

SUMMARY OF COMMENTS/RECOMMENDATIONS

PROPONENT: Rural Municipality of Whitewater
PROPOSAL NAME: Minto Water Treatment Plant Upgrade

CLASS OF DEVELOPMENT: One
TYPE OF DEVELOPMENT: Waste Disposal - Water Treatment Plants
(Wastewater)

CLIENT FILE NO.: 5080.00

OVERVIEW:

The Proposal was received on December 20, 2004. It was dated December 13, 2004. The advertisement of the proposal was as follows:

“A Proposal has been filed by the Rural Municipality of Whitewater for the construction and operation of an upgraded water treatment system for the Village of Minto. The Village’s water source would be switched from surface water dugouts to wells in the Village, and a reverse osmosis water treatment system would be installed in the present water treatment plant building. Reject water from the reverse osmosis treatment system would be discharged to the southern of two present raw water holding ponds in SW 20-5-9W. Water from the holding pond would either be pumped into the northern pond and used for untreated agricultural water supply purposes, or discharged to an adjacent waterway that flows to the Souris River.”

(The location of the holding ponds was in error in the advertisement. The correct location is SW 20-5-19W.)

The Proposal was advertised in the Boissevain Recorder on Saturday, January 22, 2005. It was placed in the Main, Eco-Network, St. James-Assiniboia and Lakeland Regional Library (Killarney) public registries. The Proposal was distributed to TAC members on January 17, 2005. The closing date for comments from members of the public and TAC members was February 24, 2005.

COMMENTS FROM THE PUBLIC:

No public comments were received.

COMMENTS FROM THE TECHNICAL ADVISORY COMMITTEE:

Manitoba Conservation – Sustainable Resource Management

The concentrate water (backwash rinse water) from the reverse osmosis process will be very saline. The proposed plan is to dispose of the concentrate in the south pond. The water from the south pond will then be pumped to the north pond and then into a raw water storage tank, where it will be available to farmers for agricultural purposes. The proponent does not clearly demonstrate that the salinity of the pond water will remain acceptable for agricultural use over the expected operating life of the water treatment plant. The proponent also fails to show that natural overflow from the south or north ponds (which apparently occurs periodically) will not have a detrimental effect on the vegetation and land use along the drainage route.

There is no indication of the structural condition of the storage ponds. There should be a requirement for a description of the design and construction of the ponds with relevant as-constructed plans and an evaluation of the potential of leakage of water from these ponds to the surrounding environment.

There is no discussion of the potential environmental impact of the backwash water from the filtration system of the water treatment plant to the surrounding environment specifically the drainage system for the backwash water.

There is no indication how the water storage tanks will be maintained.

What steps would be taken to ensure surface runoff would not contaminate the well water?

It is recommended that the proponent implement appropriate erosion and sediment control measures during pipe installation until the site is stabilized. Also given the gradient of the discharge watercourse, the proponent should monitor the area at and downstream of the discharge outlet to ensure no erosion is occurring.

Disposition:

Additional information was requested to address most of these comments. The maintenance of the water storage tanks for agricultural water use is not within the scope of the project, and erosion and sediment control measures can be addressed through licence conditions.

Manitoba Water Stewardship – Water Quality Management

The proposal is not sufficient to fully evaluate the impacts of the proposed development. It is unclear how much wastewater will be piped to the southerly pond for disposal. No information was provided as to the quality and quantity of wastewater that will be flushed from the southerly pond in the spring and with high intensity rains. The proponent has not evaluated the environmental impact of the flushed wastewater on the receiving aquatic environment. The proposal also indicates that water from the south pond will be pumped

to the north pond and then onto the raw water storage tank for use by farmers. The volume of wastewater removed for agriculture should be considered when evaluating the impacts of flushing water from the southerly pond. The proponent should also consider if the quality of the water removed for agricultural purposes will be adequate for the intended application.

The Water Quality Management Section would appreciate the opportunity to review any relevant supplemental information provided as part of the assessment.

Disposition:

Additional information was requested to address these comments.

Historic Resources Branch

No concerns.

Highway Planning and Design Branch No major concerns, but a formal underground agreement will be required for the proposed waterline within provincial road right-of-way, including beneath Provincial Trunk Highway 10 and adjacent to the Minto access road (Provincial Road 646). An application has been made by the proponent in the past as a temporary installation (which expired October 1, 2004.) Contacts in the above regards are the Regional Technical Services Engineer and the Regional Planning Technologist, both in Brandon.

Disposition:

This information was forwarded to the Proponent. The Environmental Approvals Branch was subsequently notified by the Proponent and by Manitoba Transportation and Government Services that an agreement had been completed.

