



**Mackenzie Valley Land and Water Board**  
**7th Floor - 4922 48th Street**  
**P.O. Box 2130**  
**YELLOWKNIFE NT X1A 2P6**  
**Phone (867) 669-0506**  
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**Staff Report**

<b>Applicant:</b> Hamlet of Fort Liard	
<b>Location:</b> Fort Liard, NT	<b>Application:</b> MV2009L3-0025
<b>Date Prepared:</b> August 20, 2018	<b>Meeting Date:</b> August 30, 2018
<b>Subject:</b> 2017 Annual Water Licence Report	

**1. Purpose/Report Summary**

The purpose of this Report is to present to the Mackenzie Valley Land and Water Board (MVLWB/the Board) the 2017 Annual Water Licence Report (2017 Annual Report) submitted by the Hamlet of Fort Liard (Hamlet), to fulfill Part B, condition 1 of their municipal Water Licence MV2009L3-0025 (Licence).

**2. Background**

- March 1, 2010 – Issuance of Licence MV2009L3-0025;
- March 23, 2018 – 2017 Annual Report received;
- April 17, 2018 – Review commenced;
- May 16, 2018 – Reviewer comments and recommendations due and received;
- May 30, 2018 – Responses due and received;
- **August 30, 2018 – 2017 Annual Report presented to the Board;** and
- February 29, 2020 – Expiration of Licence MV2009L3-0025.

**3. Discussion**

On March 23, 2018, the Hamlet submitted their 2017 Annual Report (attached) to fulfill Part B, condition 1 of Licence MV2009L3-0025 (attached). This submission is not for Board approval; however, it summarizes the activities undertaken during the previous year, including the general results of monitoring activities. Additionally, the Board must be satisfied that the Licensee has completed the Annual Report in accordance with requirements of the Licence.

**4. Comments**

The Hamlet submitted the 2017 Annual Report using the annual reporting template created and maintained by Board staff; however, the Hamlet submitted tabular summaries of SNP data separately and did not include all the SNP summary tables provided with the most recent version of the annual reporting template. For ease of reference and reviewing SNP data, as well as identification of Effluent Quality Criteria exceedances, the Hamlet could be encouraged to use the annual reporting template

developed by Board staff. Board staff further note that the Hamlet sampled total metals for SNP station 1478-3, which is not required by the Licence; the Hamlet could be reminded that they only need to sample the parameters at each station required in the SNP Annex, Part 2 of the Licence.

## 5. Reviewer Comments

By May 16, 2018, comments and recommendations on the 2017 Annual Report were received from Environment and Climate Change Canada (ECCC), the Government of the Northwest Territories Department of Environment and Natural Resources (GNWT-ENR), and Board staff. Acho Dene Koe First Nation (ADKFN) submitted late review comments on May 17, to 'inform the board that ADKFN will communicate directly with the Hamlet regarding the plans'.

The Hamlet responded on May 30, 2018. The Review Summary and Attachments (attached) presents the concerns identified through this review.

The following summarizes the main issues raised during the review:

### Sewage effluent quality

ECCC (Comment ID 2) pointed to a decline in sewage effluent quality possibly caused by disturbing sludge during decant operations and recommended that the Hamlet develop and implement procedures to ensure that settled sludge isn't re-suspended during decant. Board staff note that the Hamlet conducted desludging of the lagoon following the analytical results referenced by ECCC. Desludging is anticipated to improve the functioning of the lagoon system, and changes to decant procedures can be considered should function and sampling results not improve in 2018.

### SNP sampling and reporting

ECCC (Comment ID 3 and 4) pointed out that some details and results were missing from the SNP summary tables. The Hamlet agreed to provide the missing information in future; Board staff have revised the SNP summary tables in the Annual Report Template (attached) for the Hamlet's reference and use. Board staff further note that the Licence does not require the Hamlet to record field pH, field temperature or oil and grease when sampling any of the SNP stations, and note the Hamlet's reference to the recently-revised requirements for sampling frequency at station 1478-9.

ECCC (Comment ID 5) also recommended that the Hamlet summarize quality assurance and quality control (QA/QC) field sampling in the annual report; Board staff note that QA/QC is covered in the Licence SNP, condition 2(f); the Hamlet is not required by the Licence to develop or report on a QA/QC program.

