

SUMMARY OF COMMENTS/RECOMMENDATIONS

PROPONENT: City of Brandon
PROPOSAL NAME: City of Brandon Centralized Wastewater Treatment Facility
CLASS OF DEVELOPMENT: 2
TYPE OF DEVELOPMENT: Wastewater Treatment and Storage
CLIENT FILE NO.: 5510.00

OVERVIEW:

On January 21, 2011, the Department received a Proposal from AECOM on behalf of the City of Brandon for alterations to its existing wastewater treatment facilities as a final phase of a series of consecutive upgrades. The Municipal Wastewater Treatment Facility consists of a sewage treatment plant located at NW 17-10-18WPM and will be converted to a pre-treatment facility. The Industrial Wastewater Treatment Facility, located on parts of Section 16-10-18WPM, will be upgraded to a Centralized Wastewater Treatment Facility, and a wastewater treatment lagoon system located in Sections 21 and 22-10-18WPM will remain in operation. The treated wastewater from the Centralized Wastewater Treatment Facility will be discharged to the Assiniboine River through an existing outfall pipe and a proposed additional outfall pipe.

The Department, on March 21, 2011, placed copies of the Proposal in the Public Registries located at 123 Main St. (Union Station), the Millennium Library, the Manitoba Eco-Network and the Western Manitoba Regional Library. Copies of the Proposal were also provided to the Technical Advisory Committee (TAC) members. The Department placed a public notification of the Proposal in the Brandon Sun on Saturday, March 26, 2011. The newspaper and TAC notification invited responses until April 25, 2011.

COMMENTS FROM THE PUBLIC:

No responses were received from the public notification.

COMMENTS FROM THE TECHNICAL ADVISORY COMMITTEE:

Agriculture, Food and Rural Initiatives

- *No comments received.*

Conservation – Wildlife and Ecosystem Protection Branch

- *No concerns.*

Conservation – Parks and Natural Areas Branch

- *No comments to offer.*

Conservation - Sustainable Resource & Policy Management

- *No concerns.*

Conservation - Pollution Prevention Branch

- *No comments or concerns.*

Science, Technology, Energy and Mines – Mines Branch

- *No concerns.*

Culture, Heritage and Tourism - Historic Resources

- *No comments received.*

Water Stewardship

- *Before an Environment Act Licence is approved for this proposed development, Manitoba Water Stewardship needs to consult with Manitoba Conservation's Environmental Assessment and Licensing Branch to ensure that the limits for ammonia for this proposed development are correct. Note: The proposal indicates that the facility will be designed to reduce ammonia to below 5 mg/L. Typically facilities with a 15 mg/L total nitrogen limit are readily able to meet even the most stringent ammonia limits. However, the proponent has estimated ammonia limits (both load and concentration) in the preliminary design report (page 20). It appears that the calculations used to generate these proposed limits may contain a few errors. Also, the spreadsheet and method used to calculate these limits differs slightly from more recent calculations for large dischargers.*
- *The proposal does not provide adequate information on the potential impacts of biosolids application and indicates that biosolids will continue to be applied as in the existing Environment Act Licences. However, biosolids generation will change in that wastewater from Pfizer will now be included in the centralized facility where previously all biosolids from Pfizer were isolated in cell 4.*
- *Manitoba Water Stewardship requires the proponent to provide detailed information on the expected characteristics of the biosolids generated through the central facility and to describe the lands on which the biosolids would be applied.*
- *The proponent is required to provide information on the wastewater characteristics and on the expected impact to effluent and biosolids. Note: The proposed development plans to introduce wastewater from Pfizer into the effluent and biosolids generated through the City of Brandon and Maple Leaf Meats. However, the proposal does not provide information on the wastewater characteristics from Pfizer, with the exception of traditional parameters such as BOD, nutrients, and bacteria. Manitoba Water Stewardship is concerned because Pfizer generates endocrine disrupting substances as part of their operation.*
- *The proposal indicates that the final outfall design will be reviewed by the Department of Fisheries and Oceans Canada. Manitoba Water Stewardship requests to be informed of the final outfall design decision and recommendations.*
- *Manitoba Water Stewardship prefers work to occur outside of spring and summer timing windows.*

