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February 13, 2020

File: MV2019L3-0007

Mr. Alan Harris
Manager, Municipal Operations
Hamlet of Fort Liard
General Delivery
FORT LIARD NT X0G 0A0

sent via email

Dear Mr. Harris:

**Issuance of Type B Water Licence MV2019L3-0007
Municipal – Hamlet of Fort Liard**

Attached is Water Licence MV2019L3-0007 granted by the Mackenzie Valley Land and Water Board (MVLWB or the Board) in accordance with the *Mackenzie Valley Resource Management Act* and *Waters Act*. This Licence has been approved for a period of 15 years, effective February 13, 2020 and expiring February 12, 2035.

Conditions and General Procedures

Please read all conditions carefully. For the purpose of submitting plans in accordance with this Licence, the date of this letter, February 13, 2020, is the date of issuance. Also attached is a copy of the *General Procedures for the Administration of Licences in the Northwest Territories*. The MVLWB requests that you review these and address any questions to the Board's office.

Management Plans - Approved

The Board hereby approves the following Plans as summarized in Table 1:

Table 1: Plans that have been approved

| Licence Condition | Title of Plan | Date Received | Licence Requirement |
|----------------------|--|---------------|---|
| Part D, Condition 14 | Water Supply Facilities Operation and Maintenance Plan | May 15, 2019 | A Water Supply Facilities Operation and Maintenance Plan is required by this Licence for Board approval. |

Management Plans – Resubmission Required

The Board hereby directs the Hamlet of Fort Liard to **revise and resubmit following Plans within six months of the Licence issuance date (by August 13, 2020):**

1. **Sewage Disposal Facilities Operation and Maintenance Plan Version 1.1** to fulfill Part D, Condition 5 of MV2019L3-0007. Revisions to the Sewage Disposal Facilities Operations and Maintenance Plan will be for confirmation of conformity by Board staff, and shall include the following:
 - a) Provide a map showing the entire effluent flowpath from the SDF and relevant SNP stations;
 - b) Revise page 10 of the Plan to show that the receiving environment is “river/stream” instead of “land-surface (overland)”, in order to ensure that the definition of Receiving Environment is consistent in Licence documentation;
 - c) Include the plant types in Section 7; and
 - d) Ensure that changes made to the Sewage Disposal Facilities cells in 2018 are reflected.
2. **Solid Waste Disposal Facilities Operation and Maintenance Plan Version 1.1** to fulfill Part D, Condition 12 of MV2019L3-0007. Revisions to the Solid Waste Disposal Facilities Operations and Maintenance Plan will be for confirmation of conformity by Board staff, and shall include the following:
 - a) Correct the orientation of pages 7 and 26 of 29;
 - b) Include a smaller scale map of the Solid Waste Disposal Facilities cells that outlines the closed/reclaimed portion of the Facilities, cells currently being used, future cells available, and current and/or planned Surveillance Network Program (SNP) stations;
 - c) Provide additional detail on the perimeter fence in Section 3; and
 - d) Provide additional details on how excess/accumulated water is managed at the sedimentation pond in Section 5.
3. **Sludge Management Plan Version 1.1** to fulfill Part D, Condition 6 of MV2019L3-0007. Revisions to the Sludge Management Plan will be for confirmation of conformity by Board staff, and shall include the following:
 - a) Additional detail on sludge measurements and sampling procedures prior to re-use of sludge; and
 - b) Additional detail related to the dimensions of the Geotubes being used to dewater sludge, and sludge sampling protocols.
4. **Spill Contingency Plan Version 1.1** to fulfill Part G, condition 2 of MV2019L3-0007. Revisions to the Spill Contingency Plan will be for confirmation of conformity by Board staff, and shall include the following:
 - a) Attach relevant Material Safety Data Sheets; and
 - b) Include a map that illustrates all of the details listed in Section 1 of the Board’s municipal Spill Contingency Plan template.

Annual Water Licence Report

Please note that the Board will be expecting the first Annual Water Licence Report for MV2019L3-0007 to be submitted by March 31, 2021 for the period of January 1, 2020 to December 31, 2020, in accordance with Part B, condition 14 and Schedule 1 of the Licence.

The Board reminds the Hamlet to provide details on the effectiveness of the SWDF fencing to prevent illicit dumping and wildlife access issues in the annual reporting for MV2019L3-0007.

Operation and Maintenance Plan revisions

Should the Hamlet change any operations during the Licence term, they may submit revisions to the appropriate O&M Plan, or apply to amend their Licence. When revised municipal Operation and Maintenance Plan templates are available, the Hamlet shall use the newest revisions in their annual Plan updates, as appropriate. If the Hamlet identifies an ongoing waste stream from the Water Treatment Plant that requires management, the Water Treatment Plant O&M Plan shall be revised accordingly and submitted for to the Board for approval, in accordance with Part B, condition 7 of the Licence.

Submission Reminders

Please ensure that changes made to the revised Plans are detailed in a revision summary. Also include a table listing the versions and dates of all Plan submissions, indicating which versions have been approved by the Board. The Board requests that, when additional changes are requested from the Board, details of how the information is provided be included in the covering letter. A concordance table could be used to illustrate how the Hamlet has addressed each requested change.

Please refer to Annex B appended to the Water Licence for a summary and timetable of submissions required for this Licence.

The Board encourages the Hamlet to include any available MACA groundwater well data with the Hamlet's annual reporting, when it is made available to the Hamlet.

Public Registry

A copy of this Licence has been filed on the [Public Registry](#) at the office of the MVLWB. Please be advised that this letter, with attached procedures, all inspection reports, and correspondence related thereto is part of the Public Registry and is intended to keep all interested parties informed of the manner in which the Licence requirements are being met. All Public Registry material will be considered if an amendment to the Licence is requested.

The Hamlet shall adhere to the commitments made in their responses to reviewer comments dated July 3, 2019 and November 14, 2019. The full cooperation of the Hamlet of Fort Liard is anticipated and appreciated. If you have any questions or concerns, please contact Erica Janes at (867) 766-7466 or email ejanes@mvlwb.com.

Yours sincerely,



Mavis Cli-Michaud
MVLWB, Chair

Copied to: Distribution List
Sonja Martin-Elson, GNWT-ENR Dehcho region Water Resource Officer
Ceileigh Burns, Dillon Consulting Ltd.

Attached: Water Licence MV2019L3-0007
Reasons for Decision
General Procedures for the Administration of Licences in the Northwest Territories



**Mackenzie Valley Land and Water Board
Water Licence**

Pursuant to the *Mackenzie Valley Resource Management Act*, *Waters Act*, and *Waters Regulations*, the Mackenzie Valley Land and Water Board, hereinafter referred to as the Board, hereby grants to:

Hamlet of Fort Liard

(Licensee)

of _____
Fort Liard, Northwest Territories

(Mailing Address)

hereinafter called the Licensee, the right to alter, divert, or otherwise use water subject to the restrictions and conditions contained in the *Waters Act* and *Regulations* made thereunder and subject to and in accordance with the conditions specified in this Licence.

| | |
|---|--|
| Licence Number: | _____ MV2019L3-0007 _____ |
| Licence Type: | _____ B _____ |
| Water Management Area: | _____ Northwest Territories 03 _____ |
| Location: | _____ Fort Liard, Northwest Territories (60°14' N, 123°28' W: community wells) (60°09'09" N, 123°13'08" W: Waste Disposal Facilities) _____ |
| Purpose: | _____ To use water and dispose of waste and associated uses _____ |
| Description: | _____ Municipal _____ |
| Quantity of Water not to be exceeded : | _____ 60,000 cubic metres (m ³) per year _____ |
| Effective date of licence: | _____ February 13, 2020 _____ |
| Expiry date of licence: | _____ February 12, 2035 _____ |

This Licence issued and recorded at Yellowknife includes and is subject to the annexed conditions.

Mackenzie Valley Land and Water Board

A handwritten signature in blue ink, appearing to read "Mavis Cli-Michaud".

Mavis Cli-Michaud, Chair

A handwritten signature in blue ink, appearing to read "Amanda Gauthier".

Amanda Gauthier, Witness

**Type B Water Licence MV2019L3-0007
Hamlet of Fort Liard – Municipal**

Table of Contents

| | |
|---------|---|
| Part A: | Scope and Definitions |
| Part B: | General Conditions |
| Part C: | Conditions Applying to Water Use |
| Part D: | Conditions Applying to Waste Disposal |
| Part E: | Conditions Applying to Operations and Maintenance |
| Part F: | Conditions Applying to Construction |
| Part G: | Conditions Applying to Modifications |
| Part H: | Conditions Applying to Spill Contingency Planning |
| Part I: | Conditions Applying to Closure and Reclamation |

Schedules

| | |
|-------------|------------------------------|
| Schedule 1: | Annual Water Licence Report |
| Schedule 2: | Closure and Reclamation Plan |

Annex A: Surveillance Network Program

| | |
|---------|---------------------------------------|
| Part A: | Reporting Requirements |
| Part B: | Sampling and Analysis Requirements |
| Part C: | Surveillance Network Program Stations |

Annex B: Concordance Table of Items Requiring Submission

Annex C: Revision History Table

Part A: Scope and Definitions

1. Scope:

- a) This Licence entitles the Licensee to use Water and dispose of Waste for municipal undertakings at Fort Liard, Northwest Territories.
- b) This Licence is issued subject to the conditions contained herein with respect to the taking of Water and the depositing of Waste of any type in any Waters or in any place under any conditions where such Waste or any other Waste that results from the deposit of such Waste may enter any Waters. Whenever new Regulations are made or existing Regulations are amended by the Commissioner in Executive Council under the Act, or other statutes imposing more stringent conditions relating to the quantity or type of Waste that may be so deposited or under which any such Waste may be so deposited, this Licence shall be deemed, upon promulgation of such Regulations, to be automatically amended to conform with such Regulations.
- c) Compliance with the terms and conditions of this Licence does not relieve the Licensee from responsibility for compliance with the requirements of all applicable Federal, Territorial, or municipal legislation.

2. Definitions:

Act – the *Waters Act*, S.G.N.W.T. 2014, C.18.

Analyst – an Analyst designated by the Minister under subsection 84(2) of the Act.

Board – the Mackenzie Valley Land and Water Board established by subsection 99(1) of the *Mackenzie Valley Resource Management Act*.

Construction - any activities undertaken to construct or build any components of, or associated with, the undertaking.

Discharge - the direct or indirect release of any Water or Waste to the Receiving Environment.

Engineered Structure - any structure or facility related to Water Use or the deposit of Waste that is designed by a Professional Engineer, including but not limited to the Water Supply Facilities and Waste Disposal Facilities associated with the undertaking.

Freeboard – the vertical distance between the Water line and the lowest elevation of the effective Water containment crest on the upstream slope of a dam or dyke.

Greywater – all liquid Wastes from showers, baths, sinks, kitchens and domestic washing facilities but does not include Toilet Wastes.

Inspector – an Inspector designated by the Minister under subsection 65(1) of the Act.

Licensee – the holder of this Licence.

Maximum Average Concentration - the running average of any four (4) consecutive analytical results submitted to the Board in accordance with the sampling and analysis requirements specified in the Surveillance Network Program.

Minister – the Minister of the Government of the Northwest Territories – Environment and Natural Resources.

Modification – in respect of a structure, means a change, other than an expansion, that does not alter the purpose or function of that structure.

Professional Engineer – a person registered with the Northwest Territories and Nunavut Association of Professional Engineers and Geoscientists in accordance with the territorial *Engineering and Geoscience Professions Act*, and whose principal field of specialization is appropriate to address the components of the undertaking at hand.

Receiving Environment – the natural environment that receives deposit or Discharge of Waste or Water, including runoff, from the undertaking.

Reclamation – activities which facilitate the return of areas affected by the Waste Disposal Facilities to viable and, wherever practicable, self-sustaining ecosystems that are compatible with a healthy environment, human activities, and the surrounding environment.

Regulations – Regulations proclaimed pursuant to section 63 of the Act.

Sewage – all Toilet Wastes and Greywater.

Sewage Disposal Facilities – the area and structures designated to contain and treat Sewage.

Solid Waste Disposal Facilities – the area and structures designated to contain solid Wastes.

Spill Contingency Plan – a document, developed in accordance with Aboriginal Affairs and Northern Development Canada's *Guidelines for Spill Contingency Planning*.

Surveillance Network Program – a monitoring program established to define environmental sampling, analysis, and reporting requirements, as detailed in Annex A of this Licence.

Toilet Wastes – all human excreta and associated products not including Greywater.

Unauthorized Discharge – a release or Discharge of any Water or Waste not authorized under this Licence.

Waste – any substance defined as Waste by section 1 of the Act.

Waste Disposal Facilities – the area and structures designated for the disposal of Waste, including the Sewage Disposal Facilities and the Solid Waste Disposal Facilities.

Water – any Water as defined by section 1 of the Act.

Water Supply Facilities – the area and structures designated to collect, treat, and supply Water.

Water Use – a use of Water as defined by section 1 of the Act.

Part B: General Conditions

1. The Licensee shall ensure a copy of this Licence is maintained at the municipal office at all times.
2. The Licensee shall take every reasonable precaution to protect the environment.
3. All references to policies, guidelines, codes of practice, statutes, regulations or other authorities shall be read as a reference to the most recent versions, unless otherwise denoted.
4. All information submitted to the Board for this Licence shall:
 - a) Be submitted in a form acceptable to the Board;
 - b) Be in accordance with the Board's *Document Submission Standards*;
 - c) Include a conformity table, which identifies where the pertinent requirements of the Licence are addressed; and
 - d) Include a revision history table and summary of the revisions made.
5. The Licensee shall comply with all submissions approved pursuant to the conditions of this Licence, including such revisions made as per the conditions of this Licence, and as approved by the Board.
6. The Licensee may propose revisions at any time by submitting a revised submission to the Board for approval. All revisions shall be submitted to the Board, for approval, at least 90 days, unless otherwise specified, prior to implementing any proposed updates or changes in the approved submission.
7. If any submission is not approved by the Board, the Licensee shall revise the submission according to the Board's direction and resubmit it for approval.
8. If any date for a submission falls on a weekend or holiday, the Licensee may submit the item on the following business day.
9. The Licensee shall comply with the **Schedules**, which are annexed to, and form part of this Licence, and any changes to the Schedules as may be made by the Board.
10. The Licensee shall comply with the **Surveillance Network Program**, which is annexed to and forms part of this Licence, and any changes to the Surveillance Network Program as may be made by the Board.
11. The Schedules, Surveillance Network Program, and any compliance dates specified in the Licence may be changed at the discretion of the Board.
12. Prior to establishing, activating, or relocating any Surveillance Network Program stations, the Licensee shall post signs to identify the Surveillance Network Program stations. All signs shall be located and maintained to the satisfaction of an Inspector.
13. The Licensee shall install, operate, and maintain meters, devices, or other such methods used for measuring the volumes of Water used and Waste discharged to the satisfaction of an Inspector.
14. Beginning March 31, 2021 and every March 31 thereafter, the Licensee shall submit an **Annual Water Licence Report** to the Board. The Report shall be in accordance with Schedule 1.

