



Reasons for Decision

Issued pursuant to section 54 of the *Waters Act*, paragraph 40(2)(c), and sections 72.25 and 121 of the *Mackenzie Valley Resource Management Act*

Water Licence and Land Use Permit Applications	
Reference/File Numbers	MV2016L8-0003 and MV2016X0011
Applicant	Indian Affairs and Northern Development Canada – Contaminants and Remediation Division
Project	Remediation and associated activities at the Tundra Mine Site, NT

Decision from Mackenzie Valley Land and Water Board meeting of

October 20, 2016

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These Reasons for Decision set out the Mackenzie Valley Land and Water Board's (the Board or MVLWB) decision on an Application made by the Department of Indian Affairs and Northern Development - Contaminants and Remediation Division (DIAND-CARD) to the Board on May 17, 2016 for new Land Use Permit (Permit) MV2016X0011 and Water Licence (Licence) MV2016L8-0003. This Application was to "renew" DIAND-CARD's existing Licence, MV2009L8-0008¹, which expires on December 16, 2016, and to continue Phase II Remediation at the Tundra Mine site for an additional seven (7) years.

1.0 Background

The Tundra Mine Site is located approximately 240 kilometers northeast of Yellowknife in the Northwest Territories. Tundra Mine is a former underground gold mine that operated from 1964 until 1968. The principal components of the underground gold mine included an airstrip, mill and a network of underground workings. The mill was used again from 1983 until 1987 to process ore from the nearby Salmita Mine. From 1987 until 1998, the site was under the care and maintenance of Royal Oak Mines until Royal Oak Mines became insolvent. The site has since been the responsibility of the Department of Indian Affairs and Northern Development (DIAND) Contaminants and Remediation Division (CARD).

The remediation plan for Tundra Mine has been separated into two phases. On February 9, 2006, the Board issued Type B Water Licence, MV2005L8-0014, and Type A Land Use Permit, MV2005X0031, to DIAND-CARD to initiate Phase I Remediation of the Tundra Mine Site. Phase I Remediation addressed the removal and remediation of mine infrastructure. In the summer of 2007, DIAND-CARD carried out the off-site disposal of hazardous materials, sealing of surface openings to the underground workings, demolition and disposal of buildings and equipment, and construction of an engineered landfill facility. On October 29, 2008, DIAND-CARD submitted Phase II of the Remediation Plan to the Board as required under Part G, item 4 of MV2005L8-0014. It was approved by the Board on January 29, 2009.

On July 27, 2009, DIAND-CARD submitted a new application for Type A Land Use Permit, MV2009X0019, and Type A Water Licence, MV2009L8-0008, to implement Phase II Remediation. Phase II Remediation deals primarily with the remediation of the Tailings Containment Area (TCA), Waste Rock and contaminated soils. On December 17, 2009, the Board issued MV2009X0019 for a period of five years and MV2009L8-0008 for a period of seven years. In 2010, DIAND-CARD implemented Phase II of the remediation plan under the current Type A Land Use Permit and Water Licence.

On June 27, 2013, the Board approved a modification request to MV2009L8-0008 submitted by DIAND-CARD to install an Aquadam in Mill Pond, near the East Upper Dam, to contain water so that tailings within the East Upper Dam could be excavated. On July 18, 2013, the Board approved an amendment request to MV2009L8-0008 submitted by DIAND-CARD for the one-time dewatering of Mill Pond and staggered release of approximately 130,000 m³ of water to Hambone Lake to assist with the removal of tailings in the East Upper Dam. These activities have yet to take place.

On April 24, 2014, the Board approved an amendment request to MV2009X0019 submitted by DIAND-CARD to increase the size of the camp and on site and on December 11, 2014, the Board approved an extension request to MV2009X0019 submitted by DIAND-CARD. The Permit now expires on the same date as the Licence, December 16, 2016.

¹ [See MV2016L8-0008](#)

It was originally anticipated that Phase II would finalize the remediation of Tundra Mine in 2015. Due to project delays, final remediation of the site was unable to be completed under the original contract and timeline, and a second contract, known as Phase IIB, is being developed to finish the remaining Phase II remediation work. The scope and objectives of Phase II Remediation remain unchanged, with an extended timeline.

