for the creek to provide spring spawning and nursery habitat and the creek drains into the Pembina River which has resident populations of fish. We suggest monitoring to initially occur at the outlet as well as its confluence with the Pembina River.
- We recommend the license require the proponent to actively participate in any future watershed based management study, plan/or nutrient reduction program, approved by the Director, for the Pembina River and associated waterways.

Disposition:

The liner proposed for the facility is high density polyethelene. As this material is reliable and would be installed by experienced professional installers in accordance with installation procedures used by the Department and other jurisdictions, there is virtually no possibility of leakage. A standard licence clause requiring the licensee to undertake any necessary future studies is sufficient to address the issue of leakage.

The need for a Public Health Act Certificate for the project's forcemain extension will be brought to the consultant's attention.

There is very little possibility for the receiving stream to provide spring spawning or nursery habitat to fish from the Pembina river, as the tributary in the vicinity of the lagoon is approximately 30 metres above the Pembina river and only three kilometres from the river. The receiving stream also would not support a resident fish population due to winterkill. Quality parameters must be met for the effluent before it is released; additional downstream monitoring during releases will not be useful unless specific parameters are identified.

The request for a requirement to participate in future watershed management studies can be accommodated through a standard licence condition.

**Historic Resources Branch** No concerns.

**Highway Planning and Design Branch** No concerns.

**Community Planning Services Branch** No concerns.

**Manitoba Agriculture, Food and Rural Initiatives**

No agricultural concerns.

**Medical Officer of Health – Central Manitoba RHA**

The health concerns with a sewage lagoon are minimizing odors, protecting groundwater and fence enclosure. These issues would be adequately addressed through the licence.

**Canadian Environmental Assessment Agency**

The project information provided has been distributed to all federal departments with a potential interest. I am enclosing copies of the relevant responses for your file.

Based on the responses to the federal survey, the application of the Canadian Environmental Assessment Act (the Act) will be required for this project. Western Diversification, through that department's delivery of the Canada-Manitoba Infrastructure Program (CMIP), must complete a federal environmental assessment (EA) pursuant to the Act since the project is being considered for federal funding under that program.

I have not yet received a response from Fisheries and Oceans Canada (DFO), so cannot determine if DFO might also need to complete a federal EA. The DFO response will be forwarded as soon as it is available.

Please note that Health Canada (HC) has indicated that they possess specialist advice that may assist in the environmental assessment of the proposed project, if requested. Environment Canada (EC) has indicated that their department would like to participate in the EA process and has provided comments for consideration in the review. I would ask that you include EC on your provincial Technical Advisory Committee (TAC). Indian and Northern Affairs Canada has indicated that they have no interest in this project.

The Prairie Region office of the CEA Agency will be assisting WD in conducting a federal environmental screening and will act as the Federal Environmental Assessment Coordinator (FEAC) for the project.

It is my understanding that since the project requires a review under both provincial and federal environmental legislation, a joint process under the Canada-Manitoba Agreement on Environmental Assessment Cooperation will be required. As such, please forward federal review comments to the proponent for response as part of the TAC review process.

**Environment Canada**

Environment Canada (EC) has no trigger under Section 5 of the Canadian Environmental Assessment Act (CEAA), however, would like to participate in the provincial review of the proposed project consistent with the intent of Clause 59 of the expired and Clause 61 of the proposed new Canada-Manitoba Agreement on Environmental Assessment Co-operation.

EC understands that the upgraded lagoon would service not only the community of Swan Lake, but also the surrounding rural area population. In 2001, approximately 331 rural

residents contributed septage from septic tanks/field systems and about 175 students were bussed in from rural areas into the community contributing to the sewage load.

EC provides the following comments:

1. It is not clear to EC what the justification is to the commonly used average value of 56 kg BOD/ha/day, when septage from septic tanks/fields are also trucked and discharged into the lagoon. Does the average value of 56 kg BOD/ha/day take into consideration a safety margin that will accommodate the quality of septic tank sewage that are trucked in?
2. The report did not specify any effluent sampling points or any type of effluent quality monitoring program before discharge. Although the report indicated (s.3.1.2, p. 7) that "...the lagoon effluents would not be discharged unless it is in accordance with Manitoba Conservation guideline", it however, did not give any details of effluent monitoring that will ensure that the effluent quality meets the guidelines. A rigorous effluent monitoring program near the discharge outlet will provide an early warning of possible effluent quality problems, therefore EC recommends that effluent monitoring program should be implemented.

