



August 3, 2017

File: MV2014L3-0008

Ms. Tausia Lal  
Senior Administrative Officer  
Hamlet of Fort Resolution  
General Delivery  
Fort Resolution NT X0E 0M0

Email: [tausia.sao@gmail.com](mailto:tausia.sao@gmail.com)

Dear Ms. Lal:

**Plan to Address the Freeboard Requirement at Cell 1 of the Sewage Disposal Facilities – Interim Approval  
Hamlet of Fort Resolution – Water Licence MV2014L3-0008**

The Mackenzie Valley Land and Water Board (the Board) met on August 3, 2017 to review the Plan to Address the Freeboard Requirement at Cell 1 of the Sewage Disposal Facilities submitted on April 27, 2017 by the Hamlet of Fort Resolution (Hamlet) in accordance with Part D, item 8 of municipal Water Licence MV2014L3-0008.

The Board hereby approves the Plan to Address the Freeboard Requirement at Cell 1 of the Sewage Disposal Facilities (Plan) as an interim Plan, and requires the Hamlet to submit a revised version of the Plan (Version 1.1) by **August 31, 2017**. The revised Plan will be considered to be approved upon written confirmation of conformity from Board staff, and shall contain the following additions:

1. Details as to how 1 m freeboard will be achieved, or if another recommendation is made by a Professional Engineer, provide rationale for that recommendation;
2. A detailed description of the emergency procedure for pumping between cells 1 and 7, including the method(s) to calculate and monitor the sewage lagoon infiltration rate (i.e. how often pumping may be required), the freeboard level at which pumping will be triggered, the amount to be pumped, and who is responsible for monitoring lagoon levels and doing the pumping; and
3. A detailed description of how lagoon level monitoring will be conducted using the gauge referenced, and how monitoring results will translate into emergency or any other procedure(s).

The Board also requires the Hamlet to revise drawing C-101 to include elevations, as required by Part F, item 1(a) of Licence MV2014L3-0008.

The Board reminds that Hamlet that:

- As per Part I, item 3 and Schedule 2, item 1 of Licence MV2014L3-0008, a Closure and Reclamation Plan shall be submitted to the Board for approval at least 6 months prior to the closure of any of the Sewage or Solid Waste Disposal Facilities; and
- The Board should be notified, in advance, of proposed activities which constitute a modification, as per Part G of Licence MV2014L3-0008 (Conditions applying to Modifications). As-built plans and drawings of the modifications are required following their completion.

The Board acknowledges that the Hamlet has made significant progress in recent months to work towards compliance with their Licence, and appreciates the Hamlet's efforts. The Hamlet shall adhere to the commitments made in their responses to reviewer comments dated June 26, 2017.

The full cooperation of the Hamlet of Fort Resolution is anticipated and appreciated. If you have any questions or concerns, please contact Erica Janes at (867) 766-7466 or email [ejanes@mvlwb.com](mailto:ejanes@mvlwb.com).

Yours sincerely,



Mavis Cli-Michaud  
MVLWB, Chair

Copied to: Ken Johnson, Stantec Engineering  
Gavin Olvera, MACA South Slave Region  
Distribution List

Attached: Reasons for Decision  
Review Summary Table



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## Reasons for Decision

Issued pursuant to section 72.25 of the *Mackenzie Valley Resource Management Act* (MVRMA) and section 54 of the *Waters Act*

Management Plan	
<b>Preliminary Screener</b>	MVLWB
<b>Reference/File Number</b>	MV2014L3-0008
<b>Applicant</b>	Hamlet of Fort Resolution
<b>Project</b>	Plan to Address the Freeboard Requirement at Cell 1 of the Sewage Disposal Facilities

### Decision from Mackenzie Valley Land and Water Board Meeting of

August 3, 2017

With respect to this Plan, notice was given in accordance with sections 63 and 64 of the *Mackenzie Valley Resource Management Act* (MVRMA) and section 43 of the *Waters Act*. There was no public hearing held in association with this application.