- *The Executive Summary of the proposal states that “the presently proposed Phase III upgrade to a Centralized Wastewater Treatment Facility represents the latest example of the City’s commitment of satisfying the intent of the 2003 Manitoba Clean Environment Commission hearings through the ongoing improvement of their environmental stewardship.” In 2003, the Manitoba Clean Environment Commission made the following recommendation (#6 of 13) in a Report on Public Hearings:*
 - *Within 12 months of receiving Environment Act Licences, both Maple Leaf Foods and the City of Brandon should be required to complete water audits of their respective hog processing and industrial wastewater treatment facilities and targets for reducing water use.”*
 - *Were these water audits and water conservation plans completed by both Maple Leaf Foods and the City of Brandon?*
- *The Licencee shall develop a draft monitoring program for endocrine disrupting compounds in effluent and biosolids based on the characteristics of the Pfizer and Maple Leaf Meats wastewater and the research available in the literature on the endocrine disrupting substances generated through these two types of industry.*
- *The Licencee shall actively participate in any future watershed based management study, plan/or nutrient reduction program, approved by the Director, Water Science and Management Branch, Manitoba Water Stewardship.*
- *The Licencee is required to conduct an assessment to determine whether mussels are located within the immediate receiving environment of the proposed outfall area, this assessment needs to include an estimate of whether acceptable dilution levels are achieved. Note: The proposal does not appear to contain any site specific investigations of the area of the proposed outfall area. The proposal does indicate that “the outfall location does not appear to include any rare or unique habitat features or habitat”. The proposal indicates that the substrate in the area is cobble embedded with fines but there is not an indication of a survey/sampling for fish and mussels within the proposed outfall area.*
- *All mitigation measures identified in the proposal need to be reflected as clauses within a licence.*
- *In Section 9.3 of the proposal, the following statement is found: “It is assumed that Manitoba Water Stewardship and Manitoba Conservation consider the cumulative effects of projects when granting water rights or Environment Act Licences within the Province”. This statement suggests that the proponent’s consultant is not sure how these issues are accounted for on the river. The proponent can find a brief introduction on how these issues were addressed on page 41 of the 2003 Manitoba Clean Environment Commission hearings report.*

Proponent’s Response (June 15, 2011):

- The existing Environment Act Licences (2351 S2 and 2747 RR) currently regulate the discharge of ammonia from the municipal and industrial wastewater treatment plants taking into consideration the prevailing flow in the Assiniboine River. The Environment Act Licence effluent ammonia limits are based on Manitoba Conservation’s ammonia nitrogen mass balance model. The proposed project will continue to achieve the ammonia limits predicted by the model under prevailing Assiniboine River flows.

- Section 2.3.6 of the proponent's submission refers to the April 2008 NOA submission where information on the biosolids characteristics for the proposed Centralized Wastewater Facility (CWWTF) was provided to Manitoba Conservation in support of the request for alteration to the City of Brandon's Sludge Management Program at the Industrial and Municipal Wastewater Treatment Facilities. The April 2008 document included a supporting study, "Land Application of City of Brandon Biosolids, March 2008", that confirmed the sustainability of land application as a method of biosolids management. The document included the expected characteristics of the biosolids from the CWWTF and described the lands on which the biosolids would be applied. The request for Notice of Alteration was granted as a minor alteration on August 29, 2008. No revisions to Environment Act Licences 2485 (Municipal Biosolids Licence) and 2506 (Industrial Biosolids Licence) were made by Manitoba Conservation's Environmental Assessment and Licensing Branch upon approval of the alteration.
- The treatment of Pfizer wastewater is proposed to remain the licensed responsibility of the City of Brandon as it has for many years. Presently Pfizer wastewater is treated via aeration in the City of Brandon lagoon and discharged to the Assiniboine River. The proposed alteration will result in the treatment of Pfizer's wastewater in a pretreatment system (currently the City's Municipal Wastewater Treatment Facility) prior to membrane treatment in the CWWTF and discharge to the Assiniboine River. The proposed CWWTF treated effluent will be inclusive of numerous municipal and industrial sources. As noted later in this response, the City of Brandon is willing to develop a draft monitoring program that would include endocrine disrupting substances as part of the sampling regime.
- The proponent has no objections to the Department of Fisheries and Oceans Canada sharing information with Manitoba Water Stewardship. It is expected that this would be facilitated by regulators as necessary. With respect to the timing windows, it is anticipated that the appropriate working window will be determined in cooperation with regulators once the discharge design is finalized.
- Although the water audits were a recommendation of the Clean Environment Commission, they were not made an Environment Act Licence condition for the City of Brandon. The City of Brandon's Industrial Wastewater Treatment Facility's water consumption is limited to employee facilities (lunch room, washrooms) and a laboratory facility (sinks), and as such, is not considered a major consumer of water.
- The proponent already undertakes monitoring for pharmaceutical components related to hog processing as part of Licence 2747 RR and they have no objection to the development of a practical and representative draft monitoring program for the CWWTF effluent and biosolids based on proven research in the literature.

