

SUMMARY OF COMMENTS/RECOMMENDATIONS

PROPONENT: Central Manitoba Resource Management
Limited

PROPOSAL NAME: Fairholm Colony Irrigation Project

CLASS OF DEVELOPMENT: Two

TYPE OF DEVELOPMENT: Water Development and Control

CLIENT FILE NO.: 4472.00

OVERVIEW:

The Proposal was received on August 23, 1999. It was dated August 11, 1999. The advertisement of the proposal was as follows:

“A Proposal has been filed by Central Manitoba Resource Management Ltd. (a holding company formed by Central Manitoba Irrigators Association Inc.) to irrigate up to 1230 hectares (3040 acres) of land owned by the Fairholm Colony in the rural municipalities of Portage la Prairie, South Norfolk and Grey. Water for the Development would be obtained from the Assiniboine River and delivered to the project area by buried pipeline. Of the land proposed for irrigation, a maximum of 410 hectares (1010 acres) would be irrigated annually, involving up to 833 cubic decametres (675 acre-feet) of water annually. It is proposed that the water supply works would be constructed to allow partial or full operation of the system for the summer of 2000.”

The Proposal was advertised in the Treherne Times on Monday, September 20, 1999 and the Portage Herald Leader on Tuesday, September 21, 1999. It was placed in the Main, Centennial, Eco-Network and Portage Plains Regional Library (Portage la Prairie) public registries. It was distributed to TAC members on September 14, 1999. The closing date for comments from members of the public and TAC members was October 14, 1999.

COMMENTS FROM THE PUBLIC:

No public comments were received.

COMMENTS FROM THE TECHNICAL ADVISORY COMMITTEE:

Manitoba Environment - Water Quality Management

There does not appear to be significant surface water quality concerns with this project since irrigation will be occurring in summer and irrigated water will likely readily penetrate the soil types described for this area. There are, however, four irrigation sites that appear to occur over natural intermittent drainage channels (Figures 1 and 2). There is potential for pesticides and fertilizers to be transported through these drainage routes either through precipitation events or a combination of irrigation and unexpected precipitation events. A buffer strip of vegetation (grasses) in and along the sides of the natural drain and extending into the field from the field outlet would be advantageous towards inhibiting fertilizer and pesticide residue movement off field.

Some specific notes as I went through the report.

Page 14 – It indicated that the Colony intends to utilize the irrigation system as a means of transporting manure slurry to the fields. The report notes that the pipes must be drained after this process and that surface ponding of liquid manure must be avoided. However, it does not provide any details of how this will be done.

Page 18 – Perhaps the license needs a clause that irrigation would be terminated at the onset of precipitation. The soils in this area were characterized as having low to medium water holding capacity and the water table is not very deep. Consequently, over application of water is very undesirable, especially in these types of soils where excess moisture and associated nutrients or chemical residues can migrate downward at a greater pace. Precipitation has been identified as the main factor affecting irrigation scheduling because it is unpredictable. I have seen irrigation systems in the Carberry/Brandon area operating during relatively heavy rainfall events and that is not what should happen in this area.

Page 23 – 25 – This is about the fourth irrigation project proposal that I have reviewed which has used the Manitoba Conservation (formerly Manitoba Environment) water sampling station data at Brandon (WQ0009) for assessing possible impacts of Assiniboine River water quality on irrigation projects in the vicinity of Portage la Prairie. I think it is more appropriate to use, or at least include in the assessment, data from two other sites at Treesbank (WQ0636) and the Portage la Prairie Impoundment Dam (WQ0014) that are closer to the proposals. The 18th Street Brandon location (WQ0009) is near the west end of Brandon and does not represent any possible effects from the city. There is also a long distance between Brandon and the proposed withdrawal site for this project in which a lot can happen. For instance, the Souris River enters the Assiniboine River between Brandon and Portage la Prairie.