#### 1.0 Background

##### Licence Requirements

Part D, item 8 of Licence MV2014L3-0008 states:

*Within nine (9) months of issuance, the Licensee shall submit to the Board, for approval, a Plan to Address the Freeboard Requirement at Cell 1 of the Sewage Disposal Facilities. The Plan shall include, but not be limited to, the following:*

- a) Measure(s) to address the Freeboard requirement specified under Part D, item 7;*
- b) Method(s) to calculate and monitor the Sewage lagoon infiltration rate; and*
- c) A timeline and action plan for implementation of these improvement and monitoring measures.*

Submission Description

The Hamlet submitted a Plan to Address the Freeboard Requirement at Cell 1 of the Sewage Disposal Facilities on April 27, 2017, which includes two additional items that are not for Board approval:

1. Topographic information for the most recently constructed Sewage lagoon cell (in accordance with Part F, item 1(a) of Licence MV2014L3-0008); and
2. Installation of fencing at the Sewage Disposal Facilities to limit access to the site and prevent wind-blown debris from entering the Sewage lagoons (in accordance with Part D, item 11 of Licence MV2014L3-0008).

Table 1 below lists the components of the Plan required in the Licence MV2014L3-0008, and provides details on the adequacy of the submission.

**Table 1: Plan Completeness**

	<b>Components of the Plan as required in Part I, item 5 of the Licence</b>	<b>Board staff analysis of the adequacy of the Plan in addressing the component</b>
	The Plan shall include, but not be limited to, the following:	-
a)	Measure(s) to address the Freeboard requirement specified under Part D, item 7 [one metre or as recommended by a Professional Engineer and as approved by the Board];	Based on Comment ID MVLWB 2, the Hamlet should revise the Plan to include a detailed description of the emergency procedure for pumping between cells 1 and 7, including the method(s) to calculate and monitor the sewage lagoon infiltration rate (i.e. how often pumping may be required), the freeboard level at which pumping will be triggered, the amount to be pumped, and who is responsible for monitoring lagoon levels and doing the pumping.
b)	Method(s) to calculate and monitor the Sewage lagoon infiltration rate; and	Based on Comment ID MVLWB 3, the Hamlet should revise the Plan to include a detailed description of how lagoon level monitoring will be conducted using the gauge referenced, and how monitoring results will translate into emergency or any other procedure(s).
c)	A timeline and action plan for implementation of these improvement and monitoring measures.	Based on Comment ID MVLWB 1, the Hamlet should update the Plan to include how 1 m freeboard will be achieved, or if another recommendation is made by a Professional Engineer, provide rationale for that recommendation.

## **2.0 Public Review**

By June 5, 2017, comments and recommendations on the Plan were received from the Government of the Northwest Territories Department of Environment and Natural Resources (GNWT-ENR) and Board staff. On June 26, 2017, the Hamlet responded to comments by email, and Board staff posted the Hamlet's responses to the Online Review System (ORS) on July 4, 2017.

Reviewer comments largely focused on the level of detail included in the Plan, and requesting that additional information be provided, including:

- An explanation of how 1 m freeboard will be achieved, or if another recommendation is made by a Professional Engineer, provide rationale for that recommendation (Comment ID MVLWB 1);
- A detailed description of the emergency procedure for pumping between cells 1 and 7, including the method(s) to calculate and monitor the sewage lagoon infiltration rate (i.e. how often pumping may be required), the freeboard level at which pumping will be triggered, the amount to be pumped, and who is responsible for monitoring lagoon levels and doing the pumping (Comment ID MVLWB 2); and
- A detailed description of how lagoon level monitoring will be conducted using the gauge referenced, and how monitoring results will translate into emergency or any other procedure(s) (Comment ID MVLWB 3).

