

Boswick, Robert

From: Boswick, Robert
Sent: July 17, 2023 2:22 PM
To: 'vfisher@dillon.ca'; 'cpogue@dillon.ca'; Ken Anderson
Cc: Burland Ross, Siobhan; Parsons, Travis
Subject: R.M. of Grey - L.U.D. of St. Claude - EAP Review - TAC Comments and Requests for Additional Information - File No. 241.50
Attachments: 2023-06-30_241_50_TAC_WSWM.pdf; 2023-06-23_241_50_TAC_MIT.pdf; 2023-06-23_241_50_TAC_ECE.pdf; 2023-06-13_241_50_TAC_WQMS.pdf

Review of the R.M. of Grey – L.U.D. of St. Claude Environment Act Proposal (EAP) relative to proposed land application of biosolids to be removed from and upgrades to the wastewater treatment lagoon under our File No. 241.50 and currently licenced under Environment Act Licence No. 1666 S3 has resulted in comments and requests for additional information from the Technical Advisory Committee (TAC).

Regarding proposed land application of biosolids, Dillon Consulting Ltd. is requested to assess and respond to comments from the Water Science and Watershed Management Branch – Manitoba Environment and Climate contained in the first attachment as well as to related feedback from Manitoba Transportation and Infrastructure contained in the second attachment.

Regarding proposed lagoon upgrades, Associated Engineering Ltd. is requested to respond to related feedback from Manitoba Transportation and Infrastructure contained in the second attachment and respond to related comments and requests for information from the Environmental Compliance and Enforcement Branch – Manitoba Environment and Climate and the Water Quality Management Section – Manitoba Environment and Climate contained in the third and fourth attachments respectively.

Please provide resulting responses back to me.

Please contact me for discussion as necessary.

Thank you.

Robert Boswick, P.Eng.

Senior Environmental Engineer, Environmental Approvals Branch
Environment and Climate
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Box 35 - 14 Fultz Blvd., Winnipeg, MB R3Y 0L6

c: Public Registry

Boswick, Robert

From: Wiebe, Brian
Sent: June-30-23 11:48 AM
To: Boswick, Robert
Subject: RE: St. Claude Environment Act Proposal Land Application of Lagoon Biosolids - application rates

Hi Rob,

I checked the proposal and their soil tests were taken in 2018 so they will need new soil tests before the application rate can be calculated. You can provide them with the following if it makes sense (which I would be happy to discuss with them if need be):

- Phosphorus loss is runoff increases with increasing soil Olsen-P levels even within the normal agronomic range (Dr. Henry Wilson, AAFC Brandon)
- Phosphorus availability in biosolids is estimated as 50% of total phosphorus (but could be as high as 75% depending upon the actual biosolid composition)
- The phosphorus buffering capacity (BC) of the soil is estimated to be 28 kg/ha (25 lb/ac) P_2O_5 to raise Olsen-P by 1 mg/kg (Manitoba soils range from 15-35) (John Heard 2020)
- Target maximum phosphorus application for an agronomic benefit is to raise soil Olsen-P to no more than 20 mg/kg. This provides maximum agronomic benefit while still managing environmental risk

Using the equation from Heard (AgDays 2020) modified for a single application:

$$P \text{ application (kg } P_2O_5/\text{ha)} = [(Target \text{ Olsen-P (mg/kg)} - Current \text{ Olsen-P (mg/kg)}) \times Soil \text{ Buffering Capacity}] + crop \text{ removal (kg/ha)}$$

If soil test Olsen-P is 10 mg/kg and assuming a canola crop removal rate of 58 kg P_2O_5 in the first crop after application:

$$P \text{ application (kg } P_2O_5/\text{ha)} = [(20 - 10) \times 28] + 58 \text{ (kg/ha)} = 338 \text{ kg } P_2O_5/\text{ha}$$

With a biosolids plant available P_2O_5 value of 32.43 kg/tonne the maximum application rate would be 10.4 tonnes/ha

This calculation would need to be updated based on a current soil test and using the crop removal rate of the current crop.

