

SUMMARY OF COMMENTS/RECOMMENDATIONS

PROPONENT: Glenway Holding Co. Ltd.
PROPOSAL NAME: Glenway Holding Co. Ltd. – Domestic Wastewater Treatment Lagoon Expansion
CLASS OF DEVELOPMENT: 2
TYPE OF DEVELOPMENT: Wastewater Treatment Lagoons
CLIENT FILE NO.: 5634.00

OVERVIEW:

Manitoba Sustainable Development received an Environment Act Proposal on February 1, 2013 for the licensing, expansion and operation of an existing domestic wastewater treatment lagoon located on Section 2-3-3 EPM in the Municipality of Emerson-Franklin, to serve the Glenway Colony. The proposed development will consist of an existing primary cell, converting the existing secondary cell into a primary cell, and construction of 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 swale constructed in the adjacent agricultural land. The effluent will flow in this swale to the north and approximately 436 meters before it reaches the Roseau River.

The Department, on March 15, 2013, placed copies of the Proposal in the Public Registries located at Legislative Library (200 Vaughan Street), the Winnipeg Millennium Public Library, Manitoba Eco Network, Rural Municipality of Franklin and online at <http://www.gov.mb.ca/sd/eal/registries/5634glenway/index.html>. Copies of the Proposal were also provided to the Technical Advisory Committee (TAC) members. A notice of the Environment Act proposal was also placed in Emerson Southeast Journal on Saturday, March 23, 2013. The newspaper and TAC notifications invited responses until April 23, 2013.

COMMENTS FROM THE PUBLIC:

No comments were received during the public comment period.

SUMMARY OF COMMENTS FROM THE TECHNICAL ADVISORY COMMITTEE:

No.	Technical Advisory Committee Member	Response Provided	Comment Date
1	Canadian Environmental Assessment Agency	No response	
2	Manitoba Agriculture – Land Use Branch	No response	
3	Manitoba Sustainable Development –		
	<ul style="list-style-type: none"> • Compliance and Enforcement Branch • Climate Change and Air Quality Branch • Wildlife* and Fisheries** Branch • Parks and Protected Spaces Branch • Forestry Branch • Indigenous Relations Branch • Lands Branch • Water Quality Management Section • Groundwater Management Section • Office of Drinking Water • Water Use Licensing Section • Water Control Works Licensing Section • Regional Services Branch 	<p>Yes</p> <p>No response</p> <p>No concerns*/Yes**</p> <p>No comments</p> <p>No response</p> <p>No response</p> <p>No response</p> <p>Yes</p> <p>No response</p> <p>No concerns</p> <p>Yes</p> <p>No response</p> <p>No response</p>	<p>May 13, 2013</p> <p>May 10/May 19, 2013</p> <p>May 6, 2013</p> <p>May 17, 2013</p> <p>May 15, 2013</p> <p>May 6, 2013</p>
4	Manitoba Sport, Culture, and Heritage – Heritage Branch	No concerns	May 17, 2013
5	Manitoba Growth, Enterprise and Trade –		
	<ul style="list-style-type: none"> • Energy Development Branch • Petroleum Branch • Office of Fire Commissioner • Work Place Safety & Health 	<p>No response</p> <p>No response</p> <p>No comments</p> <p>No response</p>	<p>May 21, 2013</p>
6	Manitoba Infrastructure –		
	<ul style="list-style-type: none"> • Highway Planning and Design Branch 	No response	
7	Manitoba Indigenous and Municipal Relations	No response	
8	Manitoba Health, Seniors and Active Living – Environmental Health Unit	No response	

A copy of the responses and the additional information provided can be viewed at the following link:

<http://www.gov.mb.ca/sd/eal/registries/5634glenway/index.html>

COMMENTS FROM THE TECHNICAL ADVISORY COMMITTEE:

Manitoba Sustainable Development – Environmental Compliance and Enforcement, May 13, 2013

- The proposal indicates that the lagoon expansion is required to provide adequate retention and treatment capacity. There is no discussion in the proposal on how the proponent will manage the effluent until the expansion is completed.
- There are no specific mentions on how the repair/modification of the interior slopes of the existing lagoon will be done.
- Chlorination is proposed as a possible method of treatment if the coliform MPN exceeds the limit. There is no discussion of potential downstream impacts from chlorine residuals or chlorination by-products, or how such impacts will be mitigated. Environmental Compliance and Enforcement requests confirmation on whether alternate methods were considered, such as allowing additional time for the cell contents to stabilize as is proposed for BOD₅ exceedances.