Community Planning Services Branch

Having reviewed the provided about the Environment Act Proposal submitted by the RM of Whitewater regarding the proposed upgrade the Minto water treatment plant, we can offer the following comments:

1. The RM of Whitewater does have an old Planning Scheme but that document does not apply to the land areas around the Village of Minto.
2. In 2004 the RM of Whitewater joined with three other rural municipalities all working towards the approval of a new Planning District which stretches east to west along PTH No.23, however, this group has not yet begun the process of preparing a development plan and zoning by-laws.
3. While the Provincial Land Use Policies do apply, there are no provisions in those regulations which would preclude this project from progressing to implementation.
4. The proposed project is essentially an upgrade to an existing water system which serves the 100 people living in the Village and a few farm families living nearby.
5. No land use concerns have been identified from our review of the information provided or from our knowledge of the community and its infrastructure.

6. While Minto is located in the outer reaches of the commuter watershed for the City of Brandon, there are no expectations of significant population growth over the next 5 years.

Soils and Crops Branch Soils in the area of the raw water dugouts consist predominantly of the Coatstone series, and include some soils of the Ryerson and Tilston series. These soils were formed over glacial till, and are generally clay loam at the surface (Soils of the Boissevain-Melita Area, Manitoba Soil Survey Report No. 20). The surrounding area is generally Class 2 for agricultural capability.

It appears that the intention of this proposal is to use water from the north raw water pond (collected from agricultural drainage) for agricultural purposes, while the south raw water pond will receive waste water from the reverse osmosis treatment. This water will remain in the south raw water pond and will be flushed out in spring and with high intensity rains. The water in the south raw water pond will not be used for any purpose.

Given the concentration of sodium expected to be present in the wastewater, it is unlikely that water in the south raw water pond would be suitable for agricultural purposes, and may not meet the irrigation quality guidelines. This is an area that is prone to salinity, and application of this water to agricultural land should not be permitted.

We would also like some information about the integrity of these raw water storage ponds. The average depth to water table on Coatstone soils is considered to be 5 feet. If the condition of the south raw water storage pond is poor, or construction is not sound, seepage of the treated water into the soil could have serious implications for surrounding agricultural land.

We have no concerns with this proposal from an agricultural perspective provided that the following conditions are met:

- 1) The water is sufficiently diluted when flushing occurs, or with rainfall to reduce any potential impacts on agricultural land along the drainage route.
- 2) Wastewater in the south raw water storage pond is not used for agricultural purposes or for application to land.
- 3) The structural integrity of the south raw water storage pond is sound, and that there is no seepage into surrounding soils.

Disposition:

Additional information was requested to address these comments.

Health – Medical Officer of Health (Assiniboine and Brandon RHAs)

1. The proposal indicates that an existing well will be activated and treated with a reverse osmosis treatment unit. Manitoba Regulations also require chlorination or other satisfactory disinfection. The design of the plant must be such that the treated water

meets the Canadian Drinking Water Guidelines and the Manitoba Water Supplies Regulation. It would also be advisable that the design meets the treatment requirements of new forthcoming provincial legislation.

2. Recommendations were made by the Drinking Water Officer in a January 24, 2005 letter to the CAO, RM of Whitewater. The design of the new water treatment plant should incorporate these recommendations.
3. Modifications are proposed to address the poor quality of the effluent wastewater, including incorporating a high water use charge. It is understood that this is necessary because of the poor quality of the groundwater source. It is assumed that alternate sources of groundwater have been explored and have been deemed unsatisfactory.
4. Will the old water treatment facility be decommissioned? If so, the license should include the way in which this will occur. If not, will there be backflow protection?

Disposition:

Items 1 and 2 can be addressed as licence conditions. Item 3 was addressed during the planning of the project, and additional information was requested to address item 4.

Canadian Environmental Assessment Agency Based on the material circulated, Western Economic Diversification (WD) has notified us that an environmental assessment (EA) under the Canadian Environmental Assessment Act (the Act) will be required with respect to the project. In addition, Fisheries and Oceans Canada (DFO) requires additional information to determine whether a Fisheries Act authorization will be required.

DFO has also indicated that the department wishes to participate in the provincial review pursuant to Clause 59 of the Canada-Manitoba Agreement on Environmental Assessment Cooperation. Since this project requires a multi-jurisdictional EA, CEAA will act as the Federal Environmental Assessment Coordinator (FEAC) representing the Canadian Environmental Assessment Agency and coordinating the federal participation during the EA review, which we understand will be led by Manitoba Conservation.

Please note that DFO, Health Canada and Environment Canada have indicated that they can offer specialist advice in regards to the project review.

ADDITIONAL INFORMATION: Additional information to address TAC comments was requested on March 17, 2005. A response dated March 22, 2005 from the Proponent's consultant addressing the effect of the discharge of concentrate water on the environment was received on March 29, 2005. The Proponent addressed the remaining items in the information request in a telephone call of March 22, 2005.