Brian

Brian Wiebe, Ph.D., P.Ag.
Senior Land-Water Specialist
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Beshada, Eshetu

From: +WPG969 - MIT Environmental Services Section <MITEnvServices@gov.mb.ca>

Sent: June 23, 2023 1:05 PM

To: Beshada, Eshetu <Eshetu.Beshada@gov.mb.ca>

Subject: RE: Request for Environment Act Proposal Review - File 241.50 -RM of GREY – L.U.D. OF ST. CLAUDE – land application of biosolids and lagoon upgrades

Good afternoon,

Please see below for feedback from the following MTI Branches:

Capital Region:

Under section 3.2.3 Surface Water of the Notice of Alteration, it indicates surface run-off may be redirected and accumulated water may be pumped into adjacent ditches. We would like to see clarification on how the surface run-off will be redirected, and how this surface run-off can be managed within the property to prevent sediment flow into the adjacent ditches from the redirection and pumping of water, in addition to maximum flow rates. Also, MTI won't allow drainage/release of any contaminated fluids or solids in to highway ditches.

With regards to the Environmental Act Proposal, any temporary piping placed in or across MTI jurisdiction will require approval from MTI prior to placement within MTI lands

Roadside Development:

No concern

Hydrologic Forecasting and Water Management:

No concern

Thank you very much for the opportunity to review and comment.

Grace Ruth S. Quintana, M.Sc.

Environmental Review Coordinator

Environmental Services | Engineering and Technical Services

Manitoba Transportation and Infrastructure

15th Flr 215 Garry Street | Winnipeg, MB | R3C 3P3



DATE: June 23, 2023

TO:	Housseini D. Coulibaly, PhD Environmental Approvals Branch Box 35, 14 Fultz Blvd Winnipeg, Manitoba R3Y 0L6	FROM:	Jay Rackham, Environment Officer Environmental Compliance and Enforcement 309-25 Tupper Street N, Portage La Prairie MB R1N 3K1
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**SUBJECT: ECE Comments: EAP, File 241.50 -RM of GREY – L.U.D. of ST. CLAUDE
– land application of biosolids and lagoon upgrades**

As per your request, Environment Enforcement and Compliance has reviewed the two reports constituting the 2023 Environment Act Proposal for File 241.50 -RM of GREY – L.U.D. of ST. CLAUDE.

- Regarding the report entitled "*Rural Municipality of Grey, St. Claude Environment Act Proposal, Land Application of Lagoon Biosolids, Dillon Consulting, September 2021-16-3823*", Environmental Compliance and Enforcement has no comment.
- Regarding the letter report entitled "*Licence 1666 S3, St. Claude Lagoon – Notice of Alteration Rev2, Associated Engineering, May 23, 2023*", Environmental Compliance and Enforcement requests further details of the components and operations of the equipment described as "*intercell manhole C/W 300 mm Ø discharge piping and gate valve*". The intake of this equipment appears to have a fixed intake elevation. At what elevation is the intake relative to the crest of the primary cell? When the intercell gate is closed, is there sufficient design freeboard in the primary cells to allow a period of isolated digestion in the secondary cell prior to discharge? Environmental Compliance and Enforcement has no further comment regarding this proposal.

DATE: June 13, 2023

TO: Eshetu Beshada
Environmental Approvals Branch
14 Fultz Blvd, Winnipeg, MB
R3H 0W4

FROM: Joy Kennedy
Water Quality Management Section
14 Fultz Blvd
Winnipeg, Manitoba R3J 3W3

cc.

PHONE NO.: 204-945-7908

SUBJECT: RM OF GREY, L.U.D. OF ST. CLAUDE – NOA – LAGOON UPGRADE

- The Proponent proposes to remove clauses 15 and 16 from license 1666 S3 with respect to sodium chloride - salinity. To help further assess the proponent's salinity reduction program with current water quality guidelines, can the proponent please provide the laboratory results (certificate of analysis) of the effluent samples collected for the most recent discharge as per clause 12, for sodium, sodium adsorption ratio and chloride?
- The following effluent standards should be in place for RM of GREY – L.U.D. of St. Claude wastewater treatment lagoon upgrade as per the *Manitoba Water Quality Standards, Objectives and Guidelines Regulation* (196/2011) for discharge events:
 - BOD5 25 mg/L,
 - TSS 25 mg/L,
 - Total Phosphorus <1 mg/L,
 - Fecal Coliforms or *Escherichia coli* 200 organisms / 100mL
 - SAR 6.0
- The Water Quality Management Section recommends maintaining 3 mg/L of dissolved oxygen at all times in the top 2.5m of the liquid in the aerated cells.
- 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.

Sincerely,

Joy Kennedy