



# Sahtu Land and Water Board

## Staff Report

<b>Division:</b> Water Program	<b>Report No.:</b> 1
<b>Date Prepared:</b> November 29, 2017	<b>File No.:</b> <a href="#">S17L8-003</a> & <a href="#">S17X-004</a>

**Meeting Date:** December 5, 2017

### Subject:

New Type A Land Use Permit for installation of monitoring wells and new Type B Water Licence Application for operation and closure of an existing Landfarm at the Norman Wells Airport submitted by Transport Canada, Prairie and Northern Region – Environmental Services, Contaminated Sites (TC-ES).

### 1. Purpose/Report Summary

The purpose of this Report is to present to the Sahtu Land and Water Board for consideration:

- a) the new Water Licence (WL or Licence) Application S17L8-003 submitted by Transport Canada for the Hydrocarbon Contaminated Soil/Land Treatment Facility (Landfarm) located at the Norman Wells Airport
- b) the new Land Use Permit (LUP or Permit) Application S17X-004 for installation of groundwater monitoring wells at the Landfarm;
- c) the Preliminary Screening Report;
- d) the Engagement Plan and Record;
- e) the Spill Contingency Plan;
- f) the Waste Management Plan; and
- g) the terms and conditions for the new WL and LUP .

### 2. Background

- **August 9, 2017** – Pre-submission discussions initiated with Board staff by Transport Canada;
- **November 6, 2017** - the Sahtu Land & Water Board (SLWB or Board) received a [new application for a Type A LUP](#) from Transport Canada;
  - On the same day, the Applicant was advised that additional information and corrections were required which included submitting a WL application for operation, closure and reclamation of the Landfarm.
- **November 9, 2017** - the Board received a [new application Type B WL](#) from Transport Canada;
  - On the same day, the Applicant was advised that additional information and corrections were required.
- **November 9 to 14, 2017** - Supplemental information and revisions were submitted and the application was **Deemed Complete** on November 15, 2017;

- **November 15, 2017** - Review packages were sent out electronically to members of the Tulita District Distribution List using the [Online Review System](#) with a request for comments by **November 29, 2017**;
- **November 24, 2017** - The draft Permit and Water Licence were circulated for consideration during the public review;
- **November 29, 2017** – Reviewer comments received;
- **December 4, 2017** - Applicant response deadline;
- **December 5, 2017** - Presentation of Applications to the Board for decision;

### 3. Discussion

#### 3.1 Project Overview

The Norman Wells Airport Land Treatment Facility (Landfarm) Project consists of the following activities:

- 1) Installation of three (3) groundwater monitoring wells required to replace existing monitoring wells that are damaged due to frost-jacking/heaving;
- 2) Treatment of ~2500 m<sup>3</sup> of hydrocarbon contaminated soils, monitoring and decommissioning of the Landfarm;
- 3) Characterization of ~500 m<sup>3</sup> of the soil that is located immediately above and beneath the Landfarm liner that may require off-site disposal during decommissioning; and
- 4) Discharge of ~400m<sup>3</sup> of standing water that has accumulated within the lined Landfarm plus any additional waters retained following freshet.

The Norman Wells Airport was divested from Transport Canada to the Government of the Northwest Territories in the 1990s. As a condition of the Arctic A Airport transfer agreement (July 1995), Transport Canada is contractually obligated to remediate contamination that existed prior to the airport transfer, as would have been identified in a baseline study, as well as any items identified by GNWT within six years of the transfer date. An airside Landfarm was commissioned on the airport property in September 2003 at a location east of the airport runway (see Attachment 1). The Landfarm will be undergoing decommissioning once the soil quality meets the applicable criteria. Treated soils will be deposited at the site and re-graded.

The supporting documentation submitted with the WL Application provides information related to the construction and maintenance of the Landfarm with limited details of the progression of treatment of the hydrocarbon contaminated soil. The following four (4) reports were submitted:

- [Final Report for Norman Wells Airport, Fire Training Area and Land Treatment Unit Remedial Work](#) (WERI, May 2004);
- [Final Report for Land Treatment Facility, Sampling and Bunker C Removal – Norman Wells Airport](#) (WERI, January 2011);
- [Airside Land Treatment Unit, Assessment and Remedial Options Assessment Report \(ARCADIS, April 2017\)](#); and
- [Norman Wells Airport, Airside Land Treatment Unit – Field Report for First Maintenance Event](#) (BluMetric, November 2017).

