



Mackenzie Valley Land and Water Board
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October 5, 2016

File: MV2011L3-0001

Mr. Keith Morrison
Town of Fort Smith
PO Box 147
FORT SMITH NT X0E 0P0

Email: kmorrison@fortsmith.ca

Dear Mr. Morrison:

**Surveillance Network Program (SNP) Change Request Approval
Municipal Water Licence – Town of Fort Smith**

The Mackenzie Valley Land and Water Board (MVLWB or the Board) met on October 5, 2016 to review the Town of Fort Smith's (Town) request to change the sampling frequency of Surveillance Network Program (SNP) station 567-6 on the Slave River, as required by Water Licence MV2011L3-0001.

The Board hereby approves the Town's requested change. The requirements for SNP 567-6 in Licence MV2011L3-0001 have been updated. The station shall be sampled monthly during safe ice conditions and during open water.

The Board notes that the Town has demonstrated significant progress in submitting outstanding plans and reports required by their Licence.

The Board reminds the Town to adhere to the SNP requirements listed in Licence MV2011L3-0001 for each sampling station, and encourages Town staff to take field notes when sampling SNP stations to note any observations and pertinent information to aid in tracking and determining trends in effluent quality at SNP 567-2, including any rationale for missing a sample.

The full cooperation of the Town of Fort Smith 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,

A handwritten signature in black ink, appearing to read "F. M. Adlem".

Floyd Adlem
MVLWB A/Chair

Copied to: Distribution List

Attachments: Revised Water Licence MV2011L3-0001
Reasons for Decision



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

Town of Fort Smith

(Licensee)

of P.O. Box 147 Fort Smith, NT X0E 0P0
(mailing address)

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

Licence number: MV2011L3-0001
Licence type: A
Water management area: Northwest Territories 01, Great Slave Lake
Location: Town of Fort Smith (60° 00' N; 111° 53' W)
Purpose: Use of water and disposal of waste
Description: Municipal purposes
Quantity of water **not to be exceeded**: 600,000 cubic metres annually
Effective date of licence: November 1, 2011
Expiry date of licence: October 31, 2026

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

Mackenzie Valley Land and Water Board

Chair

Witness

Approved by

Minister of Aboriginal Affairs and Northern Development Canada

**MV2011L3-0001 - Town of Fort Smith
Type B Water Licence**

Part A: Scope and Definitions

Scope

- A.1. This Licence entitles Town of Fort Smith to use Water and dispose of Waste for municipal undertakings at The Town of Fort Smith, Latitude 60°00' N and Longitude 111°53'00" W, Northwest Territories.
- A.2. 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 deposits of such Waste may enter any Waters. Whenever new Regulations are made or existing Regulations are amended by the Governor in Council under the *Northwest Territories Waters 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 to such Regulations.
- A.3. Compliance with the terms and conditions of this Licence does not absolve the Licensee from the responsibility for compliance with the requirements of all applicable federal, territorial, and municipal legislation.

Definitions

In this Licence: MV2011L3-0001

“Act” means the *Northwest Territories Waters Act*.

“Analyst” means an Analyst designated by the Minister under subsection 35(1) of the Act.

“Average Concentration” means the discrete average of four consecutive analytical results, or if less than four, the analytical results collected during a batch decant and as submitted to the Board in accordance with the sampling and analysis requirements specified in the Surveillance Network Program.

“Average Concentration for Faecal Coliforms” means the running geometric mean of any four consecutive analytical results submitted to the Board in accordance with the sampling and analysis requirements specified in the Surveillance Network Program.

“Board” means the Mackenzie Valley Land and Water Board established under Part 4 of the *Mackenzie Valley Resource Management Act*.

“Engineer” means a professional Engineer registered to practice in the Northwest Territories in accordance with the *Engineering and Geoscience Professions Act*, S.N.W.T. 2006, c.16.

“Freeboard” means the vertical distance between the Water line and the lowest elevation of the effective Water containment crest on a dam or dyke’s upstream slope.

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

“Inspector” means an Inspector designated by the Minister under subsection 35(1) of the Act.

“Licensee” means the holder of this Licence.

“Minister” means the Minister of Aboriginal Affairs and Northern Development Canada.

“Modification” means an alteration to a physical work that introduces a new structure or eliminates an existing structure and does not alter the purpose or function of the work but does not include an expansion.

“Regulations” means Regulations promulgated pursuant to section 33 of the *Northwest Territories Waters Act*.

“Sewage” means all Toilet Wastes and Greywater.

“Sewage Disposal Facilities” comprises the area and engineered structures designed to contain Sewage as identified in “Figure 6 – Site Plan Showing Sewage Lagoons and Discharge Pipeline” dated January 2011 in the Fort Smith Water Licence Background Report Volume 1.

“Solid Waste Disposal Facilities” comprises the area and associated structures designed to contain solid Wastes as identified in “Figure 7 – Plan Showing Solid Waste Facility” dated January 2011 in the Fort Smith Water Licence Background Report Volume 1.

“Surveillance Network Program” means a monitoring program established to define environmental sampling and analysis requirements, to collect data on surface Water and Groundwater quality, to assess discharge quality and licence compliance, and to assess the potential for impacts to the environment.