Part C: Conditions Applying to Water Use

1. The Licensee shall obtain all Water for municipal undertakings from the community wells, using the Water Supply Facilities.
2. The Licensee may withdraw up to 40,000 cubic metres of Water per year from the community wells.

Part D: Conditions Applying to Waste and Water Management

1. The Licensee shall manage Waste and Water with the objective of minimizing the impacts of the undertaking on the quantity and quality of Water in the Receiving Environment through the use of appropriate mitigation measures, monitoring, and follow-up actions.
2. The Licensee shall immediately notify an Inspector of the exceedance of any effluent quality criterion.
3. The Licensee shall not accept Sewage, solid Waste, or contaminated soil from industrial, commercial and institutional operators working outside of the local government boundaries of the Hamlet of Fort Liard, unless otherwise authorized in writing by an Inspector.
4. The Licensee shall not accept hazardous Waste from commercial and industrial operators.

Sewage

5. Within six months of the effective date of this Licence, the Licensee shall submit to the Board, for approval, a revised **Sewage Disposal Facilities Operation and Maintenance Plan**.
6. Within six months of the effective date of this Licence, the Licensee shall submit to the Board, for approval, a revised **Sludge Management Plan**.
7. The Licensee shall operate and maintain the Sewage Disposal Facilities to prevent structural failure and to the satisfaction of an Inspector.
8. The Licensee shall maintain a Freeboard limit of one metre at the Sewage Disposal Facilities, or as recommended by a Professional Engineer and as approved by the Board.
9. All effluent from the Sewage Disposal Facilities at Surveillance Network Program station 1478-9 shall meet the following effluent quality criteria:

| Parameter | Maximum Average Concentration |
|------------------------------|--------------------------------------|
| Total Suspended Solids (TSS) | 150mg/L |
| Oili and Grease | 5 mg/L |
| CBOD | 100mg/L |
| Faecal Coliforms | 1 x 10 ⁵ /100 mL |
| pH | Above 6 |

10. The Licensee shall provide Water sampling results from SNP station 1478-9 to an Inspector and the Board no later than 10 days prior to the discharge of effluent from the Sewage Disposal Facilities to the Receiving Environment. Discharge shall not commence until authorized in writing by an Inspector.
11. The Licensee shall submit written notification to the Board and an Inspector sixty (60) days prior to the removal of sludge from the Sewage Disposal Facilities. Sludge removal shall not commence until authorized in writing by an Inspector.

Solid Waste

12. Within six months of the effective date of this Licence, the Licensee shall submit to the Board, for approval, a revised **Solid Waste Disposal Facilities Operation and Maintenance Plan**.
13. The Licensee shall maintain the Solid Waste Disposal Facilities to the satisfaction of an Inspector.
14. The Licensee shall act in accordance with the best practices outlined in Environment and Climate Change Canada's *Solid Waste Management for Northern and Remote Communities: Planning and Technical Guidance Document*.
15. The Licensee shall create and maintain waste segregation areas at the Solid Waste Disposal Facilities, to the satisfaction of the Inspector, for:
 - a) Household/municipal hazardous Waste;
 - b) Municipal solid Waste;
 - c) Bulky Waste and scrap metal;
 - d) Construction Waste; and
 - e) Waste oil.
16. The Licensee is prohibited from incinerating materials at the Solid Waste Disposal Facilities, unless otherwise authorized in writing by an Inspector.

Water

17. The Licensee shall comply with the **Water Supply Facilities Operation and Maintenance Plan**, once approved.

Part E: Conditions Applying to Construction

1. The Licensee shall ensure that all structures intended to contain, withhold, divert, or retain Water or Wastes are designed, constructed, and maintained to minimize the escape of Waste to the Receiving Environment.
2. The Licensee shall ensure that all Engineered Structures are constructed and maintained in accordance with the recommendations of the Professional Engineer responsible for the design, including, but not limited to, recommendations regarding field supervision and inspection requirements.
3. The Licensee shall only use material that is clean and free of contaminants and is from a source that has been approved in writing by an Inspector.
4. A minimum of 10 days prior to the commencement of Construction of any structure, the Licensee shall provide written notification to the Board and an Inspector. Notification shall include the name and contact information for the Construction superintendent. Updates shall be provided to the Board and an Inspector in writing as changes occur.
5. A minimum of 90 days prior to the commencement of Construction, the Licensee shall submit to the Board, for approval, a **Design and Construction Plan**, in accordance with Schedule 2.
6. A minimum of 90 days prior to the commencement of Construction of any Engineered Structures, , the Licensee shall submit to the Board, **design drawings** stamped and signed by a Professional Engineer.
7. The Licensee shall ensure that all Engineered Structures, are constructed in accordance with the applicable Design and Construction Plan and design drawings.
8. Within 90 days of the completion of the Construction of each Engineered Structure, the Licensee shall submit to the Board, an **As-built Report**, stamped and signed by a Professional Engineer, which shall include, but not be limited to, the following information:
 - a) Final as-built drawings of the Engineered Structures, stamped and signed by a Professional Engineer;
 - b) Documentation of field decisions that deviated from the Design and Construction Plan; and
 - c) Any data used to support these decisions.

Part F: Conditions Applying to Modifications

1. The Licensee may carry out a Modification to an existing or planned structure, without written approval from the Board, provided the proposed Modification is not an expansion, does not alter the purpose or function of the structure, and the following requirements are met prior to beginning the Modification:
 - a) The Licensee shall provide written notification to the Board and an Inspector a minimum of 60 days prior to beginning the Modification;
 - b) An Inspector has provided written notification to the Board authorizing the proposed Modification;
 - c) The Board has not informed the Licensee that additional information is required;
 - d) The Board has not informed the Licensee that additional time is required to review the proposed Modifications; and
 - e) The Board has not rejected the proposed Modification.
2. The Licensee may only carry out a Modification that does not meet Part F, condition 1 with written approval from the Board.
3. Within 90 days of the completion of the Modification referred to in Part F, condition 1, the Licensee shall submit to the Board an **As-built Report**, stamped and signed by a Professional Engineer, which shall include final as-built drawings and specifications of the modified structure.

Part G: Conditions Applying to Spill Contingency Planning

1. The Licensee shall ensure that Unauthorized Discharges associated with municipal undertakings do not enter any Waters.
2. Within six months following the effective date of this Licence, the Licensee shall submit to the Board, for approval, a revised **Spill Contingency Plan**.
3. If, during the period of this Licence, a spill or an Unauthorized Discharge occurs or is foreseeable, the Licensee shall:
 - a) Implement the approved Spill Contingency Plan;
 - b) Immediately report it using the NU-NT Spill Report Form using one of the following methods:
 - i. Telephone: (867) 920-8130
 - ii. Fax: (867) 873-6924
 - iii. Email: spills@gov.nt.ca
 - iv. Online: Spill Reporting and Tracking Database
 - c) Within 24 hours, notify the Board and an Inspector; and
 - d) Within 30 days of initially reporting the incident, submit a detailed report, including descriptions of causes, response actions, and any changes to procedures to prevent similar occurrences in the future, to the Board and an Inspector. Any updates to this report shall be provided to the Board and an Inspector in writing as changes occur.
4. The Licensee shall ensure that adequate spill prevention infrastructure and spill response equipment is available.
5. The Licensee shall restore all areas affected by spills and Unauthorized Discharges to the satisfaction of an Inspector.

Part H: Conditions Applying to Closure and Reclamation

1. The Licensee shall carry out progressive Reclamation of disturbed areas as soon as is reasonably practical.
2. Six months prior to the closure and reclamation of any specific facility included in the scope of the Licence, the Licensee shall submit to the Board, for approval, a facility-specific **Closure and Reclamation Plan**. The Plan shall be in accordance with Schedule 3.

Signed the behalf of the Mackenzie Valley Land and Water Board



Mavis Cli-Michaud, Chair



Amanda Gauthier, Witness

Schedule 1
Annual Water Licence Report

1. The **Annual Water Licence Report** referred to in Part B, condition 14 of this Licence shall cover the previous calendar year (January 1 through December 31), and shall include, but not be limited to, the following information:
 - a) The monthly and annual quantities in cubic metres of Water obtained from all sources;
 - b) The monthly and annual quantities in cubic metres of each and all Waste discharged to the Waste Disposal Facilities, by location;
 - c) The monthly and annual quantities in cubic metres of Waste removed from the Waste Disposal Facilities, identified by disposal location;
 - d) A summary of sludge management activities at each Cell of the Sewage Disposal Facilities, including results of depth and volume measurements, and sludge monitoring results, removal and treatment;
 - e) The monthly and annual quantities of all Sewage and solid Waste deposited into the Waste Disposal Facilities by commercial and industrial operators working outside the local government boundaries of Fort Liard, as authorized in writing by an Inspector;
 - f) Tabular summaries of all data generated under the Surveillance Network Program referred to in Part B, condition 10 of this Licence;
 - g) A summary of Construction activities conducted in accordance with Part E of this Licence;
 - h) A summary of Modification activities conducted on the Water Supply and Waste Disposal Facilities, including all associated structures, in accordance with Part F of this Licence;
 - i) A summary of major maintenance activities conducted in accordance with this Licence;
 - j) A summary of activities conducted in accordance with the approved Spill Contingency Plan, required in Part G, condition 2 of this Licence, including:
 - a. A list and description of all Unauthorized Discharges, including the date, NWT spill number, volume, location, summary of the circumstances and follow-up actions taken, and status (i.e. open or closed), in accordance with the reporting requirements referred to in Part G, condition 3 of this Licence; and
 - b. An outline of any spill training and communications exercises carried out during the previous calendar year;
 - k) A summary of any closure and reclamation work completed during the year;
 - l) A summary of any updates or revisions to the Spill Contingency Plan, Management Plans and Operation & Maintenance Plans;
 - m) A summary of any studies requested by the Board that relate to Waste disposal, Water Use or Reclamation, and a brief description of any future studies planned;
 - n) A summary of actions taken to address concerns, non-conformances, or deficiencies in any reports filed by an Inspector; and
 - o) Any other details requested by the Board on or before November 1 of the year being reported.

Schedule 2
Design and Construction Plan

1. The **Design and Construction Plan** referred to in Part E, condition 5 of this Licence shall include, but not be limited to, the following information:
 - a) A description of the facilities to be constructed, including proposed locations;
 - b) Relevant background information, which may include the following: population projections; constraint mapping including areas of local importance; drainage patterns; climate; geotechnical investigations; hydrogeological investigations; and any other relevant information, as deemed adequate by the Professional Engineer responsible for the design;
 - c) For the Sewage Disposal Facilities, a description of the process design, which may include expected influent and effluent qualities, and decant procedures;
 - d) Design characteristics of materials required for Construction; and
 - e) Construction considerations, including timing, sequencing, and a schedule.

Schedule 3
Closure and Reclamation Plan

1. With regard to Solid Waste Disposal Facilities being closed, the **Closure and Reclamation Plan** referred to in Part H shall include, but not be limited to, the applicable contents of Tables 8.1 and 8.2 of Environment and Climate Change Canada's *Solid Waste Management for Northern and Remote Communities: Planning and Technical Guidance Document*.
2. With regard to Sewage Disposal Facilities being closed, the Closure and Reclamation Plan referred to in Part H shall include, but not be limited to:
 - a) Logistical and financial considerations;
 - b) Intended future use of the land after closure;
 - c) Remediation of contaminated material;
 - d) As-built drawings of the entire wastewater treatment facility, including an accurate plot plan,
 - e) Geographic positioning systems coordinates, and permanent location markers;
 - f) Soil testing results from lagoon and wetland areas;
 - g) Contaminated site remediation, if required, such as removal of contaminated soil from unlined lagoon and wetland;
 - h) Removal of equipment and structures that will not be used during the closure phase;
 - i) Consideration for altered drainage patterns;
 - j) Choice of capping material, and availability;
 - k) Cover monitoring for stability, erosion, and settlement;
 - l) Post-closure monitoring plan of sludges, sediments, surface water, groundwater, and erosion to ensure that the site does not pose unacceptable risks to human or environmental health;
 - m) Environmental management systems (if necessary) for leachate, groundwater, and surface water; and
 - n) Signage installation indicating closure in progress, and facility no longer accepting wastewater.

Annex A: Surveillance Network Program (SNP)
Annexed to Water Licence MV2019L3-0007 Part B, condition 10
Hamlet of Fort Liard

Table of Contents:

Part A: Reporting Requirements

Part B: Sampling and Analysis Requirements

Part C: Surveillance Network Program Station Descriptions

Part A: Reporting Requirements

1. The effective date of this Surveillance Network Program is February 13, 2020.
2. The Licensee shall include all of the data and information required in Part C of this Annex in the Annual Water Licence Report, as specified in Part B, condition 14 of this Licence.
3. The Licensee shall also provide SNP data at other times, if requested by an Inspector or the Board.

Part B: Sampling and Analysis Requirements

1. More frequent sample collection or provision of data may be required at the request of an Inspector.
2. The location of sampling sites is subject to the approval of an Inspector. The Licensee shall work with an Inspector to determine suitable locations for sampling sites.
3. All sampling, sample preservation, and analyses shall be conducted in accordance with methods prescribed in the current edition of American Public Health Association's (APHA) *Standard Methods for the Examination of Water and Wastewater* at the time of analysis, or by other such methods approved by an Analyst.
4. All analyses shall be performed in a laboratory accredited by the Canadian Association for Laboratory Accreditation (CALA) for the specific analyses to be performed or as approved by an Analyst.

Part C: SNP Station Descriptions and Monitoring Requirements

| SNP station | Location | Sampling Frequency | Sampling Parameters | Rationale |
|-------------|---|---|---|--|
| 1478-3 | Raw Water intake line at the Water Supply Facilities | Monthly | Volume of Water in cubic metres | To monitor the monthly and annual quantity of Water withdrawn for municipal purposes. |
| 1478-6 | Water from stream flowing to Petitot River upstream of culvert at Highway #7 | During decant, while there is flow | pH, CBOD ₅ , Total Suspended Solids, Ammonia, Total Phosphorus, Nitrate, Nitrite, Faecal Coliforms, Oil and Grease | To monitor effluent from the Sewage Disposal Facilities during decant. |
| 1478-7 | Backwash discharge water from the greensand filter at the Water Treatment Plant | Quarterly, midway through backwash operations | Total Metals ¹ , Total Phosphorus | To determine the water quality of backwash discharge into the Liard River. |
| 1478-9 | Sewage effluent from Cell 3 of the Sewage Disposal Facilities | One week prior to discharge | pH, CBOD ₅ , Total Suspended Solids, Ammonia, Total Phosphorus, Nitrate, Nitrite, Faecal Coliforms, Oil and Grease | Site of compliance. To monitor final effluent quality from the Sewage Disposal Facilities prior to discharge to the Receiving Environment. |
| 1478-10 | Sedimentation Pond at the Solid Waste Disposal Facilities | Prior to discharge | pH, Total Suspended Solids, Total Petroleum Hydrocarbons, Total Metals, Turbidity | To test water collected prior to discharge |

Signed on behalf of the Mackenzie Valley Land and Water Board

Mavis Cli-Michaud, Chair

Amanda Gauthier, Witness

¹**Total Metals** shall include, at a minimum, the following parameters: Aluminum, Antimony, Arsenic, Barium, Boron, Cadmium, Chromium, Cobalt, Copper, Iron, Lead, Manganese, Mercury, Molybdenum, Nickel, Selenium, Thallium, Uranium, and Zinc.

