

SUMMARY OF COMMENTS/RECOMMENDATIONS

PROPONENT: Sturgeon Creek Holding Co. Ltd.
PROPOSAL NAME: Meadow View Colony Farms Wastewater Treatment Lagoon
CLASS OF DEVELOPMENT: 2
TYPE OF DEVELOPMENT: Wastewater Treatment Lagoon – Waste/Scrap
CLIENT FILE NO.: 5576.00

OVERVIEW:

On March 15, 2012 the Department received a Proposal from GENIVAR on behalf of Sturgeon Creek Holding Co. Ltd. for the construction and operation of a new wastewater treatment lagoon located in the southwest quarter of Section 34-11-1 WPM in the Rural Municipality of Rosser, to serve the Meadow View Colony Farms. The proposed development will consist of the construction of a new primary cell and a new secondary cell. Treated effluent from the wastewater treatment lagoon will be trickle discharged between June 15th and November 1st of any year into a drainage ditch, which runs into an existing field drain. The field drain connects with an existing road drain, leading to Fourth Creek, an existing second order drain. Fourth Creek drains into Sturgeon Creek which eventually empties into the Assiniboine River.

On April 23, 2012 Manitoba Conservation and Water Stewardship placed copies of the Proposal in the Public Registries located at 123 Main St. (Union Station), the Winnipeg Millennium Public Library, the Manitoba Eco-Network, and the R.M. of Rosser Municipal Office. Copies of the Proposal were also provided to the Canadian Environmental Assessment Agency (CEEA) and the Technical Advisory Committee (TAC) members. The Department placed public notification of the Proposal in the Winnipeg Free Press on Saturday, April 28, 2012. The newspaper and TAC notifications invited responses until May 28, 2012.

On June 4, 2012, Manitoba Conservation and Water Stewardship forwarded requests for additional information from the TAC to the proponent's consultant. On June 14, 2012, the consultant submitted responses to the comments and requests from the TAC.

On June 25, 2012, the consultant's responses were distributed to the participating TAC for review and comment. On July 16, 2012, Manitoba Conservation and Water stewardship received comments on consultant's responses from the TAC.

On July 23, 2012, Manitoba Conservation and Water Stewardship forwarded comments on consultant's responses from the TAC to the consultant. On August 8, 2012, Manitoba Conservation and Water Stewardship received responses from the consultant.

On August 09, 2012, Manitoba Conservation and Water Stewardship forwarded consultant's responses to the participating TAC.

All additional information necessary for the review was placed in the Public Registries

COMMENTS FROM THE PUBLIC:

No comments were received from the public.

COMMENTS FROM THE TECHNICAL ADVISORY COMMITTEE (TAC):

Manitoba Conservation and Water Stewardship – Parks and Natural Areas Branch (May 24, 2012)

- *No concerns*

Manitoba Conservation and Water Stewardship – Environmental Compliance and Enforcement Branch (May 15, 2012)

- *No concerns*

Manitoba Infrastructure and Transportation – Highway Planning and Design Branch-Environment Section (May 8, 2012)

- *No concerns*

Manitoba Conservation – Wildlife & Ecosystem Protection Branch (April 19, 2012)

- *No concerns*

Manitoba Conservation - Sustainable Resource and Policy Management Branch and the Land Branch (May 25, 2012)

- *No concerns*

Manitoba Conservation and Water Stewardship – Air Quality Section - Environmental Programs and Strategies Branch (May 22, 2012)

- *No concerns*

Manitoba Innovation, Energy and Mines - Energy Division

- *No concerns*

Manitoba Local Government - Community and Regional Planning

- *No concerns*

Manitoba Conservation and Water Stewardship – Water Quality Management Section (May 24, 2012)

- *The following effluent standards should be in place for Meadow View Colony Farms new wastewater lagoon as per the Manitoba Water Quality Standards, Objectives and Guidelines Regulation (196/2011).*
 - *BOD₅ 25 mg/L*
 - *TSS 25 mg/L*
 - *Fecal Coliforms 200 MPN / 100mL*
 - *TP 1 mg/L or required nutrient reduction strategy (see below)*
- *The Manitoba Water Quality Standards, Objectives and Guidelines Regulation requires new or expanding wastewater treatment facilities to meet a 1 mg/L phosphorus limit or implement a nutrient reduction strategy. If trickle discharge is proposed as a nutrient reduction strategy, the proponent must demonstrate*

how this strategy will reduce phosphorus loads equivalent to implementing a 1 mg/L phosphorus limit. This additional information is required before trickle discharge can be approved as a nutrient reduction strategy.

- *As per the supplemental guidelines for preparing an Environment Act proposal application (http://www.gov.mb.ca/conservation/eal/pubs/info_eap_wwtl.pdf), the proponent should consider at minimum the following options for nutrient reduction to the receiving waterway:
 - a) *effluent irrigation / land application;*
 - b) *alternative lagoon design, operation and storage capacity including employing trickle discharge and vegetation harvesting;*
 - c) *engineered/constructed wetlands; and**

The proponent should consider and discuss each option as part of the Environment Act proposal.