“Toilet Wastes” means all human excreta and associated products but does not include Greywater.

“Waste(s)” means Waste as defined by section 2 of the Act.

“Waste Disposal Facilities” mean all facilities designated for the disposal of Waste and includes the Solid Waste Disposal Facilities and Sewage Disposal Facilities.

“Water(s)” means any Waters as defined by section 2 of the Act.

“Water Supply Facilities” comprises the area and associated intake infrastructure as identified in “Figure 3 – Site Plan Showing Intake Pumphouse” dated January 2011 in the Fort Smith Water Licence Background Report Volume 1.

Part B: General Conditions

- B.1. The Licensee shall file an annual report with the Board not later than March 31 of the year following the calendar year reported which shall contain the information as set out in Schedule 1, Item 1 as attached to this Licence.
- B.2. The Licensee shall comply with the Surveillance Network Program annexed to this Licence and any amendment to the said Surveillance Network Program as may be made from time to time pursuant to the conditions of this Licence.
- B.3. The Licensee shall comply with the terms of any plans approved pursuant to the conditions of this Licence and with any amendments to the plans as may be made from time to time pursuant to the conditions of this Licence and as approved by the Board.
- B.4. The Surveillance Network Program and compliance dates specified in the Licence may be modified at the discretion of the Board.
- B.5. Meters, devices, or other methods used for measuring the volumes of Water used and Waste discharged shall be installed, operated, and maintained by the Licensee to the satisfaction of an Inspector.
- B.6. The Licensee shall, within sixty (60) days of the issuance of this Licence, post the necessary signs, where possible, to identify the station(s) of the Surveillance Network Program. All postings shall be located and maintained to the satisfaction of an Inspector.
- B.7. The Licensee shall, within sixty (60) days of issuance of this Licence, post signs in the appropriate areas to inform the public of Water Supply and Waste Disposal Facilities. All postings shall be located and maintained to the satisfaction of an Inspector.
- B.8. The Licensee shall immediately report to the 24-hour Spill Report Line (867) 920-8130 any spills of Waste which are reported to or observed by the Licensee related to the municipal undertakings or in the areas of the Water supply or Waste Disposal Facilities.
- B.9. The Licensee shall ensure a copy of this Licence is maintained at the municipal office, the Solid Waste Disposal Facilities and the Water Treatment Plant at all times.
- B.10. The Licensee shall comply with the Schedules annexed to this Licence, and with any amendments to the said Schedules, as approved by the Board.

Part C: Conditions Applying to Water Use

- C.1. The Licensee shall obtain all Water from the Slave River using the Water Supply Facilities or as otherwise approved by the Board.
- C.2. The quantity of Water used for all purposes shall not exceed 600,000 cubic metres per year.
- C.3. The Water intake hose used on the Water pumps shall be equipped with a screen having mesh size that is protective of the fish in the area.

Part D: Conditions Applying to Waste Disposal

- D.1. The Licensee shall discharge all Sewage to the approved Sewage Disposal Facilities or as otherwise approved by the Board.
- D.2. All Waste discharged from the Sewage Disposal Facilities at Surveillance Network Program Station Number 567-2 shall not exceed the following effluent quality criteria:

Parameter	Maximum Average Concentration
Suspended Solids	200 mg/L
BOD ₅	300 mg/L
Faecal Coliforms (FC)	1 x 10 ⁶ CFU/100mL
Oil and Grease	No visible sheen

The Waste discharged shall have a pH between 6 and 9.

- D.3. The Licensee shall monitor the Waste discharged from the Sewage Disposal Facilities for carbonaceous biological oxygen demand (CBOD) and biological oxygen demand (BOD) for a minimum of three years. The results of this study, including a trend analysis, shall be submitted to the Board in a report that is completed before March 1, 2015.
- D.4. A Freeboard limit of one (1.0) metre, or such Freeboard as is recommended by a qualified Engineer and approved by the Board, shall be maintained in the Sewage Disposal Facilities.
- D.5. The Sewage lagoon shall be maintained and operated in such a manner as to prevent structural failure.
- D.6. The Licensee shall maintain the Sewage Disposal Facilities to the satisfaction of an Inspector.
- D.7. The Licensee shall dispose of all solid Wastes at the Solid Waste Disposal Facilities or as otherwise approved by the Board.
- D.8. The Licensee shall submit to the Board for approval on June 30, 2012, a plan for a Groundwater Monitoring and Protection Program that meets the following objectives and satisfies Schedule 2, Item 1 attached to this Licence:
- to identify and delineate any contamination of groundwater due to landfill activities; and
 - identify the need for additional impact mitigation measures to reduce or eliminate unacceptable environmental effects.
- D.9. If not approved by the Board, the plan for the Groundwater Monitoring and Protection Program referred to in Part D, Item 8 shall be revised and resubmitted for approval within a timeframe set by the Board.
- D.10. The plan for the Groundwater Monitoring and Protection Program shall be implemented as and when approved by the Board.