**Annex B:
Concordance Table of Items Requiring Submission for Water Licence
MV2019L3-0007**

This table summarizes the information the Licensee is required to submit as per the Water Licence conditions. It supplements the Water Licence. If there are any discrepancies between this table and the body of the Water Licence, the Water Licence conditions prevail.

Table 1: Concordance Table of Items Requiring Submission

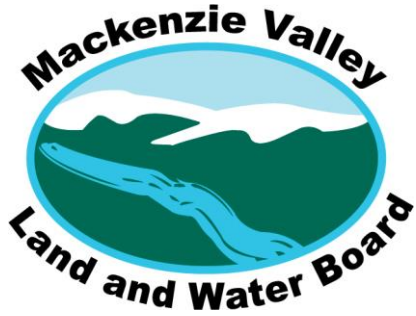
| Part of Licence | Item | Timeline |
|--|--|--|
| Part B, condition 6 | Submit revisions to submissions for Board approval (Plans, reports) | At any time, but at least 90 days prior to implementing any proposed updates or changes in the approved submission. |
| Part B, condition 12 | Post signage to identify Surveillance Network Program stations (located and maintained to the satisfaction of an Inspector) | Prior to establishing, activating or relocating any SNP stations. |
| Part B, condition 14 and Schedule 1, condition 1 | Submit Annual Water Licence report (covering the previous calendar year, of January 1 to December 31) | Beginning March 31, 2021 and every March 31 thereafter. |
| Part D, condition 5 | Submit revised Sewage Disposal Facilities Operation and Maintenance Plan, for Board approval | Within six months of issuance (by August 13, 2020). |
| Part D, condition 6 | Submit revised Sludge Management Plan for Board approval | Within six months of issuance (by August 13, 2020). |
| Part D, condition 10 | Provide water sampling results from SNP station 1478-9 to an Inspector and the Board, for Inspector authorization of discharge from the Sewage Disposal Facilities | No later than 10 days prior to the discharge of effluent from the Sewage Disposal Facilities to the Receiving Environment. |
| Part D, condition 11 | Provide written notification of removal of sludge from Sewage Disposal Facilities, to the Board and an Inspector, for Inspector authorization | 60 days prior to the removal of sludge. |
| Part D, condition 12 | Submit revised Solid Waste Disposal Facilities Operation and Maintenance Plan, for Board approval | Within six months of issuance (by August 13, 2020). |
| Part E, condition 4 | Provide written notification of Construction to the Board and an Inspector | Minimum of 10 days prior to commencement of Construction. |

| | | |
|--|---|--|
| Part E, condition 5 and Schedule 2, condition 1 | Submit Design and Construction Plan for Board approval | Minimum of 90 days prior to commencement of Construction. |
| Part E, condition 6 | Submit design drawings to the Board | Minimum of 90 days prior to commencement of Construction of any Engineered Structures. |
| Part E, condition 8 | Submit As-built Reports for Construction to the Board | Within 90 days of the completion of Construction of an Engineered Structure. |
| Part F, condition 1 | Submit written notification of a Modification to the Board and an Inspector | Minimum of 60 days prior to beginning the Modification. |
| Part F, condition 3 | Submit As-Built Reports for Modifications to the Board | Within 90 days of completion of the Modification. |
| Part G, condition 2 | Submit revised Spill Contingency Plan to the Board | Within six months of issuance (by August 13, 2020). |
| Part G, condition 3 | Submit detailed report of spill/incident to the Board and an Inspector | Within 30 days of initially reporting the spill/incident. |
| Part H, condition 2 and Schedule 3, condition 1 | Submit facility-specific Closure and Reclamation Plan to the Board for approval | Six months prior to the closure and reclamation of any specific facility included in the scope of the Licence. |

**Annex C:
Revision History Table**

Table 1: Updates and changes that have been made to the Water Licence since issuance.

| Date | Location of change | Description of change |
|------|--------------------|-----------------------|
| - | - | - |
| | | |
| | | |
| | | |



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Reasons for Decision

Issued pursuant to
Sections 72.25 and 121 of the *Mackenzie Valley Resource Management Act* (MVRMA) and
sections 36 and 54 of the *Waters Act*

| | |
|---------------------------|--------------------------------------|
| Water Licence Application | |
| Preliminary Screener | MVLWB |
| File Number | MV2019L3-0007 |
| Company | Hamlet of Fort Liard |
| Project | Municipal operations, Fort Liard, NT |
| Date of Decision | February 7, 2020 |

Table of Contents

| | | |
|------------|---|-----------|
| 1.0 | List of Abbreviations | 3 |
| 2.0 | Summary of Application | 3 |
| 2.1 | Distribution List | 4 |
| 3.0 | Regulatory Process..... | 4 |
| 4.0 | Legislative Requirements | 5 |
| 4.1 | General..... | 5 |
| 4.2 | MVRMA Part 3: Duty to Consult | 5 |
| 4.2.1 | Distribution List..... | 6 |
| 4.3 | MVRMA Part 3 and 4 and Waters Act: Land and Water Regulation and MVLWB..... | 7 |
| 4.3.1 | General..... | 8 |
| 4.3.2 | Public Notice | 8 |
| 4.3.3 | Existing Licences..... | 8 |
| 4.3.4 | Compensation to Existing Water Uses..... | 8 |
| 4.3.5 | Water Quality Standards..... | 8 |
| 4.3.6 | Effluent Quality Standards | 8 |
| 4.3.7 | Financial Responsibility | 8 |
| 4.3.8 | Minimization of Adverse Effects | 9 |
| 4.3.9 | Time Limit..... | 9 |
| 4.4 | MVRMA Part 5: Environmental Review | 9 |
| 4.4.1 | Preliminary Screening | 9 |
| 5.0 | Decision – Water Licence MV2019L3-0007 | 10 |
| 5.1 | Term of Licence..... | 10 |
| 5.2 | Part A: Scope and Definitions | 10 |
| 5.3 | Part B: General Conditions and Schedule 1 | 11 |
| 5.4 | Part C: Conditions Applying to Water Use | 12 |
| 5.5 | Part D: Conditions Applying to Waste and Water Management..... | 12 |
| 5.6 | Part E: Conditions Applying to Construction and Schedule 2 | 20 |
| 5.7 | Part F: Conditions Applying to Modifications | 20 |
| 5.8 | Part G: Conditions Applying to Spill Contingency Planning | 21 |
| 5.9 | Part H: Conditions Applying to Closure and Reclamation and Schedule 3 | 21 |
| 5.10 | Annex A: Surveillance Network Program | 22 |
| 5.11 | Annex B: Table of Submissions | 26 |
| 5.12 | Annex C: Table of Revision History | 26 |
| 6.0 | Conclusion | 26 |

These Reasons for Decision set out the Mackenzie Valley Land and Water Board’s (the MVLWB/Board) regulatory process and decisions on the Application made by the Hamlet of Fort Liard (Hamlet) to the Board on May 15, 2019 for Water Licence (Licence) MV2019L3-0007 for the use of water and disposal of waste associated with municipal operations for the Hamlet of Fort Liard, NT.

A summary of the Application is provided in Section 2 below, followed by the regulatory process in Section 3. Section 4 describes the legislative requirements applicable to this regulatory process, leading to the Board’s decisions with supporting rationale in Section 5.

1.0 List of Abbreviations

| | |
|-------------------|--|
| Applicant | Hamlet of Fort Liard |
| Application | Hamlet of Fort Liard’s submissions in support of Water Licence MV2019L3-0007 |
| CanNor | Canadian Northern Economic Development Agency |
| DFN | Dehcho First Nations |
| DFO | Fisheries and Oceans Canada |
| ECCC | Environment and Climate Change Canada |
| GNWT | Government of the Northwest Territories |
| GNWT-ENR | Government of the Northwest Territories – Environment and Natural Resources |
| INAC | Indian and Northern Affairs Canada |
| Inspector | Government of the Northwest Territories – Environment and Natural Resources – Water Resource Officer (Inspector) |
| Intervenor | A reviewing Party that submits an intervention |
| IR | Information Request |
| Licence | Water Licence MV2019L3-0007 |
| LKFN | Łı́ıdlı́ Kúé First Nation |
| MVLUR | Mackenzie Valley Land Use Regulations |
| MVLWB or Board | Mackenzie Valley Land and Water Board |
| MVRMA | Mackenzie Valley Resource Management Act |
| Minister | Minister of Environment and Natural Resources for the Government of the Northwest Territories |
| Party | As per the Board’s <i>Rules of Procedures</i> |
| Reviewer | As per the Board’s <i>Rules of Procedures</i> |
| SKFN | Sambaa K’e First Nation |
| Standard Template | Board’s Standard Land Use Permit Conditions Template |

2.0 Summary of Application

On May 15, 2019, Hamlet of Fort Liard submitted an Application for a Type B Water Licence MV2019L3-0007.¹ This Application is to use Water and dispose of Waste for municipal undertakings at Fort Liard, Northwest Territories. These activities are located on municipal land in a non-Federal area within the Dehcho Region. Fort Liard has a population of just over 600 people and has held Licences N3L4-1478 (issued January 1, 1987; expired December 31, 1996) and MV2009L3-0025 (issued March 1, 2010; expires February 29, 2020) previously for their municipal operations.

¹ See Water Licence [MV2019L3-0007 Application](#) submitted to the MVLWB on May 15, 2019.

2.1 Distribution List

This document uses the term “distribution list” for the list of parties with whom materials from this regulatory process were circulated. As the municipal undertakings are in the Dehcho Region, the appropriate core organizational reviewers, governments, First Nations, and Aboriginal organizations were included on the distribution list. The distribution list was periodically updated, and (when requested) individuals with specific interests in the municipal undertakings were also added to the distribution list.

3.0 Regulatory Process

On May 15, 2019, Hamlet of Fort Liard submitted an Application for a new Licence MV2019L3-0007. By May 30, 2019, Board staff determined that the information provided in the Application Package had satisfactorily fulfilled the requirements outlined in the MVLWB *Guide to Completing Water Licence Applications*² and required by section 72.1 of the MVRMA, and section 34 of the *Waters Act*; the Application was deemed complete.

Following the completeness check, the Application was circulated for public review to fulfill sections 63, 64, and 69 of the MVRMA. The public review commenced on May 30, 2019 and was distributed using the Board’s Online Review System (ORS) to the Dehcho distribution list and municipal rule.³ This list includes the appropriate core organizational reviewers, government departments and agencies, First Nations, Aboriginal organizations, and the landowner for the area. Distribution of the Application via the ORS advised the parties that the Application was in the form and contained the information required, and that the regulatory process would proceed.

Reviewers were reminded that by submitting comments and recommendations to the ORS, individuals and/or their organization would become a Party to the Proceeding and, as such, were expected to follow the MVLWB *Rules of Procedure*.⁴ Reviewers were encouraged to consider providing an overarching recommendation regarding whether they are in support of the Application, and to provide context, evidence, and arguments to assist the Board with its decisions on the Application and preliminary screening, as required under the Preliminary Screening Requirement Regulations annexed to the MVRMA.

A public notice of the Application and the public hearing was published in *News North* during the week of June 3, 2019 to fulfill paragraphs 41(1)(a) and 43(2)(a) of the *Waters Act*.⁵

On June 27, 2019, Board staff extended the comment deadline to July 3, 2019, in response to reviewer requests for additional time to provide comments⁶. By July 3, 2019, comments and recommendations

² The MVLWB [Guide to Completing Water Licence Applications](#) (October 2003) is available at mvlwb.com, by clicking on the red ‘Apply for a Permit/Licence’ button → Water Licence Applications → Guide to Completing Water Licence Applications.

³ See MVLWB [Online Registry for MV2019L3-0007](#) - Staff Report and Comments: Issuance

⁴ The MVLWB *Rules of Procedure* (December 2018) is available at www.mvlwb.com under the Resources tab → Rules of Procedure.

⁵ See [Notice of Application](#), dated June 3, 2019.

⁶ See Online Registry for [MV2019L3-0007](#) – [ENR Letter to the Board](#)

regarding the Application were received by the Board from the following parties: GNWT-ENR and Board staff⁷. On July 17, 2019, the Hamlet of Fort Liard responded to the parties' information requests.⁸

Technical Workshop

On September 23, 2019, Board staff hosted a technical workshop to discuss and seek clarity on issues raised by parties and Board staff, and to provide an opportunity to discuss the Application in advance of parties submitting comments and recommendations to the Board. Workshop attendees included the Hamlet of Fort Liard and their consultant, the Inspector, GNWT-ENR, and the Government of the Northwest Territories Department of Municipal and Community Affairs (GNWT-MACA).⁹ Summary notes from the workshop were circulated to the distribution list on October 7, 2019.¹⁰

On October 17, 2019, Board staff circulated draft Licence conditions to parties for review and comment. GNWT-ENR responded by November 14, 2019.¹¹ The Hamlet of Fort Liard responded to all the parties' comments and provided comments of their own by December 12, 2019¹².

On February 7, 2019, the Board met to make decisions regarding the Application.

4.0 Legislative Requirements

In conducting the review process for the Application as described in Sections 2 and 3 above, the Board has ensured that all applicable legal and procedural requirements have been satisfied, as required by section 62 of the MVRMA and as outlined below.

4.1 General

The use of water and the deposit of waste proposed is of a nature contemplated by the MVRMA and the *Waters Act*. As these municipal undertakings are located on a Non-Federal Area, the MVRMA and *Waters Act* apply.

4.2 MVRMA Part 3: Duty to Consult

In exercising its authority under the MVRMA, generally, the Board must ensure that the concerns of Aboriginal people have been taken into account as per paragraph 114(c) of the MVRMA. It must also consider the importance of conservation to the well-being and way of life of Aboriginal peoples of Canada, as per paragraph 60.1(a) of the MVRMA, specifically those to whom section 35 of the *Constitution Act*, 1982 applies and who use an area of the Mackenzie Valley. Accordingly, the Board works with applicants, affected parties (including Aboriginal organizations and governments), and other parties (such as other boards and regulators) to ensure that potential impacts of proposed projects are understood and carefully considered before decisions are made with respect to the issuance of Licences.

⁷ See Online Registry for [MV2019L3-0007](#) – Staff Report and Comments: Issuance

⁸ Ibid.

⁹ See [Technical workshop – Sign-in Sheet](#), dated September 23, 2019.

¹⁰ See [Technical workshop – Summary Notes](#), dated October 7, 2019.

¹¹ See Online Registry for [MV2019L3-0007](#) – Staff Report and Comments: Issuance

¹² Ibid

In order to address the question of Aboriginal consultation it is first helpful to understand the general process through which the Board considers an application.¹³ Following the submission of an application, a proposed project goes through several stages in the Board’s regulatory process. The application is reviewed to ensure that all necessary information is included and to confirm that the right type of Licence has been applied for, and that Aboriginal communities and organizations were engaged throughout this review, and had opportunities to participate in, and review the various public products of the Board’s process. The Board’s Engagement Policy does not require municipalities to conduct pre-application engagement. However, parties are notified of the Application through newspaper advertisements and via the ORS.

