SUMMARY OF COMMENTS / RECOMMENDATIONS

PROPONENT:	**R.M. of Dauphin**
PROPOSAL NAME:	**Industrial Wastewater Treatment Facility**
CLASS OF DEVELOPMENT:	**Class 2**
TYPE OF DEVELOPMENT:	**Wastewater Treatment Facility – Waste/Scrap**
CLIENT FILE NO.:	**5172.0**

OVERVIEW:

On January 31, 2006, MB Conservation received an Environment Act Stage 1 Proposal, dated January 16, 2006, from the R.M. of Dauphin, respecting the proposed construction of an industrial wastewater treatment facility (I-WWTF) to treat the pretreated wastewater from a beef slaughtering and processing facility which was proposed, at the same time, by Ranchers Choice Beef Co-op Ltd. The Proposal also includes the construction of : a wastewater pumping station to be located near Ranchers Choice beef processing facility, a 4.95 km long underground forcemain connecting the pump station to the I-WWTF, a gravity outfall line from the I-WWTF towards the Vermilion River (with provisions for the separate monitoring of the effluent quality before the effluent is merged with the City of Dauphin's municipal wastewater treatment facility's effluent to form a common discharge point via the existing single outfall into the Vermilion River), and the construction of two sludge holding cells.

With regards to the R.M. of Dauphin proposing to accept the pretreated wastewater from the Ranchers Choice beef processing plant for further treatment in the R.M. of Dauphin's proposed I-WWTF, that arrangement has since been formalized on June 21, 2006, through an Industrial Services Agreement signed by both parties.

The R.M. of Dauphin proposes to construct the I-WWTF on land owned by the R.M. of Dauphin, located on the southern portion of the north ½ of SEC. 23, Twp 25, Rge. 19 WPM., within the R.M. of Dauphin, and zoned as an Industrial Park.

The Proposal was advertised in the Winnipeg Free Press on March 4, 2006, as well as in the Dauphin Herald on March 7, 2006 Also, copies of the Proposal were placed in Public Registries at: the Union Station (Main Floor) in Winnipeg; the Winnipeg Public Library; Manitoba Eco-Network; and the Dauphin Public Library. The closing date for the receipt of public comments was specified as April 11, 2006.

Copies of the Proposal were as well sent to the applicable members of the interdepartmental Technical Advisory Committee, and to interested federal departments, via the Canadian Environmental Assessment Agency (CEAA), for their review and comment by no later than April 11, 2006. The CEAA subsequently requested, on behalf of Environment Canada and the Department of Fisheries and Oceans, to have the response period extended to April 25/06. That request was granted.

By virtue of funding assistance having been sought by the Proponent from the federal government, and in turn pledged by the Western Economic Diversification, this Proposal was

automatically triggered for a full review under the CEAA, and by the CEAA, while at the same time having to be processed under the Environment Act for an Environment Act Stage 1 construction Licence. Prior to the filing of the Proposal for a Stage 1 construction Licence, the Proponent and Ranchers Choice Beef Co-op held 2 open house meetings in the City of Dauphin on September 27 and November 1, 2005, to explain the project and to answer questions and concerns from the public.

COMMENTS FROM THE PUBLIC:

Only one comment was received, namely from Mr. Gordon McPhee, who commented that, as an adjacent landowner, he was disappointed that he was not consulted on his concerns. He also expressed concern about the location of the proposed settling ponds and argued that they would need to be moved so as not to interfere with the local surface drainage system. At issue, in his opinion, is the potential for local flooding. He also offered several suggestions to address the potential problem.

Disposition

- The comments were forwarded to the Proponent who in turn replied that more than one attempt was made to contact all the residents within a 3 km distance of the proposed I-WWTF plant. Also two advertised open houses were held in the City of Dauphin. Mr. McPhee was not directly contacted at that time because he did not occupy a dwelling within the 3 km radius from the site of the proposed I-WWTF.
- Proper and adequate surface drainage is provided for in the construction contract, and would be implemented under the supervision of a professional Engineer.
- Leaching from the sludge holding ponds would be addressed by hydraulic conductivity requirements that are expected to be placed into the Stage 1 construction Licence.
- The issue of the setback distances from the MTS line will be determined through the finalization of the design process.

COMMENTS FROM THE TECHNICAL ADVISORY COMMITTEE:

Agriculture, Food and Rural Initiatives commented that they support the proposed Development.