- D.11. The Licensee shall review and update the plan for the Groundwater Monitoring and Protection Program as necessary to reflect changes in the operation of the Solid Waste Disposal Facility, or as requested by the Board. Any proposed changes to the Groundwater Monitoring and Protection Program must be submitted to the Board for approval.
- D.12. The Licensee shall submit to the Board on every May 1 a report summarizing the results of monitoring completed under the Groundwater Monitoring and Protection Program in the preceding year, including but not limited to the information identified in Schedule 2, Item 2 attached to this Licence.
- D.13. The Licensee shall submit a Discussion Paper to the Board for approval by November 1, 2012, that outlines and assesses options for improvements to the Sewage Disposal Facilities that will reduce the amount of ammonia in the final Sewage discharge. The Discussion Paper shall contain the information set out in Schedule 2, Item 3 attached to this licence.
- D.14. The Licensee shall submit a Sewage Treatment Improvement Plan to the Board for approval by November 1, 2014. The Sewage Treatment Improvement Plan shall be based on the Discussion Paper and any directions from the Board and shall include:
- a. Recommended measures for improving Sewage treatment and reducing the amount of ammonia in the discharge;
 - b. A schedule for implementation of the recommended measures; and,
 - c. A plan for how progress in improving Sewage effluent quality will be measured and reported to the Board.
- D.15. The Licensee shall implement the Sewage Treatment Improvement Plan as and when approved by the Board.

Part E: Conditions Applying to Modifications

- E.1. The Licensee may, without written approval from the Board, carry out Modifications to the Water Supply and Waste Disposal Facilities provided that such Modifications are consistent with the terms of this Licence and the following requirements are met:
 - a. The Licensee has notified the Board in writing of such proposed Modifications at least sixty (60) days prior to beginning the Modifications;
 - b. Such Modifications do not place the Licensee in contravention of either the Licence or the Act;
 - c. The Board has not, during the sixty (60) days following notification of the proposed Modifications, informed the Licensee that review of the proposal will require more than sixty (60) days; and
 - d. The Board has not rejected the proposed Modifications.

- E.2. Modifications for which all of the conditions referred to in Part E, Item 1 have not been met may be carried out only with written approval from the Board.

- E.3. The Licensee shall provide to the Board as-built plans of the Modifications referred to in this Licence within ninety (90) days of completion of the Modifications.

Part F: Conditions Applying to Contingency Planning

- F.1. The Licensee shall submit to the Board for approval within sixty (60) days of the issuance of this Licence, an updated Spill Contingency Plan in accordance with Aboriginal Affairs and Northern Development Canada's 2007 "Guidelines for Spill Contingency Planning".
- F.2. If not approved by the Board, the Spill Contingency Plan referred to in Part F, Item 1 shall be revised and resubmitted within thirty (30) days of receiving notification of the Board's decision.
- F.3. The Licensee shall review the Spill Contingency Plan annually and, if necessary, modify the plan to reflect changes in operation(s) and technology. Any updated Spill Contingency Plan shall be submitted to the Board for approval.
- F.4. If, during the period of this Licence, an unauthorized discharge of Waste occurs, or if such a discharge is foreseeable, the Licensee shall:
 - a. Employ the appropriate contingency plan;
 - b. Report the incident immediately via the 24-hour NWT Spill Report Line. Currently the number is (867) 920-8130; and
 - c. Submit to an Inspector a detailed report on each occurrence not later than thirty (30) days after initially reporting the event.

Part G: Conditions Applying to Closure and Reclamation

- G.1. The Licensee shall submit to the Board for approval an Interim Closure and Reclamation Plan for the Solid Waste Disposal Facilities by June 30, 2013. The Interim Closure and Reclamation Plan shall contain the information as set out in Schedule 3, Item 1, included in this Licence.
- G.2. If not approved by the Board, the Interim Closure and Reclamation Plan, referred to in Part G, Item 1 shall be revised and resubmitted for approval within sixty (60) days of receiving notification of the Board's decision.
- G.3. The Licensee shall submit to the Board for approval a Final Closure and Reclamation Plan at least six months prior to abandoning any component of the Waste Disposal Facilities.
- G.4. The Licensee shall implement the plan specified in Part G, Item 1 and Item 3 as and when approved by the Board.

Part H: Conditions Applying to Construction

- H.1. Prior to construction of any dams, dykes, or structures intended to contain, withhold, divert, or retain Water or Wastes, the Licensee shall submit to the Board for approval design drawings stamped by a qualified Engineer registered in the Northwest Territories.
- H.2. Construction of structures referred to in Part H, Item 1 shall be carried out as approved by the Board.
- H.3. The Licensee shall provide to the Board as-built plans and drawings of the construction referred to in Part H, Item 1 within ninety (90) days of completion of the construction.

Part I: Conditions Applying to Operation and Maintenance

- I.1. The Licensee shall, by April 30, 2012, submit to the Board for approval, a plan for the operation and maintenance of the Sewage Disposal Facilities. The plan shall contain the information as set out in Schedule 4, Item 1, included in this Licence.
- I.2. The Licensee shall, by April 30, 2012, submit to the Board for approval, a plan for the operation and maintenance of the Solid Waste Disposal Facilities. The plan shall contain the information as set out in Schedule 4, Item 2, included in this Licence
- I.3. If not approved by the Board, the plans referred to in Part I, Items 1 and 2 shall be revised and resubmitted for approval within sixty (60) days of receiving notification of the Board's decision.
- I.4. The Licensee shall implement the Plans specified in Part I, Items 1 and 2 as and when approved by the Board.
- I.5. The Licensee shall annually review the plans specified in Part I, Items 1 and 2 and shall modify the plans to reflect changes in operations and technology or as directed by the Board. All proposed updates or revisions to the plans shall be submitted to the Board for approval.

