

SUMMARY OF COMMENTS/RECOMMENDATIONS

PROPONENT: Town of Arborg: Applicant
PROPOSAL NAME: Wastewater Treatment Lagoon
CLASS OF DEVELOPMENT: 2
TYPE OF DEVELOPMENT: Wastewater Treatment Lagoon
CLIENT FILE NO.: 126.40

OVERVIEW:

On April 8, 1999, the Department received a Proposal from the Town of Arborg to expand the wastewater treatment lagoon by constructing a new primary cell. The wastewater treatment lagoon will be located on River Lot 48, Township 22, Range 2 EPM in the Rural Municipality of Bifrost. The Proposal indicated that treated wastewater from the lagoon will be discharged to a drainage ditch that flows into Icelandic River during the period from June 15 to November 1.

The Proposal indicated that suitable clay soils can be found at or near the site which will meet the provincial hydraulic conductivity requirements for the construction of the wastewater treatment lagoon.

The Department, on July 6, 1999, placed copies of the Proposal in the Public Registries located at 123 Main St. (Union Station); the Centennial Public Library, the office of the Town of Arborg and provided copies of the Proposal to the Interdepartmental Planning Board and TAC members. As well, the Department placed a public notification of the Proposal in the Interlake Spectator on Monday, July 12, 1999. The newspaper and TAC notification invited responses until August 6, 1999.

COMMENTS FROM THE PUBLIC:

Two responses were received to the public notification. The following are comments/concerns related to the proposal:

- *Ellen Francis/Peter Marykuca – Interlake Citizens for Clean Environment*
- *Groundwater seepage and water from the weeping tile in the basements of Arborg residences add almost as much liquid to the sewage system on a daily basis as that which originates from actual household sewage. The figures are about 275 litres of wastewater from each home and another 200 litres of groundwater per home. It is suggested that the sewers should be repaired and the residents should be required to direct their sump pump collection and weeping tile drainage out doors as an alternative to expanding the wastewater treatment lagoon.*

- *Effluent disposal should be changed from discharge to the Icelandic River to effluent irrigation to spare the Icelandic River from the downstream affects. Changing the Arborg sewage disposal method to a land irrigation application is a feasible alternative to the present release to the Icelandic River and would preserve the water quality and biota downstream.*
- *We believe that the preservation of many streams in Manitoba that presently receive sewage water from a number of towns has been a neglected aspect in the Environmental Department's management.*
- *Environmental officials maintain that the released sewage water doesn't seriously harm the water life downstream. If this is truly the case they would be quick to release verifying written reports confirming this, where are their reports?*
- *Tests taken from the sewage prior to release into the river make no accounting of the soaps and detergents which are hugely devastating to many life forms that inhabit the river and the marshes. During low water periods the Arborg sewage water displaces water in the shallow pools along the river and accumulates in the broader river reaches just upstream and downstream of Riverton where there is very little water flow and where the river rises and falls with the wind surges on the lake.*

Disposition:

- The proponent indicated that the project did not include land disposal. The proposal is for the addition of a cell to a wastewater treatment lagoon. Effluent irrigation is not a common municipal practice in Manitoba. This may be a reflection of the soil, precipitation rates and agricultural practices that prevail through most of Manitoba. It may also reflect the somewhat difficult operating circumstances and costs experienced at Roblin.
- Extraneous flows and infiltration in the Arborg collection system may account for effluent discharge volumes. The draft Licence requires the proponent to develop and implement a phased sewer maintenance and repair program acceptable to the Director.
- Disposal of treated wastewater is an allowable use of streams, rivers and lakes in accordance with the Manitoba Surface Water Quality Objectives and applicable Environment Act Licences.
- A clear need for nutrient removal to protect downstream uses has not been established. There is anecdotal information on both sides of the nutrient impact issue with respect to the Icelandic River. The draft Licence requires the proponent to participate in an approved nutrient reduction program when it is necessary.

- *Ron Dalmy – The Organization*
- *One of the design criteria for septage lagoons is BOD 7000 mg/l. Will that be a licence requirement.*
- *Lagoons do not nitrify. When the Arborg lagoon is discharged all wildlife from ducks to dragon flies and crayfish are gone from the Icelandic River.*

Disposition:

- The proponent was requested to establish the organic load from septage based on recognized design values (WEF Design Manual – BOD of 7000 mg/l) or from a monitoring program of truck hauled wastewater at the Arborg site. The proponent indicated that the design will accommodate this design criteria.
- Research work on wastewater treatment lagoons in Alberta indicated that ammonia reduction occurs. The draft Licence requires the proponent to monitor for ammonia levels prior to discharge.
- There has been no confirmation that wildlife disappears from the Icelandic River after the Arborg lagoon has been discharged.

