

SUMMARY OF COMMENTS/RECOMMENDATIONS

PROPONENT: Bunge Canada
PROPOSAL NAME: Bunge Canada
CLASS OF DEVELOPMENT: 1
TYPE OF DEVELOPMENT: Food Processing Plant
CLIENT FILE NO.: 2404.10

OVERVIEW:

On December 6, 2004, Manitoba Conservation received a Proposal from Bunge Canada to alter the operation of their existing licenced vegetable oil processing plant in Harrowby, R.M. of Russell, on SE 33-20-29 WPM, such that the processing plant would, twice per year, release approximately 40,000 cubic metres of treated wastewater from their existing on-site wastewater treatment and storage facility to the Assiniboine River. Their existing Environment Act Licence No. 959 VC RR had been issued on the basis of a zero liquid effluent discharge proposal that ultimately proved to be impractical, resulting in emergency discharge events which required individual approvals.

The Department, on December 22, 2004, placed copies of the Proposal in the Public Registries located at 123 Main St. (Union Station) Main Floor, Winnipeg; the St. James-Assiniboia Public Library, 1910 Portage Avenue, Winnipeg; the Manitoba Eco-Network, 3rd Floor, 303 Portage Ave., Winnipeg; the Dauphin Public Library, 504 Main Street North, Dauphin; and the R.M. of Russell office. 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 the Russell Banner on January 4, 2005. The newspaper and TAC notifications invited responses until January 24, 2005.

COMMENTS FROM THE PUBLIC:

No public comments were received.

Disposition:

No action needed.

COMMENTS FROM THE TECHNICAL ADVISORY COMMITTEE:

Manitoba Conservation

The following comments were provided:

- The proponent should install a flow meter at the discharge point to provide accurate data of discharge flows.

- *The proponent responds that a flow measurement device is installed during discharge.*
- The proponent should install a control structure or device whereby discharge flows may be accurately controlled.
 - *The proponent responds that the position of the discharge valve is used to control discharge flows.*
- The proponent should provide, to the Director in a manner and by a method acceptable to the Director, for the monitoring of flow rates of the Assiniboine River.
 - *The proponent responds that flows in the Assiniboine River at this location are controlled at the Shellmouth Dam and that flow rates are readily available.*
- The proponent should provide an Operational Plan for the Wastewater Treatment Facility for approval by the Director for all operational functions and maintenance.
 - *The proponent responds that an operational plan will be provided as required.*
- The proponent shall ensure the hexane storage facility is in compliance with the petroleum storage regulation MR 188/2001.
 - *The proponent responds that the hexane storage facility has been upgraded and is in compliance with MR 188/2001.*
- There is no indication of the effect of the effluent on fish. The data they give does not include temperature for the spring releases. The high pH approaching 9.0 is a concern, depending upon the temperature the level of ammonia could be toxic to early life stages. This would be critical to fish using the area for spawning during the spring release.
 - *The proponent responds that ammonia levels in the effluent are anticipated to decline rapidly to background levels as it flows overland between the effluent point and the point where it enters the Assiniboine River. Additionally, the proponent will add an aerator to each storage cell in order to further decrease ammonia concentrations.*
- The data set also shows an increasing trend for TKN and TP, this is also of concern. The proponent should be looking at ways to reduce the nutrient loading of their effluent. Has the proponent looked at filtration or other methods to increase the amount of water they can recycle rather than just increasing the nutrient dump into the Assiniboine River? Fisheries Branch has raised concerns regarding potential erosion in the release channel.
 - *The proponent responds that more recent data indicates a reducing trend in TKN concentrations due to changes in wastewater management practices. Erosion has not been identified in the discharge channel and will continue to be monitored.*
- The photo in the proposal appears to show a bit of a delta forming in the Assiniboine at the point of discharge. Does the proponent have a plan to mitigate?
 - *The proponent responds that the delta is likely a natural formation at this point in the river bend and outflow from the highway drainage ditch.*

Disposition:

The proponent adequately addressed the concerns/comments raised. Clause 11 of the Draft Environment Act Licence requires the submission of a wastewater management plan. Clause 22 of the draft Environment Act Licence provides effluent discharge limits.