- *The Water Quality Management Section is concerned with any discharges that have the potential to impact the aquatic environment and/or restrict present and future uses of the water. Therefore it is recommended that the license require the proponent to actively participate in any future watershed based management study, plan/or nutrient reduction program, approved by the Director.*

Manitoba Conservation and Water Stewardship – Planning and Coordination Branch (May 29, 2012)

- *The Water Stewardship Division requires an Environment Act Licence to include the following:*
 - *The Licencee must achieve the following effluent standards, as required by the Manitoba Water Quality Standards, Objectives and Guidelines Regulation under The Water Protection Act:*
 - *5-Day Biochemical Oxygen Demand \leq 25 mg/L;*
 - *Total Suspended Solids \leq 25 mg/L;*
 - *Fecal Coliforms \leq 200 MPN / 100mL; and,*
 - *Total Phosphorus \leq 1 mg/L or implement a nutrient reduction strategy. If trickle discharge is proposed as a nutrient reduction strategy, the Licencee must demonstrate how this strategy will reduce phosphorus loads equivalent to implementing a 1 mg/L phosphorus limit. This additional information is required before trickle discharge can be approved as a nutrient reduction strategy.*
 - *The Licencee shall actively participate in any future watershed based management study, plan/or nutrient reduction program, approved by the Director.*

- *Note: The Water Stewardship Division is concerned with any discharges that have the potential to impact the aquatic environment and/or restrict present and future uses of the water.*
- *The Water Stewardship Division requests the proponent to provide a response to the following options for the proposed development's Environment Act proposal:*
 - *a) effluent irrigation / land application;*
 - *b) alternative lagoon design, operation and storage capacity including employing trickle discharge and vegetation harvesting; and,*
 - *c) engineered/constructed wetlands.*
- *The Water Stewardship Division submits the following concern:*
 - *The discharge route does include waterbodies that either contribute to or directly support small-bodied and large-bodied fish species.*
- *The Water Stewardship Division submits the following comments:*
 - *The Water Stewardship Division does not object to the approval of this proposal, at this time.*
 - *The proponent needs to be informed of the following for information purposes:*
 - *Erosion and sediment control measures should be implemented until all of the sites have stabilized.*
 - *The Water Rights Act requires a person to obtain a valid licence to control water or construct, establish or maintain any "water control works." "Water control works" are defined as any dyke, dam, surface or subsurface drain, drainage, improved natural waterway, canal, tunnel, bridge, culvert borehole or contrivance for carrying or conducting water, that temporarily or permanently alters or may alter the flow or level of water, including but not limited to water in a water body, by any means, including drainage, OR changes or may change the location or direction of flow of water, including but not limited to water in a water body, by any means, including drainage. If a proposal advocates any of the aforementioned activities, a person is required to submit an application for a Water Rights Licence to Construct Water Control Works. A contact person is Mr. Perry Stonehouse, P.Eng., Manager, Water Control Works and Drainage Licensing, Manitoba Conservation and Water Stewardship, 1129 Queens Avenue, Brandon, Manitoba R7A 1L9, telephone: (204) 726-6764.*

- With the construction of a new lagoon facility sized to treat the design loadings, the treated effluent should be well within the BOD₅, TSS, fecal coliform as will be required in a new Environment Act Licence and as per the requirements of the Water Quality Standards, Objectives and Guidelines Regulation under The Water Protection Act (2011). The Meadow View Colony Farms will implement a nutrient reduction strategy consisting of trickle discharge. The estimated maximum Meadow View Colony Farms population is 150 and thus the proposed Meadow View Colony Farms lagoon may be considered as a small wastewater treatment facility. The distance of the route from the discharge point of the proposed lagoon to the Assiniboine River is approximately 30 kilometres. A trickle discharge extending from two to four weeks will allow the vegetation and the soil in the bottom of the discharge ditch and the field drain to absorb nutrients and reduce nutrient loads to surface waters. Treated effluent will be discharged from the isolated secondary cell if wastewater effluent quality meets licence requirements and at a rate that optimizes the opportunity for nutrients in the effluent to be assimilated in the discharge route prior to reaching the second order drain while not challenging the normal operation of the wastewater treatment lagoon.
- Any party involved in a future watershed based management study, plan/or nutrient reduction program for the area are welcome to contact Sturgeon Creek Holding Co. Ltd.
- Land application has been an ongoing problem for other Colonies in the last few years. Successive years of high precipitation made it impractical and harmful for Colonies to add yet more moisture to land already saturated with natural rainfall. Therefore, a nutrient reduction strategy consisting of trickle discharge has been proposed for the new Meadow View Colony Farms facility.
- Hydraulic loading refers to the volume of wastewater directed to the lagoon. Lagoons are presently designed for a 227-day storage period beginning November 1st and ending June 15th of the following year. Hydraulic loading over the 227-day storage period is used to calculate the volume of storage required in the Meadow View Colony Farms lagoon facility.