Page 29 – I have concerns with the interpretation and comments made in this section. First, the second paragraph states that declining deep nitrate-N concentrations with depth generally indicates that nitrates are not leaching downward. This is a reasonable assumption but the soil types must be carefully considered. When the water table is so high and the soils tend to be coarser and sandier, the nitrate may be readily leaching into the water table and giving the impression that nitrates are not moving downward. Table 9 showed higher nitrate-N concentrations in the lower profile than the upper for test-hole #3

and #4 which indicated that nitrate has leached downward at some sites. Despite the explanations, which also appear reasonable, elevated nitrate-N concentrations above the drinking water guideline limit (10 mg/L) in monitoring wells and private wells (MW3, J. Mazurat, and the Fairholm Colony's wells) emphasizes the sensitivity of this area and that some contamination has occurred.

I'm not sure what the last sentence in paragraph 3 – "In addition the Manitoba Agriculture guidelines are for fall not spring" - is inferring. Although the Manitoba Environment regulation for soil nitrate-N limitations was developed for fields to which manure is applied at any time of the year and Manitoba Agriculture adopted these limitations as guidelines for fall applications, as a best management practice these values should be considered for any area and any time of the year. Several times throughout the report references have been made that best management practices would be employed and I expect whether it is regulated or not means staying within the bounds of recommended guidelines. Whether it comes from manure or commercial fertilizer or some other source, excessive nitrate-N levels in the soil is excessive nitrate-N. This was emphasized in the next paragraph when referring to elevated nitrate-N levels in TH1 and TH2 and it was stated " This risk was elevated in the spring of 1999 by the close proximity of the water table to the surface."

Page 34 – The second paragraph recommends a procedure to track soil salinity concerns and this should be included in the monitoring aspect of the license.

Page 39 – The discussion on this page just reinforces the requirement for intensive and proper management of any irrigation operation and the need to monitor any runoff from a tile drain system that may be installed to protect surface water quality. This should also be considered in the monitoring requirements if tile drains will be installed now or in the future.

Page 41 - fourth paragraph should be part of monitoring component in a licence.

Page 44 – suggested mitigation techniques during pad and bank access ramp seem appropriate.

Page 45 – Why would manure not be tested for total nitrogen and ammonia nitrogen? My understanding is that these are the two variables that have generally been used in calculating application rates.

Table 7 – What is the frequency for periodic deep nitrate testing or what criteria will be used to trigger such testing?

Table 4 – Footnote 5 – As previously mentioned in reviews of prior proposal reports prepared by KGS, I think the condensed definition in Category "C" on the Table 7 has lost the meaning from the Manitoba Surface Water Quality (MSWQ) objective description. My take on the MSWQ objectives description for Category "C" is "to ensure long term protection of permanent irrigation installations on coarse soils, up to 20 years protection for temporary irrigation installations on medium to fine soils, and only short term protection for medium to fine and fine textured soils."

Appendix A - Recommendations from the SPEI sheet should be followed if irrigation is undertaken. The SPEI sheet indicated the groundwater hazard is high, the water table is high, and there is a concern with potential for groundwater contamination. The SPEI sheet indicated that soil testing was done annually and this must continue. The operator or CMRML should also maintain these soil test records and have them available upon request.

Disposition:

These comments will be referred to the Proponent's consultants for information in the preparation of future proposals. Most of these comments can be addressed as licence conditions.

Manitoba Environment - Terrestrial Quality Management

The following needs clarification: The last sentence on page 28 that continues on page 29 states that "The Manitoba Environment Act has set nitrate limits ... at 90 lbs/ac within the top two feet in lighter soils such as loamy sands to sands on fields where manure is applied." Yet the last sentence of paragraph 2, page 29 states that "The majority of soils within the project area are loamy lacustrine deposits and therefore the Manitoba Environment Act limit of 140 lbs/ac was used." Based on the soil descriptions earlier in the report, it appears that the 90 lbs/ac guideline should be used.

I also disagree with the statement in sentence 1, paragraph 3 on page 29, that just because the total nitrate-N levels in the soil profiles were below the guideline that this indicates that nitrate is not accumulating in the soil profile. That reasoning would not be true in all cases. That can only be determined by successive analyses which show that the nitrate concentration is not increasing.