However, it must be recognized that many (potentially all) of the constituents generated by these two industries may already be present in municipal effluent and biosolids and the enumeration of the respective constituents may not result in information that will serve to affect the operation of the proposed project. Accordingly, the proponent feels that the requested draft endocrine disrupting compound monitoring program should be a shared responsibility approached on the provincial level (if not higher) and that such a monitoring program needs to be coordinated by regulators to ensure consistent and scientifically defensible data collection.

The City of Brandon expects that the requirement for such a program would be in line with other similar and operating facilities under Manitoba's jurisdiction. Furthermore, given the historic operation of similar facilities in Manitoba, it is anticipated that Manitoba Water Stewardship will facilitate the efficiency of such an undertaking by providing examples of what Manitoba Water Stewardship is seeking in this regard.

- The proponent has no objection to the practical and fair application of this clause and has demonstrated support for such endeavours through work undertaken in the last several years on the Assiniboine River.
- The proposed project utilizes the existing discharge that was licensed as part of the original Industrial Wastewater Treatment Facility construction in 1998 as well as a new discharge located adjacent to the existing discharge. As part of the Licensing process for the original discharge, extensive study of water quality and biota was conducted to characterize the aquatic environment in the vicinity of the discharge location and other points in the Assiniboine River. The studies included mixing zone studies and hydraulic analyses with related sampling. The information was reviewed as part of the CWWTF environmental assessment and limited observations of the outfall area were undertaken in 2010 to confirm the aquatic habitat under present conditions. The observations were undertaken by an aquatic biologist and the location did not appear to include rare or unique habitat features. Accordingly, additional survey/sampling for aquatic life in the existing/proposed discharge area was not undertaken as it appeared that conditions were not markedly different from when the existing outfall was originally licensed or when the previous aquatic studies were undertaken.
- The City of Brandon currently conducts acute lethality monitoring on treated effluent as part of its ongoing licence requirements. The tests are conducted on effluent only (not inclusive of dilution in the mixing zone) and they are reported to Manitoba Conservation. The tests indicate non-acutely lethal conditions are typically met by the Industrial Wastewater Treatment Facility. In addition, the City of Brandon manages their discharges (municipal, lagoons, and industrial) to the Assiniboine River to ensure that only 75% of the ammonia assimilative capacity of the river is utilized. This strategy allows the City (and Koch, the other primary discharger in the City) to maintain protection of the river in a flexible and sustainable manner. The proposed project will increase the City's ability to control their discharge to the river and continue to ensure that adequate dilution levels are maintained for protection of the river. Accordingly, the need to assess dilution levels or conduct additional aquatic surveys is not supported by the proponent.
- However, the City of Brandon realizes that certain species, such as the Mapleleaf Mussel, have been recommended in recent past by the Committee on the Status of Wildlife in Canada (COSEWIC) to be protected under the federal Species At Risk Act and these may not have been specifically included in previous surveys. The proponent would support limited surveys in the vicinity of the outfall area to identify potential mussels beds and develop appropriate mitigation measures if required.
- The proponent expects the odour nuisance clause in their existing Environment Act Licences will be included in a new Environment Act Licence for the CWWTF.
- The proponent will comply with conditions specified in a new Environment Act Licence for the CWWTF.