Manitoba Transportation and Government Services (MTGS) commented that:

- permits for the Development would be required from their Department for any changes to the access and any construction or placement of structures on, under or above the ground within the highway right-of-way or the control area adjacent to Provincial Road 362, within 125 feet from the edge of the Provincial Road 362 right-of-way;
- permits are required from the Highway Traffic Board for any changes to the access or placement of any structures on, under or above the ground within highway right-of-way or the control area adjacent to Provincial Road 362 within 125 feet from the edge of Provincial Road 362 right-of-way;
- permits are required from the Highway Traffic Board for any changes to the access or placement of any structures on, under or above the ground within highway right-of-way or the control area adjacent to Provincial Trunk Highway (PTH) 20 within 125 feet from the edge of PTH 20 right-of-way;

- detailed design drawings should be forwarded to MTGS for review when they are available;
- construction difficulties may be encountered in the PTH 20 west ditch where soils are saturated due to seepage from the existing wastewater lagoon, such that boring may be a consideration in this area;
- During the construction phase the proponent must provide appropriate traffic control for access to the highways (as per their Departmental Traffic Control Guidelines, and to approach their department for additional safety advice.

  Disposition

  The Proponent responded that the required permits will be obtained, the required drawings will be submitted, and consideration will be given to utilizing boring techniques along the PTH 20 west ditch. Also appropriate traffic control will be provided.

Historical Resource Branch commented that they had no concerns.

Sustainable Resource Management Branch commented that they had no concerns.

MB Conservation – Western Region commented that:
- pages 6-15 thru 6-17 of the proposal report were missing;
- they agree with the suggestions offered in Section 9.2.1 to deal with numerous uncertainties associated w.r.t. the potential effects of the effluent upon the receiving waterway relative to the Manitoba Water Quality Standards, Objectives and Guidelines (MWQSOG);
- two sources of effluent from different proponents via a shared discharge pipe may pose enforcement difficulties;
- a biosolids management plan is proposed to developed over the first two years, whereas it should be included in the (Stage 2) Proposal to ensure that odour and process upsets are captured by a contingency plan;
- additional information is required on the qualifications of operators for the I-WWTF, as well as on monitoring and reporting protocol between Ranchers Choice and the R.M. of Dauphin particularly w.r.t. issues of process upsets that require joint action; and
- they have concerns with the proposal of using a cell of the City of Dauphin's municipal wastewater treatment facility until the R.M. of Dauphin's I-WWTF can be commissioned.

  Disposition:

  The Proponent provided the missing pages and responded:
  - aquatic impact issues are being addressed in response to their similar concerns;
  - facilities will be provided for monitoring the I-WWTF's effluent before it reaches the common outfall;
  - a biosolids management plan specific to the design of the I-WWTF will be part of the Stage 2 application;
  - the proponent has no objection for a requirement to produce a facility operational plan for the I-WWTF as a licence requirement;
  - the proponent acknowledges the constraints of the existing municipal wastewater treatment facility and any plan for using any available temporary storage would require consultation with MB Conservation.

Water Stewardship commented that:

- The existence of any public water system in the vicinity of the proposed project area, and any surface water licences issued downstream of the discharge point were not mentioned.

  Disposition:

  The proponent responded that outside of the City's water supply network 35 registered wells exist for domestic use, but they exist in a region where a usable aquifer is not considered to exist. There are no known public water supply systems in the vicinity of the project area, and there are licensed withdrawals and 3 applications for water withdrawal from the Vermilion River, at locations upstream of upstream of the proposed I-WWTF.

- In Section 2.7 it is mentioned that there are 69 registered wells, including test and production wells. It is unclear whether the consultant collected any baseline water quality data.

  Disposition:

  The proponent commented "no", however, as part of the Stage 2 Proposal, a groundwater monitoring program on respective sites around the I-WWTF and also Ranchers Choice beef processing plant will be formulated.

- Section 4.10 identified some methods of effluent monitoring, but how coliforms, fecal coliforms and E. coli will be monitored could not be found. Also the process diagram suggests no storage after UV application. Therefore it is unclear how the bacteriological integrity of the effluent will be maintained.

  Disposition:

  The proponent responded that:
  - coliform monitoring will be conducted in a method appropriate to the final design of the I-WWTF and in accordance with the requirements of the license; and
  - storage following UV application is not typically required.

- No description was provided to identify the location of the City of Dauphins' water supply intake wells respecting the Vermilion River and Edwards Creek Reservoirs relative to the location of the proposed I-WWTF and the possible impacts of the I-WWTF on the water supply systems.

  Disposition:

  The proponent responded that:
  - the reservoir for the City of Dauphin Water Treatment Plant exists near the northern limit of the Riding Mountain National Park about 18 km south of the site, including a river distance of just over 50 km; and
  - a major historic leak in the water supply system (equivalent to Ranchers' plant's water demand) was repaired such that impacts on the water supply system are considered negligible.