Additional Information Request: A request for additional information was sent out to the proponent's consultant on May 29, 2013 and on April 19, 2016.

Proponent's Consultant's Response (received on April 28, 2016):

1. It has been communicated to Conservation and Water Stewardship staff that the desired method of effluent management during the time that the expansion is under way is field application to surrounding agricultural land under the control of the colony. It is proposed to apply the effluent to the land utilizing the same equipment and technologies used for the application of livestock manure. Application rates are intended to be adjusted to facilitate crop requirements and the constituents within the treated effluent.
2. It is intended to reshape the interior slopes in a manner similar to the construction of the new cell. Upon commissioning of the new cell it is intended to de-sludge the existing cells and stock pile the material on the upper slopes of the new cell in order to facilitate dewatering. Samples of this material will be submitted for testing in order to determine the constituents in order to establish the acceptability for land application and whether any further treatment is required. In order to achieve the desired interior slope, it is anticipated that the majority of the re-shaping will be achieved by removing existing material. In the event that fill material is to be added, the methods to be employed will be similar to the new cell construction techniques previously identified. On site verification of the clay liner thickness and compaction testing will also be performed in order to establish that an effective barrier has been established.
3. Chlorination has been identified as a last resort in the event that natural treatment methods cannot achieve an acceptable coliform MPN within the available retention time of the primary treatment cell. Testing of residual chlorine levels in the treated effluent will be performed in order to avoid excessive concentrations which may impact downstream uses and the aquatic environment. Discharge of the treated effluent will be

temporarily suspended to allow the residual levels to decrease if determined to be too high. Extending the retention time within the swale may also be utilized to reduce the residual chlorine levels, if required.

Disposition: The above information from the Proponent's consultant was forwarded to the Environmental Compliance and Enforcement Section (ECE) on June 8, 2016 and no further comment from ECE was received. The draft licence contains clauses respecting irrigation of treated effluent, sludge management, testing of repaired and new liner, and disinfection of treated effluent using chlorine.

Manitoba Sustainable Development – Water Science and Management

- The colony should explore alternative water softening options in order to reduce SAR in their wastewater and report back to the Director of Environmental Assessment and Licensing Branch in one year.
- The following effluent standards should be in place 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 proponent must demonstrate that the proposed trickle discharge reduces phosphorus concentrations of the wastewater within the drainage swale and prior to entering the Roseau River to concentrations equivalent to a < 1 mg/L phosphorus limit.
- The license require the proponent to actively participate in any future watershed based management study, plan/or nutrient reduction program, approved by the Director.

Additional Information Request: A request for additional information was sent out to the proponent's consultant on May 29, 2013 and on April 19, 2016.

Proponent's Consultant's Response (received on April 28, 2016):

1. The impacts of high SAR levels are well documented and have been discussed with the colony. Glenway Colony has committed to exploring alternative water softening options in response to regular SAR testing results. Management practices will also be tailored to reduce the amount of softened water utilized by the colony and consequently reduce the softening waste water.
2. The suggested effluent standards are intended to be met as per the requirements of the Manitoba Water Quality Standards, Objectives and Guidelines Regulation (196/2011)
 - a. BOD₅ 25 mg/L

- b. TSS 25 mg/L
 - c. Fecal coliforms 200 MPN/ 100 mL
 - d. TP 1 mg/L or alternate nutrient reduction strategy
3. It is proposed to test the phosphorous content of the wastewater discharge stream at the end of the swale before it empties into the Roseau River. If it is determined that the phosphorus concentration is not less than 1 mg/L at this point reconfiguration and re-routing of the swale will be undertaken to increase the retention time and nutrient take up. This procedure will be repeated until such time that the phosphorus limit criteria is met.
 4. As previously indicated, Glenway Colony has committed to participating in future watershed based management studies and nutrient reduction strategies.