- The proponent will continue to monitor effluent quality to ensure Environment Act Licence limits are met.
- The proponent will continue to report and appropriately dispose of all hazardous wastes as applicable.
- A groundwater monitoring program has been conducted at the Maple Leaf Foods and City of Brandon Industrial Wastewater Treatment Plant sites (future CWWTF) on an at least annual basis since 1998. The objective of the monitoring program is to identify potential impacts to groundwater due to the operation of the pork processing and wastewater treatment facility. The monitoring program is used to identify potential seepage from the system and can also be used to identify potential impact to soils. The proponent expects that groundwater monitoring will continue as part of the requirements of a new Environment Act Licence.
- The proposed infrastructure (pipelines and treatment tanks) for the project will be designed in accordance with applicable engineering standards for wastewater treatment. Treatment tanks will be hydraulically tested prior to operation whereas pipelines will either be pressure tested or televised prior to operation depending on the type of pipeline. The design and construction of the proposed infrastructure as well as the groundwater monitoring program will mitigate potential groundwater impacts.
- The City of Brandon prohibits the disposal of a variety of substances in the municipal sewage system as well as their land drainage system through their Water and Wastewater Control By-Law No. 5957/114/91. The By-Law prohibits the discharge to any land drainage sewer within the City of any polluted waters except where suitable preliminary treatment has been approved in accordance with the By-Law. The By-Law also prohibits the discharge of specific substances to the sewage system including: gasoline, benzene, crude oil, cinders, toxic substances and radioactive substances. The By-Law will continue to be used to prevent the disposal of prohibited substances to the land drainage and sewage system.
- Access to the existing Industrial Wastewater Treatment Facility (future CWWTF), Municipal Wastewater Treatment Facility and Municipal Lagoons is controlled by fencing and gates. No change to public access to these sites is anticipated.
- The proponent has previously submitted to Manitoba Conservation an Emergency Response Plan for the Industrial Wastewater Treatment Facility and will update the Emergency Response Plan as required for the CWWTF. Once the plan is revised, the proponent will provide the revised Emergency Response Plan to Manitoba Conservation's Environmental Assessment and Licensing Branch for circulation to appropriate provincial authorities.
- The proponent will coordinate underground agreements for the crossing of PTH 110 and Victoria Avenue with MIT.
- The proponent will coordinate with MIT and Manitoba Hydro for the proposed crossing at PTH 110 and Victoria Avenue.

Water Stewardship Response (August 3, 2001):

- *The proposed centralized wastewater treatment facility will impact biosolids production – both in terms of volume and quality. Manitoba Water Stewardship has reviewed the current licence governing biosolids application to land – which was issued prior to the enactment of the Nutrient Management Regulation – and the 2008 Notice of Alteration report and would suggest the following:*

- *Clause 9.g. of current licence states that: “The Licencee shall ensure that biosolids are not applied onto any land less than 5 metres from the mapped boundary of a soil series consisting of:*
 - *The Arizona soil series; and*
 - *Any other soil series, or combination of soil series and conditions, determined by the Licencee, or by the Director, to be unsuitable for the application of biosolids;”*
- *Since the Nutrient Management Regulation also prohibits application of biosolids to land classified as Zone N4, Manitoba Water Stewardship would suggest revising this to read:*
 - *The Licencee shall ensure that biosolids are not applied onto any land less than 5 metres from and within the mapped boundary of a soil series consisting of:*
 - *The Arizona soil series;*
 - *Any soil designated as being Nutrient Management Zone N4 (Section 3(1) of the Nutrient Management Regulation);*
 - *Any other soil series, or combination of soil series and conditions, determined by the Licencee, or by the Director, to be unsuitable for the application of biosolids;”*
- *Clause 14.b. currently states: “The Licencee shall ensure that: the amount of plant available nitrogen added to the land from all sources does not exceed 100 kg per hectare during any year in which biosolids were applied.”*

This wording is problematic in that this does not account for pre-application soil nitrogen levels and the producer is not allowed to apply nitrogen above this 100 kg/ha even if the crop can use it.

Manitoba Water Stewardship notes that in the 2008 notice of alteration, the proponent requested an alteration to remove this nitrogen based restriction and replace it with the residual nitrate-nitrogen limits as described in the Nutrient Management Regulation. This seems logical based on the Nutrient Management Regulation. However, compliance must now be based on residual nitrogen and phosphorus soil test levels and a soil testing program requirement must be included in the licence to monitor these residual levels.