4.2.1 Distribution List

The application and supporting documents are uploaded to the Board’s webpage and then an application package is distributed to stakeholders, including appropriate federal and territorial government departments and agencies; landowners; affected communities and Aboriginal organizations; Renewable Resource Boards; heritage regulators; and other interested parties. Table 1 below identifies the Distribution List that the Board used for this regulatory process.

Table 1: Organizations on the Distribution List for Application for Water Licence MV2019L3-0007

| |
|--|
| Acho Dene Koe First Nation |
| CanNor NWT Region |
| Dehcho Land Use Planning Committee |
| Deh Gah Got'ie Dene Council |
| Dehcho First Nations |
| Dene Nation |
| Dene Tha' First Nation |
| Deninu K'ue First Nation |
| Digaa Enterprises Ltd |
| Environment and Climate Change Canada |
| Fisheries and Oceans Canada |
| Fort Providence Metis Council #57 |
| Fort Providence Resource Management Board |
| Fort Simpson Metis Local 52 |
| Forward Mining |
| Gwich'in Land and Water Board |
| GNWT - ENR (Environment and Natural Resources) |
| GNWT – ENR – Dehcho Region |
| GNWT – ENR – South Slave Region – Fort Smith |
| GNWT - Executive and Indigenous Affairs |
| GNWT - HSS (Health and Social Services) |
| GNWT - INF (Infrastructure) |
| GNWT - ITI (Industry, Tourism and Investment) |
| GNWT - Lands |
| GNWT - Lands – Dehcho Region |
| GNWT – Lands – Hay River Region |
| GNWT – Lands - North Slave Region |

¹³ See www.mvlwb.com → Resources → Policies and Guidelines: [Guide to Completing Water Licence Application to the Mackenzie Valley Land and Water Board](#) (2003).

| |
|--|
| GNWT – Lands – South Slave Region |
| GNWT - MACA (Municipal and Community Affairs) |
| GNWT - PPCA (Policy, Planning, Communications and Analysis (w/in ITI)) |
| GNWT - PWNHC (Prince of Wales Northern Heritage Centre (w/in ECE)) |
| Hamlet of Fort Liard |
| Hamlet of Fort Providence |
| INAC - CARD |
| INAC - NWT Inspectors |
| INAC - Yellowknife |
| Ka'a'gee Tu First Nation |
| Kátłó'deèche First Nation Fabien |
| Liard First Nation (Yukon) |
| łíídlı́ Kúé First Nation (Ft Simpson) |
| Mackenzie Valley Environmental Impact Review Board |
| Mackenzie Valley Land and Water Board |
| Naha Dehe Dene Band |
| North Slave Metis Alliance |
| Northwest Territory Metis Nation |
| NWT- OROGO (Office of the Regulator of Oil and Gas Operations) |
| Pehdzeh Ki First Nation (Wrigley) |
| Ross River Dena Council |
| Sambaa K'e First Nation (Trout Lake) |
| Snap Lake Environmental Monitoring Agency |
| Tłjchq Government |
| Town of Hay River |
| Transport Canada |
| Tthets'ek'ehdeli First Nation (Jean Marie River) |
| Wek'èezhìi Renewable Resources Board |
| Wek'èezhìi Land and Water Board |
| West Point First Nation |
| Wood PLC |

The Board requested that reviewers provide comments with respect to the Application and associated management plans. For a Type B Licence, as was the case in this Application, within nine months the Board shall make a decision. When the review is completed, comments are forwarded to the applicant for a response.

The Application is then assessed to determine if it is exempt from Part 5 of the MVRMA; if not, then a preliminary screening must be conducted. Details relating to preliminary screening are outlined below in Section 4.4.1 (MVRMA Part 5).

4.3 MVRMA Part 3 and 4 and Waters Act: Land and Water Regulation and MVLWB

The use of water, and the deposit of waste proposed is of a nature contemplated by the MVRMA and the *Waters Act*. The Board has jurisdiction to issue this Licence under subsection 60(1.1) and section 102 of the MVRMA.

4.3.1 General

The Board has considered the people and users of the Mackenzie Valley, and any traditional knowledge and scientific information that was made available to it during this regulatory proceeding, as per section 60.1 of the MVRMA.

4.3.2 Public Notice

Notice and copies of the Application was given to fulfill sections 62 and 63 of the MVRMA. The Board is satisfied that a reasonable amount of time was given to communities, First Nations, and the public to participate in this regulatory process by making submissions to the Board.

4.3.3 Existing Licences

With respect to paragraph 26(5)(a) of the *Waters Act*, no other Licensees contacted the Board during the statutory period, and there are no applicants with precedence in the watershed as per subsection 72.26(1) of the MVRMA/59(1) of the *Waters Act*. The Board is satisfied that the granting of this Licence will not adversely affect, in a significant way, any existing Licensee if compliance with the Licence occurs.

4.3.4 Compensation to Existing Water Uses

Paragraph 26(5)(b) of the *Waters Act* prohibits the issuance of the Licence unless the Board is satisfied that appropriate compensation has been or will be paid by the applicant to persons who would be adversely affected by the use of waters, or deposit of waste proposed by the applicant, at the time when the applicant filed its Application with the Board.

The Board received no claims for compensation either during the prescribed period or afterwards. Provided compliance with the Licence conditions takes place, the Board finds that there are no water users or persons listed in paragraph 26(5)(b) of the *Waters Act* who will be adversely affected by the use of waters or the deposit of waste proposed.

4.3.5 Water Quality Standards

With regards to subparagraph 26(5)(c)(i) of the *Waters Act*, the Board is satisfied that compliance with the Licence conditions will ensure that waste will be collected and disposed of in a manner which will maintain water quality consistent with applicable standards and the Board's *Water and Effluent Quality Management Policy*. These are discussed further in Section 5.5 of these Reasons for Decision (Part D of the Licence: Conditions Applying to Waste and Water Management).

4.3.6 Effluent Quality Standards

There are no effluent quality standards prescribed in Waters Regulations. The Board is nonetheless satisfied that the effluent quality standards set out in the Licence are consistent with the Board's *Water and Effluent Quality Management Policy* and will protect the receiving waters and environment. These are further discussed in Section 5.5 of these Reasons for Decision (Part D of the Licence: Conditions Applying to Waste and Water Management).

4.3.7 Financial Responsibility

The Board must satisfy itself of the financial responsibility of the Hamlet of Fort Liard under paragraph 26(5)(d) of the *Waters Act* before it can issue the Licence. The Board is confident that

the Hamlet is capable of meeting any financial obligations set out in subparagraph 26(5)(d) of the the *Waters Act* and the Licence concerning the use of Water and deposit of Waste for municipal purposes at Fort Liard.

4.3.8 Minimization of Adverse Effects

With regards to subsection 27(2) of the *Waters Act*, it is the opinion of the Board that compliance with the Licence will ensure that any potential adverse effects on other water users, which might arise because of the issuance of the Licence, will be minimized.

4.3.9 Time Limit

The Board is satisfied it has adhered to section 48(1) of the *Waters Act*, which requires it to make a decision within a period of nine months after the day on which an application is made or a notice advertised as per subsections 43(1) and 43(2) of the *Waters Act*.

4.4 MVRMA Part 5: Environmental Review

4.4.1 Preliminary Screening

A Preliminary Screening was approved by the Board on February 28, 2002 when Licence N3L3-1478 was issued. At the issuance of Licence MV2009L3-0025 on March 1, 2010, the Board determined that the Application was exempt from Preliminary Screening, with the qualifier that prior to “constructing a new solid waste facility in the future, the Hamlet of Fort Liard will need to apply for an amendment, at which point the new facility will be screened”¹⁴. The Hamlet applied to amend Licence MV2009L3-0025 on July 16, 2010, to construct a new Solid Waste Disposal Facility, including an access road and sedimentation pond. Upon issuance of the amended Licence, the Board approved a new Preliminary Screening for the operations, on August 19, 2010.

The scope of the development, which allows for the use of Water and disposal of Waste for municipal purposes, has not changed from what was included in the two Preliminary Screenings, dated February 28, 2002 and August 19, 2010. With the issuance of the Hamlet’s Licence MV2019L3-0007, the Board has combined the two historical screenings (dated February 28, 2002 and August 19, 2010) into a single screening for coherence and administrative efficiency¹⁵; the content of neither screening has been materially altered (i.e., only minor grammatical edits have been made).

On February 7, 2020, the Board met and confirmed the activities associated with the Application were exempt from preliminary screening based on Schedule 1, Part 1, section 2 of the Exemption List Regulations annexed to subsection 143(1) of the MVRMA¹⁶. Consequently, no preliminary screening was conducted.

¹⁴ See MVLWB Online Registry for MV2009L3-0025 – [February 5, 2010 Issuance Staff Report](#)

¹⁵ See MVLWB Online Registry for [MV2019L3-0007](#) - Preliminary Screening Exemption Form

¹⁶ See Online Registry for [MV2019L3-0007](#) – Issuance Reasons for Decision

5.0 Decision – Water Licence MV2019L3-0007

In making its decision and preparing these Reasons for Decision, the Board has reviewed and considered:

- 1) The comments and recommendations made during the regulatory processes;
- 2) The evidence and submissions from the Hamlet of Fort Liard received by the Board;
- 3) The written comments and submissions from parties received by the Board; and
- 4) The Staff Report prepared for the Board.

Having due regard to the facts, circumstances, and the merits of the submissions made to it, and to the purpose, scope, and intent of the MVRMA and the *Waters Act*, the Board has determined that Licence MV2019L3-0007 should be issued subject to the scope, definitions, conditions, and term contained therein. The Board’s determinations and reasons for this decision are set out below.

The scope, definitions, conditions, and term set forth in the Licence have been developed to address the Board’s statutory responsibilities and the concerns that arose during the regulatory process. The Reasons for Decision set out below focus on the major concerns and issues raised by parties, including those that were the subject of substantive argument submitted by one or more parties. They also address evidence which resulted in the inclusion of new or revised conditions that differ from those in the existing Licence MV2009L3-0025.

The format of the Licence has been reorganized from Licence MV2009L3-0025. These changes modernize the Licence and enhance its consistency with other municipal licences in the Northwest Territories.¹⁷ Site-specific conditions were developed where necessary.

5.1 Term of Licence

The Hamlet of Fort Liard applied for a term of 10 years for the Licence¹⁸.

Subsection 26(2) of the *Waters Act* allows for a Licence term of not more than 25 years or the duration of the undertaking. No comments on the Licence term was received during the public review of the Application¹⁹. No suggested Licence term was distributed for public review with the draft Licence conditions. The Hamlet’s previous Licence MV2009L3-0025 was issued for a period of 10 years. Recently, the Board has consistently decided that ten-year terms for municipal Licences are appropriate; however, in the interest of administrative efficiency, the Board sees value in staggering municipal Licence expiry dates. Given the Hamlet’s efforts to remain in compliance with Licence MV2009L3-0025, the Board is of the opinion that a longer Licence term is justified, and has decided to set the term of MV2019L3-0007 for 15 years, with an expiry date of February 12, 2035.

5.2 Part A: Scope and Definitions

Part A of the Licence contains the scope and definitions for terms used throughout.

¹⁷ For example: Water Licence MV2016L3-0001, issued to the Hamlet of Fort Providence on July 6, 2016 and Water Licence MV2018L3-0001, issued to Smbaa K’e First Nation on February 21, 2019.

¹⁸ See MVLWB [Online Registry for MV2019L3-0007 – Application](#)

¹⁹ See MVLWB [Online Registry for MV2019L3-0007](#) – Staff Report and Comments: Issuance

Scope

The scope of the Licence ensures the Licensee is entitled to conduct activities which have been applied for and screened by the Board. In setting out the scope of the Licence, the Board endeavoured to provide enough detail to identify and describe the authorized activities, without be unduly restrictive or prescriptive, and to allow for project flexibility throughout the life of the Licence.

Part A, conditions 1(b) and (c) are consistent with previous Licences issued by the Board. These conditions ensure that the scope of the authorization includes all water uses and deposits of waste associated with the undertakings, and reflect and comply with all applicable legislation for the life of the authorization in the Licensee's effort to protect the environment.

During the review of the draft Licence conditions, no comments or recommendations were received on the scope. The Board determined that the proposed wording put forth by Board staff adequately addresses the municipal undertakings proposed by the Hamlet.

Definitions

The Board defined items in the Licence to ensure a common understanding of conditions, to avoid future differences in interpretation, and to use wording similar to that found in previously issued Licences.

5.3 Part B: General Conditions and Schedule 1

Part B and Schedule 1 of the Licence contain general administrative conditions regarding compliance and conformity with the *MVRMA* and *Waters Act*, and is consistent with standard conditions found in previous Licences issued by the Board.

Part B, condition 3, clarifies that all references to policies, guidelines, codes of practice, statutes, regulations or other authorities shall be read as a reference to the most recent versions, unless otherwise denoted. This standard practice allows for flexibility in Licence conditions when documents are updated during the life of the Licence.

This Part addresses conformity and compliance with submissions to the Board. Periodic review and submission of major updates or changes to management plans are required by Part B, condition 6, for Board approval. Such revisions must be approved by the Board prior to the implementation of activities not identified in existing, approved plans. This condition ensures that all applicable plans are regularly reviewed and updated so they reflect changes in technology and/or changes and phases of the project throughout the life of the authorization.

Part B, condition 9 introduces the Schedules which are annexed to and form part of the Licence. Changes to these Licence components are largely administrative matters and are within the Board's authority to make.

Part B, condition 10 introduces the Surveillance Network Program (SNP) which is annexed to and forms part of the Licence. Part B, conditions 12 and 13 address SNP signage and measuring devices.

Part B, condition 14 and Schedule 1, condition 1: Annual Water Licence Report

The requirements for the Annual Water Licence Report are outlined in Part B, condition 14, and Schedule 1, condition 1. The purpose of the Annual Water Licence Report is to provide the Board and

all stakeholders the opportunity to be annually updated on project components and activities, and to provide a platform for stakeholders to submit comments, observations, feedback, and questions as necessary. The requirements are intended to provide clarity and summarize information already captured through existing submissions; they are not meant to be onerous. The Board organized these requirements to coincide with the layout of the Licence and to be consistent with recently issued municipal licenses.

During the review process, it was recommended that the Hamlet include a summary of sludge management activities at each Cell of the SDF, including results of depth and volume measurements, sludge removal, and treatment, in their annual reporting, in order to better understand triggers for sludge removal at the SDF²⁰. For this reason, the Board has specified this reporting to apply to each Cell in Schedule 1.

The Board has also specified that the first annual report be submitted March 31, 2021, with subsequent annual reports submitted every March 31 thereafter, to cover the previous calendar year (January 1 to December 31). The Hamlet is not required to submit an annual report on March 31, 2020 under MV2019L3-0007 because they will submit an annual report on March 31, 2020 to cover activities from January 1, 2019 to December 31, 2019, under their previous Licence MV2009L3-0025.