It was also identified that the Hamlet should:

- Revise drawing C-101 to include elevations, as required by Part F, item 1.a of MV2014L3-0008; and
- Submit a Closure and Reclamation Plan to the Board for approval at least 6 months prior to the closure of any of the Sewage or Solid Waste Disposal Facilities, as per Part I, item 3 and Schedule 2, item 1 of MV2014L3-0008.

## **3.0 Decision**

After reviewing the submission of the Hamlet, the written comments received by the Board and the Staff report prepared for the Board, the Board, having due regard to the facts and circumstances, the merits of the submissions made to it, and to the purpose, scope, and intent of the MVRMA and the *Waters Act* and Regulations made thereunder, has determined that some components of the Plan to Address the Freeboard Requirement at Cell 1 of the Sewage Disposal Facilities submitted to satisfy the requirements of the Licence require revision. Therefore, the Board has decided to approve the Plan as an interim Plan.

The Board requires that the Hamlet submit a revised Plan to Address the Freeboard Requirement at Cell 1 of the Sewage Disposal Facilities (Version 1.1) by August 31, 2017. The revised Plan will be considered to be approved upon written confirmation of conformity from Board staff, and shall include the following revisions:

- Provide detail as to how 1 m freeboard will be achieved, or if another recommendation is made by a Professional Engineer, provide rationale for that recommendation;
- Provide a detailed description of the emergency procedure for pumping between cells 1 and 7, including the method(s) to calculate and monitor the sewage lagoon infiltration rate (i.e. how often pumping may be required), the freeboard level at which pumping will be triggered, the amount to be pumped, and who is responsible for monitoring lagoon levels and doing the pumping; and
- Provide a detailed description of how lagoon level monitoring will be conducted using the gauge referenced, and how monitoring results will translate into emergency or any other procedure(s).

The Hamlet shall also revise drawing C-101 to include elevations, as required by Part F, item 1(a) of Licence MV2014L3-0008.

Water Licence MV2014L3-0008 contains provisions that the Board feels necessary to ensure and monitor compliance with the MVRMA and the *Waters Act* and the Regulations made thereunder and to provide appropriate safeguards in respect of the Applicant's use of the waters and/or deposit of waste affected by the Licence. The Board will provide additional referenced material or documents if requested in writing to do so.

SIGNATURE

Mackenzie Valley Land and Water Board



August 3, 2017

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Mavis Cli-Michaud, Chair

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Date

## Review Comment Table

<b>Board:</b>	MVLWB
<b>Review Item:</b>	Hamlet of Fort Resolution Sewage Disposal Facilities (Lagoon) submissions (MV2014L3-0008)
<b>File(s):</b>	<a href="#">MV2014L3-0008</a>
<b>Proponent:</b>	Hamlet of Fort Resolution
<b>Document(s):</b>	<a href="#">MV2014L3-0008 - Fort Resolution - Sewage Disposal Facilities Requirements - Apr27-17</a> (2.9MB)
<b>Item For Review Distributed On:</b>	May 8 at 09:46 <a href="#">Distribution List</a>
<b>Reviewer Comments Due By:</b>	June 5, 2017
<b>Proponent Responses Due By:</b>	June 26, 2017
<b>Item Description:</b>	<p>The Hamlet of Fort Resolution as submitted a plan intended to address three requirements of their municipal Water Licence MV2014L3-0008, related to the Sewage Disposal Facilities (Lagoon):</p> <ol style="list-style-type: none"> <li>1. Part D, item 8: a Plan to Address the Freeboard Requirement at Cell 1 of the Sewage Disposal Facilities</li> <li>2. Part F, item 1.a: topographic information for the most recently constructed Sewage lagoon cell; and</li> <li>3. Part D, item 11: installation of fencing at the Sewage Disposal Facilities.</li> </ol> <p>Part D, item 8 is for Board approval. Reviewers are asked to focus their comments on the requirements for this condition, which is as follows:</p> <p style="padding-left: 40px;"><i>Within nine (9) months of issuance, the Licensee shall submit to the Board, for approval, a <b>Plan to Address the Freeboard Requirement at Cell 1 of the Sewage Disposal Facilities</b>. The Plan shall include, but not be limited to, the following:</i></p> <ol style="list-style-type: none"> <li>a) Measure(s) to address the Freeboard requirement specified under Part D, item 7;</li> <li>b) Method(s) to calculate and monitor the Sewage lagoon infiltration rate; and</li> <li>c) A timeline and action plan for implementation of these improvement and monitoring measures.</li> </ol> <p>Part F item 1a is for submission to the Board only. Please note that Part D, item 11 is not for Board approval; the Licence states that 'the fencing shall be installed to the satisfaction of an Inspector.'</p> <p>Reviewers are invited to submit questions, comments and recommendations on the Hamlet's submission by <b>June 5, 2017</b>.</p> <p>If you have questions or comments regarding this review or the Online Review System, please contact Erica Janes at (867) 766-7466 or <a href="mailto:ejanes@mvlwb.com">ejanes@mvlwb.com</a>.</p>