Reviewers (GNWT-ENR Comment ID 1 and MVLWB Comment ID 2) identified several exceedances at SNP station 1478-9 and recommended that the SNP summary table allow space for EQC to be included for comparison purposes. Board staff will ensure that the revised Annual Report Template (attached) includes such a column for this SNP station. The Board may wish to remind the Hamlet to make use of the most recent annual reporting template provided by Board staff to increase the likelihood of clear and sufficient reporting of SNP results.

Board staff noted that the location of SNP station 1478-8 has yet to be identified; the Hamlet responded that they will endeavor to do so during the 2018 field season. The Board may wish to remind the Hamlet of this Licence requirement.

### Reporting

GNWT-ENR (Comment ID 2) recommended that the Hamlet provide updates/details on procedures performed to improve recurring issues relating to freeboard and emergency decants, as per the Dillon's 2015 Sewage Lagoon Capacity Study Final Report, Inter-Cell Transfer and Decanting Protocol, which the Hamlet agreed to do if required. The Hamlet should include any updates or details on timing and duration of decant procedures under Section 13 (Other Information) of the annual reporting template provided by Board staff.

GNWT-ENR (Comment ID 3) recommended that the Hamlet submit all water quality data to the public registry in an accessible file type (csv or xls) and complete the GNWT metadata template attached to the Review Comment Table (Comment ID 4). The Hamlet agreed to do both if required by the Board. Board staff note GNWT-ENR has recently requested this type of information in a number of recent reviews. The Board could encourage the Hamlet to discuss this request with GNWT-ENR.

## **6. Security**

Not applicable.

## **7. Conclusion**

Annual Water Licence Reports are not for Board approval; however, the Board may wish to follow up with the Hamlet based on the information provided in the Annual Report and through the public review.

Board staff conclude that the Hamlet could be reminded of the following:

- Ensure that the most recent annual reporting template provided by Board staff is used each year, to increase the clarity and adequacy of reporting SNP results;
- The Hamlet is only required to sample the parameters listed at each SNP station required in the SNP Annex, Part 2 of the Licence;
- The Licence SNP requires identification of SNP station 1478-8. The Board could request a proposal from the Hamlet to identify this station in the near future; and
- Any updates or details on timing and duration of decant procedures should be included in Section 13 (Other Information) of the annual reporting template each year.

The Hamlet could also be encouraged to discuss GNWT-ENR's request to provide water quality data in an accessible file type and to complete their metadata template for posting to the Board's public registry, with GNWT-ENR representatives.

## 8. Recommendation

Board staff recommend the Board **accept the 2017 Annual Water Licence Report as submitted** to fulfill Part B, condition 1 of their municipal Water Licence MV2009L3-0025.

A draft letter is attached for the Board's consideration.

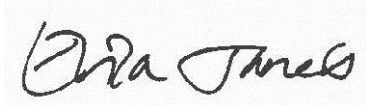
Board staff recommend including the following text in the decision letter:

- The Board notes and appreciates the Hamlet's efforts to report in accordance with Licence requirements.
- The Hamlet shall adhere to the commitments made in their responses to reviewer comments dated May 30, 2018.

## 9. Attachments

- [2017 Annual Water Licence Report](#)
- Review Summary and Attachments
- Annual Report template – revised
- Draft Letter from the Board

Respectfully submitted,



Erica Janes  
Regulatory Specialist



Heather Scott  
Technical Advisor

### Review Comment Table

<b>Board:</b>	MVLWB
<b>Review Item:</b>	Hamlet of Fort Liard - 2017 Annual Water Licence Report (MV2009L3-0025)
<b>File(s):</b>	<a href="#">MV2009L3-0025</a>
<b>Proponent:</b>	Hamlet of Fort Liard
<b>Document(s):</b>	<a href="#">MV2009L3-0025 - Fort Liard - 2017 Annual WL Report - Mar23-18</a> (3.4 MB)
<b>Item For Review Distributed On:</b>	Apr 17 at 11:19 <a href="#">Distribution List</a>
<b>Reviewer Comments Due By:</b>	May 16, 2018
<b>Proponent Responses Due By:</b>	May 30, 2018
<b>Item Description:</b>	<p>The Hamlet of Fort Liard has submitted their 2017 Annual Water Licence Report, in accordance with Part B, Condition 1 of municipal Water Licence MV2009L3-0025. Although formal approval of Annual Reports is not required under the Licence, the Board must be satisfied that the Hamlet has reported in accordance with the requirements of their Licence.</p> <p>Reviewers are invited to submit questions, comments and recommendations on the 2017 Annual Water Licence Report by <b>May 16, 2018</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 have received review materials by fax:</p> <ul style="list-style-type: none"> <li>• Fort Simpson Métis Local #52 - Marie Lafferty, President (867)695-2040;</li> <li>• Hay River Metis Council - Trevor Beck, President (867)874-4472;</li> <li>• Northwest Territory Métis Nation - Tim Heron, NWTMN IMA Coordinator (867)872-3586; and</li> <li>• Liard First Nation – Kaska Dena Council - George Morgan, Chief (867) 536-7910.</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