A water consumption of 275 Lpcd has been assessed to the Colony population. Conservatively, water consumption is assumed to equal wastewater generation and therefore 275 Lpcd is the design wastewater generation for the Colony. Infiltration into the existing sewer system is considered to be negligible. The Meadow View Colony Farms population of 150 will generate wastewater requiring an active storage capacity of approximately $(275 \text{ L/c/d/} \times 150 \text{ people} \times 227 \text{ d} =) 9,363,750 \text{ L}$ or $9,364 \text{ m}^3$ for a period of 227 days. The proposed lagoon is designed to provide storage capacity of $10,380 \text{ m}^3$ or 10% higher. Having extra storage capacity will allow the Colony to implement a trickle discharge extending from two to four weeks while not challenging the normal operation of the wastewater treatment lagoon.

The maximum single discharge into a discharge ditch from the proposed lagoon will be the storage volume of the secondary cell, or $8,430 \text{ m}^3$. Treated effluent will be discharged from

the isolated secondary cell at a rate that optimizes the opportunity for nutrients in the effluent to be assimilated in the discharge route prior to reaching the second order drain.

Vegetation harvesting will be implemented along the discharge ditch on Colony land to promote nutrient uptake.

- Construction of an engineered / constructed wetland could be an alternative nutrient reduction strategy for the Colony if trickle discharge and vegetation harvesting is not reducing the nutrient levels in the discharge ditch.
- In order to protect any potential fish in the critical springtime spawning season, when effluent un-ionized ammonia tends to be high, the lagoon has been designed to the 227-day storage period. The lagoon will discharge after June 15th which will allow for significant conversion of toxic un-ionized ammonia into relatively benign nitrates.

Further comments from Manitoba Conservation and Water Stewardship – Water Quality Management Section (July 16, 2012)

- *The Manitoba Water Quality Standards, Objectives and Guidelines Regulation requires new or expanding wastewater treatment facilities to meet a 1 mg/L phosphorus limit or implement a nutrient reduction strategy. If trickle discharge is proposed as a nutrient reduction strategy, the proponent must demonstrate how this strategy will reduce phosphorus loads equivalent to implementing a 1 mg/L phosphorus limit. This additional information is required before trickle discharge can be approved as a nutrient reduction strategy.*
 - *In the Proponent's Proposal and subsequent response letter of June 14, 2012, the Proponent indicates increased storage capacity, trickle discharge of two (2) to four (4) weeks, vegetation harvesting along the discharge ditch on Colony land, and a total discharge of 30 kilometers.*
 - *Can the Proponent provide details of the vegetation harvesting that are proposed in order to promote nutrient uptake? Frequency, method, disposal of vegetation, and composting. The vegetation should be removed from the drainage ditch to prevent a re-release of nutrients into the ditch.*

Proponent's Response (August 8, 2012)

- The Colony has control of the land for the initial 1,050 metres of drainage ditch. The grass cover will be mowed in July (after the lagoon discharge) and baled to be used as livestock feed. This will be done after the ditch has dried up completely and the equipment can get in. In some cases, a second cut of grass is made in late September. This would be prior to a fall discharge. The main ditches, like Sturgeon Creek, are mowed and the hay removed by

farmers who contract with Water Stewardship for the hay. They cut down to the bottom of the ditch if it is dry or as close to the water as practical when the ditch is not dry.

Disposition:

- After receiving the additional information from the proponent, no further comments were received from Water Quality Management Section.

COMMENTS FROM FEDERAL REPRESENTATION:

Canadian Environmental Assessment Agency (CEEA) (March 21, 2012)

- *Project information provided was distributed to all federal departments with a potential interest. Based on the responses to the survey the application of the Canadian Environmental Assessment Act (the Act) by a federal authority will not be required for this project.*
- *Health Canada (HC) has indicated it is not a responsible Authority (RA) for the project. However, it could contribute expert knowledge in the area of human health to an RA if requested. The contact person for HC is Rick Grabowecky. He can be reached by email: Rick.Grabowecky~hc-sc.pc.ca.*
- *The Department of Fisheries and Oceans (DFO) has reviewed the project information and determined it is not an RA for the project. DFO can contribute its expertise in the area of fish and fish habitat to an RA if requested. The contact person for DFO is Richard Janusz. He can be reached by email: Richard.ianusz@dfo-mpo.pc.ca.*
- *Environment Canada (EC) has also reviewed the project information and determined it is not an RA for the project. However, EC could provide expert advice related to its mandate to an RA if requested. The contact person for EC is Meghan Thomson. She can be reached by phone at (204) 984-3316. EC would like to be informed of the provincial review process.*

PUBLIC HEARING:

- A public hearing is not recommended because no comments were received from the public.

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.

There is no aboriginal community nearby the lagoon and would be no infringement of aboriginal or treaty rights under Section 35 of the Constitution Act, 1982. Therefore, 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 wastewater treatment lagoon in accordance with the specifications, limits, terms and conditions of the attached draft Licence. Enforcement of the Licence should be assigned to the Environmental Approvals Branch until the liner testing has been completed and the Development is commissioned.

PREPARED BY:

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