Signed on behalf of the Mackenzie Valley Land and Water Board



Floyd Adlem, A/Chair



Amanda Gauthier, Witness

Schedule 1: General Conditions

1. The Annual Report referred to in Part B, Item 1 shall include, but not be limited to, the following:
 - a. The total quantity of water pumped from the Slave River at Station Number 567-1;
 - b. The total quantity of Sewage discharged to the Slave River at Station Number 567-2;
 - c. Tabular summaries of all data generated under the "Surveillance Network Program";
 - d. The monthly and annual quantities in cubic metres of fresh water obtained from all sources;
 - e. A detailed record of Modifications and/or major maintenance work carried out on the Water Supply Facilities and Waste Disposal Facilities and all associated structures;
 - f. Results of any inspections of all dams, berms, dykes and control structures;
 - g. A summary of any abandonment and restoration work completed during the year and an outline of any work anticipated for the next year;
 - h. A list of unauthorized discharges;
 - i. Updates or revisions to the approved Operation and Maintenance Plans for both the Sewage Waste Facilities and the Solid Waste Disposal Facilities;
 - j. Updates or revisions to the approved Spill Contingency Plan;
 - k. Updates or revisions to the locations and associated coordinates of the snow disposal sites;
 - l. Summary of sludge management activities, if any;
 - m. Comparison of the Surveillance Network Program data to Water Licence regulated limits and sampling and analysis requirements;
 - n. A summary of progress on the implementation of the Sewage Treatment Improvement Plan, as per Part D, Item 15;
 - o. A summary of any studies requested by the Board that relate to Waste disposal, waste use or reclamation, and a brief description of any future studies planned;
 - p. The inclusion of all correspondence between the Inspector and the Licensee; and,
 - q. Any other details on water use or waste disposal requested by the Board by November 1st of the year being reported.

Schedule 2: Conditions Applying to Waste Disposal

1. The plan for the Groundwater Monitoring and Protection Program (GMPP referred to in Part D, Item 8) shall include, but not be limited to the following:
 - a. A summary of potential impacts to groundwater and surface water due to operation of the Solid Waste Disposal Facility. This summary should include:
 - i. Maps and description of the water budget at and around the Facility that includes but is not limited to:
 - a) A hydrogeological description and interpretation of the subsurface directly beneath and surrounding the Facility,
 - b) Maps showing season variation in depth to water table, patterns of groundwater movement and hydraulic gradients beneath and surrounding the Facility,
 - c) A map and description of surface water drainage patterns and the interaction between surface water drainage and groundwater at and surrounding the Facility,
 - d) A map and summary of the types of solid waste at the surface and subsurface of the facility.
 - ii. An estimate of the background groundwater and surface water quality at and surrounding the Facility, and
 - iii. Any other information relevant to groundwater or surface water quality at and surrounding the Facility.
 - b. A description, including rationale, of the type and frequency of monitoring required to achieve the objectives listed in Part D Item 8. The rationale should, at a minimum, include:
 - i. A map showing the location of existing and additional proposed groundwater monitoring wells at the Facility and surface water sampling locations;
 - ii. Construction details of existing groundwater monitoring wells;
 - iii. A description of groundwater monitoring well development protocols;
 - iv. A description of monitoring protocols, methodologies, and parameters for each groundwater monitoring well and surface water sampling location;
 - v. A description of the groundwater sampling and analytical QA/QC procedures,
 - vi. A description of how the data will be analyzed for each monitoring type;
 - c. A Groundwater Contingency Plan including a description, with rationale, of thresholds for measured parameters and corrective actions that will be taken if thresholds are reached.
2. The Groundwater Monitoring and Protection Program (GMPP) Annual Report referred to Part D, Item 12 shall include, but not be limited to, the following information:
 - a. A summary of monitoring activities conducted under the GMPP carried out in a given year,
 - b. Summaries of all data and information generated under the GMPP in a format acceptable to the Board;
 - c. An analysis and interpretation of the results;
 - d. An evaluation of any identified environmental changes that have occurred as a result of the Solid Waste Disposal Facility;

- e. An evaluation of the overall effectiveness of the GMPP to date and recommendations, if necessary, for refining the GMPP to improve its overall effectiveness; and,
 - f. A description of any actions taken under the Groundwater Contingency Plan.
3. The Discussion Paper, referred to Part D, Item 13, shall include, but not be limited to, the following information:
- a. Options for achieving the lowest effluent quality criteria for ammonia practical at the Sewage Disposal Facilities;
 - b. For each option identified, a description of environmental, operational and financial implications of applying each option including an estimated timeline for implementation; and
 - c. Recommendations for which option, in the Licensee's opinion, is the most appropriate for the Facilities.