Manitoba Health

The following comments were provided:

- No adverse health effects are anticipated as a result of the proposal as long as continued monitoring of the process effluent meets Manitoba Conservation Water Quality Objectives.
- Other considerations outlined in licence 959 VC RR should be continued in order to address other potential effects i.e. odour, particulate matter, etc.
- Sections 40 – 44 of the existing license address hexane management yet Section 6.3.3 of the Environment Act Proposal states that the facility does not require onsite storage of gasoline or fuel. Is the storage of fuel another alteration?
 - *The proponent responds that all fuel storage tanks are less than 5000 litres and therefore no licence is required. There are no plans to alter the storage tanks.*

Disposition:

No action required.

Manitoba Transportation and Government Services

The following comments were provided:

- The effluent discharge route follows the south ditch of Provincial Trunk Highway (PTH) 16
- The proponent is responsible for repairing any erosion caused by the proposed discharge in highway right-of-way; the right-of-way shall be returned to pre-existing condition.
 - *The proponent responds that there are currently no issues with bank stability and/or erosion along the discharge route, and that they will continue to monitor the banks. The proponent has installed a pond discharge pad to reduce the potential for erosion at the discharge point.*
- The proponent is responsible for the cost of upgrading drainage infrastructure along the south ditch of PTH 16 (i.e. culvert in existing ford crossing) that may be necessary due to the proposed discharge rate.

Disposition:

Clauses 24 & 25 of the draft Environment Act Licence address maintenance of the discharge route.

Manitoba Conservation – Wildlife and Ecosystem Protection Branch

The following comments were provided:

- A search of the CDC database resulted in two occurrences of rare (S2) Manitoba plant species from the Russell area: smooth blue beard-tongue (*Penstemon nitidus*) and leafy musineon (*Musinion divaricatum*). Both species are typically found in dry prairie grasslands and bloom in early to mid-June. It is the responsibility of the proponent to

inspect all areas that will be directly or indirectly affected by the effluent or associated activities, to determine if any of these species (or other listed species) may be impacted. The proponent needs to be aware that if rare or endangered species are present, removal or destruction of the plants or their habitat may be in contravention of Subsection 10(1) “Prohibition” of The Endangered Species Act (Manitoba). If species of concern are present, the proponent must contact the Biodiversity Conservation Section of the Wildlife and Ecosystem Protection Branch (Nicole Firlotte, 945-6998) to discuss possible mitigation options.

- *The proponent responds that there will be no excavations or physical work carried out as part of this proposal, and therefore removal or destruction of rare species is not anticipated.*
- Note: Since many areas of the province have never been thoroughly surveyed, the absence of data in the CDC database in any particular geographic area does not necessarily mean that species or ecological communities of concern are not present. The information should therefore not be regarded as a final statement on the occurrence of any species of concern nor can it substitute for an on-site survey for species that will be impacted by the development.
- The effluent contains a significant concentration of salts and nutrients and thus could detrimentally impact the vegetation and wildlife in the wetland. In addition to surveying the area for rare or endangered species, the proponent should provide a description of the vegetation and wildlife present in the wetland and provide an assessment of whether the effluent may negatively affect the wetland habitat. Future monitoring should also be conducted to determine whether or not the effluent is negatively impacting the vegetation and/or wildlife of the wetland.
 - *The proponent responds that variability in certain effluent parameters (nutrients, sodium) may be related to sampling location as some samples were taken from the evaporation cell and others taken after discharge, near where the effluent enters the river. As runoff from the Yellowhead highway is carried along the same ditch, the quality may be influenced by this road runoff, as this section of the highway is salted in winter. Water quality results taken during a discharge event on October 11, 2005 at the discharge point compared to results for samples taken at the edge of the property where discharge enters the Assiniboine River suggests that runoff from the road ditch causes increases in alkalinity, carbonate, calcium, sodium, conductivity, hardness, magnesium, and nitrogen while dissolved oxygen, phosphorous, and pH actually decrease over the discharge route. The proponent reviewed their use of sodium in the production process in an attempt to identify and isolate pathways by which sodium enters the wastewater. Sodium is used in the production process, and also for cleaning. Sodium used in production is not believed to be a source of sodium in the wastewater. The use of alternative detergents in place of sodium hydroxide is being evaluated. A change in wastewater management has resulted in a decrease in conductivity, sodium, phosphorous, nitrogen, and ammonia in the discharged wastewater.*
- Finally, the company should take pre-emptive measures to ensure that the effluent does not cause soil erosion as it flows through the ravine and ditch to the wetland.
 - *The proponent responds that there are currently no issues with bank stability and/or erosion along the discharge route, and that they will continue to monitor*

the banks. The proponent has installed a pond discharge pad to reduce the potential for erosion at the discharge point.