As documented in the May 2004 Norman Wells Airport, Fire Training Area and Land Treatment Unit Remedial Work Report (WERI, May 2004) remedial activities were conducted by a Contractor (Winnipeg Environmental Remediations Inc., WERInc), retained by Transport Canada, in September 2003. Activities included commissioning of a treatment cell (Landfarm) designed to contain petroleum hydrocarbon (PHC) contaminated soil excavated from the former Fire Training Area (FTA) and installation of three groundwater monitoring wells

one up-gradient and two down-gradient from the Landfarm.<sup>1</sup> The Land Treatment Unit (Landfarm) was commissioned adjacent to the former FTA site to contain approximately 1500m<sup>3</sup> of PHC contaminated soil with dimensions of approximately 100 x 30 m that included a sump area designed to collect contact water downgradient of the treatment area. This report provides Landfarm construction details with drawings and specifications which included excavation below grade with a perimeter berm established around the area to prevent (and contain) contaminant runoff. The area was then compacted and an impermeable synthetic geomembrane liner was installed to prevent contaminants from leaching into the subsoil. The treatment objective was to meet or exceed the remediation criteria of GNWT and CCME. The Phase II Environmental Site Assessment (ESA) was conducted previously and remedial activities were conducted by the Contractor to address the environmental issues that were identified in the Remedial Action Plan for the Project; which was not included in the Application submission. The report also included recommendations for treatment and monitoring.

The three other reports submitted with the Application provide additional detail about the treatment of soils as well as integrity of the Landfarm. As documented in the 2011 report (HCl and WERI) treatment in 2010 involved mechanical aeration (tilling) of the contaminated soil. This report also provides an evaluation of treatment progression and details segregation and containerization of Bunker C oil (heavy fuel oil) contained in a stockpile within the Landfarm area; which is generally not suitable for treatment in a Landfarm. There were complications with the process that resulted in approximately 40% of Bunker C oil contained within the stockpile being processed and containerized for disposal at a licenced facility (approximately 1500 kg). The remaining Bunker C oil is to be considered at decommissioning. Water sampling was conducted within the Landfarm and from one of the down-gradient monitoring wells and tested for BTEX, F1 and total extractable hydrocarbons. Results were compared to the CCME Water Quality Guidelines for the protection of freshwater aquatic life (1999 with 2004 update) and found to be below the detection limits of the analytical instruments.

The Airside Land Treatment Unit Assessment and Remedial Options Assessment Report (ARCADIS 2017) provides additional background information including description of the Landfarm as designed to contain approximately 2,500m<sup>3</sup> of contaminated soil with a treatment depth of 0.5m and dimensions of approximately 100x50m; which is updated from information provided in the 2004 report detailing 2003 commissioning. Arcadis completed field work from Sep 27-29, 2016 and found that the three existing groundwater monitoring wells were observed to be dry and too damaged by jack-frosting/heaving to be useful. Arcadis recommended evaluation of perfluorinated compounds in the soils due to source of materials. This report also suggests that the Landfarm was overfilled with some deterioration noted (liner) and inability to collect groundwater samples to verify integrity of design.

The Norman Wells Airside Land Treatment Unit – First Maintenance Event – Field Report (Blumetric 2017) provides overview of treatment and liner repairs complete from Sept 5 to 9, 2017. The Landfarm had vegetation covering most of the soil and standing water accumulated on the east and south of the Landfarm. Clearing involved removal of trees while smaller vegetation was mixed with the soil. A trench was dug to drain water from east to south and air monitoring was conducted during operations for VOCs. Treatment included addition of fertilizer and maintenance and repair was conducted following the recommendations within the Federal Guidelines for Landfarming Petroleum Hydrocarbon Contaminated Sites (2006). Wetness of soil complicated treatment and an excavator was used for tilling rather than the Allu bucket.

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<sup>1</sup> See SLWB Online Registry: [S17L8-003 – Norman Wells Airport Remedial Works Report – May 2004 – Nov 10 17](#).

### Management Plans

A [Waste Management Plan](#) (Version 1.0), [Spill Contingency Plan](#) (Version 1.0), and [Engagement Plan and Record](#) were included with the Applications. Waste from drilling activities will be placed within a drum and after successful installation of the monitoring well, will be disposed of within the Landfarm. Domestic wastes, including well construction material packaging, garbage and/or food scraps will be placed in appropriate containers, removed from site at the end of each day and disposed of at the Town of Norman Wells Solid Waste Disposal Facility. These plans did not contain information related to Landfarm operation, maintenance, closure or reclamation.

### Equipment and Infrastructure

The following equipment is identified as required for the installation of groundwater monitoring wells in the LUP Application:

- Drill rig (Multi Power Locust Tracked Geotechnical Air Rotary Drill)
- 4x4 Pickup Truck

Equipment re-fueling activities will utilize a 450L tank on back of pick up, in double walled tank.