Disposition:

Additional information was requested to address these comments. The Proponent's consultants agreed with both of the points raised. Therefore, the limit for nitrate-N for manure application should be 90 lbs/ac. Also, it was agreed that the report should have stated that total nitrate-N levels are low, and not that they continue to be low.

Historic Resources Branch

No concerns.

Mines Branch

No concerns.

Community Economic Development

No concerns.

Highway Planning and Design

The Proponent should be familiar with the Department's requirement when working within right-of-way including: appropriate traffic control during the installations; installations through the road embankments should

be by boring, tunneling or jacking; all excavated areas should be restored to a condition similar and equal to that which existed previously; all pressurized water lines crossing the highway right-of-way should be sleeved, extending a minimum of 3 m beyond the edge of the shoulder or to the toe of the grade and side slope of the roadway, whichever is lesser; water line installations should be buried at least 2.5 m below ditch bottom. The proponent may be required to apply for a utility agreement through the Portage la Prairie Regional Office and should be prepared to submit detailed plans of their installations for review and approval. The departmental contact in this regard is the regional Technical Services Engineer.

Disposition:

These comments will be forwarded to the Proponent's consultant for information.

Resources Management Division The pump intake into the Assiniboine River is to be screened in accordance with DFO guidelines. Slope stabilization and erosion protection measures should be implemented at the pump installation site at NW 35-9-8W and impacts to the riparian area during construction and maintenance should be minimized. Fuel storage at this site should comply with fuel storage adjacent to water bodies. Setback requirements for the fields adjacent to the creek in E ½ 1-9-8W, SW 6-10-7W and SW 5-10-7W are required and should be adhered to. The tile drainage installation will require a Water Rights Licence. A comprehensive manure management plan should be provided. Native species should be planted in any disturbed or exposed site.

Disposition:

These comments can be addressed as licence conditions.

Canadian Environmental Assessment Agency An environmental assessment under The Canadian Environmental Assessment Act will be conducted by PFRA. Natural Resources Canada, Fisheries and Oceans and Environment Canada have offered to provide specialist advice in accordance with Section 12(3) of the Act.

Fisheries and Oceans The project is not likely to cause significant adverse effects on fish and fish habitat after the implementation of appropriate mitigation measures. The location of the pump site is on an outside bend of the Assiniboine River, and as such the potential for erosion around the access ramp and pump pad is high. As a result, site specific erosion prevention should be carefully planned. The following measures, if incorporated into the project, will ensure that any potentially adverse effects on fish and fish habitat will be mitigated:

1. No instream activities related to the construction of the pump access ramp should take place within the period of April 1 and June 15 of any year.
2. All banks of the Assiniboine River should be stabilized immediately after construction to prevent erosion and sedimentation. The access ramp should be constructed of clean material, large enough to withstand the erosive power of the Assiniboine River. The access ramp and

pump pad should be inspected annually. When required, maintenance should be performed immediately. 3. Pumping for irrigation is proposed for July and August. Although the initial pumping rate is for 6.1 m³/minute, the ultimate pumping rate will be 9.1 m³/minute. Therefore, screening requirements for protection of fish should meet the later rate. Since Northern Pike in the Assiniboine River have grown to 100 mm by this time of year, the intake screening should be designed to protect 100 mm anguilliform fish. Approach velocities should be less than 0.065 m/s. Final screen designs to meet the above objectives should be provided to DFO for review. Should pumping occur earlier in the season than proposed, please notify DFO, as fish screen may require modification to protect small fish. 4. Pumping should not occur below any minimum instream flow level once it has been established by Manitoba Conservation. The deposit of deleterious substances is prohibited under the Fisheries Act. 5. The handling of diesel fuel should follow procedures outlined in Annex 2 of the CMIA/CMRM Best Management Practices Manual, 1999.

Disposition:

These comments can be addressed as licence conditions.

PUBLIC HEARING:

No members of the public commenting on the Proposal requested a public hearing. Accordingly, a public hearing is not recommended.

RECOMMENDATION:

All comments received on the Proposal which require action can be addressed as licence conditions. (Other comments will be useful for information in the preparation of future proposals.) 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 the South-Central Region.

PREPARED BY:

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December 7, 1999

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