Disposition:

The proponent adequately addressed the concerns/comments raised. Clauses 22 & 29-32 of the Draft Environment Act Licence address water quality requirements for the discharged wastewater.

Manitoba Water Stewardship

A summary of the extensive comments provided is below:

- Assessment of the impact of the discharge was limited to an examination of expected changes in water chemistry in the Assiniboine River. There are a number of problems with these calculations.
 - *The proponent conducted additional analysis to address these concerns.*
- The proponent is proposing to discharge into the Assiniboine River during the month of April. Discharge of effluent from lagoons is not generally permitted between April 1 and June 15 due to impacts on fish spawning and incubation. Given that ammonia toxicity is of concern during this period, I would recommend that allowable end of pipe ammonia effluent loads (and concentrations) be determined for April and May (as well as for other months of proposed discharge) to provide further information on the toxicity of the effluent to aquatic communities. In addition, due to the possibility that the Assiniboine River and the receiving ravine and wetland will be frozen during April and the likelihood that daily minimum temperatures will be below freezing during April and early May, I would recommend prohibiting discharge until May 15. The proponent could also consider piping the effluent to the Assiniboine River which would allow discharge to occur earlier.
 - *The proponent responds that they will abide by all licence requirements.*
- Given the proponent's concerns regarding environmental stewardship, I would recommend that the proponent conduct a study of the agronomic feasibility of irrigating with the effluent.
 - *The proponent responds that the feasibility of irrigation has been studied and is not considered a viable option at this time.*
- The proposed wastewater management plan provides the facility with no additional storage capacity in the event that the effluent does not meet licence limits and must be stored for a greater length of time. If the effluent does not meet discharge limits during the proposed discharge periods, the facility may want to discharge during a month other than April/May or October. In addition, in a year with heavy rainfall and poor evaporation, the facility might need to be discharging more than twice per year to provide enough space in the evaporation pond for the process wastewater. The proponent should provide an assessment of the impacts on the aquatic environment of a) discharging more than twice per year and b) discharging during periods other than April/May and October. The proponent should also consider alternatives that would allow them to store additional wastewater.

- *The proponent conducted analysis of a potential summer discharge and determined that the impacts of such a discharge should be minimal.*
- What volume of wastewater is recycled and is the volume consistent between years?
 - *The proponent responds that recycling rates are not consistent and could be zero.*
- The proponent should provide a monitoring plan for assessing the long-term impacts to aquatic species in the Assiniboine River. An inventory of aquatic species in the Assiniboine River should be provided by the proponent (fish, invertebrates, algae) and the long term impacts to these species should be discussed with methods for mitigation included.
 - *The proponent responds that they will monitor water quality in the vicinity of the discharge point. The proponent provided the requested inventory of aquatic species and indicated that impacts to these species are not expected.*
- The proponent should examine the impact of additional nitrogen and phosphorus loads from the facility on the downstream Assiniboine River.
 - *The proponent completed nutrient loading analysis and determined the effects of discharge to be minimal.*
- The proponent should provide an assessment of the impact of the proposed discharge on bank stability and erosion, and provide appropriate mitigation strategies in the Environment Act proposal.
 - *The proponent responds that there are currently no issues with bank stability and/or erosion along the discharge route, and that they will continue to monitor the banks. The proponent has installed a pond discharge pad to reduce the potential for erosion at the discharge point.*
- The proponent should assess the impact of effluent discharge on sodium concentrations near the Bunge Canada facility.
 - *The proponent responds that sodium analysis was completed based on available information. Additionally, variability in certain effluent parameters may also be related to sampling location as some samples were taken from the evaporation cell and others taken after discharge, near where the effluent enters the river. As runoff from the Yellowhead highway is carried along the same ditch, the quality may be influenced by this road runoff, as this section of the highway is salted in winter. Water quality results taken during a discharge event on October 11, 2005 at the discharge point compared to results for samples taken at the edge of the property where discharge enters the Assiniboine River suggests that runoff from the road ditch causes increases in alkalinity, carbonate, calcium, sodium, conductivity, hardness, magnesium, and nitrogen while dissolved oxygen, phosphorous, and pH actually decrease over the discharge route. The proponent reviewed their use of sodium in the production process in an attempt to identify and isolate pathways by which sodium enters the wastewater. Sodium is used in the production process, and also for cleaning. Sodium used in production is not believed to be a source of sodium in the wastewater. The use of alternative detergents in place of sodium hydroxide is being evaluated. A change in wastewater management has resulted in a decrease in conductivity, sodium, phosphorous, nitrogen, and ammonia in the discharged wastewater.*
- The proponent should provide some information on the concentrations of heavy metals in the effluent and any potential long-term impacts on the aquatic environment.