The questions and responses were as follows:

1. *Question:* A more detailed description should be provided of the way the existing ponds will be operated. In particular, will runoff continue to be directed into the

south pond to dilute the reject (concentrate) water? When the south pond discharges, is it due to the overtopping of the east dyke? If so, does the pond remain full to the elevation of the top of the dyke once water levels outside the dyke subside? For the north pond, is filling and emptying only by pumping, or does runoff water flow into the pond by gravity? Does the north pond overflow to the east?

Response: The south pond is located in a coulee, and is filled and flushed by water flowing through the coulee and overtopping the pond's dykes. The north pond is located above the coulee, and is filled by pumping from the south pond. It is emptied by pumping to the community's water supply system. The ponds are approximately 15 – 18 feet deep, and are estimated to provide a three year supply for agricultural use.

Commentary: This information indicates that water in the south pond is frequently flushed by spring runoff, and that the Proponent has complete control over water in the north pond. Accordingly, the north pond could be filled from the south pond, as now occurs, or it could be filled directly from the coulee if water quality in the south pond was inadequate for agricultural purposes. In addition, since the ponds would no longer be supplying water for the community, the north pond could supply untreated water for agricultural purposes for a greater period of time than at present if insufficient runoff occurred to refill the pond. This suggests that the proposed operation of the ponds could provide a volume and quality of water in the north pond that was suitable for non potable agricultural use.

2. *Question:* The reject water from the proposed water treatment plant is expected to have approximately three times the concentration of constituents such as sodium, chloride and total dissolved solids as the raw water. An assessment should be undertaken of expected concentrations of undesirable parameters such as these in the south and north ponds if the system is operated as proposed. This assessment should include an estimate of the quality and quantity of water discharged from the ponds to the receiving stream during high flow periods, and the effect of this discharge on aquatic life and vegetation in the receiving stream. Expected water quality in the north pond should be compared to guidelines for agricultural use to ensure that the water will be suitable for this intended use.

Response: The attached response from Bullee Consulting Ltd. was provided.

Commentary: The response indicates that runoff past the ponds may be in the order of 640 acre-feet per year, and the Proposal indicates that the volume of concentrate is approximately 2.3 acre-feet per year. Further, the volume of the south pond is estimated in the Proposal to be 16.5 acre-feet. Although the dilution of the concentrate each year would depend on the volume of raw water previously remaining in the pond and the volume of runoff overflowing the pond, it is probable that substantial dilution would be provided in any year with runoff sufficient to overtop the dykes of the south pond.

3. *Question:* Information is needed on the condition of the existing ponds. As constructed drawings for the ponds should be provided if available. Information on the date and conditions of their construction would be useful. It should be verified through a careful inspection that leakage from the ponds does not occur. It may be necessary to confirm the integrity of the dykes through a drilling program if leakage is apparent.

Response: Both ponds were constructed approximately 25 years ago. The north pond, excavated on higher ground, is well maintained. The south pond, constructed in the bottom of the coulee, is less maintained and has steeper dykes. The dykes of both ponds are well vegetated. Leakage is not apparent from either pond and both are used for raw water supply for the existing water treatment system. The north pond would leak to the south pond or the coulee. The south pond would leak to the coulee. As the parcel containing the ponds is isolated from adjacent agricultural land by roads and the coulee, it is unlikely that leakage from either pond could affect agricultural land.

Commentary: Given that the ponds are relatively recent, have not leaked noticeably in their current use and are effectively contained by roads and the coulee, it may be concluded that their construction is adequate for the proposed future use.

4. *Question:* A description should be provided of measures to ensure that surface water does not contaminate the existing and proposed supply wells. This should include mounding at the wellheads, the use of proper well caps, and proper sealing of the annulus between the drilled holes and the well casings.

Response: It is agreed that the measures listed will be incorporated in the project. The existing well was installed by a qualified well driller.

Commentary: Standard wellhead protection measures will be adequate to protect the well from surface contamination.

5. *Question:* A description should be provided of the steps involved in decommissioning the existing water treatment system.

Response: The existing filters will be removed from the water treatment plant building, and the building will be used to house the new treatment system. Piping changes to accommodate the concentrate disposal line and the separate untreated agricultural water supply system will be as shown on the plan attached to the Proposal.

Commentary: The proposed treatment system upgrades involve the replacement of modular components. Accordingly, the response provides sufficient information.

PUBLIC HEARING:

As no public concerns were identified, a public hearing is not recommended.

RECOMMENDATION:

Comments received on the Proposal have been addressed in the additional information, or can be addressed through licence conditions. 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 Western Region.

PREPARED BY:

Bruce Webb, P. Eng.

Environmental Approvals - Environmental Land Use Approvals

March 17, 2005 Updated April 13, 2005

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