The WL Application does not identify equipment involved with the treatment and maintenance of the Landfarm.

There is no camp associated with this operation.

### Eligibility

Transport Canada is eligible per subsection 18(b) of the MVLUR: "...has the right to occupy the land and either contracts to have the land-use operation carried out or is the person who is to carry out the operation."

The LUP Application incorrectly identified eligibility under subsection 18(a)(i) of the MVLUR: "(a) where the proposed land-use operation is in the exercise of a right to search for, win or exploit minerals or natural resources, (i) holds the right."

### Fees

No application fee was required as the Applicant is the Federal Government.

### Term

A proposed time schedule for the License was not identified by TC in the Application however the anticipated start date is summer 2018. The Specifications and Tender Documents are being developed.

The requested period of the Permit is November 1, 2017 to November 1, 2018.

## **3.2 Process Requirements**

**Application Received:** November 6 to 14, 2017

**Application Deemed Complete:** November 15, 2017

**Application Forwarded for Review:** November 15, 2017

**Draft WL and LUP Forwarded for Review: November 24, 2017**

**Number of Review Agencies:** 29<sup>2</sup>

**Review Period End Date:** November 29, 2017

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<sup>2</sup> See Online Review System ([http://lwbors.yk.com/LWB\\_IMS/ReviewComment.aspx?appid=12347](http://lwbors.yk.com/LWB_IMS/ReviewComment.aspx?appid=12347)): [Distribution List](#)

**Proponent Response Date:** December 4, 2017

The activities as described trigger a Type B Licence in accordance with Schedule H (Licensing Criteria for Agricultural, Conservation, Recreational and Miscellaneous Undertakings), item 3 of the Waters Regulations for a deposit of waste.

The activities as described trigger a Type A Permit in accordance with paragraph 4(a) of the MVLUR: 4 No person shall, without a Type A permit, carry on any activity that involves (b) on land within or outside the boundaries of a local government, (i) the use of motorized earth-drilling machinery the operating weight of which, excluding the weight of drill rods, stems, bits, pumps and other ancillary equipment, equals or exceeds 2.5t, for a purpose other than the drilling of holes for building piles or utility poles or the setting of explosives within the municipal boundaries of the local government.

Of the 29 organizations to which the application was distributed, fourteen (14) are represented within the Sahtu Settlement Area. Review comments were received from:

- Environment and Climate Change Canada (ECCC);
- GNWT – Department of Environment and Natural Resources (ENR); and
- Sahtu Renewable Resources Board (SRRB).

The main concerns raised were related to the inadequacy of details provided for operation and closure of the Landfarm specifically with regard to the anticipated disposal of wastewater.

Proponent responses to reviewer comments were not received at the time this report was prepared. The Review Comment Table and submitted letters from ECCC and ENR are attached to this report (Attachment 2).

## **4.0 Comments**

### 4.1 Permission of Land Owner, Community Consultations and Traditional Knowledge

Transport Canada provided public consultation letters to potentially affected parties of the planned submission of the LUP application to the Board on October 18, 2017.<sup>3</sup> The Town of Norman Wells, Town Manager, provided a signed copy of the requested Acknowledgement of Engagement Letter on November 1, 2017 indicating that there were no concerns or questions. A copy of this letter is included in the [Engagement Plan](#) which, in Board staff's opinion, meets the applicable guidelines but only in context of the planned well installations.<sup>4</sup> The Engagement Plan does not consider "life of project" activities that would be associated with the Landfarm operation and closure activities. The Engagement Record is limited to application pre-submission details.

No traditional knowledge was submitted with the Applications.

No reviewer comments were related to engagement.

### 4.2 Management Plans

Similar to the Engagement Plan, the Spill Contingency Plan and Waste Management Plan submitted with the Applications meet applicable guidelines and reflect the scope for the proposed project only as related to the LUP

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<sup>3</sup> SLWB Online Registry: [S17X-004 – Transport Canada – Engagement Letter – Nov 6, 17](#)

<sup>4</sup> SLWB Online Registry: [S17X-004 – Transport Canada – Engagement Plan – Nov 6, 2017](#), pg. 9

(i.e., well installation). The Waste Management Plan does not include a letter from ‘approved licenced disposal facilities’ confirming they will accept wastes from the activities however pre-submission communications provide evidence that attempts were made to obtain the letter.

The WL Application states that a Decommissioning Plan for the Landfarm will be available January 2018.

#### 4.3 Preliminary Environmental Screening

Section 124(1) of the Mackenzie Valley Resource Management Act requires the Board to undertake a Preliminary Screening of any proposed development prior to the issuance of a Licence, Permit or Authorization.