Schedule 3: Conditions Applying to Closure and Reclamation

1. The Interim Closure and Reclamation Plan referred to in Part G, Item 1 shall include, but not be limited to, the following:
 - a. Maps delineating all disturbed areas, borrow material locations and site facilities;
 - b. A staging plan for closure of the Solid Waste Disposal Facility (SWDF) or portions of the SWDF;
 - c. A plan to manage surface water infiltration or moisture additions according to the design intent of the SWDF cells or areas during and after closure;
 - d. A proposed design for the final SWDF cover system and the identification of source materials for the cover;
 - e. General information of the final elevation and slopes;
 - f. A re-vegetation plan of completed areas of the SWDF; and
 - g. A description of the potential end-use of the SWDF after final closure.

Schedule 4: Conditions Applying to Operation and Maintenance

1. The Operation and Maintenance Plan for the Sewage Disposal Facilities (SDF) referred to in Part I, Item 1 shall be prepared in accordance with the “Guidelines for the Preparation of an Operation and Maintenance Manual for Sewage and Solid Waste Disposal Facilities in the Northwest Territories” (Government of the Northwest Territories, Municipal and Community Affairs, 1996) and include, but not be limited to, the following:
 - a. Site description showing specific location of the SDF, drainage and distance to water bodies by means of maps and drawings;
 - b. List of people by positions and phone numbers who are responsible for the operation and maintenance for the SDF;
 - c. A description of the normal operation and maintenance procedures for the SDF;
 - d. Frequency of each of the operation and maintenance steps carried out (i.e., daily, weekly, annually, etc.);
 - e. Site records including volumes of effluent discharged to the environment, Sewage volume collected, and details of any maintenance undertaken;
 - f. Safety procedures for the operator,
 - g. A description of weed and insect control;
 - h. Methods of controlling access to the SDF such as signs and fencing
 - i. A list of chemicals used in the treatment process, if any;
 - j. A description of the frequency of inspection of dams, dykes and drainage courses;
 - k. A description of procedures used for removal of floating materials from the SDF;
 - l. Runoff and drainage control within and around the facilities, and restoration of erosion; and
 - m. A description of how Sewage sludge is managed, treated and disposed of.

2. The Operation and Maintenance Plan for the Solid Waste Disposal Facilities (SWDF) referred to Part I, Item 2 shall be prepared in accordance with the “Guidelines for the Preparation of an Operation and Maintenance Manual for Sewage and Solid Waste Disposal Facilities in the Northwest Territories” (Government of the Northwest Territories, Municipal and Community Affairs, 1996) and include, but not be limited to, the following:
 - a. A site description including maps of the area showing::
 - i. Location of the SWDF,
 - ii. Dimensions of SWDF,
 - iii. Distance to water bodies and drainage paths,
 - iv. Prevailing wind, and
 - v. Segregation of solid wastes into sections such as bulky waste, waste oil, honey bag, refuse area, hazardous waste, recyclable and reusable waste, Biotreatment Pad;
 - b. List of people by position and their phone numbers what are responsible for the normal operation and maintenance of the SWDF;

- c. Classification of the solid wastes including hazardous waste which are expected to be generated by the community;
- d. Disposal procedures for all solid Waste generated by the community;
- e. Basic maintenance procedures of the SWDF and frequency of maintenance activities including waste compaction, waste collection, methods of preventing windblown debris, fencing and signs, odour control and burning where permitted;
- f. Conditions that hinder the normal operation so the SWDF such as permafrost and access to cover material;
- g. Safety procedures for the operator;
- h. Water and leachate management and monitoring; and,
- i. Site records including
 - i. Date, description, estimated volume and generator of waste placed in compound,
 - ii. Any maintenance activities done at site;
- j. A Hazardous Waste Management Plan that shall be completed in general accordance with the Government of the Northwest Territories, Department of Environment and Natural Resources document entitled A Guide to Developing a Community Based Hazardous Waste Management Plan.



MACKENZIE VALLEY LAND AND WATER BOARD SURVEILLANCE NETWORK PROGRAM

Licensee: Town of Fort Smith

Licence number: MV2011L3-0001

Effective date of Licence: November 1, 2011

Effective date of Surveillance

Network Program (SNP): November 1, 2011

A. Location and Description of Surveillance Network Stations

Station Number	Description	Rationale
567-1	Raw water supply from the Slave River at the Intake House.	To determine the quality of the water for use as a municipal water source.
567-2	Sewage Disposal Facilities effluent discharged to the Slave River	SITE OF COMPLIANCE. To monitor final effluent quality before discharge into receiving environment.
567-3	Raw Sewage prior to entering Sewage Disposal Facilities.	To characterize the quality of Sewage.
567-4	Run-off directly below the Solid Waste Disposal Facilities.	To monitor final effluent quality discharged.
567-5 Inactive	The established groundwater monitoring wells in the Solid Waste Facility.	To monitor potential impacts to groundwater surrounding the Solid Waste Facility System.
567-6	The Slave River, approximately three (3) metres downstream from the outlet of the Sewage Disposal Facilities. ¹	To monitor the receiving environment of the Sewage Disposal Facilities.

¹The exact location of sampling site is subject to approval of the Inspector.