Hamlet of Fort Liard (Proponent)				
ID	Topic	Reviewer Comment/Recommendation	Proponent Response	Board Staff Analysis
1	General File	<b>Comment</b> ( <a href="#">doc</a> ) Per MVLWB Reviewer Erica Janes - Comment #3. Tabular summary of SNP results for station 1478-7 attached. <b>Recommendation</b>	N/A	Noted.
Acho Dene Koe First Nation: Julie Swinscoe				
ID	Topic	Reviewer Comment/Recommendation	Proponent Response	Board Staff Analysis
1	General Comment	<b>Comment</b> ( <a href="#">doc</a> ) ( <b>Submitted after Due Date</b> ) ADKFN acknowledges the submission of the Annual Water License Report to the MVLWB for review under water licence MV2009L3-0025, and is submitting this referral response to inform the board that ADKFN will communicate directly with the Hamlet regarding the report. <b>Recommendation</b> See attached.	<b>May 30:</b> No comment.	Noted.
Environment and Climate Change Canada: Melissa Pinto				
ID	Topic	Reviewer Comment/Recommendation	Proponent Response	Board Staff Analysis
1	General File	<b>Comment</b> ( <a href="#">doc</a> ) ECCC Cover Letter <b>Recommendation</b>	--	Noted.
2	Sewage effluent quality	<b>Comment</b> Post-decant concentrations measured in July were much higher for Carbonaceous Biochemical Oxygen Demand (CBOD) (90 mg/L) and Total Suspended Solids (TSS) (356 mg/L) than the pre-decant concentrations (27 mg/L CBOD; 44 mg/L TSS) measured in June. A decline in effluent quality could be	<b>May 30:</b> Noted. The Hamlet will develop and implement such procedures if required by the Board.	Board staff note that the Hamlet conducted desludging of the lagoon in September and October of 2017. Desludging is anticipated to improve the functioning of the

		<p>caused by disturbing sludge during decant operations and/or by decanting too low. Procedures should be put in place to prevent this from occurring.</p> <p><b>Recommendation</b> ECCC recommends that the Hamlet of Fort Liard (the Proponent) develop and implement procedures to ensure that settled sludge will not be re-suspended during decant, and/or discharged during decant operations.</p>		<p>lagoon system; should function and sampling results not improve in 2018, changes to decant procedures can be considered in future.</p>
3	SNP summary tables	<p><b>Comment</b> ECCC notes that the summary tables provided in Appendix A are missing concentration units for many parameters. As well, the following parameters were not included in the summary tables: field pH, field temperature, oil and grease.</p> <p><b>Recommendation</b> ECCC recommends that future annual report summary tables provide parameter concentration units, and include data for field pH, field temperature, and oil and grease.</p>	<p><b>May 30:</b> Noted. Concentration units were noted as missing in Appendix A of the current submission for Station Number 1478-6 and 1478-9 summary tables. The Hamlet will include parameter concentration units in its future report summary tables. Data for Oil and Grease will be submitted for future sampling events. Field pH, field temperature data will be collected at future sampling events if required by the Board.</p>	<p>Board staff can provide updated summary tables, including concentration units, in a revised annual reporting template, for the Hamlet's use.</p> <p>Board staff note that the Licence SNP does not require the Hamlet to record field pH, field temperature or oil and grease when sampling any of the SNP stations.</p>
4	SNP summary tables	<p><b>Comment</b> ECCC notes that the summary tables do not include the data measured at lagoon #3 during the fall decant.</p> <p><b>Recommendation</b> ECCC recommends that pre- and post-decant data from September 2017 be included in the summary tables.</p>	<p><b>May 30:</b> Pre-decant data from September 2017 (labelled as August 29th, 2017) can be found in column 3 of the summary tables on page 41 of the Annual Report Submission (Lab Certs on pages 63-64). Post-decant data was not collected as the decant was done in preparation for de-sludging of the cell. For future reporting requirements, please refer to the letter from</p>	<p>Noted.</p>