Therefore, Manitoba Water Stewardship recommends modifying the monitoring requirements for the biosolids licence to require post harvest sampling of each field for residual nitrate-nitrogen in the 0-24 inch soil depth and Olsen-P phosphorus in the 0-6 inch soil depth for each of three years following biosolids application. The post harvesting soil testing should be included as part of the annual report required each year as part of clause 24 in the two biosolids licences.

Nutrient availability from biosolids is highly variable and information on soil residuals would indicate the effect/bioavailability of the biosolids phosphorus and nitrogen added to a field and allow the proponent to adjust future application rates accordingly. As the property of cropping is going to be different in each field, the proponent is requested to soil test every application field separately. If the limits are exceeded, it would activate restrictions on fertilizer application for the producer and may require the filing of a nutrient management plan.

Manitoba Water Stewardship would appreciate an opportunity to review the biosolids reports submitted each year to ensure compliance with the Nutrient Management Regulation.

- *Manitoba Water Stewardship is concerned that the additional chemicals (metal salts) applied during wastewater treatment will negatively impact the availability of nutrients, in particular, phosphorus, in the biosolids applied to land. Manitoba's Water Quality Standards, Objectives and Guidelines requires best practical technology for the beneficial use of valuable resources such as nutrients, organic matter and energy contained within municipal biosolids and sludge. Manitoba Water Stewardship acknowledges that the proponent has chosen to apply biosolids to land and that this is a preferred approach for beneficial reuse of nutrients. However, the information collected above regarding soil residual nutrients will aid in a longer term assessment of nutrient availability after chemical application.*
- *Manitoba Water Stewardship remains concerned regarding the potential impacts of the Pfizer wastewater and its integration with the other waste streams. While Manitoba Water Stewardship recognizes the positive synergies associated with combining these wastewaters, the Department is uncomfortable with the lack of information of the Pfizer raw influent. To assess the impact of the centralized facility on the environment, Manitoba Water Stewardship again requests information on the characteristics of the Pfizer wastewater, in particular concentrations of emerging contaminants that may not be present in the other waste streams. While the proponent has provided information on traditional parameters such as BOD, nutrients and bacteria, information on other possible contaminants is required.*
- *The proponent suggests that "it must be recognized that many (potentially all) of the constituents generated by these two industries may already be present in municipal effluent and biosolids". And yet no information was provided on endocrine disrupters that may be present in the effluent and biosolids from the expanded facility. While the provincial government does conduct high level, province-wide water quality monitoring for substances such as endocrine disrupters, it is the responsibility of the proponent to develop and conduct a monitoring program for substances that could impact the aquatic environment and downstream communities and to conduct appropriate mitigation. Therefore, Manitoba Water Stewardship suggest that the licence for this facility include a requirement for the development of a monitoring program for endocrine disrupting compounds in effluent and biosolids based on the characteristics of the Pfizer and Maple Leaf Meats wastewater and the research available in the literature on the endocrine disrupting substances generated through these two types of industry. Manitoba Water Stewardship would be pleased to review and provide comment on the draft monitoring program to ensure consistent and scientifically defensible data collection.*

Proponent's Response (November 8, 2011):

- With respect to the appropriate biosolids application zone, the City of Brandon has no concerns with respect to the suggested change as the land inventory that was developed by the City in 2008 did not include any Zone N4 lands and sufficient land was identified to sustainably utilize the biosolids resource generated at the proposed CWWTF. With respect to the biosolids quality and the pre- and post-application monitoring requirements suggested, the City of Brandon has no objections to these measures and we feel that the resulting data will further support the report provided in the 2008 sludge management alteration request.
- With respect to characterization of the Pfizer influent, the City of Brandon would support inclusion of Pfizer influent monitoring in the draft monitoring program to be developed in

coordination with Manitoba Conservation. Similarly, recognizing that endocrine disrupter monitoring is an emerging issue, the City of Brandon would support the requirement to develop the draft monitoring program that would be inclusive of industry-appropriate EDC's as part of the sampling regime and be consistent with the requirements of other similar facilities in Manitoba. The City of Brandon believes that the emerging nature of EDC characterization is worthy of further study and would expect the monitoring program to be developed using a cooperative approach with Manitoba Conservation (and other regulators as required).