5.4 Part C: Conditions Applying to Water Use

Part C of the Licence contains conditions that address the source and maximum amounts of all Water that can be used for municipal undertakings. These are consistent with standard conditions found in previous municipal licences issued by the Board.

5.5 Part D: Conditions Applying to Waste and Water Management

Part D of the Licence contains conditions applying to waste and water management activities for the municipal undertakings and is consistent with standard conditions included in previous Licences issued by the Board. Site-specific conditions were developed where necessary and are discussed in more detail below.

Part D, condition 3: Waste Sources

Part D, condition 3 was included to prevent waste from external sources from being deposited without authorization, and to allow the Inspector and the Hamlet the discretion to determine whether waste is externally or internally generated. This change is also reflected in Schedule 1, condition 1(e), where the Hamlet is required to report on any of these wastes that may have been authorized for deposit by an Inspector, in annual reporting.

Part D, condition 5: Sewage Disposal Facilities Operation and Maintenance Plan

Part D, condition 5 requires a Sewage Disposal Facilities Operation and Maintenance Plan for Board approval. This requirement is standard for municipal water licenses and is based on the Board's most recent version of the *Operation and Maintenance Plan Template for Municipal Water Licenses*:

²⁰ See MVLWB Online Registry for [MV2019L3-0007](#) – Staff Report and Comments: Issuance, Comment ID GNWT-ENR 1 from the Application Review

Sewage Disposal Facilities. The Hamlet included a Sewage Disposal Facilities Operation and Maintenance Plan Version 1 with their Application (dated May 2019).

Throughout the regulatory review process, comments and recommendations were received from reviewers regarding the Sewage Disposal Facilities Operation and Maintenance Plan²¹ and that further details should be included in the Plan. In response to concerns, Hamlet of Fort Liard generally agreed with the requests for additional information and provided most of that information during the review process.

Interim Approve: The Sewage Disposal Facilities Operation and Maintenance Plan cannot be approved at this time and should be revised and re-submitted by August 13, 2020 (using the Board's March 2018 revised template) to reflect the updates as agreed to during the public review, and to include the following:

- a) Provide a map showing the entire effluent flowpath from the SDF and relevant SNP stations;
- b) Revise page 10 of the Plan to show that the receiving environment is "river/stream" instead of "land-surface (overland)", in order to ensure that the definition of Receiving Environment is consistent in Licence documentation
- c) Include the plant types in Section 7; and
- d) Ensure that changes made to the Sewage Disposal Facilities cells in 2018 are reflected.

The revised Plan will be considered approved upon written confirmation of conformity from Board staff.

Part D, condition 6: Sludge Management Plan

Part D, condition 6 requires a Sludge Management Plan for the Sewage Disposal Facilities for Board approval. This requirement has been carried forward from the Hamlet's previous Licence MV2009L3-0025. The Hamlet included a Sludge Management Plan Version 1 with their Application (dated May 2019).

Throughout the regulatory review process, comments and recommendations were received from reviewers regarding the Sludge Management Plan²² and that further details should be included in the Plan. In response to concerns, Hamlet of Fort Liard provided the information requested.

Interim Approve: The Sludge Management Plan cannot be approved at this time and should be revised and re-submitted by August 13, 2020 to reflect the updates as agreed to during the public review, and to include the following:

- a) Additional detail on sludge measurements and sampling procedures prior to re-use of sludge; and
- b) Additional detail related to the dimensions of the Geotubes being used to dewater sludge, and sludge sampling protocols.

²¹ See MVLWB Online Registry for [MV2019L3-0007](#) – Staff Report and Comments: Issuance, Comment ID GNWT-ENR 1, 5, 6, 7, 8; MVLWB 3, 4 from the Application Review and Comment ID GNWT-ENR 16, 19 from the Draft Conditions Review.

²² See MVLWB Online Registry for [MV2019L3-0007](#) – Staff Report and Comments: Issuance, Comment ID GNWT-ENR 3, 4 from the Application Review.

The revised Plan will be considered approved upon written confirmation of conformity from Board staff.

Part D, condition 9: Effluent Quality Criteria for Sewage Disposal Facilities at SNP station 1478-9

Part D, condition 9 includes the Effluent Quality Criteria (EQC) for effluent from the Sewage Disposal Facilities.

The Board's approach to managing the deposit of waste to the receiving environment through water licence terms and conditions is described in the MVLWB's *Water and Effluent Quality Management Policy*.²³ Effective March 31, 2011, this Policy is being applied to all new and renewal water licence Applications throughout the Mackenzie Valley.

In 2014, the *Wastewater Effluent System Regulations*²⁴ (WSERs) were legislated in all Canadian provinces and include performance standards for carbonaceous biological oxygen demand (CBOD) ≤ 25 mg/L, total suspended solids (TSS) ≤ 25 mg/L, total residual chlorine (TRC) ≤ 0.02 mg/L, and un-ionized ammonia ≤ 1.25 mg/L; however, the WSERs do not yet apply to wastewater treatment systems in Canada's north. It is unknown when the WSERs will be legislated in the Northwest Territories because of the unique challenges presented by the northern environment. Accordingly, these standards were not directly considered in the discussions regarding reassessment of effluent quality criteria for this Licence.

Calculating water-quality-based EQC in place of applying set discharge limits requires sufficient data on the quality and flow of water in the receiving waterbody, as well as the establishment of water quality objectives (WQOs) for the site. At this time, the Board does not have adequate evidence to make a determination on appropriate WQOs for this site, and limited data is available for the receiving waterbody. Additionally, the achievability of any calculated EQC would need to be evaluated, and the Board does not have sufficient data on the quality of effluent from the sewage treatment system to conduct such an evaluation. As such, the Board has not considered water-quality based EQC in this case.

Part D, item 2 of the existing Licence MV2009L3-25 stipulates that sewage discharged from SNP station 1478-9 meet the following effluent quality criteria (EQC), which were based on the Maximum Average Concentration: Fecal Coliforms = 1×10^3 CFU/100 mL; BOD₅ = 40 mg/L; Suspended Solids = 30 mg/L; Oil and Grease = Non-Visible; and the waste discharged shall have a pH between 6 to 9. These criteria were recommended by Indian and Northern Affairs Canada (INAC; now Crown Indigenous Relations and Northern Affairs Canada) during the issuance of MV2009L3-25. INAC's explanation at the time was:

The Canadian Council for the Ministers of the Environment (CCME) recently signed a Canada-Wide Strategy (the Strategy) to regulate Municipal Wastewater Effluent (MWWE) across Canada. Within this Strategy, a period of 5 years is allocated to identify National Performance Standards appropriate to remote or Northern conditions. The current treatment system operated by the Hamlet appears to have no problem meeting the new recommended requirements of 1000

²³ Water and Effluent Quality Management Policy, Standard Procedure and Consistency Working Groups (WG), March 2011.

²⁴ [Wastewater System Effluent Regulations](#), SOR/2012-139, Minister of Justice, Canada.

CFU/100 ml, 40 mg/l BOD, and 30 mg/l TSS. Since no Northern Standards have been set by the CCME, INAC suggests that the above criteria may be appropriate for this application and assist [sic] in the development of northern performance standards.

During the term of the existing Licence MV2009L3-25, the criteria listed in Part D, item 2 were not consistently met, as indicated in the Hamlet's Annual Reports²⁵ and noted by GNWT-ENR in their review of the draft water licence²⁶.

During the review of this Application, the MVLWB solicited recommendations for the EQC to be met at SNP station 1478-9, to which GNWT-ENR noted the following:

ENR offers the following information on SNP 1478-9 (SDF Compliance Point) for the consideration of the Board, and to support the recommendations to follow, based on monitoring data submitted by the Hamlet between 2006 and 2019. Results at the final discharge point (SNP 1478-6) were provided for the last 3 years only, as per 2017 station re-instatement. CBOD:

- *Using the City of Yellowknife BOD/CBOD trend analysis of 90%, the current Water Licence BOD limit of 40 mg/L would correspond to 36 mg/L for CBOD.*
- *Since 2006, results above 40 mg/L for BOD were reported on 3 occasions: Nov 25/2015 at 81 mg/L, Oct 5/2016 at 48 mg/L & June 22/2017 at 41.6 mg/L.*
- *Since 2010, results above 36 mg/L (CBOD) were measured/reported once, on Nov 25/2015 at 65 mg/L. The same is also true for results under 35 mg/L for CBOD.*
- *Based on the above provided information, and until Northern Performance Standards are established at some point in the future, ENR recommends the site-specific EQC (or Discharge Criteria) of 35 mg/L for CBOD, at the SNP 1478-9 Compliance Point²⁷.*

And with respect to TSS, GNWT-ENR noted:

Please note that BC Municipal Wastewater Regulation (B.C. Reg. 87/2012) TSS discharge limits for municipal lagoon system were also specified, for comparison purposes:

- *Current Water Licence limit for TSS is 30 mg/L.*
- *TSS values monitored since 2006 ranged between 9 mg/L and 124 mg/L (average of 54.3 mg/L), with 14 results above 30 mg/L.*
- *Cell 3 expansion constructed in the summer of 2018, should translate into improved effluent quality in the future, although not achieved in 2019.*
- *Oct 1 2019 TSS results (following year of Cell 3 expansion), were:*
 - *74 mg/L (outflow of Cell 3, at Compliance Point SNP 1478-9).*
 - *12.3 mg/L at Final Discharge Point (prior to entering Petitot River), at SNP 14786.*
- *TSS limits from B.C. Reg. 87/2012 for municipal lagoon system effluent, are: not more than 60 mg/L (for secondary treatment), and not more than 130 mg/L (for primary treatment). As the ~2.7 km wetland following the lagoon discharge is providing some secondary polishing treatment to effluent discharged from the lagoon, the above limit of 130 mg/L may be used for the current situation only. Should effluent quality improve significantly in the near future,*

²⁵ See MVLWB Online Registry for [MV2009L3-0025](#) – Annual Reports

²⁶ See MVLWB Online Registry for [MV2019L3-0007](#) – Staff Report and Comments: Issuance, GNWT-ENR Review Comments 14, 15, and 17, from the Draft Licence Conditions Review.

²⁷ See MVLWB Online Registry for [MV2019L3-0007](#) – Staff Report and Comments: Issuance, GNWT-ENR Review Comment 14 from the Draft Licence Conditions Review.

the new Water Licence may include provision to allow EQCs revision prior to next Water Licence renewal. Fort Liard SDF operates as a multi-cells system. De-sludging of Cell 3 was conducted in the summer of 2018 during the expansion. Sludge accumulation in Cell 1 and Cell 2, has not been removed in the past.

- Based on the above provided information, and until further treatment improvement is achieved at the outflow of Cell 3, or that Northern Performance Standards may be established at some point in the future, ENR recommends the site-specific EQCs (or Discharge Criteria) of 130 mg/L for TSS, at the SNP 1478-9 Compliance Point.²⁸

Board staff also note that the existing EQC are significantly lower when compared to other similar sewage disposal systems – multi-cell lagoon systems that discharge to a wetland and eventually flow to a river receiving environment. For example, in their Reasons for Decision for MV2016L3-0001²⁹, the Board set the EQC for discharge from the Hamlet of Fort Providence’s Sewage Disposal Facilities, at the final lagoon cell prior to the wetland, as follows:

| Parameter | Maximum Average Concentration |
|------------------|--------------------------------|
| Suspended Solids | 300 mg/L |
| Oil and Grease | 5 mg/L |
| CBOD | 330 mg/L |
| Fecal Coliforms | 1x10 ⁵ CFU / 100 mL |
| pH | Above 6 |

Given the exceedances experienced at SNP 1478-9 under the existing EQC, the above recommendations of GNWT-ENR, and the higher EQC set for similar SDFs, the Board believes that is reasonable to set EQC at higher, technologically-achievable levels, that will not impact the receiving environment, at SNP 1478-9³⁰. For example, a value of 150 mg/L TSS is just above the maximum observed concentration of 124 mg/L³¹.

Using the *Alberta Water Quality Based Effluent Limits Procedures Manual*³², Board staff completed basic calculations with limited available data for TSS to estimate any changes to background water quality using a proposed technology-based EQC that is higher than all recent TSS data at SNP 1478-9 (e.g., 150 mg/L). The resultant concentration for TSS in the Petitot River was conservatively calculated using the following formula:

$$C = (Q_e C_e + f Q_s C_s) / (Q_e + Q_s)$$

²⁸ See MVLWB Online Registry for [MV2019L3-0007](#) – Staff Report and Comments: Issuance, GNWT-ENR Review Comment 15 from the Draft Licence Conditions Review.

²⁹ See MVLWB Online Registry for [MV2016L3-0001](#) – Reasons for Decision.

³⁰ See MVLWB Online Registry for [MV2019L3-0007](#) – Staff Report and Comments: Issuance, GNWT-ENR Review Comment 18 from the Draft Licence Conditions Review.

³¹ See MVLWB Online Registry for [MV2019L3-0007](#) – Staff Report and Comments: Issuance, GNWT-ENR Review Comment 15 from the Draft Licence Conditions Review.

³² Alberta Environmental Protection, [Water Quality Based Effluent Limits Procedures Manual](#), 1995.

Where:

Q_e = volume of effluent discharge

Q_s = volume of receiving stream available for mixing

C_e = concentration of a substance in the effluent

C_s = upstream concentration of substance

ff = fraction of flow

C = resultant instream concentration of substance after mixing

The following conservative values were used:

Q_e = 50 m³/day (rate of discharge from Sewage Disposal Facilities, as indicated in the Operations and Maintenance Plan³³)

Q_s = 10% of 62 m³/s (62 m³/s was provided as the mean flow value from 1995-2017, as provided by a hydrologist from GNWT-ENR to Board staff for the Petitot River, 10DA001, as measured by Environment and Climate Change Canada^{34, 35}; 10% is used as the portion of the river that may be used for mixing of the effluent)

C_e = 150 mg/L (proposed EQC for TSS at SNP 1478-9)

C_s = 1 mg/L (lowest TSS value as recorded in the Mackenzie Datastream for Petitot River, measured between 2015-2018)³⁶

ff = 10%; assuming 10% of the stream flow is used for mixing of the backwash effluent in the Petitot River.

The resultant C = 1.01 mg/L illustrates that even under conservative conditions, the EQC of 150 mg/L of TSS appears to have no significant effect on the background TSS concentration in the Petitot River, and the Board concludes that this technology-based EQC for TSS is appropriate for this site. It is also important to note that the effluent receives further treatment post-discharge as it flows through the wetlands between the Sewage Disposal Facilities and the Petitot River.

No BOD or CBOD data was available for the Petitot River, so the above calculation could not be performed for proposed EQC for BOD or CBOD. However, based on the resultant TSS concentration above, it is illustrated that under conservative conditions, the dilution of the Sewage Disposal Facilities effluent in the Petitot River is high. Under these conditions, the Board concludes that the EQC should be raised to ensure that they are technologically feasible for the Hamlet to meet yet will not impact the receiving environment. This approach to using technology-based EQCs when effluent is discharged to a large river with a dilution factor is similar to the Town of Fort Smith's Water Licence, MV2011L3-0001³⁷ and the Hamlet of Fort Providence's Water Licence MV2016L3-0001.