- *The proponent responds that monitoring of heavy metals has not been conducted as it was not required by the current licence or emergency discharge procedures.*

Disposition:

The proponent adequately addressed the concerns/comments raised. Clauses 22 & 29-32 of the Draft Environment Act Licence address water quality requirements for the discharged wastewater.

Manitoba Conservation – Sustainable Resource Management

The following comments were provided:

- Assessment of the impact of the discharge was limited to an examination of expected changes in water chemistry in the Assiniboine River. It is suggested that discharge effluent data include all data available and also, ammonia concentrations be included in these analysis. The discharge rates should be consistent.
 - *The proponent conducted additional analysis to address these concerns.*
- The impact downstream of additional nitrogen and phosphorus loads and sodium concentrations should be examined. Heavy metals were not included in the assessment.
 - *The proponent completed nutrient loading analysis and determined the effects of discharge to be minimal.*
- There is no indication in the proposal of effluent effect on fish, in particular as it may pertain to the seasonal use of the discharge route for spawning purposes. Generally fish will utilize these areas in years of higher flows so dilution should hopefully be adequate.
 - *The proponent responds that ammonia levels in the effluent are anticipated to decline rapidly to background levels as it flows overland between the effluent point and the point where it enters the Assiniboine River. Therefore impacts on fish in the discharge route are not expected.*
- This area contains two rare plant species: smooth blue beard-tongue and leafy musineon. The proponent should inspect the area to see if these species will be impacted as removal or destruction of the plants or their habitat may be in contravention of The Endangered Species Act, Manitoba. If the species are present, the proponent should contact Nicole Firlotte of the Biodiversity Conservation Section of the Wildlife and Ecosystem Protection Branch.
 - *The proponent responds that there will be no excavations or physical work carried out as part of this proposal, and therefore removal or destruction of rare species is not anticipated.*
- The effluent contains a significant concentration of salts and nutrients which could be detrimental to vegetation and wildlife in the wetland. An assessment of whether the effluent may negatively affect the wetland habitat should be provided.
 - *The proponent responds that variability in certain effluent parameters (nutrients, sodium) may be related to sampling location as some samples were taken from the evaporation cell and others taken after discharge, near where the effluent enters the river. As runoff from the Yellowhead highway is carried along the same ditch, the quality may be influenced by this road runoff, as this section of the*

highway is salted in winter. Water quality results taken during a discharge event on October 11, 2005 at the discharge point compared to results for samples taken at the edge of the property where discharge enters the Assiniboine River suggests that runoff from the road ditch causes increases in alkalinity, carbonate, calcium, sodium, conductivity, hardness, magnesium, and nitrogen while dissolved oxygen, phosphorous, and pH actually decrease over the discharge route. The proponent reviewed their use of sodium in the production process in an attempt to identify and isolate pathways by which sodium enters the wastewater. Sodium is used in the production process, and also for cleaning. Sodium used in production is not believed to be a source of sodium in the wastewater. The use of alternative detergents in place of sodium hydroxide is being evaluated. A change in wastewater management has resulted in a decrease in conductivity, sodium, phosphorous, nitrogen, and ammonia in the discharged wastewater.

- The proponent should take pre-emptive measures to ensure that the effluent does not cause soil erosion as it flows through the ravine and ditch to the wetland.
 - *The proponent responds that there are currently no issues with bank stability and/or erosion along the discharge route, and that they will continue to monitor the banks. The proponent has installed a pond discharge pad to reduce the potential for erosion at the discharge point.*

Disposition:

The proponent adequately addressed the concerns/comments raised. Clauses 22 & 29-32 of the Draft Environment Act Licence address water quality requirements for the discharged wastewater.

Canadian Environmental Assessment Agency

CEAA indicated that the application of the *Canadian Environmental Assessment Act* will not be required for this project.

Disposition:

No action necessary.

PUBLIC HEARING:

A public hearing is not recommended.

RECOMMENDATION:

The Proponent should be issued a revised licence for the operation of a vegetable oil processing facility in accordance with the specifications, terms and conditions of the attached draft Licence. Enforcement of the Licence should be retained by the Western Region.

A draft environment act licence is attached for the Director's consideration.

Prepared by:

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