			the MVLWB dated February 22, 2018 regarding approval of changing the sampling frequency of SNP station 1478-9. The Board has removed the requirement for post-decant sampling at this SNP station.	
5	QA/QC field sampling	<p><b>Comment</b> Quality Assurance/Quality Control (QA/QC) field sampling was not described in the annual report. Sampling locations, dates and results for field blanks, travel blanks and duplicate field samples should be included to ensure appropriate QA/QC is being conducted.</p> <p><b>Recommendation</b> ECCC recommends that QA/QC field sampling is summarized in the annual report.</p>	<p><b>May 30:</b> A QA/QC program will be developed and executed at future sampling events if required by the Board.</p>	Board staff note that QA/QC is covered in the Licence SNP, condition 2(f); the Hamlet is not required by the Licence to develop or report on a QA/QC program.

**GNWT - ENR: Central Email GNWT**

<b>ID</b>	<b>Topic</b>	<b>Reviewer Comment/Recommendation</b>	<b>Proponent Response</b>	<b>Board Staff Analysis</b>
5	General File	<p><b>Comment</b> <a href="#">(doc)</a> ENR Letter with Comments, Recommendations and Attachment</p> <p><b>Recommendation</b></p>	--	Noted
6	General File	<p><b>Comment</b> <a href="#">(doc)</a> Attachment; 2018 Appendix A Example of Water Quality Sample Metadata Template (2)</p> <p><b>Recommendation</b></p>		
1	Topic 1: Annual Report Results EQCs and Exceedances	<p><b>Comment</b> In their 2016 Staff Report and Comments (June 2017), the MVLWB Board Staff recommended the Annual Report template to include Effluent Quality Criteria (EQC) for results provided from Fort Liard compliance SNP station SNP 1478-9 for comparison</p>	<p><b>May 30:</b> Noted. The Hamlet will include a column identifying EQC limits in their tabular summary template and will also highlight exceedences to facilitate results comparison in future submissions if required by the Board.</p>	Board staff note that the most recently revised annual reporting template (revised July 7, 2017) provided to the Hamlet does provide a column for EQCs (Part D,



		<p>purposes. From the EQC, Board staff also recommended Fort Liard to identify/highlight exceedances in their Annual Report. It was noted that EQCs, as provided in Part D Item 2 of the Water Licence not provided in the Fort Liard results reporting template, and that exceedances were not identified/highlighted. As such, ENR identified the following exceedances for the year 2017 - out of a total of 3 sampling events: . BOD [EQC of 30 mg/L]: 2 exceedances, of 41.6 mg/L and 100 mg/L; . TSS [EQC of 40 mg/L]: 3 exceedances, of 44 mg/L, 356 mg/L and 74 mg/L; and . FC [EQC of 1,000 CFU/100 ml]: Possibly 1, reported as &gt;200.5 CFU/100 ml. Results at the end of the treatment system (at Final Discharge Point), immediately prior to entering the receiving environment of Petitot River, reported 1 elevated level for TSS of 84 mg/L.</p> <p><b>Recommendation 1)</b> ENR recommends that Fort Liard’s tabular summary template provide a space allowing for EQC limits to be inserted, facilitating results comparison and identification of exceedances.</p>		<p>condition 2) at SNP station 1478-9. Board staff can send the annual reporting template to the Hamlet again for future use.</p>
2	<p>Topic 2: Dillon’s Inter-Cell Transfer and Decanting Protocol - Reporting</p>	<p><b>Comment</b> Section 5.1.1 of the Sewage Lagoon Capacity Study Final Report (submitted to the MVLWB in 2016) suggested a series of transfers between Cell #1 (receiving wastewater discharges), Cell #2 and Cell #3 and following a</p>	<p><b>May 30:</b> Noted. The Hamlet will include updates and details on timing and duration of decant procedures in future annual report submissions if required by the Board.</p>	<p>The Hamlet should include any updates or details on timing and duration of decant procedures under Section 13 (Other Information) of the</p>