CBOD and BOD are closely related parameters that are both used to monitor the oxygen-consuming capability of sewage discharges, and the Wastewater System Effluent Regulations³⁸ uses CBOD instead

³³ See MVLWB Online Registry for [MV2019L3-0007 – O and M Plan for Sewage Disposal Facilities – May15-19.pdf](#).

³⁴ See MVLWB Online Registry for [MV2019L3-0007 - Email exchange between Ryan Connon and Heather Scott, January 9, 2020](#).

³⁵ See Environment and Climate Change Canada, Water Office Database (<https://wateroffice.ec.gc.ca/>), Monthly Discharge Data for Petitot River below Highway 77 (Station 10DA001).

³⁶ See Mackenzie DataStream (<https://mackenziedatastream.ca/>) for Total Suspended Solids Data for Petitot River, 2015-2018.

³⁷ See the MVLWB Online Registry for [MV2011L3-0001](#) - Type A WL Approval- Sept29-11.pdf.

³⁸ [Wastewater System Effluent Regulations](#), SOR/2012-139, Minister of Justice, Canada.

of BOD. Therefore, it is recommended that CBOD be monitored and used as the EQC for sewage discharge in this Licence. In order to derive an appropriate EQC for CBOD, Board staff looked to the BOD/CBOD Trend Analysis³⁹ submitted by the City of Yellowknife, as per their municipal Licence, MV2009L3-0007. This report illustrated that over a three-year average, CBOD values were approximately 90% of BOD values for wastewater effluent from the City of Yellowknife's Sewage Treatment Facilities. Based on the observed ranges of BOD in MV2009L3-0025, the maximum observed value of BOD of 65 mg/L⁴⁰, and the information presented above, the Board set an EQC of 100 mg/L CBOD.

The EQC for pH was set as "Above 6". Because pH can become naturally elevated in lagoon systems, particularly in late summer, no upper limit was established for pH. This criterion also aligns with ENR's recommendation⁴¹ and is consistent with previously-issued municipal Licences.

GNWT-ENR noted that the highest observed concentration of fecal coliforms at SNP 1478-9 was measured as 10,025 CFU/100 mL on November 25, 2015; however, GNWT-ENR recommended a limit of 1,000 CFU/100mL. Given the previous discussion regarding dilution in the Petitot River and the exceedance above existing EQC observed during the current licence, the EQC in the existing licence was raised from $1 \times 10^3/100 \text{ mL}$ to $1 \times 10^5/100 \text{ mL}$ to align with other municipal water licences recently issued by the Board⁴².

The oil and grease criterion in Part D, item 9 of 5 mg/L is typical of EQC set for municipal sewage discharges in water licenses issued by the Board.

Part D, item 10 ensures that the Hamlet meets the EQC defined in Part D, item 9 prior to discharging from the Sewage Disposal Facilities.

Part D, condition 10: Sewage Disposal Facilities discharge requirements

Part D, condition 10 requires the Hamlet to provide Water sampling results from Surveillance Network Program (SNP) station 1478-9 (sewage effluent from the Sewage Disposal Facilities) to an Inspector and the Board no later than 10 days prior to the discharge of effluent from the Sewage Disposal Facilities to the Receiving Environment, and that discharge shall not commence until authorized in writing by an Inspector. This requirement is standard for municipal water licenses and received no comments. The Board has decided to retain this condition.

Part D, condition 12: Solid Waste Disposal Facilities Operation and Maintenance Plan

Part D, condition 12 requires a Solid Waste Disposal Facilities Operation and Maintenance Plan for Board approval. This requirement is standard for municipal water licenses and is based on the Board's most recent version of the *Operation and Maintenance Plan Template for Municipal Water Licences*:

³⁹ See the MVLWB Online Registry for [MV2009L3-0007](#) – City of Yellowknife – BOD and CBOD Study and SNP Proposal, May 2016.

⁴⁰ See MVLWB Online Registry for [MV2019L3-0007](#) – Staff Report and Comments: Issuance, GNWT-ENR Review Comment 14 from the Draft Licence Conditions Review.

⁴¹ See MVLWB Online Registry for [MV2019L3-0007](#) - Staff Report and Comments: Issuance, GNWT-ENR Review Comment 17 from the Draft Licence Conditions Review.

⁴² See MVLWB Online Registry for [MV2016L3-0001](#) – Issuance Letter with conditions and RFD.

Solid Waste Disposal Facilities. The Hamlet included a Solid Waste Disposal Facilities Operation and Maintenance Plan Version 1 with their Application (dated May 2019).

Throughout the regulatory review process, comments and recommendations were received from reviewers regarding the Solid Waste Disposal Facilities Operation and Maintenance Plan⁴³ and that further details should be included in the Plan. In response to concerns, the Hamlet of Fort Liard provided the information requested.

Interim Approve: The Solid Waste Disposal Facilities Operation and Maintenance Plan cannot be approved at this time and should be revised and re-submitted by August 13, 2020 to reflect the updates as agreed to during the public review, and to include the following:

- a) Correct the orientation of pages 7 and 26 of 29;
- b) Include a smaller scale map of the Solid Waste Disposal Facilities cells that outlines the closed/reclaimed portion of the Facilities, cells currently being used, future cells available, and current and/or planned SNP stations;
- c) Provide additional detail on the perimeter fence in Section 3; and
- d) Provide additional details on how excess/accumulated water is managed at the sedimentation pond in Section 5.

The revised Plan will be considered approved upon written confirmation of conformity from Board staff.

Part D, condition 15: Waste Segregation

Part D, condition 15 requires the Hamlet to create and maintain waste segregation areas at the Solid Waste Disposal Facilities to the satisfaction of an Inspector for a number of waste streams. During the public review of the draft Licence conditions, GNWT-ENR⁴⁴ recommended inclusion of best waste management practices and supported the inclusion of this condition in the Licence; the Hamlet had no comment. For this reason, the Board has included this condition.

Part D, condition 16: Waste Incineration

Part D, condition 16 prohibits the Hamlet from incinerating materials at the Solid Waste Disposal Facilities, unless otherwise authorized in writing by an Inspector. This is a standard condition used by the Board to ensure that best practices are implemented in solid waste management.

Part D, condition 17: Water Supply Facilities Operation and Maintenance Plan

Part D, condition 17 requires a Water Supply Facilities Operation and Maintenance Plan for Board approval. This requirement is standard for municipal water licenses and is based on the Board's most recent version of the *Operation and Maintenance Plan Template for Municipal Water Licenses: Water Treatment Plant*.

⁴³ See MVLWB Online Registry for [MV2019L3-0007](#) – Staff Report and Comments: Issuance, Comment ID GNWT-ENR 1, 5, 7 from the Draft Conditions Review.

⁴⁴ See the MVLWB Online Registry for [MV2019L3-0007](#) – Staff Report and Comments: Issuance, Comment ID GNWT-ENR 4 from the Draft Conditions Review.

Throughout the regulatory review process, the only comments and recommendations received from reviewers regarding the Water Supply Facilities Operation and Maintenance Plan⁴⁵ was a recommendation for approval from GNWT-ENR. For this reason, the Board has decided to approve this Plan.

The Board acknowledges that compliance with all submissions is already required under general conditions in Part B; however, plans that are approved at issuance do not have a condition requiring a revised plan, but will still need to be introduced as a licence requirement. The wording of the condition addresses that gap for plans approved at issuance and is consistent with the approach used in the Standard Land Use Permit Conditions.

5.6 Part E: Conditions Applying to Construction and Schedule 2

Part E of the Licence contains conditions applying to construction activities for the municipal undertaking and is consistent with standard conditions found in previous municipal Licences issued by the Board. These conditions ensure that Engineered Structures are built to appropriate standards and require the submission of design and engineering reports. The Board can ensure that monitoring requirements are in place prior to, during, and post-construction.

Part E, condition 5 and Schedule 2, condition 1

Part E, condition 5 and Schedule 2, condition 1 include requirements for a Design and Construction Plan to be submitted for Board approval a minimum of 90 days prior to the commencement of Construction. This requirement was included as a result of the possibility of the Hamlet undertaking Construction activities at their municipal facilities during the term of the Licence. This condition is intended to provide guidance to the Hamlet in this work, and is consistent with other recently-issued municipal Licences; no parties commented on it during the public review of the draft Licence conditions⁴⁶. For this reason, the Board has included this requirement.

5.7 Part F: Conditions Applying to Modifications

Part F of the Licence contains conditions outlining when and how Modifications of existing or planned physical works may be authorized. They ensure the Board and the Inspector are kept informed and can request more information or reject the proposed modification. This section is closely linked to the Construction section (Part E), which contains conditions related to the design and Construction of Engineered Structures. This section relies on the definition of a Modification, outlined in Part A, “does not include expansions, nor alternations of the purpose of function of a structure.” These conditions are consistent with standard conditions found in previous municipal Licences issued by the Board. The purpose of Part F is to streamline the process for authorizing modifications and ensure that any proposed changes to structures that might be outside the scope of the Licence are brought to the Board’s attention.

⁴⁵ See MVLWB Online Registry for [MV2019L3-0007](#) – Staff Report and Comments: Issuance, Comment ID from the Application Review and Comment ID GNWT-ENR 2 from the Draft Conditions Review.

⁴⁶ See MVLWB Online Registry for [MV2019L3-0007](#) – Staff Report and Comments: Issuance.

5.8 Part G: Conditions Applying to Spill Contingency Planning

Part G of the Licence contains conditions related to spill contingency planning and reporting, reclamation of spills and unauthorized discharges, and emergency response for the municipal undertakings. The purpose of this part is to ensure that Hamlet of Fort Liard is fully prepared to respond to spills and unauthorized discharges. The planning and reporting requirements in this part ensure that Hamlet of Fort Liard has identified the lines of authority and responsibility, has an action plan(s) for responses to spills and unauthorized discharges, and has established reliable reporting and communication procedures. This will ensure that any spills or unauthorized discharges are effectively controlled and cleaned up, with the goal of preventing or limiting damage to the receiving environment. The conditions in Part G are consistent with standard conditions found in previous municipal Licences issued by the Board.

Part G, condition 2: Spill Contingency Plan

Spill Contingency Plan is a defined term in the Licence, referencing the Indian and Northern Affairs Canada's *Guidelines for Spill Contingency Planning*.⁴⁷ The Hamlet of Fort Liard included a Spill Contingency Plan in the Application (dated May 2019), using the Board's Operation and Maintenance Plan Template for Municipal Water Licences: Spill Contingency Plan (March 2018 revision)⁴⁸. In response to reviewer comments during the Application review⁴⁹, the Hamlet submitted the applicable Material Safety Data Sheets. In response to reviewer comments during the Draft Conditions review⁵⁰, the Hamlet agreed to submit changes within six months following the effective date of the Licence.

Interim Approve: The Spill Contingency Plan cannot be approved at this time and should be revised and re-submitted by August 13, 2020 to reflect the updates as agreed to during the public review, and to include the following:

- a) Relevant Material Safety Data Sheets; and
- b) A map that illustrates all of the details listed in Section 1 of the Board's Spill Contingency Plan template.

The revised Plan will be considered approved upon written confirmation of conformity from Board staff.

5.9 Part H: Conditions Applying to Closure and Reclamation and Schedule 3

Part H and Schedule 3 of the Licence contain conditions applying to closure and reclamation of any component of the municipal undertaking being closed. The Board has previously decided⁵¹ that for Type B municipal licenses, solid waste closure and reclamation practices can be addressed through proper design, construction, operation and maintenance of facilities, and therefore fall under the Board's approval of the Operation and Maintenance Plan for the Solid Waste Disposal Facilities. The

⁴⁷ See www.mvlwb.com → Resources → Policies and Guidelines: [INAC Guidelines for Spill Contingency Planning](#) (2007).

⁴⁸ See MVLWB Online Registry for [MV2019L3-0007 – Spill Contingency Plan May15-19](#)

⁴⁹ See MVLWB Online Registry for [MV2019L3-0007 - Staff Report and Comments: Issuance, Comment ID MVLWB 6](#) from the Application review

⁵⁰ See MVLWB Online Registry for [MV2019L3-0007 - Staff Report and Comments: Issuance, Comment ID GNWT-ENR 1](#) from the Draft Conditions review

⁵¹ See MVLWB Online Registry for [MV2015L3-0001 – Fort Simpson ICRP condition removed from Water Licence](#)

Board also notes that Part D, condition 14 requires the Licensee to “act in accordance with the best practices outlined in Environment and Climate Change Canada’s *Solid Waste Management for Northern and Remote Communities: Planning and Technical Guidance Document*” and that this document, which was formally adopted by the Board in December 2017 to include as guidance for communities in the Mackenzie Valley⁵², includes guidance on closure and reclamation.

Further to this, Schedule 3, condition 1 refers to specific components of Environment and Climate Change Canada’s *Solid Waste Management for Northern and Remote Communities: Planning and Technical Guidance Document*, and Schedule 3, condition 2 lists specific requirements for consideration in closure planning for Sewage Disposal Facilities, originating from the *Canadian Standards Association Standard W203:19: Planning, design, operation, and maintenance of wastewater treatment in northern communities using lagoon and wetland systems*⁵³.

Part H, condition 2 requires the Hamlet of Fort Liard to submit, for Board approval, a facility-specific Closure and Reclamation Plan a minimum of six months prior to the closure and reclamation of any specific facility included in the scope of the Licence. This is a standard requirement of Licences issued by the Board and will ensure the municipal facility in question is reclaimed in accordance with established guidelines and expectations of reviewers and the Board.

5.10 Annex A: Surveillance Network Program

Annex A of the Licence contains conditions applying to the Surveillance Network Program (SNP). The SNP details the sampling and monitoring requirements related to compliance with numerous conditions and plans required by the Licence. Requirements for measuring volumes and water quality are based on standard water license conditions, as are the reporting requirements.

The SNP has been developed to ensure collection of water quality data and to build an understanding of the treatment efficacy of, and potential impacts on, the Receiving Environment from the Water Supply Facilities, the Sewage Disposal Facilities, and Solid Waste Disposal Facilities. The following SNP locations were proposed in the draft Licence and comments were received on several SNP station details from GNWT-ENR⁵⁴. In an effort to improve the clarity of the SNP Annex, the Board has removed inactive SNP stations that were included in previous Licences issued to the Hamlet, and only included those SNP stations that are currently active, with their previously-assigned nomenclature, as follows:

SNP 1478-3: This location is intended to record the volume of Water withdrawn for municipal purposes. This requirement is typical of all municipal water licenses issued by the Board.

SNP 1478-6: This location is intended to monitor effluent from the Sewage Disposal Facilities, during decant to the Receiving Environment, while there is flow. The parameters chosen for this location are typical of those used by the Board for monitoring sewage effluent.

SNP 1478-7: This location is intended to monitor the quality of water being discharged from the Water Treatment Plant backwash to the Liard River.