Based on information provided in the application and by referral agencies (see below) a Preliminary Environmental Screening (PES) was performed. The draft PES is attached (3). The report concludes that the environmental impact of the proposed project can be mitigated with known technologies and that no significant public concerns have been raised. The draft Preliminary Environmental Screen was forwarded to MVEIRB on December 1, 2017 and the final version will be forwarded to the MVEIRB once it has received approval from the Board.

#### 4.4 Conformity with the Land Use Plan

Pursuant to subsection 61(2) of the MVRMA, the Board may not issue a licence or permit except in accordance with any applicable land use plan. The Sahtu Land Use Plan (SLUP or Plan) received approval and came into effect on August 8, 2013. The Plan applies throughout the Sahtu Settlement Area except for “lands in a settlement area that comprise a park to which the *Canada National Park Act* applies, that have been acquired pursuant to the *Historical Sites and Monuments Act* or that are situated within the boundaries of a local government.”<sup>5</sup>

All Landfarm infrastructure are contained within the Municipal Boundary of the Town of Norman Wells on airport property thus the SLUP does not apply.

#### 4.5 Security Deposit

In accordance with section 94 of the MVRMA, the federal government is not required to post security, pursuant to section 71 of the MVRMA.

#### 4.6 Draft Land Use Permit

The draft Permit (Attachment 4) was developed in consideration of the Application, the *Standard Land Use Permit Conditions Template* (February 2016), other recently issued land use permits for similar activities and reflects reviewer concerns and Board staff recommendations.

#### 4.7 Draft Licence

A draft Licence (Attachment 5) had been prepared by Board staff to ensure consistency with recent Board issuances and other recent WLs issued for Landfarm undertakings by Land and Water Board of the Mackenzie Valley (e.g. [MV2017L8-0004](#) – GNWT-ENR – Checkpoint Remediation Project Landfarm Treatment Facility &

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<sup>5</sup> Mackenzie Valley Resource Management Act (MVRMA), Section 34.

[G17L1-002](#) – KBL Environmental Ltd. – Inuvik Soil Treatment Facility) and was distributed for review on November 24, 2017. GNWT-ENR had noted that there was insufficient time to provide adequate review of the draft WL and requested that, if the Board is requesting formal comments on the draft, that the Board provide additional time to conduct a thorough review of the document.

The Proponent response was not available at the time this report was prepared. Board staff are of the opinion that the draft WL addresses all comments and recommendations that arose during the regulatory process (as discussed below).

### **Water Licence Term**

A requested term for the License was not identified by TC-ES in the application however works are anticipated to begin Summer 2018. The Landfarm is intended to be a temporary engineered structure, operated until hydrocarbon contaminated soils originating from remedial works complete as part of the Arctic A Airport transfer agreement between the Government of the Northwest Territories (GNWT) and Transport Canada, comply with applicable environmental regulations, guidelines, standards, codes and/or acts. Board staff recommend a five (5) year term is appropriate, matching the term of the Permit.

### **Comments on Part A of the Licence:**

#### Scope

The scope of the Licence is generally consistent with the similar WL recently issued by Land and Water Boards of the Mackenzie Valley and authorizes the Licensee to use water and dispose of Waste for miscellaneous undertakings.

#### Definitions

The definitions section, for the most part, contains standard working similar to those included in recent WLs issued by the Land and Water Boards of the Mackenzie Valley. Board staff have included a number of definitions in order to ensure a common understanding of the conditions and to avoid future differences in interpretation.

### **Comments on Part B and Schedule 1: General Conditions**

This Part of the WL stipulates matters regarding compliance and conformity with the *Waters Act*, and an assortment of conditions that support the other Parts of the Licence. This includes conditions which pertain to the Annual Water Licence Report, Surveillance Network Program (SNP), measuring devices, signage, and the location of copies of this WL. These are standard conditions that are generally consistent with recent WLs issued by the Boards of the Mackenzie Valley and are appropriate for the Transport Canada's Norman Wells Airport Property Landfarm. The reporting requirements in Schedule 1 are based on recent Type B WLs requirements for Landfarms.

### **Comments on Part C: Conditions Applying to Security Requirements**

In accordance with section 94 of the MVRMA, the federal government is not required to post security, pursuant to section 71 of MVRMA.

This part has been intentionally left blank.

### **Comments on Part D: Conditions Applying to Water Use**

The Application indicates there will be no water use in conjunction with treatment of the hydrocarbon contaminated soils. Pre-submission discussions had indicated below threshold water use as part of the soil treatment plans (approximately 9000L, or 9m<sup>3</sup>/year spread over 3 treatments events) from the municipal water supply (see Attachment 6).