		<p>specific timing prior to one final discharge to the environment in the fall. This Inter-Cell Transfer and Decanting Protocol was designed to help the Fort Liard resolve long term recurring issues of exceeding freeboard and requiring emergency decants. ENR commends the Hamlet for conducting sludge removal in the summer of 2017. For subsequent years (i.e. 2018 and onwards), procedures followed under the Inter-Cell Transfer and Decanting Protocol, should be included within Annual Reports, under Section 2 ii) and/or wherever else deemed appropriate.</p> <p><b>Recommendation 1)</b> ENR recommends future Annual Reports provide updates/details on procedures performed to improve recurring issues relating to freeboard and emergency decants, as per the Dillon’s 2015 Sewage Lagoon Capacity Study Final Report, Inter-Cell Transfer and Decanting Protocol.</p>		<p>annual reporting template provided by Board staff.</p>
3	Topic 3: Water Quality Data	<p><b>Comment</b> The Hamlet of Fort Liard provided its 2017 water quality sampling results in Appendix A in a PDF format. However, the utility of this data is limited by third parties in its current format (i.e. pdf).</p> <p><b>Recommendation 1)</b> ENR recommends that the Hamlet of Fort Liard submit all water quality data associated with the Surveillance Network Program stations and the Sewage Lagoon stations to</p>	<p><b>May 30:</b> Noted. The Hamlet will provide its water quality data in the requested format if required by the Board.</p>	<p>Noted. However, as the public registry doesn’t support xls files, the Board could encourage the Community to discuss this request with GNWT-ENR.</p>

		the Board public registry in an accessible file type (e.g., csv or xls).		
4	Topic 4: Metadata Template	<p><b>Comment</b> ENR appreciates that the Hamlet of Fort Liard provided all monitoring sampling results in Appendix A of the 2017 Annual Report. However, to ensure consistency among reporting by proponents, ENR encourages the use of a standard metadata template. Metadata sets the context for the water quality data, providing a description of data that was collected as part of a water quality sampling program and includes field conditions and a description of laboratory analyses conducted. Metadata standards are required to ensure the proper use and interpretation of the data by the users. Also, as with the water quality data itself, ENR encourages that the metadata be available in an accessible file type.</p> <p><b>Recommendation 1)</b> ENR recommends that the Hamlet of Fort Liard complete the attached metadata template and provide it with the associated water quality data to the public registry in an accessible file type (e.g., csv or xls).</p>	<b>May 30:</b> Noted. The Hamlet will adopt the use of the suggested metadata template if required by the Board.	Noted.  The Board could encourage the community to discuss this request with GNWT-ENR.

**MVLWB: Erica Janes**

<b>ID</b>	<b>Topic</b>	<b>Reviewer Comment/Recommendation</b>	<b>Proponent Response</b>	<b>Board Staff Analysis</b>
1	SNP station identification	<b>Comment</b> Board staff note that no location for SNP 1478-8 has been identified, and recognize that with a Water	<b>May 30:</b> Noted. The Hamlet will endeavour to work with the new Dehcho WRO in order to identify a location for	Acceptable response.

		Resources Officer now hired in the Dehcho region, identification of this station should be possible during the 2018 field season. <b>Recommendation</b> None	SNP 1478-8 during the 2018 field season.	The Board may wish to remind the Hamlet of this Licence requirement.
2	SNP results: station 1478-9	<b>Comment</b> Board staff note that tabular results for SNP station 1478-9 do not provide a comparison to the Licence Effluent Quality Criteria (EQC) listed in Part D, condition 2, and that the Board requested in the June 22, 2017 acceptance letter for the 2016 Annual WL Report that EQC exceedances be identified in annual reporting. The annual reporting template for MV2009L3-0025 provided by Board staff contains tables for each SNP station, and where relevant, Licence EQC for comparative purposes. <b>Recommendation</b> Please ensure that future annual reports compare SNP results at station 1478-9 to the EQC listed in the Licence, and that exceedances are clearly identified.	<b>May 30:</b> Noted. Future annual reports will include a column listing EQCs listed in the Licence and will highlight parameter exceedances to those EQCs if required by the Board.	The Hamlet should make use of the annual reporting template provided by Board staff to increase the likelihood of clear and sufficient reporting of SNP results.
3	SNP results: station 1478-7	<b>Comment</b> The tabular SNP summary section states that results from station 1478-7 are attached separately; Board staff could not locate these results. <b>Recommendation</b> Please append a tabular summary of SNP results for station 1478-7.	<b>May 30:</b> Noted. Tabular results for 1478-7 have been provided to the Board via the ORS. (Posted with the current comment response submission).	Noted. Board staff have posted the tabular summary to the registry.