⁵² <https://mvlwb.com/sites/default/files/en14-263-2016-eng.pdf>

⁵³ <https://climatechange.toolkitnwtac.com/wp-content/uploads/sites/21/2019/08/Planning-Wastewater-CSA.pdf>

⁵⁴ See MVLWB Online Registry for [MV2019L3-0007](#) – Staff Report and Comments: Issuance

Section 6 of the WTP O&M Plan indicates that greensand filtration and water softening are used in the treatment process⁵⁵. As stated in Section 7 of the Water Treatment Plant O&M Plan (WTP O&M Plan⁵⁶), backwash water is periodically discharged to the Liard River, adjacent to the Water Supply Facilities. The Hamlet confirmed that backwash streams from the water softener and the greensand filter are mixed in a sump within the Water Supply Facilities that is periodically discharged to the Liard River, once the sump is full⁵⁷. The Hamlet has been collecting backwash water quality since an SNP location was added to the current water licence, MV2009L3-0025.

Water Treatment Plant backwash was discussed during both review periods⁵⁸. Board staff used the available data at SNP 1478-7 in an attempt to assess the impact the backwash may have on the receiving environment.

Using the *Alberta Water Quality Based Effluent Limits Procedures Manual*⁵⁹, Board staff completed basic calculations with the available water quality data of the backwash discharged from the Water Supply Facilities to the Liard River. These calculations were conducted to estimate possible changes to background water quality in the Liard River realized by the deposit of backwash water. These calculations used backwash water quality data provided at SNP 1478-7 in the 2018 Annual Water Licence Report⁶⁰ and background water quality of the Liard River, as available on the Mackenzie DataStream.⁶¹ The resultant concentration (C) for various backwash constituents in the Liard River was conservatively calculated using the following formula:

$$C = (Q_e C_e + ffQ_s C_s) / (Q_e + ffQ_s)$$

Where:

Q_e = volume of effluent discharge

Q_s = volume of receiving stream available for mixing

C_e = concentration of a substance in the effluent

C_s = upstream concentration of substance

ff = fraction of flow

C = resultant instream concentration of substance after mixing

The following conservative values were used:

⁵⁵ See MVLWB Online Registry for MV2019L3-0007 – [Water Treatment Plant Operation and Maintenance Plan Version 1 – May15-19](#)

⁵⁶ See MVLWB Online Registry for MV2019L3-0007 – [Water Treatment Plant Operation and Maintenance Plan Version 1 – May15-19](#)

⁵⁷ See MVLWB Online Registry for MV2019L3-0007 - [MV2019L3-007 - Ft Liard - renewal - September 23 2019 Technical Workshop - Meeting Summary Notes - Oct7-19.pdf](#).

⁵⁸ See MVLWB Online Registry for [MV2019L3-0007](#) – Staff Report and Comments: Issuance, Comment ID GNWT-ENR 9, 10 and MVLWB 8 for the Application review.

⁵⁹ Alberta Environmental Protection, [Water Quality Based Effluent Limits Procedures Manual](#), 1995.

⁶⁰ See MVLWB Online Registry for MV2009L3-0025 - [MV2009L3-0025 - Fort Liard - 2018 Annual Water Licence Report - Mar13-19.pdf](#).

⁶¹ See Mackenzie DataStream (<https://mackenziedatastream.ca/#/>) for Water Quality Data for Liard River, 2015-2018.

Q_e = 6.5 m³/day (rate of discharge of backwash from the Water Supply Facilities⁶²)

Q_s = 223 m³/s (223 m³/s was provided as the 7Q10 from 1995-2017, as provided by a hydrologist from GNWT-ENR to Board staff for the Liard River, Station 10ED001 (Liard River at Fort Liard), as measured by Environment and Climate Change Canada^{63, 64})

C_e = The maximum concentration of various constituents observed from backwash concentrations at SNP 1478-7⁶⁵

C_s = The lowest (i.e., the most sensitive) concentrations of various backwash water constituents in the Liard River as recorded in the Mackenzie DataStream, measured between 2015-2018⁶⁶

ff = 10%; assuming 10% of the stream flow is used for mixing of the backwash effluent in the Liard River.

The table below summarizes the backwash data (maximum concentration monitored at 1478-7) and the resultant concentration in the Liard River, using the methods outlined above. Bolded values indicate resultant concentrations above minimum Liard River background concentrations.

| Parameter | Maximum Backwash Concentration (mg/L) | Minimum Liard River Background Concentration (mg/L) | Resultant Concentration (assume $ff = 10\%$) |
|------------|---------------------------------------|---|---|
| Aluminum | 0.0812 | 0.0046 | 0.0046 |
| Antimony | Below detection limit | 0.000001 | N/A |
| Arsenic | 0.00473 | 0.00015 | 0.00015 |
| Barium | 3.42 | 0.0308 | 0.0308 |
| Beryllium | 0.00019 | 0.000002 | 0.000002 |
| Bismuth | Below detection limit | 0.000001 | N/A |
| Boron | 0.0431 | 0.002 | 0.002 |
| Cadmium | 0.000602 | 0.000016 | 0.000016 |
| Calcium | 104 | 6.65 | 6.65 |
| Chromium | 0.00129 | 0.00009 | 0.00009 |
| Cobalt | 0.00397 | 0.000025 | 0.000025 |
| Copper | 0.00223 | 0.00035 | 0.00035 |
| Iron | 153 | 0.0219 | 0.0224 |
| Lead | 0.00042 | 0.000012 | 0.000012 |
| Magnesium | 15.2 | 1.38 | 1.38 |
| Manganese | 10.2 | 0.00165 | 0.00168 |
| Molybdenum | 0.00193 | 0.000423 | 0.000423 |

⁶² See email exchange between Allan Harris and Heather Scott, December 2019, [MV2019L3-0007 - Ft Liard - Email correspondence re Flowrate of backwash - Jan 21-20.pdf](#)

⁶³ See MVLWB Online Registry for [MV2019L3-0007 - Email exchange between Ryan Connon and Heather Scott, January 9, 2020.](#)

⁶⁴ See Environment and Climate Change Canada, Water Office Database (www.wateroffice.ec.gc.ca), Monthly Discharge Data for Liard River at Fort Liard (Station 10ED001).

⁶⁵ See [2018 Annual Water Licence Report for MV2009L3-0025](#) – Hamlet of Fort Liard

⁶⁶ See Mackenzie DataStream (<https://mackenziedatastream.ca/#/>) for Water Quality Data for Liard River, 2015-2018.

| | | | |
|-------------------|---------|----------|----------|
| Nickel | 0.00047 | 0.00056 | 0.00056 |
| Phosphorus | 5.13 | 0.002 | 0.002 |
| Selenium | 0 | 0.00033 | 0.00033 |
| Silver | 0 | 0.000001 | 0.000001 |
| Sodium | 90.9 | 2.3 | 2.3 |
| Strontium | 0.314 | 0.0991 | 0.0991 |
| Thallium | 0 | 0.000001 | 0.000001 |
| Uranium | 0.00122 | 0.000695 | 0.000695 |
| Vanadium | 0.0238 | 0.000078 | 0.000078 |
| Zinc | 0.14 | 0.00122 | 0.00122 |

As noted in the table, when assuming a 10% fraction of flow (i.e., 10% of the 7Q10 for the Liard River), most constituents of the backwash have no influence on the water quality of the Liard River, but both iron and manganese show a minimal change in concentration after mixing, and no change is observed when a fraction of flow of 63% or greater is used in the calculations. In addition, the concentrations for iron and manganese remain below the Canadian Council Ministers of the Environment Canadian Water Quality Guidelines for the protection of freshwater aquatic life at all fractions of flow. The Board also recognizes that these calculations have been conducted with limited data, as the Hamlet has only been monitoring station 1478-7 since 2018. For these reasons, the Board has chosen not to set Effluent Quality Criteria for 1478-7, but still requires continued, periodic monitoring to further understand this discharge and effects on the Liard River.

Therefore, in the draft Licence⁶⁷, Board staff recommended that SNP 1478-7 be tested quarterly for total metals and phosphorus, in order to monitor concentrations of these parameters in the backwash discharge to the Liard River. As no comments were received during the draft Licence conditions review, the Board has decided to retain the details of SNP 1478-7 as drafted.

SNP 1478-8: This location was intended to monitor the quality of surface water run-off present at the Solid Waste Disposal Facilities, and was brought forward from Licence MV2009L3-0025. During the Technical Workshop⁶⁸, the Hamlet indicated that no water ponds at the Solid Waste Disposal Facilities, and that this station has not been previously sampled or utilized. During the public review of draft Licence conditions, GNWT-ENR recommended that the Board consider removing surface monitoring requirements at SNP 1478-8⁶⁹; the Hamlet responded with no comment. GNWT-ENR further recommended⁷⁰ that opportunistic sampling of ponded water at the SWDF be included in the Licence; however, this would be difficult to enforce and relying upon sampling of the sedimentation pond (SNP 1478-10) would be a more effective method of capturing any impacts to water at the SWDF. In addition, at the Technical Workshop, parties discussed the fact that the groundwater wells installed

⁶⁷ See MVLWB Online Registry for MV2018L3-0001 – Consultations/Reviews/Work Plans – [Draft Licence Terms and Conditions – Oct22-19](#)

⁶⁸ See MVLWB Online Registry for [MV2019L3-0007 - September 23 2019 Technical Workshop - Meeting Summary Notes](#)

⁶⁹ See MVLWB Online Registry for [MV2019L3-0007](#)– Staff Report and Comments: Issuance, Comment ID GNWT-ENR 9, 10 for the Draft Conditions review

⁷⁰ Ibid

on site and monitored by GNWT-MACA would likely provide a more accurate measurement of potential impacts of the SWDF on nearby waters. Given this rationale, the Board has decided to remove this SNP station from Licence MV2019L3-0007.

GNWT-ENR commented further on this during the public review of draft Licence conditions, recommending that no groundwater monitoring be included in the Licence SNP, but that the Hamlet provide GNWT-MACA's groundwater monitoring results for future use⁷¹. The Board has not included any groundwater monitoring requirements for the SWDF, but encourages the Hamlet to include any available MACA groundwater well data when it is made available to the Hamlet.

SNP 1478-9: This location is intended to monitor the final effluent water quality from the Sewage Disposal Facilities, prior to discharge to the Receiving Environment, and has been identified at the site of compliance for which EQC apply (see Section 5.5 above). The parameters chosen for this location are typical of those used by the Board for monitoring sewage effluent.

SNP 1478-10: This location is intended to monitor the quality of water collected at the Sedimentation Pond at the Solid Waste Disposal Facilities prior to discharge. During the Technical Workshop, the Hamlet indicated that the Sedimentation Pond at the Solid Waste Disposal Facilities is not being used for water management. However, during the review of draft Licence conditions, GNWT-ENR requested closing plans for the sedimentation pond in order to proactively prevent any illegal discharges⁷². The Hamlet responded that fencing the area off may be possible, but that illegal discharge to the sedimentation pond is unlikely and it does not wish to close the facility. In addition, GNWT-ENR recommended that the 'as needed' frequency be retained as drafted. As such, the Board has chosen to retain SNP 1478-10 as drafted, in order to allow for the possibility of future use of the sedimentation pond, with frequency and parameters consistent with those included in MV2009L3-0025, and with the understanding that groundwater wells on site will provide the best representation of any contamination.

5.11 Annex B: Table of Submissions

Annex B of the Licence contains a table that summarizes the information the Hamlet of Fort Liard is required to submit, as required by the Licence conditions.

5.12 Annex C: Table of Revision History

Annex C of the Licence contains a table which identifies updates and tracks changes made to the Licence. This table is currently blank because this is a new Licence, but it will be updated throughout the life of the Licence.

6.0 Conclusion

Subject to the scopes, definitions, conditions, and terms set out in the Licence and Permit, and for the reasons expressed herein, the MVLWB is of the opinion that the water use and waste disposal associated

⁷¹ See MVLWB Online Registry for [MV2019L3-0007](#)– Staff Report and Comments: Issuance, Comment ID GNWT-ENR 11 for the Draft Conditions review

⁷² See MVLWB Online Registry for [MV2019L3-0007](#)– Staff Report and Comments: Issuance, Comment ID GNWT-ENR 6 for the Draft Conditions review

with municipal undertakings can be completed by the Hamlet of Fort Liard while providing for the conservation, development, and utilization of waters in a manner that will provide the optimum benefit for all Canadians and in particular for the residents of the Mackenzie Valley.

Water Licence MV2019L3-0007 contains provisions that the Board deems necessary to ensure and monitor compliance with the MVRMA, *Waters Act*, and the Regulations made thereunder, and to provide appropriate safeguards in respect of the Hamlet's use of the land and water affected by the Licence.

SIGNATURE

Mackenzie Valley Land and Water Board



Mavis Cli-Michaud, Chair

February 7, 2020

Date

**General Procedures for the Administration of Licences
Issued Under the *Waters Act*
in the Northwest Territories**

1. At the time of issuance, a copy of the Licence is placed on the Public Registry in the office of the Mackenzie Valley Land and Water Board (MVLWB or the Board) in Yellowknife and is then available to the public.
2. To enforce the terms and conditions of the Licence, the Minister of Environment and Natural Resources has appointed Inspectors in accordance with subsection 65(1) of the *Waters Act*. The Inspectors coordinate their activities with staff of the MVLWB. The Inspector responsible for Licence MV2019L3-0007 is located in the Fort Simpson, NT office.
3. To keep the MVLWB and members of the public informed of the Licensee's conformity to the Licence's conditions, the inspectors prepare reports which detail observations on how each item in the Licence has been met. These reports are forwarded to the Licensee with a covering letter indicating which action, if any, should be taken. The inspection reports and cover letters are placed on the Public Registry, as are any responses received from the Licensee pertaining to the inspection reports. It is therefore of prime importance that you react in all areas of concern regarding all inspection reports so that these concerns may be clarified.
4. Licence MV2019L3-0007 will expire on February 12, 2035, if required; it is the responsibility of the Licensee to apply to the MVLWB for a new licence. The past performance of the Licensee, new documentation and information, and points raised during a public hearing, if required, will be used to determine the terms and conditions of any new licence. Please note that if the Licence expires and another has not been issued, then water and waste disposal must cease, or you, the Licensee, would be in contravention of the *Waters Act*. For a Type A Licence, an application for a new licence shall be made at least one year in advance of the Licence's expiry date. In the case of a Type B Licence, an application shall be made at least six months in advance of the Licence's expiry date.
5. If, for some reason, Licence MV2019L3-0007 requires amendment, a public hearing may be required. You are reminded that applications for amendments should be submitted as soon as possible to provide the MVLWB ample time to complete the amendment process. The process may take up to six months or more depending on the scope of the amendment requested.
6. Specific clauses of your Licence make reference to the Board, Analyst, or Inspector. The contact person, address, phone, and fax number of each is:

Mackenzie Valley Land and Water Board:

Public Registry Clerk
Mackenzie Valley Land and Water Board
7th Floor - 4922 48 Street,
P.O. Box 2130
YELLOWKNIFE NT XIA 2P6
Phone: (867) 669-0506
Fax: (867) 873-6610

Analyst:

Street and Mailing Address:

CARO Analytical Services
17225 109 Ave NW
Edmonton AB
T5S 1H7

Phone: (780) 489-9100

Inspector:

Sonja Martin-Elson, Water Resource Officer
Department of Environment and Natural Resources, Dehcho Region
Government of the Northwest Territories
P.O. Box 240
FORT SIMPSON NT X0E 0N0
Phone: (867) 695-7477
Fax: (867) 695-2381

7. Specific clauses of your licence may reference security. The contact person, address, and phone and fax numbers of the individual administering security deposits is:

Director, Water Resources
Department of Environment and Natural Resources
Government of the Northwest Territories
P.O. Box 1320
YELLOWKNIFE NT X1A 2L9
Phone: (867) 767-9234 ext. 53105
Fax: (867) 873-4229

Preliminary Screening Exemption Report Form

| | |
|---|---|
| Preliminary screener: MVLWB Reference / File number: MV2019L3-0007 TITLE: Type B Municipal Licence ORGANIZATION: Hamlet of Fort Liard MEETING DATE: February 7, 2020 | EIRB Reference number: |
|---|---|

Type of Development:
(CHECK ALL THAT APPLY)

- New
- Amend, EIRB Ref. #
- Requires permit, licence, or authorization
- Does not require permit, licence, or authorization

Project Summary:

History of Screening

This Preliminary Screening Report combines, but does not alter, the contents of two previous Preliminary Screenings done for the Hamlet of Fort Liard's (Hamlet) municipal operations. The first Screening was conducted by the Mackenzie Valley Land and Water Board (MVLWB or Board) in March 2002 for Licence N3L3-1478. A Project Scope description was included in the 2002 Screening, and it is clear from its contents that the Screening was meant to encompass all municipal operations under that Licence.