- There are information gaps in the aquatic assessment report relative to the release of heated effluent in the winter, the rate of cooling and the potential for thermal shocks on fish (if in fact fish overwinter in this area of the river. It is also stated that under extreme river flow and extreme effluent quality conditions, the dissolved oxygen conditions may not be adequate to protect aquatic life.

  Disposition:

  The Proponent responded:
  - the risk of thermal shock is reduced by the capability of the equalization basin in that it is designed to accommodate scheduled and emergency shutdowns at the processing plant such as to provide a consistent flow to the I-WWTF;

- given the uncertainty related to winter fish usage of the Vermilion River in the region of the outfall, the proponents are willing to develop and conduct a fisheries study in the area as part of the construction and operation of the projects in order to fill the information gaps.

- The assessment of the potential impact of the I-WWTF on the aquatic environment suffers from a general lack of data, resulting in a number of uncertainties. A proposal should be submitted by the proponent for acquiring additional aquatic information and developing a water quality model for review by the Water Quality Management Section.

  Disposition:

  - The proponent responded that the proponents have no objection to the implementing the recommendation as a requirement of a Stage 1 and Stage 2 Licence, with interim reporting provided on an annual basis until completion of the studies;
  - the additional data that could be collected through a river monitoring program would be used to augment information in water quality model, and also provide empirical data provide empirical data to describe effects to dissolved oxygen.

- The impact of the temperature of the proposed effluent on aquatic life in the Vermilion River was not assessed by the proponent.

  Disposition:

  - The proponent responded that the maximum end-of-pipe effluent temperature would be 7.3°C which is marginally above the MWAT of 4°C which is intended to be applied to the fully mixed condition in the river; and
  - given the high flow conditions in spring, and the magnitude of difference between the ambient (range of 0.5-14.5°C for the month of April) and the end-of-pipe effluent temperature(i.e.7.3-14.3°C) the effluent is not expected to create a thermal plume of the size or magnitude that would affect the reproductive condition of fish.

The Consultant's comments were referred to Water Stewardship who in turn responded that:

- they acknowledge and concur with the points made by the Consultant but stressed that they remain with the concern that the Vermilion River watercourse does not currently have sufficient in-stream flows to sustain the aquatic ecosystem;
- Whereas the City of Dauphin holds a Water Rights Licence that allocates enough water for current and future needs, the Minister of Water Stewardship now has the responsibility to consider in-stream flows that are necessary to ensure that aquatic ecosystems are protected and maintained. The in-stream flow needs for fish habitat protection also falls within the jurisdiction of the federal Fisheries Act. In that regard the City of Dauphin can manage its water withdrawals between Edwards Creek and Vermilion River reservoirs in a manner that minimizes the impact on in-stream flows. Further, the positive effect on flow volume of the I-WWTF discharges to a reach of river downstream of the reservoir is noted, but in the long term, the Intermountain Conservation District, in partnership with the R.M. and City of Dauphin and the Department of Water Stewardship, should develop an integrated watershed management plan that includes identification of water demand management initiatives and alternative sources for a sustainable water supply for the City of Dauphin. As part of this work, the CD and the City of Dauphin , together with the Province, should carry out an assessment of the in-stream flows that are necessary to maintain aquatic ecosystem health in the Vermilion River and Edwards Creek watershed.

- Regarding water quality, the current effluent from Dauphin's sewage lagoons has been and continues be a concern from a fisheries perspective.
- Monitoring the water quality of the Vermilion River upstream and downstream of the combined effluent discharge outfall is critical.
- As to thermal effects within the Vermilion River, the proponent should conduct one or more thermal plume delineation studies, and have temperature monitoring stations installed upstream and downstream of the outfall.

Provincial Fisheries (Western Region) commented that:

- there have been fish kills in the Vermilion River caused by the effluent from the City of Dauphin's municipal wastewater treatment facility. The EAP indicates that the ammonia concentrations in Ranchers wastewater discharge will be high during low flows in the river. The combined effects from both sources will probably lead to an increased frequency of fish kills.
- Figures 20 and 21 of the EAP indicate zero dissolved oxygen in the Vermilion River for a distance of about 20 km below the point of discharge in March. This would be very close to the mouth of the Vermilion River at Dauphin Lake where fish would be staging for the spawning run. The slug of deoxygenated water could potentially cause a fish kill of large proportions to the pre spawn adults at the mouth of the river.
- The water quality monitoring station on the Vermilion River is upstream of the City's lagoon discharge point. Water quality monitoring should be done downstream of the discharge point to provide a data set to better predict the impacts from the combined discharges on the Vermilion River.