Additional Information Request: The above information from the Proponent's consultant was forwarded to the Water Science and Management on June 8, 2016 and the following comment was received.

Additional Comment from Water Science and Management, June 8, 2016:

- The Proponent must demonstrate that the proposed trickle discharge reduces phosphorus concentrations of the wastewater within the drainage swale and prior to entering the Roseau River to concentrations equivalent to a < 1 mg/L phosphorus limit. Water Quality Management section recommends for a period of at least five years following the commencement of operation of the wastewater treatment lagoon, at the beginning, middle, and end of each discharge campaign, obtain samples of effluent flowing in the discharge swale at the discharge end, prior to the effluent encountering any other surface water, and have them analyzed for the total phosphorus mg/L. It is recommended the Proponent be required to report the results from the sampling.

Disposition: The draft licence contains clauses respecting SAR reduction and monitoring, treated effluent limits in accordance with Manitoba Water Quality Standards, Objectives and Guidelines Regulation, trickle discharge, and Total Phosphorous monitoring and reporting.

Manitoba Sustainable Development – Fisheries Branch, May 19, 2013

The constructed swale:

- The proposed swale is straight. It would be preferable that the swale be constructed with a meander or two with some widened sections for pools which would serve to lengthen the route (provide an extra buffer to achieve water quality limits prior to entering the river) and may create fish habitat under suitable years.
- The outlet enters the river at a bend. This is one area where erosion typically occurs in a river and although the outlet is going to be rip rapped energy will get transferred downstream of the armoured area and start to erode natural section of the bank. The outlet would be best placed along a straight section of the river. If

this is not feasible then a condition in the licence for the Colony to monitor the outlet and stabilize the bank as required either through native vegetation (preferred) or rip rap.

- Swale and outlet design. There does not appear to be any design information regarding the swale channel morphology (depth, width at bottom and top, bank slope) and what plants are going to be planted or the design of the outlet (depth entering the river, area to be rip rapped and slope). From Ontario guidelines on shoreline stabilization: In general, rock rubble or rip-rap embankments are constructed so that the final slope is at least 1:2 ratio (vertical: horizontal); that is for every one meter in height, the rock should extend out two meters. Where possible, a 1:3 ratio is preferred as it is more stable. To maximize the life of an embankment, the appropriate slope and rock size are needed so wave and current action will not damage it. In many cases, only the toe or bottom of the slope may need to be rip-rapped and the remainder may be planted. The planting of vegetation, especially deep-rooting species, above and immediately behind the rock will greatly increase the stability of the slope. A combined rock rip-rap and natural shrub shoreline will greatly increase the stability of the slope and provides additional habitat, food supply and hiding spaces for a greater variety of fish species. Rock rubble or rip-rap must be clean and free of silts and organic debris, and must not be removed from the waterbody.
- The swale and outlet should be constructed during the dry and erosion and sediment control measures must be in place prior to starting construction and remain in place during and after construction until the site has stabilized.
- Sediment from the swale construction needs to be placed away from the constructed swale and river to ensure it cannot enter either during precipitation events.

Water Quality:

- Discharge effluent meets or exceeds Manitoba's Water Quality Standards, Objectives and Guidelines for aquatic life (Tier II). Although they are not directly discharging into fish bearing waters, fish bearing waters are close. While we defer to the recommendations of our colleagues in Water Quality Science Management re: parameters, levels and monitoring we would be very supportive of a requirement to monitor the very downstream end of the swale just prior to its confluence with the Roseau River (and/or just downstream in Roseau River) to ensure trickle discharge is effective in reducing phosphorous and nitrogen levels as well as ensuring there is a reduction in SAR levels. Monitoring would ideally be carried on long enough so that the effluent could be tested under different precipitation / flow events.”