This part has been intentionally left blank.

### **Comments on Part E: Conditions Applying to Waste Disposal and Water Management & Annex A – Surveillance Network Program**

This Part of the WL addresses waste disposal and water management requirements. The conditions in the draft WL are generally consistent with conditions found in other recent WLs issued by the Land and Water Boards of the Mackenzie Valley. Any exceptions are discussed in further detail below:

Condition 4 requires within sixty (60) days of issuance that the Licensee submit for Board approval a **revised Waste Management Plan** in accordance with the Board's *Guidelines for Developing a Waste Management Plan* as directed by the Board and commitments made during the review process.

This requirement addresses Board staff review that the contents of the document only relate to the installation of the three groundwater monitoring wells. Also, this conditions addresses recommendations by ENR (Comment ID ENR 1) that "TC provide the following information:

- Anticipated water volume and quality of discharge from the facility and proposed EQC for the facility;
- Information related to discharge location including location, grade, soil characteristics; and
- Proposed timing and anticipated duration of discharge."

The Application indicated that a detailed waste management plan would be included in the Decommissioning Plan for the Landfarm, anticipated for submission January 2018.

Condition 5 requires within six (6) months of issuance that the Licensee submit for Board approval a **Water Quality Monitoring Program**. The Plan shall be in accordance with Schedule 2. The reporting requirements in Schedule 2 are based on recent Type B WLs requirements for Landfarms.

This requirement addresses recommendations by ENR (Comment ID 2) that "TC provide additional information on the locations of groundwater wells, as well as an outline of the proposed sampling frequency and parameters to be included."

Board staff review of the supporting documents found no groundwater results were available. Board staff have revised this condition in the final draft, as presented to the Board, to require the submission within ninety days of issuance.

Condition 6 requires within sixty (60) days of issuance that the Licensee submit to the Board for approval an **Operations and Maintenance Manual** in accordance with the *Federal Contaminated Sites Action Plan, Federal Guidelines for Landfarming Petroleum Hydrocarbon Contaminated Soils* and include, but not be limited to the following:

- a. Project Description;
- b. Facility Design;
- c. Facility Personnel and Training;

- d. Soil management procedures including the dimensions of soil piles (windrows);
- e. Soil removal procedures;
- f. Surface and groundwater monitoring;
- g. Leachate management and monitoring;
- h. Soil sampling and analysis plan;
- i. Effluent discharge procedures;
- j. Inspection and maintenance schedule including response to major storm or catastrophic events.

Board staff are of the opinion that this requirement also addresses recommendations by ENR (Comment ID 1).

Condition 8 relates to acceptance criteria and requires that contaminated soil from industrial, commercial, residential and institutional operators not be accepted at the Landfarm, unless otherwise authorized in writing by an Inspector.

This condition was included as the Application suggests no additional hydrocarbon contaminated soil will be added to the Landfarm.

Conditions 9-11 outline the **effluent quality criteria (EQC)** that must be met prior to discharging any Water from the Landfarm. EQC for the discharge of Water were not proposed in the Licence Application. Board staff have applied EQC consistent with other authorizations issued within the Mackenzie Valley for hydrocarbon contaminated soil treatment facilities (MV2017L8-0004<sup>6</sup> and G17L1-002<sup>7</sup>) that were derived from the *CCME Water Quality Guidelines for Protection of Aquatic Life*.

These conditions also address recommendations made by ENR (Comment ID 1).

Condition 10 requires the Licensee provide analytical results for Water sampling from within the Landfarm (SNP station 2017-1), with the proposed discharge location, to an Inspector and the Board a minimum of ten (10) days prior to the discharge of standing Water from the Landfarm. Discharge shall not commence until authorized in writing by an Inspector.

Board staff have also included the requirement of analytical results for perfluorooctane sulfonate (PFOS) as background reports indicate that the source of some soils is from a former Fire Training Area where fire-fighting foams were used. As described in the Arcadis 2017 report, perfluorinated compounds are a group of chemicals that resist biodegradation in the environment and have been linked to adverse health effects in high concentrations. They have been used in such applications as fire-fighting foams. Board staff had requested reviewer comment on the inclusion of these criteria in the draft WL however did not get any recommendations. Board staff also acknowledge that the Application referenced a Field Report for PFAs and PHCs Assessment (November 2017) however was not included with the reports submitted.

In 2009, PFOS was added to the Stockholm Convention on Persistent Organic Pollutants and in 2017 ECCC released [Federal Environmental Guidelines for PFOS](#) where the criteria is 6.8 µg/L for surface water and 0.068 mg/L for groundwater (coarse and fine grained soils). The ECCC Guidelines also establish a Federal Soil Quality Guideline for PFOS of 0.14 mg/kg (coarse soil) and 0.21 mg/kg (fine soil) for Commercial and Industrial land use.