B. Sampling and Analysis Requirements

- 1) Water at Station Number 567-2 shall be sampled monthly and analysed for the following parameters:

BOD _{5,2}	pH
Total Suspended Solids	Fecal Coliforms
Ammonia	Total Phosphorus
Un-ionized Ammonia	
Nitrate	Nitrite
CBOD ₃	

- 2) Water at Station Number 567-6 shall be sampled monthly, during safe ice conditions and during open water, and analysed for the following parameters:

BOD _{5,4}	pH
Total Suspended Solids	Fecal Coliforms
Ammonia	Total Phosphorus
Un-ionized Ammonia	
Nitrate	Nitrite
CBOD ₅	

- 3) Water at Station Number 567-4 shall be sampled twice per year in June and September for the following parameters:

pH	Total Iron
Conductivity	Total Lead
Total Suspended Solids	Total Mercury
Faecal Coliforms	Total Nickel
BOD ₅	Total Zinc
Total Arsenic	Total Chromium
Total Cadmium	Total Sulphate
Total Copper	Visible Oil and Grease

- 4) Water at Station Number 567-2 and 567-4 shall be inspected monthly during periods of flow for the presence of an oily sheen. If sheen is detected, then a sample shall be collected and analysed for the presence of oil and grease.
- 5) All sampling, sample preservation, and analyses shall be conducted in accordance with methods prescribed in the current edition of "Standards Methods for the Examination of Water and Wastewater" or by such other methods approved by an Analyst.

2 Biological Oxygen Demand

3 Carbonaceous Biological Oxygen Demand

4 Biological Oxygen Demand

5 Carbonaceous Biological Oxygen Demand

- 6) All analyses shall be performed in a laboratory approved by an Analyst.
- 7) Station Number 567-1 shall be sampled and analyzed to the satisfaction of an Environmental Health Officer/Inspector.

C. Flow and Volume Measurement Requirements

- 1) The monthly and annual quantities of Water pumped from the Slave River at Station Number 567-1 shall be measured and recorded in cubic metres (m³).
- 2) The monthly quantity of Sewage discharged from the Sewage Disposal Facilities to the Slave River at Station Number 567-2 shall be measured and recorded in cubic metres (m³).
- 3) The monthly and annual quantities of Sewage solids removed from the sewage disposal facility shall be measured and recorded.

D. Reports

- 1) The Licensee shall, unless otherwise requested by an Inspector, include all of the data and information required by the Surveillance Network Program in the Licensee's Annual Report, which shall be submitted to the Board on or before March 31st of the year following the calendar year being reported.

Signed on behalf of the Mackenzie Valley Land and Water Board



Floyd Adlem, A/Chair



Amanda Gauthier, Witness

Annex A Schedule

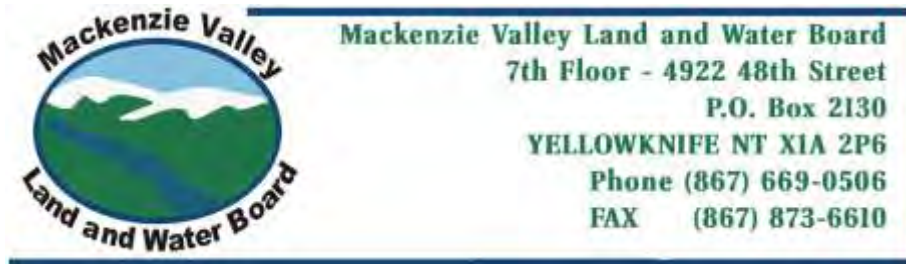
Summary of reports or information to be submitted by the Licensee as required through License conditions

Licence Condition	Report Title /Action Required	Timeline for Submission
Part B, Item 1 and Schedule 1, Item 1	Annual Water Licence Report	Annually on March 31
Part D, Item 3	Study comparing results of CBOD and BOD analysis of sewage effluent	March 1, 2015
Part D, Item 8	Groundwater Monitoring and Protection Program plan	June 30, 2012
Part D, Item 12 and Schedule 2, Item 2	Annual Groundwater Monitoring and Protection Program Report	Annually on May 1
Part D, Item 13 and Schedule 2, Item 3	Discussion Paper for improvement of sewage treatment	November 1, 2012
Part D, Item 14	Sewage Treatment Improvement Plan	November 1, 2014
Part F, Item 1	Spill Contingency Plan	Within 60 days of licence issuance
Part G, Item 1 and Schedule 3, Item 1	Interim Closure and Reclamation Plan for the Solid Waste Disposal Facilities	June 30, 2013
Part G, Item 3	Final Closure and Reclamation Plan	At least 6 months prior to abandoning any component of the Waste Disposal Facilities
Part H, Item 1	Design drawings	Prior to construction of facilities listed in H.1
Part H, Item 3	As-built plans	Within 90 days of completion of construction of items listed in H.1
Part I, Item 1 and Schedule 4, Item 1	Operation and Maintenance Plan for Sewage Disposal Facilities	April 30, 2012
Part I, Item 2 and Schedule 4, Item 2	Operation and Maintenance Plan for Solid Waste Disposal Facilities	April 30, 2012

Annex B Revisions to Water Licence MV2011L3-0001

List of changes that have been made to the Water Licence since issuance

Date	Location of change	What has changed
November 19, 2015	Surveillance Network Program, section A and B	SNP station 567-6 was added to monitor the receiving environment of the Sewage Disposal Facilities. Testing parameters are the same as those for 567-2. Un-ionized ammonia was added as a parameter to be analysed at 567-2 and 567-6.
October 5, 2016	Surveillance Network Program update to SNP 567-6.	This update was made to account for safety considerations encountered when collecting samples from this location in the winter, spring break-up and fall freeze-up.