**Acho Dene Koe**  
— FIRST NATION —



# Memorandum

**To:** Alan Harris (Manager Municipal Operations), Hamlet of Fort Liard  
**From:** Julie Swinscoe, Project Director  
**c.c.:** Boyd Clark, Operations Manager; Chief Gene Hope, Acho Dene Koe First Nation  
**Date:** May 17, 2018  
**Re:** Fort Liard Water Licence Report Referral # MV2009L3-0025

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The following Referral response is being submitted online via the MVLWB Online Review System on behalf of Acho Dene Koe First Nation.

## 1 General Comments

The Hamlet of Fort Liard has submitted its Annual Water License Report to the Mackenzie Valley Land and Water Board (MVLWB) to meet the requirements of the water licence.

The Hamlet of Fort Liard is Acho Dene Koe First Nation's (ADKFN's) principal settlement. ADKFN acknowledges the submission of the Annual Water License Report to the MVLWB for review under water licence MV2009L3-0025, and is submitting this referral response to inform the board that ADKFN will communicate directly with the Hamlet regarding the plans.

## 2 Authorization

These recommendations were provided on behalf of Acho Dene Koe First Nation on the 17<sup>th</sup> day of May, 2018.

Acho Dene Koe First Nation	Landmark Resource Management
 Signature	 Signature
Gene Hope Name	Julie Swinscoe Name
ADKFN Chief Title	Project Director Title

## **APPENDIX A: Water Quality Sample Metadata Template - Field Data**

### **Proponent Identification**

Proponent Name:

Contact Name:

Contact Number and Email:

Program/Project Title:

Unique Identifier for Sample:

### **Sample Identification**

Sampled By:

Date Sample was Collected (DD-MM-YYYY):

Time of Sample Collection (24 hr clock hh:mm):

Sampling Frequency (e.g. 3x/yr, monthly):

Program/Project Title:

Program Initiation (MM-YYYY):

Purpose of Data Collection:

Legal Sample:

### **Sampling Equipment**

Instrumentation Type with Model Number:

Sensors Used, Including Model Numbers:

Date of Last Calibration:

### **Field Data**

Waterbody Type:

Sample Matrix:

Sample Type:

Sample Form:

Sampling Equipment:

Sample Location:

Depth of Sample (m):

Wind Speed/Direction:

Air Temperature (0C):

Precipitation in the Previous 24 Hours (Y/N):

Water Depth (m):

Ice Thickness (m):

Snow Thickness (m):

Cloud Cover (%):

Field Observations & Comments. Note anything unusual about the location or sampling procedure

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**Sample 1**

**Sample 2**

**Sample 3**

**Etc.**



**APPENDIX B: Water Quality Sample Metadata  
Template - Lab Data**

**Proponent Identification**

Proponent Name:

Contact Name:

Contact Number and Email:

Program/Project Title:

Unique Identifier for Sample:

**Lab Data**

Parameter

Sample Date (DD-MM-YYYY)

Laboratory Used

Lab Analysis Date (DD-MM-YYYY)

Sample Preservation Method

Sample Preparation Method

Laboratory Analytical Method Used

Method Detection Limit

**Sample 1**

**Sample 2**

**Sample 3**

**Etc.**



May 16, 2018

Erica Janes  
Regulatory Officer  
Mackenzie Valley Land and Water Board  
7<sup>th</sup> Floor – 4910 50<sup>th</sup> Avenue  
P.O. Box 2130  
Yellowknife, NT  
X1A 2P6

Dear Ms. Janes,

**Re: Hamlet of Fort Liard  
Water Licence – MV2009L3-0025  
2017 Annual Water Licence Report  
Request for Comments**

The Department of Environment and Natural Resources (ENR), Government of the Northwest Territories has reviewed the report at reference based on its mandated responsibilities under the *Environmental Protection Act*, the *Forest Management Act*, the *Forest Protection Act*, the *Species at Risk (NWT) Act*, the *Waters Act* and the *Wildlife Act* and provides the following comments and recommendations for the consideration of the Board.