2.0 Regulatory Process

On May 17, 2016, DIAND-CARD submitted an Application to renew Water Licence MV2009L8-0008², which is set to expire on December 16, 2016 as well as an Application for a new Land Use Permit³. On May 18, 2016, the Applications were deemed complete in accordance with section 34(2) of the *Waters Act*, sections 17.16(1) and 63(1) of the *Mackenzie Valley Resource Management Act* (MVRMA) and sent for review⁴. The Board is satisfied that the Applications were in the form and contained the information prescribed by the regulations in accordance with section 34(1) of the *Waters Act* and section 72.1 of the MVRMA. Notice of commencement of the review was provided to the parties and indicated that the Board had deemed the information supplied by DIAND-CARD to be sufficient, that the regulatory process would proceed, and that the legislated timelines defined in subsection 72.18(1) of the MVRMA and in subsection 47(1) of the *Waters Act* had commenced. The Board also requested comments on the applicability of the Exemption List Regulations for the purpose of confirming or denying the preliminary screening exemption. All interested parties were given the opportunity to participate in this regulatory process.

A comment deadline of June 6, 2016 was established. On June 6, 2016, the Board received no comments relating to the applicability of the Exemption List Regulations as they apply to MV2016L8-0003 and MV2016X0011. Comments on the applications were received from the following parties: the Government of the Northwest Territories – Department of Environment and Natural Resources (GNWT-ENR), Department of Fisheries and Oceans Canada (DFO), and Department of Indian Affairs and Northern Development – Inspector (INAC). Board staff also submitted comments on the applications. DIAND-CARD responded to the parties' comments and recommendations on June 10, 2016.⁵

On June 22, 2016, the Board met and confirmed that the applications submitted by DIAND-CARD were exempt from preliminary screening based on the Exemption List Regulations specifically Schedule 1, Part 1, Section 2 which states that:

A development, or part thereof, for which renewal of a permit, licence or authorization is requested that:

- a) Has not been modified; and
- b) Has fulfilled the requirements of the environmental assessment process established by the *Mackenzie Valley Resource Management Act*, the *Canadian Environmental Assessment Act* or the *Environmental Assessment Review Process Guidelines Order*.⁶

² See [MV2016L8-0003 Water Licence Application submitted on May 17, 2016](#).

³ See [MV2016X0011 Land Use Permit Application submitted on May 17, 2016](#).

⁴ See MVLWB Letters to DIAND-CARD - [Land Use Permit Application Complete](#) and [Water Licence Application Complete](#) - dated May 18, 2016

⁵ See [ORS Reviewer Comments](#)

⁶ See [Preliminary Screening Exemption Confirmation Letter dated June 22, 2016](#).

June 23, 2016, the Board held a technical session to discuss and seek clarity on issues raised by reviewers and Board staff during the review. The technical session was facilitated by Board staff and was transcribed⁷. Attendees included: DIAND-CARD, GNWT-ENR, DFO, and North Slave Metis Alliance (NSMA)⁸. DIAND-CARD provided a presentation⁹ on the project followed by questions. Information Requests (IRs) resulting for the session were circulated to the participants on June 24, 2016¹⁰. IR responses were submitted June 27 and 30, 2016¹¹ and July 8, 2016.¹²

On June 30, 2016, Board staff held a pre-hearing conference in Yellowknife, NT to discuss the conduct of the public hearing, the intervention presentations, and to briefly outline the Boards Rules of Procedure. The pre-hearing conference was attended in person by representatives from DIAND-CARD, GNWT-ENR; DFO participated over the phone. Summary minutes of the pre-hearing conference were recorded and posted to the public registry on July 4, 2016.¹³

On July 5, 2016, intervention submissions were due, the Board received two letters; one from GNWT-ENR¹⁴ and the other from DFO¹⁵ indicating that they would not be submitting a formal intervention and that the additional information and clarification that was provided by DIAND-CARD during the initial review of the application was sufficient. As there were no interventions submitted, DIAND-CARD did not provide responses on July 8, 2016 as outlined in the workplan.