Disposition:

- The proposed ammonia limits in the draft Licence have been reviewed by Manitoba Water Stewardship.
- The City of Brandon Biosolids Licence has not been revised at this time. All comments regarding biosolids management from Manitoba Water Stewardship will be considered when the City of Brandon biosolids Licence is revised.
- A requirement for an endocrine disrupting compound monitoring program is included in the draft Licence.

Infrastructure and Transportation

- *The MIT Regional Office will require that the City of Brandon obtain an underground agreement with MIT for the force main where it crosses under PTH 110 & Victoria Avenue. When the City is ready to undertake the work, they can contact Ashley Beck at 204-726-7000 to obtain the required underground agreement.*
- *The Region would recommend that the City of Brandon contact Manitoba Hydro regarding the proposed force main alignment where it crosses PTH 110 & Victoria Avenue. The reason for this is that Manitoba Hydro has recently consulted with MIT regarding the Canexus Load Addition project which will require an underground line to be placed at PTH 110 & Victoria Avenue. Therefore, the potential for these two underground utilities to be in close proximity or even possibly on a similar alignment exists.*

Proponent's Response (June 15, 2011):

- The proponent will coordinate underground agreements for the crossing of PTH 1120 and Victoria Avenue with MIT.
- The proponent will coordinate with MIT and Manitoba Hydro for the proposed crossing at PTH 110 and Victoria Avenue.

Disposition:

No further comments were received from Manitoba Infrastructure and Transportation. This was assumed to indicate that the original concerns submitted were satisfied.

Manitoba Health

- *Please ensure:*
 - *Odour control and monitoring*
 - *Air emission criteria will be met, including greenhouse gas emissions*
 - *Any discharge of effluent is in compliance with Manitoba Environment's guidelines*
 - *Ongoing reporting and appropriate disposal of all hazardous wastes*
 - *Leachate, soil and groundwater monitoring*
 - *Containment design provides the best possible groundwater protection for the area*
 - *Prevention of pollutant or contaminated wastewaters from entering sewage disposal and municipal ditch systems*
 - *Fencing, gates and warning signs included to ensure public safety, in case of unsupervised public access to the development*
 - *Noise level concerns addressed*
 - *Availability for review of an emergency response plan.*

Intergovernmental Affairs

- *No comments received.*

Canadian Environmental Assessment Agency

- *Following a review by all federal departments with a potential interest in the proposed development, CEAA is not able to determine if an environmental assessment of the project under the Act will be necessary.*

PUBLIC HEARING:

A public hearing was not requested by the public and is not recommended for this Development.

CROWN-ABORIGINAL CONSULTATION:

The Government of Manitoba recognizes it has a duty to consult in a meaningful way with First Nations, Métis communities and other Aboriginal communities when any proposed provincial law, regulation, decision or action may infringe upon or adversely affect the exercise of a treaty or Aboriginal right of that First Nation, Métis community or other Aboriginal community.

The City of Brandon Centralized Wastewater Treatment Facility consists of existing developments that will be upgraded and utilized in such a manner as to increase the quality of wastewater effluent discharged to the Assiniboine River. Therefore, the project would not create land use changes or affect resource use on First Nation land.

Since resource use is not affected by the project, it is concluded that Crown-Aboriginal consultation is not required for the project.

RECOMMENDATION:

The Proponent should be issued a Licence for the construction and operation of the centralized wastewater treatment facility, wastewater collection system and wastewater treatment lagoon system in accordance with the specifications, terms and conditions of the attached draft Licence. Enforcement of the Licence should be assigned to the Environmental Assessment and Licensing Branch until the Development has been completed and commissioned.

PREPARED BY:

Jennifer Winsor, P.Eng.
Environmental Engineer
Municipal, Industrial and Hazardous Waste Section

December 2, 2011
Telephone: (204) 945-7012
Fax: (204) 945-5229
E-mail Address: Jennifer.Winsor@gov.mb.ca