### **Topic 1: Annual Report Results – EQCs and Exceedances**

#### **Comment(s):**

In their 2016 Staff Report and Comments (June 2017), the MVLWB Board Staff recommended the Annual Report template to include Effluent Quality Criteria (EQC) for results provided from Fort Liard compliance SNP station SNP 1478-9 for comparison purposes. From the EQC, Board staff also recommended Fort Liard to identify/highlight exceedances in their Annual Report. It was noted that EQCs, as provided in Part D Item 2 of the Water Licence not provided in the Fort Liard results reporting template, and that exceedances were not identified/highlighted. As such, ENR identified the following exceedances for the year 2017 - out of a total of 3 sampling events:

- BOD [EQC of 30 mg/L]: 2 exceedances, of 41.6 mg/L and 100 mg/L;

- TSS [EQC of 40 mg/L]: 3 exceedances, of 44 mg/L, 356 mg/L and 74 mg/L; and
- FC [EQC of 1,000 CFU/100 ml]: Possibly 1, reported as >200.5 CFU/100 ml.

Results at the end of the treatment system (at Final Discharge Point), immediately prior to entering the receiving environment of Petitot River, reported 1 elevated level for TSS of 84 mg/L.

### **Recommendation(s):**

- 1) ENR recommends that Fort Liard's tabular summary template provide a space allowing for EQC limits to be inserted, facilitating results comparison and identification of exceedances.

### **Topic 2: Dillon's Inter-Cell Transfer and Decanting Protocol - Reporting**

#### **Comment(s):**

Section 5.1.1 of the *Sewage Lagoon Capacity Study Final Report* (submitted to the MVLWB in 2016) suggested a series of transfers between Cell #1 (receiving wastewater discharges), Cell #2 and Cell #3 and following a specific timing prior to one final discharge to the environment in the fall. This *Inter-Cell Transfer and Decanting Protocol* was designed to help the Fort Liard resolve long term recurring issues of exceeding freeboard and requiring emergency decants.

ENR commends the Hamlet for conducting sludge removal in the summer of 2017.

For subsequent years (i.e. 2018 and onwards), procedures followed under the *Inter-Cell Transfer and Decanting Protocol*, should be included within Annual Reports, under Section 2 ii) and/or wherever else deemed appropriate.

#### **Recommendation:**

- 1) ENR recommends future Annual Reports provide updates/details on procedures performed to improve recurring issues relating to freeboard and emergency decants, as per the Dillon's 2015 Sewage Lagoon Capacity Study Final Report, *Inter-Cell Transfer and Decanting Protocol*.

### **Topic 3: Water Quality Data**

#### **Comment(s):**

The Hamlet of Fort Liard provided its 2017 water quality sampling results in Appendix A in a PDF format. However, the utility of this data is limited by third parties in its current format (i.e. pdf).

**Recommendation(s):**

- 1) ENR recommends that the Hamlet of Fort Liard submit all water quality data associated with the Surveillance Network Program stations and the Sewage Lagoon stations to the Board public registry in an accessible file type (e.g., csv or xls).

**Topic 4: Metadata Template****Comment(s):**

ENR appreciates that the Hamlet of Fort Liard provided all monitoring sampling results in Appendix A of the 2017 Annual Report. However, to ensure consistency among reporting by proponents, ENR encourages the use of a standard metadata template. Metadata sets the context for the water quality data, providing a description of data that was collected as part of a water quality sampling program and includes field conditions and a description of laboratory analyses conducted. Metadata standards are required to ensure the proper use and interpretation of the data by the users. Also, as with the water quality data itself, ENR encourages that the metadata be available in an accessible file type.

**Recommendation(s):**

- 1) ENR recommends that the Hamlet of Fort Liard complete the attached metadata template and provide it with the associated water quality data to the public registry in an accessible file type (e.g., csv or xls).

Comments and recommendations were provided by ENR technical experts in the Water Resources Division, NWT CIMP and the Dehcho Region and were coordinated and collated by the Environmental Assessment and Monitoring Section, Conservation, Assessment and Monitoring Division (CAM).