Reasons for Decision

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

Type A Water Licence Application	
Preliminary Screener	MVLWB
Reference/File Number	MV2011L3-0001
Applicant	Town of Fort Smith
Project	Municipal Water Licence – revision to Surveillance Network Program station 567-6

Decision from Mackenzie Valley Land and Water Board Meeting of

October 5, 2016

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

Background

Background on SNP for MV2011L3-0001

Part D, item 14 of the Town’s Licence required the submission of a Sewage Treatment Plan and Ammonia Discussion Paper, which was submitted to and approved by the Board on July 16, 2015. The Ammonia Discussion Paper illustrated that the current Sewage Disposal Facilities (SDF) meet the Effluent Quality Criteria (EQC) as per Part D, item 2 of the Licence. It also spoke to the fact that the Sewage Disposal Facilities meet the Wastewater System Effluent Regulations for un-ionized ammonia, although these Regulations have not been introduced in the NWT.

The Town was required to develop a Sewage Treatment Improvement Plan (Part D, item 14), based on the results of the Ammonia Discussion Paper. This Plan was submitted in September 2015. In it, the Town did not advance any particular option to improve wastewater treatment until such time as a comprehensive regulatory framework exists in the far north. However, the Sewage Treatment Improvement Plan did state that in the interim, the Town is agreeable to implementing enhanced sampling and monitoring of the Slave River downstream of the treated wastewater discharge location, including incorporation of two additional SNP locations to monitor the receiving water body.

On November 19, 2015, the Board approved the addition of location 567-6 to the SNP, downstream of the Sewage Disposal Facilities, in order to monitor the receiving environment of the Sewage Disposal Facilities (i.e. the Slave River). The exact location of the station was determined collaboratively by the Government of the Northwest Territories Inspector and Town staff, to be approximately three (3) meters downstream from the outlet of the SDF, with signage was to be installed during summer 2016.

Meeting with Town and Parties

On July 19, 2016, a meeting with the Town, the Inspector and other interested parties was held in Fort Smith to discuss the development of a timeline for outstanding operational issues and outstanding submissions under MV2011L3-0001, as directed by the Board in their March 17, 2016 letter.

Representatives from the Town of Fort Smith, Government of the Northwest Territories – Environment and Natural Resources (including the Inspector) and Municipal and Community Affairs, Fort Smith Métis Nation, Fort Resolution Métis Council, Deninu K'ue First Nation, Hamlet of Fort Resolution, Environment and Climate Change Canada, and the MVLWB attended. The meeting provided a valuable opportunity to discuss and work through the Town's Licence requirements and outstanding issues with stakeholders in person. Board staff are of the opinion that the meeting was instrumental in assisting the Town to adhere to the requirements of their Licence, and community feedback strongly encouraged the continuation of this kind of dialogue.

Submission Description

Following the July 19, 2016 meeting, the Town submitted a letter on July 28, 2016, addressing a number of follow-up items, and requesting a revision to SNP 567-6. Specifically, the Town requested that:

“...this be revised to monthly "during open water only". This request is due to the hazards associated with sampling during the winter, spring break-up, and fall freezeup.”

The Town has submitted this request to change the frequency of sampling required for SNP 567-6 due to safety concerns resulting from the station being located on the Slave River.

Public Review

By September 13, 2016, comments and recommendations on the SNP change request were received from Environment and Climate Change Canada (ECCC) and the GNWT-ENR. The Town did not respond to reviewer comments by the September 20, 2016 deadline.

In summary, reviewers were supportive of the SNP change request, and had additional suggestions. ECCC recommended that efforts be made to collect monthly winter samples, but only if and when it is safe to do so, to increase the knowledge of the winter receiving environment, when water quality may be different and lower aeration occurs (ECCC comment 2). GNWT-ENR supported the request to reduce sampling at SNP 0053-6 to during open water only, but emphasized the importance of the Town collecting monthly compliance sampling data at SNP 0053-2 (site of compliance), in order to effectively capture effluent characteristics and help assess compliance with the Licence (GNWT-ENR comment 1). GNWT-ENR further recommended that Town staff take field notes when conducting sampling to aid in tracking and determining trends in effluence quality at SNP 0053-2 (GNWT ENR comment 2).

Decision

After reviewing the submission of the Town, the written comments received by the Board and the Staff report prepared for the Board, the Board, having due regard to the facts and circumstances, the merits of the submissions made to it, and to the purpose, scope, and intent of the MVRMA and the *Waters Act* and Regulations made thereunder, has determined that there are no outstanding issues or concerns with the Town's request to change the sampling frequency of SNP station 567-6, and that Water Licence MV2011L3-0001 be revised. This revision shall require SNP station 567-6 to be sampled monthly during safe ice conditions and during open water. Sampling monthly during safe ice conditions and during open water will increase knowledge of the winter receiving environment.

Water Licence MV2011L3-0001 contains provisions that the Board feels necessary to ensure and monitor compliance with the MVRMA and the *Waters Act* and the Regulations made thereunder and to provide appropriate safeguards in respect of the Applicant's use of the waters and/or deposit of waste affected by the Licence. The Board will provide additional referenced material or documents if requested in writing to do so.