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<sup>6</sup> See GNWT-ENR [Type B Water Licence MV2017L8-0004](#) for a Landfarm Treatment Facility on the MVLWB Online Registry

<sup>7</sup> See KBL Environmental Ltd. [Type B Water Licence G17L1-002](#) for the Inuvik Soil Treatment Facility on the MVLWB Online Registry

Board staff acknowledge that these criteria are conservative and could be amended with consideration of the applicable pathway as the surface water body sustaining aquatic life is greater than 10 kilometres of the site; however, details of the proposed effluent discharge location was not clearly specified in the Application. Pre-submission discussions included reference to the approximate 400m<sup>3</sup> of retained water within the Landfarm requiring disposal/discharge and it was suggested that past practice was to discharge to the surrounding lands outside the Landfarm (see Attachment 7). The analytical results were provided and included testing for BTEX and hydrocarbons (F1-F4) with all parameters reported below the detection limit.

The list of required parameters for analytical testing is robust and based on MV2017L8-0004 and recommendations in the [draft Guideline for Design, Operation, Monitoring, Maintenance and Closure of Hydrocarbon Contaminated Soil Treatment Facilities in the Northwest Territories](#); which was circulated for public review on August 8, 2017. Board staff review of background reports found that arsenic was the only metal detected above applicable criteria in soils within the Landfarm (17 of 20 samples slightly exceeded CCME guidelines in the Arcadis 2017 Report<sup>8</sup>). However, there is limited information submitted with the Application describing the surface and groundwater conditions. Board staff have the opinion that the requirements support the SRRB recommendation (Comment ID 2) that the Decommissioning Plan intended for submission in January 2018 include a program to fully characterize the contaminants in water.

Conditions 12-14 outline the requirements for treated soil. Condition 12 requires that the Licensee ensure that all treated soil meets the remediation criteria for the proposed end use as the GNWT *Environmental Guideline for Contaminated Site Remediation*, unless otherwise authorized by the Board and an Inspector. Condition 14, mirrors condition 10, requiring the Licensee submit soil analytical results to the Board and an Inspector a minimum of 10 days prior to removing soils from the Landfarm.

As noted above, Board staff have included criteria for PFOS for treated soils for the Board's consideration.

#### Annex A – Surveillance Network Program (SNP)

Board staff have included four (4) monitoring stations within the SNP which is based on requirements of related authorizations by Land and Water Boards of the Mackenzie Valley and the [draft Guideline for Design, Operation, Monitoring, Maintenance and Closure of Hydrocarbon Contaminated Soil Treatment Facilities in the Northwest Territories](#). ENR recommended that “the Water Licence include an SNP which includes sampling for the effluent discharge, including sampling parameters and frequency, and other monitoring locations such as those associated with groundwater monitoring wells (Comment ID 3). The requirement of groundwater monitoring is included in the SNP of the draft WL, and includes all three groundwater monitoring wells to be installed under S17X-004. The fourth station is associated with the retained waters within the Landfarm which require discharge (as described above under conditions 9-10). Board staff have included PFOS as a parameter for groundwater testing and also require that graphical summaries and interpretation of analytical results are compared to the Federal Contaminated Sites Action Plan – *Federal Interim Groundwater Quality Guidelines for Federal Contaminated Sites*. Board staff have included the requirement for a **Surveillance Network Program Report** to be submitted with the Annual Water Licence Report.

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<sup>8</sup> See SLWB Online Registry – [S17X-004 – Airside Land Treatment Unit Assessment and Remedial Options Assessment – Norman Wells Airport, Arcadis 2017](#), pg. ES-2.

## **Comments on Part F: Conditions Applying to Construction**

Part F of the Licence addresses a variety of issues related to Construction, including designs, maintenance, record-keeping, as-built drawings, notifications, and Board approval requirements. The main purpose of this Part is to ensure that Construction is carried out to appropriate standards with proper oversight, in order to facilitate good performance, avoid failures, and ultimately, to protect the environment. The conditions in this part are consistent with other industrial water licences issued by the Land and Water Boards of the Mackenzie Valley.