Additional Information Request : A request for additional information was sent out to the proponent’s consultant on May 29, 2013 and on April 19, 2016.

Proponent's Consultant's Response (received on April 28, 2016):

1. The current proposal does indicate that the proposed swale runs in a straight line directly to the north. This is the preferred path to facilitate the farming activities that will take place adjacent to the swale and better facilitate harvesting of the organic growth within same. As indicated in our previous response to Joy Kennedy's comments it is proposed to alter the discharge path if the required effluent constituent levels cannot be achieved at the discharge point into the Roseau River. This may entail increasing the travel distance or the incorporation of pooling sections which will allow for additional nutrient absorption and plant uptake. The possibility also exists to direct the flow to the east of the proposed cell and then north along the municipal road and significantly increase the travel distance and retention time. This avenue will be explored if the situation warrants.
2. The proposed outlet into the Roseau River has been modified as shown on the attached site plan. In lieu of discharging into the bend of the river, the proposed location is an under-utilized oxbow which only experiences active flow and becomes inundated under high water events. During normal summer conditions it has been witnessed by the colony that this oxbow will completely dry. Erosion protection measures will be implemented at the discharge into this oxbow in order to eliminate sedimentation. As this oxbow is isolated from the main flow in the Roseau River it is unlikely that any negative impacts with regards to the introduction of sediment or erosion of the river bank will be realized. Shallow bank slopes and the presence of established grasses within this drainage path will provide an effective means of mitigating the potential impacts which you have identified.
3. Construction of the swale shall be such that concentrated flows are avoided and the ability to harvest the organic matter can be facilitated. Appropriate erosion protection will be facilitated at the discharge locations where concentrated flows are expected. Grasses will be planted within the swale to facilitate the desired nutrient uptake. The species to be selected shall be saline tolerant and hardy enough to endure inundation at numerous times throughout the growing season in order to assure continual growth.
4. During the construction and establishment of the permanent erosion protection, sediment control measures are intended to be implemented. These measures will include but may not be limited to sediment fences and erosion control blankets depending on the location and application. Minimal disturbance is anticipated at the discharge into the Roseau River, therefore maintaining the natural vegetation that already exists.
5. Material removed to construct the swale shall be placed elsewhere within the adjacent farm land to fill natural depressions. Establishment of an agricultural crop will provide natural protection to limit the mobility of this material as with any other farmland.
6. As previously indicated it is proposed to monitor the treated effluent at the downstream end of the swale in order to ensure the requirements of the Manitoba Water Quality Standards, Objectives and Guidelines Regulation (196/2011) are met and operation of the proposed treatment and nutrient reduction strategies are functioning as intended. In the event that these strategies are determined not to achieve the overall objectives, adjustments to the systems and management of these systems will be facilitated as necessary.

Disposition: The above information from the Proponent's consultant was forwarded to the Fisheries Branch on June 8, 2016 and no further comment was received. The draft licence contains clauses respecting sediment and erosion control measures and nutrient limits in accordance with Manitoba Water Quality Standards, Objectives and Guidelines Regulation.

Additional Information Request on February 21, 2013

- A telephone request was made to clarify the following: legal description of the land, conditional use approval, and original construction details and liner integrity of the existing wastewater treatment lagoon.

Proponent's Consultant's Response (received on March 7, 2013)

- The legal description of the proposed development is east half of 2-3-3 EPM.
- Final approval of obtaining a conditional use approval is subject to meeting and fulfilling all Provincial licensing requirements.
- The existing storage was constructed utilizing high plastic clay.
- Clay samples submitted for analysis revealed that high plastic clay is prevalent and materials with the properties exhibited are anticipated to achieve or exceed a hydraulic conductivity of 1×10^{-7} cm/second when compacted to 95% of standard proctor density.

Disposition: The above information is acceptable and the draft licence contains clauses that require the testing of the liner integrity of the existing and new cells and compliance with other Acts and Regulations.