Disposition:

With respect to the average value of BOD (56 kg/ha/day), this value is commonly used because it is a Manitoba Conservation design guideline. The guideline is based on experience and is the maximum permissible organic loading value for the primary cell of standard wastewater treatment lagoons. With respect to effluent monitoring, Environment Act licences require that effluent quality requirements be met prior to discharge. Sampling protocols are specified in the department's operating guidelines for wastewater treatment lagoons. Since the EC reviewer may not have been previously provided with these documents, copies will be provided and reviewed.

**Department of Fisheries and Oceans** (Copy of letter to the Proponent) Please ensure that the following additional measures are incorporated into your plans:

- Effective sediment and erosion control measures are implemented until seeded areas are revegetated. Any disturbed areas are seeded and revegetated or otherwise protected (e.g. cover exposed soil with biodegradable erosion control blankets) to prevent erosion. If revegetation cannot be undertaken within a reasonable timeframe, or if the work is conducted outside of the growing season, alternate erosion control measures are applied to stabilize exposed soils until revegetation occurs.
- Planting native vegetation (e.g. willows, sedges, deep rooted grasses, etc.) within and behind the riprap, or using bioengineering stabilization treatments is encouraged as deep rooted native plants can improve the ability of the banks to resist erosion. Consult a riparian (shoreline) plant specialist to determine the appropriate plant species and maintenance activities that are required to establish this vegetation.
- At all times during construction, ensure that effective measures are taken to prevent sediment from construction activities from entering any watercourse.

- The deposit of deleterious substances into water frequented by fish is prohibited under the Fisheries Act. Appropriate precautions must therefore be taken to ensure that potentially deleterious substances (such as fuel, hydraulic fluids, oil, sediment, etc.) do not enter any water body.
- Machinery is to arrive on site in a clean condition and maintained free of fluid leaks.
- Wash, refuel and service machinery and store fuel and other materials for the machinery away from the water to prevent deleterious substances from entering the water.
- Keep an emergency spill kit on site in case of fluid leaks or spills from machinery. All equipment operators should be familiar with how to properly use the spill kits in the case of an emergency.

By implementing these additional measures, it is our opinion that the proposed works and undertakings will not likely result in the harmful alteration, disruption or destruction (HADD) of fish habitat, which is prohibited unless authorized by DFO. These are recommendations to ensure that the proposed works will likely not result in a HADD of fish habitat. Therefore a subsection 35(2) authorization is not necessary.

You could contravene subsection 35(1) of the Fisheries Act if a HADD of fish habitat results from any change in your proposed plan or from failure to properly implement these additional measures. Subsection 35(1) states, “no person shall carry on any work or undertaking that results in the harmful alteration, disruption or destruction of fish habitat.”

This letter of advice does not permit the deposit of a deleterious substance (section 36 of the Fisheries Act) into waters frequented by fish nor does it release you from the responsibility to obtain any other federal, provincial or municipal approvals.

**Disposition:**

Most of the mitigation measures discussed can be addressed through licence conditions. Willows and reeds are not suitable vegetation on lagoon dykes because their roots increase the permeability of the dykes. Since the information is contained in a letter of advice, DFO will be monitoring to ensure that all required measures are being implemented.

**ADDITIONAL INFORMATION:**

No additional information is required to address TAC comments. Additional information was requested to address design features involving cell sizes and the invert elevation of the secondary cell discharge pipe. Further additional information was requested concerning cover material on the liner for the primary cell of the facility, and concerning sludge disposal when decommissioning the existing facility.

**PUBLIC HEARING:**

As no requests for a public hearing were made, a public hearing is not recommended.

**RECOMMENDATION:**

All comments received on the Proposal that require followup can be addressed as licence conditions. Therefore, it is recommended that the Development be licensed under The Environment Act subject to the limits, terms and conditions as described on the attached Draft Environment Act Licence. It is further recommended that enforcement of the Licence be assigned to Environmental Assessment and Licensing until construction is completed. Once the facility is commissioned, enforcement should be assigned to the Red River Region.

**PREPARED BY:**

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Bruce Webb, P. Eng.  
Environmental Assessment and Licensing - Environmental Land Use Approvals  
(for Municipal and Industrial Approvals)  
June 20, 2006 Updated October 11, 2006.

Telephone: (204) 945-7021  
Fax: (204) 945-5229  
E-mail: bwebb@gov.mb.ca