Disposition:

The Consultant responded that:

-The concentration of ammonia in Ranchers' treated effluent is expected to be 2 mg/L with a maximum of 5 mg/L occurring for short periods of time. As indicated on page 40, these concentrations are below the Manitoba water quality objectives for ammonia for the protection of aquatic life, and therefore would not cause a fish kill even if discharged under zero river flows.

-Figures 20 and 21 present the results of dissolved oxygen (DO) modeling runs for 1Q10 and 7Q10 flows for the month of March. These simulations were conducted to represent the worst case scenario whereby the river discharge would be comprised of effluent. The modeling simulations indicate that adequate DO concentrations are expected under all scenarios evaluated, with the exception of March should 100% ice cover occur.

-Water quality monitoring would be conducted downstream of the discharge point as part of the proposed river monitoring study as part of the Stage 1 and Stage 2 Licences.

Canadian Environmental Assessment Agency (CEAA) coordinated federal responses to Ranchers Choice Proposal, and received comments from Health, Environment Canada and DFO. However, because the I-WWTF was triggered under the Canadian Environmental Assessment Act, their screening process also prompted their own comments:

- The scope of the assessment as set out in the Environmental Impact Assessment (EIA) did not include the environmental effects of the operation of the facility.

Disposition:

The proponent responded that the Proposal was submitted under the first (construction) stage of the provincial staged licensing framework. An assessment of the operational effects will be submitted with the Stage 2 submission.

- The information provided does not contain the level of information that would usually be provided. Also an "experience review" of similar type wastewater treatment systems in similar climate zones should be provided.

  Disposition:

  The consultant provided a functional design report and indicated that the proponent will be using a design-build process such that the constructed plant may not be exactly similar to the provided functional design.

- There is no assessment of the facility operation on air quality, odour and cumulative effects on the local air quality.

  Disposition:

  The proponent advised that since the design is currently under development through s design build competition, it could not be provided in the Stage 1 submission, but will be presented in the Stage 2 submission.

- No information was provided on volumes and characteristics of the biosolids. High levels of aluminum are expected in the effluent if alum is used for nutrient removal. Potential effects, mitigation and significance of the effects all need to be evaluated.

  Disposition:

  The proponent responded that the information depends upon the treatment process chosen through the design-build competition that is under way. The requested information will be described in the Stage 2 submission.

- The projected effluent quality is shown only in the appended aquatics report with no indication of source or how it was derived. It also differs from the effluent limits stated in Table 4.6 of the EIA. In formation on the final effluent quality will be required for all parameters.

  Disposition:

  The proponent responded that the effluent quality parameters were based on the experience of the authors of the of the functional design report. The design-build bidders will provide details on the projected effluent quality and their basis for determination.

- Effluent quality prediction, assessment and mitigation all need to be reported together with any excursions from effluent quality limits that may occur during start-up and commissioning of the I-WWTF. Assurances are needed that partially treated wastewater will not be released to the Vermilion River during the commissioning phase of the I-WWTF.

  Disposition:

  The proponent responded that these details and assurances specific to the selected design will be provided as part of the Stage 2 submission.

- Predictions, assessment and mitigation all need to be reported, as well as any excursions from effluent quality limits that may occur during start-up and commissioning of the plant. Assurances are needed that partially or untreated wastewater will not be released to the Vermilion River during this phase of the development.

  Disposition:

The proponent responded that these details and assurances specific to the selected design will be provided as part of the Stage 2 submission to MB Conservation for the I-WWTF.

- There is no indication of other water uses or users downstream of the proposed site. An assessment of potential effects of the project on other water uses in the system is required. (Other uses could include domestic or livestock water supply, irrigation, and/or recreation. It should not be restricted to just reporting on possession of water rights.

Disposition:

The proponent responded that while there are no licensed users downstream, informal knowledge indicates that rural residents may water gardens from the river, use it for boat launching, and also for watering livestock. There are no known instances of use as a domestic water supply aside from the City of Dauphin.

Transport Canada commented that any deviation in the intended directional drilling under the Vermilion River relative to the *Navigable Waters Protection Program Pipeline Crossing Guidelines* would require the Proponent to contact the Navigable Waters Protection Program for approval.

Disposition:

The Proponent responded that the drilling program will be undertaken in accordance with the supplied guidelines, and that should it not prove practical, Transport Canada would be consulted.