Additional Information Request on July 20, 2016

- It was stated in Section 4.2 of the Environment Act Proposal that based on a population of 150 people and the additional organic loading from the slaughter house, the total daily BOD₅ contribution to the stabilization pond is 11.91 kg. It was further elaborated in the same section that the daily BOD₅ contribution due to a population of 150 is 11.55 kg and the average daily BOD₅ contribution from the slaughter house is 1.9 kg. Please comment on whether the total daily BOD₅ contribution to the lagoon needs any correction. If so, please amend the relevant section(s) of the Environment Act Proposal accordingly.
- According to the Classes of Development Regulation, meat processing and slaughter plants are considered a Class 2 development and the associated application fee is \$7500. Please submit an Environment Act Proposal for the slaughter plant accordingly. Alternatively, the slaughter plant development may be accommodated through the existing licensing process by submission of a Notice of Alteration (NoA) request. Your NoA proposal is required to describe in detail the development itself, the effects on the terrestrial and aquatic environment resulting from the construction and operation of the proposed facility, and proposed mitigation measures and residual effects.
- It appears from the submitted Environment Act Proposal that the proposed development will consist of combining the existing primary and secondary cells into a new primary

cell and the construction of a new secondary cell. However, it appears from the review of the engineering drawings that the proposed development will have one primary cell and two secondary cells. Please clarify and if required, please amend the engineering drawings with correct labels.

- Classification is required for wastewater collection and treatment facilities pursuant to *Manitoba Regulation 77/2003*.

Proponent’s Consultant’s Response (received on December 31, 2016):

- The total BOD₅ contribution to the stabilization pond will be 13.45 kg based on a population of 150 people and the additional organic loading from the slaughter house.
- A Notice of Alteration (NoA) dated December 30, 2016 was submitted on December 31, 2016 in regards to licensing an existing meat processing plant.
- It is intended to utilize the existing primary and secondary cells in combination with each other as the new primary cell. Although the existing berm is intended to remain in place, the interconnecting pipe will remain open at all times in order that the cells will operate together. The proposed cell addition as identified by “Cell #3” is intended to perform as the sole secondary cell.
- The required classification form has been completed and attached.

Disposition: The NoA dated December 30, 2016 was reviewed and clauses related to operating the above existing meat processing plant in an environmental sustainable manner were included in the draft licence.

PUBLIC HEARING:

A public hearing is not recommended.

CROWN-INDIGENOUS CONSULTATION:

The Government of Manitoba recognizes that it has a duty to consult in a meaningful way with Indigenous communities when any proposed provincial law, regulation, decision or action may infringe upon or adversely affect the exercise of the Indigenous rights of that community. The proposal is for the licensing, expansion and operation of an existing domestic wastewater treatment lagoon and meat processing plant located on Section 2-3-3 EPM in the Municipality of Emerson-Franklin, to serve the Glenway Colony. The proposed changes to the development will consist of combining the existing primary and secondary cells into two primary cells and the construction of 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 swale constructed in the adjacent agricultural land. The effluent will flow in this swale to the north into an Oxbow of the Roseau River, and eventually into the Roseau River. Adverse effects on surface water or habitat for wildlife or fisheries are not anticipated. Since resource use is not affected by the project, there would be no infringement of Indigenous rights under Section 35 of the Constitution

Act, 1982. Therefore, it is concluded that Crown-Indigenous consultation is not required for the project.

RECOMMENDATION:

The Proponent should be issued a Licence for construction, expansion, operation, and maintenance of a wastewater treatment lagoon and operation of a meat processing plant in accordance with the specifications, terms and conditions of the attached draft Licence.

It is further recommended that administration of the Licence be assigned to the Eastern region of the Environmental Compliance and Enforcement Branch. Responsibility for liner inspection and record drawings should be retained by the Environmental Approvals Branch until construction of the wastewater treatment lagoon is completed.

Prepared by:

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Date: July 20, 2018

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