<b>General Reviewer Information:</b>	<p>In addition to the email distribution list, the following organizations received review materials by fax:</p> <ul style="list-style-type: none"> <li>• Fort Resolution Métis Council - Trudy King (867)394-3322;</li> <li>• Hay River Metis Council - Trevor Beck, President (867)874-4472; and</li> <li>• NWT Metis Nation - Tim Heron, NWTMN IMA Coordinator (867)872-3586.</li> </ul>
<b>Contact Information:</b>	<p>Erica Janes 867-766-7466  Heather Scott 867-766-7463  Jen Potten 867-766-7468</p>

### Comment Summary

GNWT - ENR: Central Email GNWT				
ID	Topic	Reviewer Comment/Recommendation	Proponent Response	Board Staff Analysis
3	General File	<p><b>Comment</b> (<a href="#">doc</a>) ENR Letter with Comments and Recommendations</p> <p><b>Recommendation</b></p>		Noted.
1	Topic 1: Current Sewage Lagoon Cells Closure and Reclamation	<p><b>Comment</b> The document entitled "Sewage Disposal Facilities Requirements" (page 3 of 5) provides several important items pertaining to compliance amongst which includes remedial work to be completed on the perimeter berm and on the truck ramp to improve freeboard. Numerous references were made in the various documents submitted regarding the construction of the new Sewage lagoon cells; however, ENR was not able to locate details on closure and reclamation for the current Sewage Disposal Facilities. ENR notes that Part I Item 3 of the Hamlet Water Licence specifies that Closure and Reclamation Plan should be submitted to the Board six (6) months prior to the closure of any Sewage or Solid Waste Disposal Facilities.</p> <p><b>Recommendation</b> 1) ENR recommends the Hamlet of Fort Resolution (the Hamlet) clarify their plans regarding the future of the current Sewage Lagoons (i.e. will they be closed in 6 months).</p>	<p><b>July 4:</b> 1. The closure of the existing sewage lagoon will depend upon the commissioning of the new lagoon, and the timeline for the commissioning will depend upon the construction schedule developed by the successful tender of the work.</p>	<p>Noted. The Hamlet should be reminded that as per Part I, item 3 and Schedule 2, item 1 of MV2014L3-0008, a Closure and Reclamation Plan shall be submitted to the Board for approval at least 6 months prior to the closure of any of the Sewage or Solid Waste Disposal Facilities.</p>

2	None	<b>Comment</b> None <b>Recommendation</b> 2) ENR recommends that six months prior to the closure of such facilities the Hamlet include closure and reclamation details in a Closure and Reclamation Plan, as per Part I, Item 3 of the current Water Licence.	<b>July 4:</b> 1. Comment regarding timeline for closure and reclamation planning acknowledged.	Noted. See Comment ID ENR 2 above.
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**MVLWB: Erica Janes**