Health Canada commented that:

- the criteria used to define Magnitude of Effect is not recommended. The severity of effect , rather than the percentage of population affected, is preferred;
- respecting Table 6.8 for magnitude of effect, the effect after mitigation was not addressed;

Disposition:

The proponent responded that alternative methods to measure severity will be addressed in the Stage 2 Proposal.

Environment Canada commented that:

- whereas the Proposal indicates that the I-WWTF was designed with expansion in mind to accommodate other industries within the Industrial Park, the I-WWTF may not be designed to accommodate all types of effluent.

Disposition:

The proponent responded that it is understood that any significant additions or changes to the I-WWTF will require an alteration request to MB Conservation, which will include an assessment of the potential effects.

- Whereas the proposed forcemain will be routed beneath the Vermilion River within casing pipes, it may be necessary to implement a leak detection and monitoring program.

Disposition:

The proponent responded that if a leak detection program is required, the proponent will conduct one or design that portion of the system to provide the ability to detect leaks.

Fisheries and Oceans commented that:

- The N/S Consultants Report states "during some low flow periods, the Vermilion River is dry", which would mean that effluent discharged from the I-WWTF would effectively become the river flow, which creates several problems:
- the release of 14°C water in the winter and 23°C water in the summer will result in a HADD (harmful alteration, disruption or destruction of fish habitat) in the Vermilion River downstream of the I-WWTF outfall;
- the release of warm effluent that constitutes the majority of flow during late winter and early spring, may result in advancement or abandonment of the spawning period, either of which may result in partial or complete year class failure in the river;
- the potential lack of any mixing zone during these low flows may result in a HADD;
- the potential for a completed aquatic ecosystem upset in the lower Vermilion River may change species assemblages.

Disposition:

The proponent responded that:

- the identified estimated winter and summer effluent temperatures of 14°C and 23°C temperatures related to end-of pipe I-WWTF, whereas winter and summer estimated temperatures at the end-of-pipe at the Vermilion River, following a cooling along the buried discharge to the Vermilion are estimated to be a maximum of 7.3°C and 14.3°C respectively; and that these temperatures are within the range experienced in the river during open water months and is not expected to have a significant affect on local fish populations;
- whereas a zero flow upstream in the vermilion River would mean that no mixing zone would be available, the effluent would still meet discharge standards which should not be acutely lethal to aquatic life, as per the requirements of the MWQSOG, except that if nitrate concentrations are demonstrated to pose significant effects to the aquatic ecosystem, measures can and will be taken to further minimize the nitrate concentrations.

PUBLIC HEARING:

The advertisement of the Proposal did not solicit a request for a public hearing.

RECOMMENDATION:

A draft Stage 1 Environment Act Licence, authorizing the construction of the I-WWTF, the pumping station, the forcemain and the outfall line towards the Vermilion River is attached for the consideration of the Director of Environmental Assessment and Licensing. It is recommended that the Licence, if approved, be assigned to Environmental Assessment and Licensing for administration, surveillance, monitoring, ongoing compliance evaluation and enforcement responsibilities during the entire period of the construction phase.

Due to the nature of this project, particularly with respect to the proposed future transfer of pretreated wastewater from Ranchers Choice to the R.M. of Dauphin's proposed I-WWTF, whereby it has been proposed to release the treated wastewater to the Vermilion River, the limited assimilative capacity that the river has to offer, and the potential threat to the fisheries that can develop under low in-stream flow conditions, as well as under winter conditions, it may be prudent to express a cautionary note in the Stage 1 Licence to the effect that in accepting the Stage 1 construction Licence, the R.M. of Dauphin must also accept the potential prospect that under future operating conditions, and in order for the R.M. of Dauphin to remain in compliance

with the conditions of their operating Licence, the R.M. of Dauphin may at times, through provisions in their Industrial Services Agreement, require Ranchers Choice Beef Co-op Ltd. to curtail operations at the beef processing plant, until the in-stream flow needs and/or the R.M. of Dauphin's I-WWTF's effluent quality performance, is again suitable for sustaining the fish within the Vermilion River. Conversely, alternative improved treatment might be required to provide an assured consistent and improved effluent quality. This potential prospect may be less troublesome once the integrated watershed management plan, and the recommended studies on the Vermilion River's in-steam flow needs for sustaining the fish habitat are adequately addressed as per the recommendations of the Department of Water Stewardship and also the Department of Fisheries and Oceans.

PREPARED BY:

Clemens Moche, P.Eng.
Environmental Engineer
Municipal, Industrial and Hazardous Waste Approvals Section
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telephone: (204) 945-7013
fax: (204) 945-5229
e-mail: cmoche@gov.mb.ca