The Application included submission of design drawings for the Landfarm which were included in the WERI 2004 Report.<sup>9</sup> Condition 8 requires, within 30 days of issuance, that the Licensee **submit a detailed sketch and photos** of the layout of the Landfarm that shows where the holding tanks, sump (surface run-off Retention Pond), containment berms, surface and groundwater monitoring stations, and spill kits are/will be located, noting the size and capacity of each and any other relevant information. This condition is also included in MV2017L8-0004. Board staff are of the opinion that this requirement is necessary as there is uncertainty in the current status of the Landfarm. Board staff review of the supporting documents found the amount of soil contained in the Landfarm may be greater than designed for (i.e. the Arcadis 2017 describing 2016 activities suggests the Landfarm holds twice its design capacity<sup>10</sup>) and the sump included in the original design to manage surface waters as described in the WERI 2004 report does not appear to be referenced in current reports (i.e. reporting 2016 and 2017).

## **Comments on Part G: Conditions Applying to Modifications**

Part G of the Licence contains conditions outlining when and how Modifications of the engineered structures may be authorized. The conditions ensure that the Board and the Inspector are kept informed and have the opportunity to request more information or reject a proposed Modification. This section is closely linked to the Construction section (Part F). Part F relies on the definition of Modification, which does not include expansions or alterations of the purpose or function of a structure. The conditions in this section are consistent with other licences issued by the Land and Water Boards of the Mackenzie Valley.

The purpose of Part G is to streamline the process for authorizing Modifications and ensure that any proposed changes that might be inconsistent with the scope or conditions of the Licence are brought to the Board's attention.

## **Comments on Part H: Conditions Applying to Spill Contingency Planning**

The conditions under Part H of the Licence are standard conditions to ensure procedures are in place to respond to spills. The planning and reporting requirements in this part ensure that the Licensee has identified the lines of authority and responsibility for spill response, established reliable reporting and communication procedures, and has an action plan for spill response. The intent is to ensure that any spills are effectively controlled and cleaned up in order to prevent or minimize damage to the receiving environment.

Condition 2 requires the submission of a revised Spill Contingency Plan for Board approval that is in accordance with Board direction and commitments made during the review process of the Water Licence application. Board staff recommend that the revision includes consideration of all activities to be complete as part of the Project with an update to the text and figures(s) that show the quantity and location of all spill kits as well as includes details of any reported spills.

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<sup>9</sup> See SLWB Online Registry: [S17L8-003 – Norman Wells Airport LTU as-built from 2004 Report – Nov 10 17](#)

<sup>10</sup> See SLWB Online Registry: S17L8-003 – Norman Wells Airport LTF Assessment and Remedial Options Report – April 2017 – Nov 10\_17, pg. 10.

## Comments on Part I: Conditions Applying to Closure and Reclamation

Part I of the Licence pertains to closure and reclamation of the waste disposal facilities. The general condition is similar to those in other licences.

Condition 1 requires the submission of a Closure and Reclamation Plan for Board approval within ninety (90) days of issuance. The reporting requirements in are based on recent Type B WLs requirements for Landfarms.

### 3. Other Agency Comments

The application was distributed to members of the Tulita District Distribution List; which includes twenty-nine (29) review organizations, requesting a reply by November 29, 2017. To date, three (3) organizations have responded, offering comments on the application and recommendations which informed the revised Draft WL as describe above. Additional recommendations provided by the Reviewers include:

- Environment Canada
  - No comments at this time
- Government of Northwest Territories – Environment and Natural Resources
  - ENR was unable to review the draft WL as was provided on Nov 24, 2017 and as such was received only 3 working days before the due date for comments. If the Board is requesting comments on the draft WL, ENR is requesting additional review time be provided to conduct a thorough review.
- Sahtu Renewable Resources Board
  - No comments on the LUP
  - TC describe a program to fully characterize the contaminants in the water before deciding whether to discharge to the river, ensuring the program is able to quantify a full spectrum of metals and organic contaminants.

Proponent responses were not received at the time this report was prepared.

### 4. Conclusion

Not all the information required to evaluate the Water Licence Application has been provided. The draft Licence conditions were prepared by Board staff in consideration of recent Type B miscellaneous and industrial issuances for Landfarm undertakings. The draft Permit conditions are based upon the standard permit condition list. Both draft authorizations have considered reviewer comments and Board staff recommendations. Board staff conclude that the conditions contained in these drafts should mitigate the potential environmental impacts this undertaking may have on the land and water.

Board staff suggest that the Spill Contingency Plan can be approved on an interim basis because the submission meets the applicable guidelines and reflects the scope of the proposed operations for the installation of groundwater monitoring wells. Similarly, Board staff suggest that the Engagement Plan and Waste Management Plan be approved on an interim basis as they meet the applicable guidelines and reflect the scope of the proposed operations for installation of groundwater monitoring wells; which was anticipated to commence the last week of November 2017. These plans will require resubmission to address deficiencies related to the absence of consideration of the scope of activities proposed for the Landfarm, for Board approval by February 5,

2018. This would allow adequate time for the Board approval process before Landfarm activities are anticipated to commence (Summer 2018).