On March 1, 2010, the Board issued Licence MV2009L3-0025 to the Hamlet, which renewed Licence N3L3-1478. At that time, the Board determined that the Hamlet's municipal operations were exempt from Preliminary Screening, based on the March 2002 Screening.

On July 14, 2010, the Hamlet submitted a complete application to amend Licence MV2009L3-0025, for the construction of new Solid Waste Disposal Facilities (SWDF) adjacent to the existing facility. The new SWDF was expected to have a 40-year lifespan and required a new road to connect it with the existing access road, as well as construction of a sedimentation pond to collect any excess water and installation of groundwater monitoring wells adjacent to the site. The conditions of the Licence remained the same, but the scope was revised to reflect the new location of the SWDF, and an additional Surveillance Network Program (SNP) station was added for the sedimentation pond. A new Preliminary Screening Report for the amendment was completed and approved by the Board, along with the amended Licence, on August 19, 2010.

With the current renewal of the Hamlet's Licence (MV2019L3-0007), the two historical screenings have been combined into this single Screening for coherence and administrative efficiency, and the content of either Screening has not been materially altered (i.e. only minor grammatical edits have been made). The contents of this combined Screening are colour-coded to indicate the origin of each component: **blue text indicates content originally from the 2002 Screening; red text indicates content originally from the 2010 Screening.** Board staff further note that specific Licence condition references that appear in the Mitigations table below are specific to the Licence referenced, not the current renewal MV2019L3-0007.

The Hamlet of Fort Liard operates municipal Water and Waste facilities to serve their residents; these facilities comprise a Water Treatment Plant, Sewage Disposal Facilities, and Solid Waste Disposal Facilities.

Scope:

The Project Scope included in the 2002 Screening is as follows:

The Hamlet of Fort Liard has applied for a Class B Water Licence as a renewal to operate a municipal water use and disposal system.

- Water intake is up to **28.7 m3** a day, **10475.5 m3** a year.
- The system is composed of a ground water well supply, a treatment package for iron, manganese and hydrogen sulphide removal, necessary storage and water truck loading facilities.
- Water is drawn on a daily or hourly basis on demand from two wells.
- Waste disposal consists of a sewage treatment facility, hazardous waste disposal, and solid waste disposal all located at the same site 15 km southeast of the Hamlet.
- The sewage disposal system consists of a three-cell exfiltration system, which is presently decanted when capacity demands.

The Project Scope included in the 2010 Screening is as follows:

This Licence entitles the Hamlet of Fort Liard to Use Water and dispose of Waste for municipal undertakings at Fort Liard, Northwest Territories.

Community wells: 60°14' N, 123°28' W

Waste Disposal Facility: 60° 9'59.07"N, 123°15'59.68"W
 60°10'11.62"N, 123°15'50.03"W
 60°10'6.94"N, 123°15'25.53"W
 60° 9'54.39"N, 123°15'35.19"W

As stated in Licence MV2009L3-0025, the scope comprises use of Water and disposal of Waste for municipal undertakings at Fort Liard, NT. There are no proposed changes to the scope for Licence Application MV2019L3-0007.

Land Use Eligibility - Section 18 Mackenzie Valley Land Use Regulations:

Type of Disposition Disposition Number(s)

- Mineral Claims
- Prospecting Permit (s)
- Mineral Leases
- Oil and Gas: EL/SDL/PL
- Quarry Permit
- Timber Permit
- Other:

Municipal Lands

Principal Activities (related to scoping) (CHECK ALL THAT APPLY)

- | | | |
|---|---|---|
| <input checked="" type="checkbox"/> Construction | <input type="checkbox"/> Exploration | <input type="checkbox"/> Decommissioning |
| <input type="checkbox"/> Installation | <input type="checkbox"/> Industrial | <input type="checkbox"/> Abandonment |
| <input checked="" type="checkbox"/> Maintenance | <input type="checkbox"/> Recreation | <input type="checkbox"/> Aerial |
| <input checked="" type="checkbox"/> Expansion | <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> Municipal | <input type="checkbox"/> Harvesting |
| <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> Operation | <input type="checkbox"/> Quarry | <input type="checkbox"/> Camp |
| <input type="checkbox"/> Repair | <input type="checkbox"/> Linear / Corridor | <input type="checkbox"/> Scientific/ |
| <input type="checkbox"/> Research | <input checked="" type="checkbox"/> Sewage | <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> Solid Waste |
| <input checked="" type="checkbox"/> Water Intake | | |
| <input type="checkbox"/> Other: | | |

Principal Development Components (related to scoping) (CHECK ALL THAT APPLY)

- | | |
|---|---|
| <input checked="" type="checkbox"/> Access Road | <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> Waste Management |
| <input checked="" type="checkbox"/> construction | <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> disposal of hazardous waste |
| <input type="checkbox"/> abandonment/removal | <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> waste generation |
| <input type="checkbox"/> modification e.g., widening, straightening | <input checked="" type="checkbox"/> sewage |
| <input checked="" type="checkbox"/> Automobile, Aircraft or Vessel Movement | <input checked="" type="checkbox"/> disposal of sewage |
| <input type="checkbox"/> Blasting | <input type="checkbox"/> Geoscientific Sampling |
| <input type="checkbox"/> Building | <input type="checkbox"/> Trenching |
| <input type="checkbox"/> Burning | <input type="checkbox"/> Diamond drill |
| <input checked="" type="checkbox"/> Burying | <input type="checkbox"/> Borehole core sampling |
| <input type="checkbox"/> Channelling | <input type="checkbox"/> Bulk soil sampling |
| <input type="checkbox"/> Cut and Fill | <input type="checkbox"/> gravel |
| <input checked="" type="checkbox"/> Cutting of Trees or Removal of Vegetation | <input type="checkbox"/> hydrological Testing |
| <input type="checkbox"/> Dams and Impoundments | <input type="checkbox"/> Site Restoration |
| <input type="checkbox"/> construction | <input type="checkbox"/> fertilization |
| <input type="checkbox"/> abandonment/removal | <input type="checkbox"/> grubbing |
| <input type="checkbox"/> modification | <input type="checkbox"/> planting/seeding |
| <input checked="" type="checkbox"/> Ditch Construction | <input type="checkbox"/> reforestation |
| <input checked="" type="checkbox"/> Drainage Alteration | <input type="checkbox"/> scarify |
| <input type="checkbox"/> Drilling other than Geoscientific | <input type="checkbox"/> spraying |
| <input type="checkbox"/> Ecological Surveys | <input type="checkbox"/> re-contouring |
| <input checked="" type="checkbox"/> Excavation | <input type="checkbox"/> Slashing and removal of vegetation |
| <input type="checkbox"/> Explosive Storage | <input type="checkbox"/> Soil Testing |
| <input type="checkbox"/> Fuel Storage | <input type="checkbox"/> Stream Crossing/Bridging |
| <input type="checkbox"/> Topsoil, Overburden or Soil | <input type="checkbox"/> Tunnelling/Underground |

- fill
- disposal
- removal
- storage

Other:

NTS topographic map sheet numbers:

95B

095B03

Latitude / longitude and UTM system:

- Hamlet of Fort Liard - 60° 14' N; 123° 28' W
- Waste Disposal Site Approximation 60° 09' 09" N; 123° 13' 08" W (Both the seconds are +/- 05")

| Northing | Easting | Latitude | Longitude |
|-------------|------------|---------------|----------------|
| 6670361.769 | 485356.05 | 60°10'11.62"N | 123°15'50.03"W |
| 6670313.218 | 485477.977 | 60°10'10.07"N | 123°15'42.10"W |
| 6670116.086 | 485400.706 | 60°10'3.69"N | 123°15'47.07"W |
| 6670163.638 | 485278.779 | 60°10'5.21"N | 123°15'54.99"W |

Nearest community and water body:

Fort Liard, Petitot River/Liard River

Fort Liard, Liard River

Land Status (*consultation information*)

- Free Hold/Private
 Commissioner's/Territorial Lands
 Federal Crown Land
 Municipal Land

Transboundary/Transregional Implications

- British Columbia
 Alberta
 Saskatchewan
 Yukon
 Nunavut
 National Park
 Inuvialuit Settlement Region
 Wek'èezhii
 Gwich'in
 Sahtu

Type of transboundary implication:
 Impact / Effect
 Development

Public concern: _____
 (Describe.)

Physical - Chemical Effects

Impact

1) Ground Water

- water table alteration
- water quality changes

Mitigation

Water Licence Conditions Part D, Items 9 to 14 (N3L3-1478, issued March 1, 2002).

Leachate will be monitored through the installation of groundwater monitoring wells. Exact locations are to be determined near the end of construction.

infiltration changes

other:

N/A

Impact

2) Surface Water

- flow or level changes
- water quality changes

Mitigation

- Water Licence Conditions Part D, Items 10 to 14 (N3L3-1478, issued March 1, 2002).
- Spill contingency and emergency response plans in effect. All spills of oil, fuel, or other deleterious material should be reported immediately to the 24-Hour Spill Line at (876) 920-8130.
- The site will contain a sediment pond; there runoff/leachate will be held, tested, and then discharged.
- Addition of SNP station 1478-10.

- water quantity changes
- drainage pattern changes

See previous. As well, the site is designed so that any water impacted by garbage is directed to and collected in the sedimentation pond. Further, there is ditching surrounding the site to control drainage from adjacent areas.

- temperature
- wetland changes/loss
- other:
- N/A

Impact

3) Noise

- noise in/near water
- noise increase
- other:
- N/A

Mitigation

Noise will be temporary during construction – no mitigation.

Impact

4) Land

- geologic structure changes
- soil contamination

Mitigation

Water License Conditions Part D, Items 11, 12 & 14 (N3L3-1478, issued March 1, 2002).

- buffer zone loss
- soil compaction and settling
- destabilization/erosion
- permafrost regime alteration
- explosives/scarring
- other:

- Hazardous waste materials plan required to be submitted.
- Part D, condition 10 (from MV2009L3-0025, issued March 1, 2010).
- Site has had a topographic survey in order to help best determine the location for the facility components. Sedimentation pond also on site to collect runoff and sediment.
- Part D, condition 10 (from MV2009L3-0025, issued March 1, 2010).

N/A

Impact

5) Non-renewable natural resources

Mitigation

resource depletion

other:

N/A

Impact

6) Air/climate/atmosphere

Mitigation

other:

N/A

BIOLOGICAL ENVIRONMENT

Impact

1) Vegetation

Mitigation

species composition

species introduction

toxin/heavy accumulation

other: Linear Migration routes, habitat fragmentation

N/A

Impact

2) Wildlife and Fish

Mitigation

effects on rare, threatened or endangered species

fish population changes

waterfowl population changes

breeding disturbance

population reduction

species diversity change

health changes

behavioural changes

Bear fence has been erected around the site, and has thus far been effective in keeping the animals out (site tour 04/02/02 @ 16:00).

habitat changes / effects

New site is located directly adjacent to the existing site so as to reduce potential impacts to the natural habitat. Proponent is to contact DFO should any fish bearing waters be present on the site. The household waste, bulky waste, and hazardous waste area will be

enclosed by a fixed knot fence and a gated entrance to discourage wildlife from entering the area.

game species effects

toxins/ heavy metals

forestry changes

agricultural changes

other: Possible runoff of deleterious substances from waste disposal site to adjacent drainages.

Water Licence Conditions Part D, Item 11, 12 & 14 (N3L3-1478, issued March 1, 2002).

N/A

Interacting Environment

Impact

Mitigation

1) Habitat and Communities

predator-prey

wildlife habitat/ecosystem composition changes

reduction/removal of keystone or endangered species

removal of wildlife corridor or buffer zone

other:

N/A

Impact

Mitigation

2) Social and Economic

planning/zoning changes or conflicts

increase in urban facilities or services use

rental house

airport operations/capacity changes

human health hazard

• Landfill site is to be fenced, gated, and appropriately signed (stated in amendment application).

• Part B, conditions 6 & 7 (from MV2009L3-0025, issued March 1, 2010).

impair the recreational use of water or aesthetic quality

affect water use for other purposes

affect other land use operations

quality of life changes

public concern; Decant operations

- The Hamlet has been decanting only as required as opposed to a regularly scheduled decant (Letter 30/01/02).
- Water License Conditions Part D, Item 10, 12 & 13 (N3L3-1478, issued March 1, 2002).

other:

N/A

Impact

Mitigation

3) Cultural and Heritage

effects to historic property

increased economic pressure on historic properties

change to or loss of historic resources

change to or loss of archaeological resources

increased pressure on archaeological sites

change to or loss of aesthetically important sites

effects to aboriginal lifestyle

other:

N/A

- Pursuant to Schedule 4.1 of the **Northwest Territory Métis Nation** (NWTMN) Interim Measures Agreement, the MVLWB determined that written notice was given to the NWTMN and that a reasonable period of time was allowed for NWTMN to make representations with respect to the application.
- Pursuant to section 27, paragraphs (a) and (b) of the **Dehcho First Nations** (DCFN) Interim Measures Agreement, the MVLWB has determined that written notice was given to the DCFN, and that a reasonable period of time was allowed for DCFN to make representations with respect to the application.

Reasons For Decision

DECISION

The Board is satisfied that communities and First Nations affected by the Application have been notified and provided adequate time to provide comment on the Application as required by land claim and self government agreements, the MVRMA, policy directions relating to Interim Measures Agreements, and any other applicable legislation and agreements.

In their Application, the Hamlet demonstrated that no new activities were being proposed compared to what was previously screened in 2002 and 2010. No comments were received from reviewers to indicate disagreement that the Application was exempt from screening. Therefore, in accordance with Schedule 1, Part 1, section 2 of the *Exemption List Regulations*, the Board has confirmed the undertaking is exempt from preliminary screening. Consequently, no preliminary screening was conducted.