COMMENTS FROM THE TECHNICAL ADVISORY COMMITTEE:

Highways

- *No comment.*

Natural Resources

- *The proposal does not address the possible impacts of either un-ionized ammonia or residual chlorine in the wastewater lagoon effluent. If the lagoon needs to be chlorinated it is possible that a “slug” of effluent with a very high concentration of chlorine could occur at particular times and be released to the Icelandic River.*
- *The possible cumulative effects of combined Arborg-Riverton effluents on the Icelandic River have not been fully addressed.*
- *Flooding of this site is expected to occur under 100 year flood conditions, but not to the extent of precluding development. The top of the impoundment dikes should be constructed to at least elevation 228.5 metres.*

Disposition:

- Un-ionized ammonia has been addressed by increasing the storage period and thereby deferring spring discharge from mid-May to mid-June. This additional retention time provides the treatment period for the reduction of ammonia.
- The proponent indicated that the use of chlorine to disinfect wastewater effluent is not a normal operating procedure and it is typically restricted to over-loaded wastewater treatment lagoons. The expanded facility is designed appropriately to preclude the need for early discharges or the possibility of poor treatment efficiency. Use of a disinfectant in such circumstances is normally undertaken in response to the request of the Regional Environmental Director.
- The proponent indicated that the proposal did not discuss the Riverton wastewater treatment lagoon because the critical spring discharges of these facilities do not coincide.
- The draft Licence requires the proponent to participate in a nutrient reduction program if one is required for the Icelandic River.
- The draft Licence includes the minimum dyke elevation provided by Natural Resources to address the concern about flooding.

Historic Resources

- *No concerns.*

Rural Development

- *No concerns.*

Health

- *No comment.*

Environment-Operations Division

- *Monitoring of the stripping operation of the south side of the old berm, then the application and compaction of the clay liner on the berm that is to be the divider between the new south cell and the existing old cells should be undertaken.*
- *Sampling requirements for both secondary cells prior to discharge should be emphasized.*
- *The treated effluent is discharged almost directly into the Icelandic River. It would be beneficial to direct this effluent into a constructed wetland to reduce the ammonia level before it enters the watercourse.*

Disposition:

- It is not necessary for the common berm to meet the same hydraulic conductivity requirement as the perimeter berms in order to meet environmental requirements.

Proper keying of the new section of the liner to the existing perimeter dykes is an important design and construction consideration. The draft Licence sets out the requirements for the lining system and the post-construction soil testing requirements provides for random soil sampling and testing to confirm that the requirements have been met.

- Effluent sampling requirements are included in the draft Licence.
- The proponent was asked if consideration had been given to the use of a constructed wetland to reduce ammonia levels in the effluent before it enters the Icelandic River. The proponent indicated that there was no contemplation of adding a constructed wetland and the issue of un-ionized ammonia was addressed by means of deferring the previous mid-May discharge to mid-June. Previous discussions that the proponent had with Fisheries and regional environmental operations personnel indicated that this addressed their concerns

Environment-Water Quality Management

- *The proposal indicates that the facility will be designed to accommodate the hydraulic loading from a population of 2070. It is unclear whether this figure is the present population being served or whether it is the 20-year projected population for the service area.*
- *The proposal provides few details about the conversion of the existing primary cell to a secondary cell. In particular, will the sludge sediment in the existing primary cell be removed as part of this conversion? If the sludge is not removed, will it affect the quality of the effluent in the new secondary cell? Is this a concern?*
- *The proposal suggests that because of the relatively large watershed, the discharges should not negatively impact the water quality of the river. It is not necessarily the size of the drainage area, but rather, the volume of water flowing through the drainage area that will have the greatest influence on countering the negative effects of the effluent discharge. Unfortunately, no flow data are presented in the proposal to support the proponent's contention that impacts will be negligible.*
- *The proposal indicates that the maximum discharge from the Arborg lagoon was 124,000 m³ over 10 days and the discharge from Riverton with a population of 600 was 9,000 m³ over 2 days. Why is there such a large difference in discharge volumes between the two communities.*
- *Will there be any impacts on the receiving waters as a result of the application of chlorine to deal with excessive coliform bacteria in the secondary effluent prior to discharge?*

Disposition:

- The equivalent design population of 2070 is representative of future expectations at the end of the 20 year design horizon.
- The proponent indicated that sludge removal is not contemplated at this time. The existing primary cell has been in operation for less than a decade. If effluent quality from the existing primary cell does not meet expectations, the three cells can be operated in series, with effluent being discharged only from the existing secondary cell, until remedial action is taken. As such, this matter poses no operation concern.
- The proponent has not provided flow data on the Icelandic River. The proposal is for an expansion of an existing wastewater treatment facility and any change in impact would be incremental. The Environmental Water Quality Management section has not indicated that water quality monitoring indicates that a impact problem currently exists. Proponents and local objectors appear to hold differing views on the impact on the Icelandic River. The draft Licence addresses effluent quality parameters. Ammonia reduction is addressed through the normal nitrification process in wastewater treatment lagoons combined with the allowable discharge period. The need for possible future nutrient reduction is also addressed in the draft Licence.
- With respect to effluent discharge volumes, the proponent indicated that they cannot address the causes for the limited volume of discharge from Riverton, since they have no interest in the situation of that incorporated Village. The volumes for Arborg are believed to be reasonably accurate. The proponent indicated that the effluent discharge volume for Riverton may reflect high seepage losses, since that facility was constructed prior to current requirements for effective containment.

Extraneous flows and infiltration in the Arborg collection system may also account for effluent discharge volumes. The draft Licence requires the proponent to develop and implement a phased sewer maintenance and repair program acceptable to the Director.

- The proponent indicated that application of chlorination is not contemplated except under exceptional circumstances, which require prior authorization by the Regional Director. These circumstances should not arise until long term future growth results in the design capacities being exceeded.

Canadian Environmental Assessment Agency

- *The application of the Canadian Environmental Assessment Act with respect to this proposal will not be required.*

PUBLIC HEARING:

A public hearing is not required.

RECOMMENDATION:

A Licence should be issued in accordance with the attached draft. Enforcement of the Licence should be assigned to the Approvals Branch until the soil testing has been completed.

PREPARED BY:

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