Conditions have been included in the draft Licence that require the submission of a Water Quality Monitoring Program and a Closure and Reclamation Plan for the Landfarm. These items will require submission to the Board for approval by March 5, 2018. The Licensee will be required to submit an Operation and Maintenance Plan for the Landfarm for Board approval by February 5, 2018.

The draft Licence also includes an SNP that has groundwater monitoring stations (3) as well as wastewater testing requirements prior to discharge. The draft Licence includes criteria for PFOS as the materials contained within the Landfarm are potentially co-contaminated with hydrocarbons and perfluorinated compounds from fire-fighting foams used at the Fire Training Area; which was remediated as part of Transport Canada's obligations under the Arctic A Airport transfer agreement.

For consideration in the Board's decision is that the reviewers did not provide comment or recommendations of the draft authorizations and Proponent responses were not received at the time this report was prepared. Despite this shortcoming, Board staff have the opinion that the draft authorizations are consistent with those for similar undertakings in the Mackenzie Valley.

## 5. Recommendation

Board staff recommend that the Board:

1. Proceed with the regulatory process by issuing the Water Licence and Land Use Permit for a term of 5 years; **or**
2. Determine that the Board requires formal comments on the draft Water Licence prior to proceeding with the regulatory process; and
3. Proceed with the regulatory process and issue the Land Use Permit for a term of 5 years.

Should the Board determine formal comments are required on the draft Water Licence, Board staff also recommend that the Board:

- Direct Board staff to revise the **Preliminary Screening** to only consider the scope of the Land Use Permit;
- Approve the draft LUP, with a term of five years, and the associated Reasons for Decision;
- Approve the **Waste Management Plan** as does meet the basic requirements of the Board's Guidelines for Developing a Waste Management Plan (2011).
- Approve the **Spill Contingency Plan** as does meet the basic requirements of AANDC's Spill Contingency Guidelines (2007).
- Approve the **Engagement Plan** as does meet the basic requirements of the Board's Engagement Guidelines for Applicants and Holders of Water Licences and Land Use Permits (2014).
- Direct the Applicant to submit comment on the draft WL with evidence and appropriate rationale to support any recommended changes.

Should the Board decide to proceed with the regulatory process for the Water Licence and Land Use Permit, Board staff also recommend that the Board:

- Approve the **Preliminary Screening**;
- Approve the draft WL and LUP, with a term of five years;

- Approve the **Waste Management Plan**, on an interim basis, and require the submission of a revised plan with consideration of the scope of activities for the Landfarm for Board approval by February 5, 2018.
- Approve the **Spill Contingency Plan**, on an interim basis, and require the submission of a revised plan with consideration of the scope of activities for the Landfarm for Board approval by February 5, 2018.
- Deny the **Engagement Plan** and require the submission of a revised plan with consideration of the life of project for Board approval by February 5, 2018.
- Approve the draft **Reasons for Decision** and draft **Letter of Issuance** prepared for Board consideration (see attachment X and X)

Should the Board grant approval, the Licence and Permit could be issued on December 5, 2017.

## 9. Attachments

1. Application
  - a. [Land Use Permit Application](#)
  - b. [Water Licence Application](#)
  - c. [Location Map](#) – also provided in hard copy as attachment 1 in this report
  - d. [Spill Contingency Plan](#)
  - e. [Waste Management Plan](#)
  - f. [Engagement Plan](#)
  - g. Supporting Documentation
    - i. [Norman Wells Airport Land Treatment Unit and Remedial Works Report – WERI, May 2004](#)
      1. [Land Treatment Unit Drawings](#)
    - ii. [Norman Wells Airport, Land Treatment Facility Maintenance Report – WERI, Jan 2011](#)
    - iii. [Norman Wells Airport, Land Treatment Facility Assessment and Remedial Options Report – Arcadis, April 2017](#)
    - iv. [Norman Wells Airport, Land Treatment Facility Maintenance Report – BluMetric, November 2017](#)
2. Review Comment Table with attachments – Dated Dec 1, 2017 – no proponent responses
3. Draft Preliminary Screening
4. Draft Land Use Permit Cover Page & Conditions
5. Draft Water Licence Cover Page & Conditions
6. Pre-submission email correspondence related to water usage during soil treatment
7. Pre-submission email correspondence related to waters retained within the Landfarm
8. General Procedures for Water Licences
9. Draft Reason for Decision
10. Draft Issuance Letter

Respectfully submitted,



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Regulatory Specialist