SIGNATURE

Mackenzie Valley Land and Water Board



October 5, 2016

Floyd Adlem, A/Chair

Date

Amanda Gauthier

From: Amanda Gauthier
Sent: Thursday, October 06, 2016 10:04 AM
To: 'kmorrison@fortsmith.ca'
Cc: Erica Janes; 'admin_dkfn@northwestel.net'; 'Alexis_Campbell@gov.nt.ca'; 'apower@ykdene.com'; 'barryt@arcticsafaris.ca'; 'boydw@bathurstinlet.com'; 'Brandon_Bradbury@gov.nt.ca'; 'Carolc.lands@gmail.com'; 'Catherine_BraunRodriguez@gov.nt.ca'; 'Ceo.srfn@northwestel.net'; 'Charlene_Coe@gov.nt.ca'; 'chief.lkdfn@gmail.com'; 'chief.srfn@northwestel.net'; 'chief@slfn196.com'; 'christian.bertelsen@cannor.gc.ca'; 'clint_ambrose@gov.nt.ca'; 'Colin_merz@gov.nt.ca'; 'craigecologynorth@gmail.com'; 'dave.white@aurorageosciences.com'; 'david.alexander@cannor.gc.ca'; 'doug_carr@gov.nt.ca'; 'ec.ea.nwt.ec@canada.ca'; 'esangris@ykdene.com'; 'exec@slema.ca'; 'fieldworker.frmc53@northwestel.net'; 'fisheriesprotection@dfo-mpo.gc.ca'; 'fortsmithmetiscouncil@northwestel.net'; 'frmc@northwestel.net'; 'Gary.Woo@neb-one.gc.ca'; 'Glen_Mackay@gov.nt.ca'; 'gnwt_ea@gov.nt.ca'; 'Heather_Beck@gov.nt.ca'; 'Hilary_machtans@golder.com'; 'hrmc@northwestel.net'; 'ima_dkfn@northwestel.net'; 'Iqbal_Arshad@gov.nt.ca'; 'Jayda_Robillard@gov.nt.ca'; 'jblack@ykdene.com'; 'Jeremy_Roberts@gov.nt.ca'; 'jhood@fortsmith.ca'; 'joe_heron@gov.nt.ca'; 'johnny_lennie@gov.nt.ca'; 'Jon_Posynick@gov.nt.ca'; 'Jen Potten'; 'land@wpfn.ca'; 'lands@denenation.com'; 'lands@slfn196.com'; 'landsnresources@katlodeeche.com'; 'laurie_mcgregor@gov.nt.ca'; 'Lindsay_Armer@gov.nt.ca'; 'lkdfnlands@gmail.com'; 'Matthew.Spence@cannor.gc.ca'; 'mauge@yellowknife.ca'; 'Melanie.Murphy@wscc.nt.ca'; 'Mike_Vassal@gov.nt.ca'; 'monica_wendt@gov.nt.ca'; 'Nathen_Richea@gov.nt.ca'; 'Norman_McCowan@gov.nt.ca'; 'NTCard@aandc.gc.ca'; 'Olivia_Lee@gov.nt.ca'; 'pat_knutson@gov.nt.ca'; 'patrick_clancy@gov.nt.ca'; 'Paul_Green@gov.nt.ca'; 'Pauline_DeJong@gov.nt.ca'; 'Permits'; 'preliminaryscreening@reviewboard.ca'; 'president.nwtmn@northwestel.net'; 'rcc.nwtmn@northwestel.net'; 'Rebecca.Leighfield@aandc.gc.ca'; 'rhonda_batchelor@gov.nt.ca'; 'rmakohoniuk@yellowknife.ca'; 'Robert_Jenkins@gov.nt.ca'; 'Russell_Teed@gov.nt.ca'; 'Sam.Kennedy@aandc.gc.ca'; 'sao@hayriver.com'; 'Scott_Stewart@gov.nt.ca'; 'screeningofficer@eastarm.com'; 'shin.shiga@nsma.net'; 'Steven_Shen@gov.nt.ca'; 'stu_niven@gov.nt.ca'; 'Tasha_Hall@golder.com'; 'tim.morton@aandc.gc.ca'; 'tyanna_steinwand@gov.nt.ca'; 'Veronique.DAmours-Gauthier@dfo-mpo.gc.ca'; 'walexander@yellowknife.ca'; 'Wendy_Bidwell@gov.nt.ca'; 'ww.symbion@shawbiz.ca'; 'zabeynevitt@tlicho.com'; 'Diep_Duong@gov.nt.ca'; 'Jean_Soucy@gov.nt.ca'; 'Bill_Pain@gov.nt.ca'; Heather Scott
Subject: MV2011L3-0001 - Town of Fort Smith - Approval - SNP Change
Attachments: MV2011L3-0001 - Town of Fort Smith - Approval - SNP Change.pdf

Good day,

Please see the attached document. if you have any questions, please contact Erica Janes at (867) 766-7466 or email ejanes@mvlwb.com.

Regards,

Amanda Gauthier

Executive Coordinator

Mackenzie Valley Land and Water Board

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