ID	Topic	Reviewer Comment/Recommendation	Proponent Response	Board Staff Analysis
1	Policy/Compliance #1 & #2	<b>Comment</b> These items state that remedial work on the perimeter berm and truck ramp will increase elevation by 0.5m to improve freeboard. <b>Recommendation</b> What is the current freeboard at the facility? Will raising the perimeter berm by 0.5 m be sufficient to eliminate the problem of inadequate freeboard?	<b>July 4:</b> 1. The current freeboard on the lagoon is about 0.5 metres. The 0.5 metre increase in the berm height may be sufficient to eliminate the problem with the sewage lagoon freeboard, however the ultimate height increase in the berm will be adjusted to the measurement of the lagoon water level.	Board staff note that as per Part D, item 7 of MV2014L3-0008, a freeboard limit of 1 metre, or as recommended by Professional Engineer and as approved by the Board, shall be maintained at all structures associated with the Sewage Disposal Facilities. The Plan should be updated to include how 1 m freeboard will be achieved, or if another recommendation is made by a Professional Engineer, provide rationale for that recommendation.
2	Policy/Compliance #5	<b>Comment</b> This item references an emergency procedure to manage high water levels by pumping between cells 1 and 7. Board staff note that this emergency procedure should be fully explained in the forthcoming Sewage Disposal Facilities O&M Plan, which is to be submitted within 4 months of Board approval of the Freeboard Plan, as per Part E, item 3 of MV2014L3-0008. It would also be helpful if additional detail were included in this submission,	<b>July 4:</b> 1. Emergency pumping procedure between cell 1 and cell 7 will be subject to the Hamlet staff monitoring the lagoon level on a weekly basis, and if the freeboard is less than 1 metre, as measured with the lagoon level gauge, a pump owned by the Hamlet will be deployed to the area between cell 1 and cell 7. The pump will operate constantly by the Hamlet staff until the freeboard returns to 1 metre as	Noted.  The Hamlet should include this information in the revised Freeboard Plan.

		<p>to facilitate understanding of the Hamlet's plans to manage freeboard in Cell 1. Also, Part D, item 8b of the Licence requires this submission to include method(s) to calculate and monitor the sewage lagoon infiltration rate.</p> <p><b>Recommendation</b> Please provide additional information to describe the emergency procedure for pumping between cells 1 and 7, including the method(s) to calculate and monitor the sewage lagoon infiltration rate (ie how often pumping may be required), the freeboard level at which pumping will be triggered, the amount to be pumped, and who is responsible for monitoring lagoon levels and doing the pumping.</p>	<p>indicated by the lagoon level gauge."</p>	
3	Responsibilities #4	<p><b>Comment</b> This item states that lagoon levels will be monitored on a weekly basis during ice free periods; Policy/Compliance #4 also mentions use of a gauge to monitor lagoon levels, but the gauge is not described.</p> <p><b>Recommendation</b> Please provide detail to describe how lagoon level monitoring will be conducted using the gauge referenced, and how monitoring results will translate into emergency or any other procedure(s).</p>	<p><b>July 4:</b> 1. The lagoon level monitoring will be conducted by observing the elevation on the water level gauge, which will consist of a graduated scale (in metres) on a metal pole embedded into the bottom of the lagoon near the truck discharge area. See item 2 above for the translation of monitoring information into the execution of an emergency pumping procedure.</p>	<p>Noted.</p> <p>The Hamlet should include this information in the revised Freeboard Plan.</p>
4	F1a of Licence: topographic information for most recently constructed sewage lagoon cell	<p><b>Comment</b> Board staff note that this submission is intended to address Part F, item 1a of the Licence. This item was due within 3 months of Licence issuance (March 3, 2016). Topographic lines are included in drawing C-101, but elevations are not.</p> <p><b>Recommendation</b> Please ensure when submitting topographic information in future, that all details are submitted.</p>	<p><b>July 4:</b> 1. Comment regarding the submission of detailed topographic information acknowledged.</p>	<p>The Hamlet should revise the figure included in drawing C-101 to include elevations.</p>