Should you have any questions or concerns, please do not hesitate to contact Patrick Clancy, Environmental Regulatory Analyst at (867) 767-9233 Ext: 53096 or email [patrick.clancy@gov.nt.ca](mailto:patrick.clancy@gov.nt.ca).

Sincerely,

A handwritten signature in black ink, appearing to read 'P. Clancy', written in a cursive style.

Patrick Clancy  
Environmental  
Environmental Regulatory Analyst  
Environmental Assessment and Monitoring Section  
Conservation, Assessment and Monitoring Division  
Department of Environment and Natural Resources  
Government of the Northwest Territories

Att: 2018 Appendix A Example of Water Quality Sample Metadata Template (2)



Environmental Protection Operations Directorate  
Prairie & Northern Region  
5019 52<sup>nd</sup> Street, 4<sup>th</sup> Floor  
P.O. Box 2310  
Yellowknife, NT X1A 2P7

ECCC File: 5100 000 026/001  
MVLWB File: MV2009L3-0025

May 16, 2018

Via online submission

Erica Janes  
Regulatory Specialist  
Mackenzie Valley Land and Water Board  
7th Floor, 4922 48th Street  
P.O. Box 2130  
Yellowknife, NT X1A 2P6

Dear Ms. Janes:

**RE: MV2009L3-0025 – Hamlet of Fort Liard – Municipal Water Licence – 2017  
Annual Water Licence Report**

Environment and Climate Change Canada (ECCC) has reviewed the information submitted to the Mackenzie Valley Land and Water Board (MVLWB) regarding the above-mentioned adaptive management plan and is submitting comments via the online review system. ECCC's specialist advice is provided based on our mandate, in the context of the *Canadian Environmental Protection Act*, and the pollution prevention provisions of the *Fisheries Act*.

Should you require further information, please do not hesitate to contact me at (867) 669-4733 or [Melissa.Pinto@canada.ca](mailto:Melissa.Pinto@canada.ca).

Sincerely,

[original signed by]

Melissa Pinto  
Senior Environmental Assessment Coordinator

Attachment(s): ECCC Comments Excel Sheet

cc: Georgina Williston, Head, Environmental Assessment North (NT and NU)  
ECCC Review Team



**Station Number 1478-7: Backwash discharge water from water treatment plant**

**2017**

<u>Parameters</u> - list as per direction from the Environmental Health Officer and/or Inspector	<u>September 14 Results</u>	<u>Method Reporting Limit (RDL)</u>	<u>Units</u>
Hardness	356	5.00	mg/L
Aluminum, total	103	2.0	µg/L
Antimony, total	<0.050	0.050	µg/L
Arsenic, total	5.78	0.050	µg/L
Barium, total	4310	0.10	µg/L
Beryllium, total	0.259	0.010	µg/L
Bismuth, total	<0.010	0.010	µg/L
Boron, Total	35.5	2.0	µg/L
Cadmium, total	0.347	0.0020	µg/L
Calcium, total	116000	40	µg/L
Chromium, total	1.72	0.10	µg/L
Cobalt, total	3.53	0.0050	µg/L
Copper, total	3.15	0.20	µg/L
Iron, total	174000	2.0	µg/L
Lead, total	0.704	0.050	µg/L
Lithium, total	9.27	0.050	µg/L
Magnesium, total	16200	5.0	µg/L
Manganese, total	10300	0.050	µg/L
Molybdenum, total	1.91	0.010	µg/L
Nickel, total	0.527	0.040	µg/L
Phosphorus, total	6500	10	µg/L
Potassium, total	1880	10	µg/L
Selenium, total	0.46	0.10	µg/L
Silicon, total	9410	100	µg/L
Silver, total	<0.010	0.010	µg/L
Sodium, total	27500	20	µg/L
Strontium, total	432	0.10	µg/L
Sulfur, total	8300	1000	µg/L
Tellurium, total	<0.050	0.050	µg/L
Thallium, total	<0.0040	0.0040	µg/L
Thorium, total	0.262	0.010	µg/L
Tin, total	0.105	0.050	µg/L
Titanium, total	4.61	0.20	µg/L
Uranium, total	1.17	0.0010	µg/L
Vanadium, total	34.1	0.20	µg/L
Zinc, total	156	1.0	µg/L
Zirconium, total	26.0	0.020	µg/L