No notices of intent to appear at the public hearing were received by the Board and DIAND-CARD confirmed they had no need to appear in front of the Board. On July 19, 2016, notification of public hearing cancellation in accordance with subsection 72.15 (3)(a) of the MVRMA and subsection 41(3)(a) of the *Waters Act* was circulated to the parties ten (10) days prior to the scheduled hearing date.¹⁶

An updated workplan including a second round of information requests was circulated. All parties, including DIAND-CARD, were invited to submit any information requests to the Board by 5:00 pm, Wednesday July 28, 2016. Board staff contributed the only questions to the second round of information requests, all directed at DIAND-CARD. These were distributed on July 29, 2016.¹⁷ DIAND-CARD responded on August 8, 2016.¹⁸

On August 17, 2016, a draft Permit and draft Licence were circulated to parties for review.¹⁹ By September 14, 2016 the following parties responded: GNWT-ENR Inspector, INAC Inspector, GNWT-ENR, and DFO. DIAND-CARD responded to all of the parties' comments and provided comments of their own on September 19, 2016.

On October 20, 2016, the Board met to make decisions regarding the Applications. Reasons for these decisions can be found in Section 4.0, below.

⁷ [See Technical Session Transcripts June 23, 2016.](#)

⁸ [See Technical Session Sign-in Sheet June 23, 2016.](#)

⁹ [See DIAND-CARD Technical Session Presentation June 23, 2016.](#)

¹⁰ [See Technical Session - Information Requests dated June 23, 2016.](#)

¹¹ [See GNWT-ENR Inspector Response to Information Requests dated June 27, 2016](#) and [DIAND-CARD Responses to Information Requests dated June 30, 2016,](#)

¹² [See INAC Response to IR #5 dated July 8, 2016,](#) and [GNWT Response to IR #5 dated July 8, 2016.](#)

¹³ [See Pre-Hearing Conference Minutes June 30, 2016.](#)

¹⁴ [See GNWT-ENR Response to Intervention Request dated July 4, 2016.](#)

¹⁵ [See DFO Letter Regarding Interventions and Public Hearing dated July 5, 2016.](#)

¹⁶ [See Public Hearing Cancellation Letter dated July 19, 2016.](#)

¹⁷ [See Second Round Information Requests dated July 29, 2016.](#)

¹⁸ [See DIAND-CARD Response to Second Round Information Requests dated August 8, 2016.](#)

¹⁹ [See Draft Land Use Permit MV2016X0011](#) and [Draft Water Licence MV2016L8-0003](#)

3.0 Procedural Requirements

In conducting the review processes for the Applications as described in Section 1.0 and 2.0, above, the Board has ensured that all applicable legal and procedural requirements have been satisfied, including:

- 1) Notice of the Permit and Licence Applications given in accordance with sections 63 and 64 of the MVRMA. The Board is satisfied that a reasonable period of notice was given to communities, First Nations and the public so that they could provide comments to the Board; and
- 2) A public hearing was scheduled for July 28, 2016 in accordance with subsection 72.15(2) of the MVRMA; however, all intervening parties and DIAND-CARD consented, in writing, to the disposition of the Application without a public hearing, and the Board did not receive notification that any person intended to appear regarding the Application ten (10) days prior to the scheduled hearing date. As such, the public hearing was cancelled July 18, 2016, in accordance with paragraph 72.15(3)(a) of the MVRMA.

The scope, definitions, and conditions set forth in the Licence and Permit have been developed in order to address the Board's statutory responsibilities, its ongoing role in the regulation of the Tundra Mine Site and the concerns raised during the regulatory process. The Reasons for Decision set out in Section 4.0, below, focus on major concerns raised by parties, including those that were subject of substantive argument submitted by one or more parties. They also address evidence which resulted in the inclusion of any new or revised conditions that differ from those in the existing Licence MV2009L8-0008 and Permit MV2009X0019.

4.0 Decision

After reviewing the evidence submission from DIAND-CARD and the written comments and submission from parties received by the Board, and 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, the Board has determined that Licence MV2016L8-0003 and Permit MV2016X0011, should be issued, subject to the term and conditions contained therein. The Board's determination and reasons for its decision are set out below.

The project is split legislatively between the *Waters Act* (WA) and associated Waters Regulations (WR) and the MVRMA and the associated Mackenzie Valley Federal Areas Waters Regulations (MVFAWR) in respect to licensing because of the arrangements made for administration and control of the affected lands in the NWT devolution process.

During the Technical Session, an Information Request was submitted to both DIAND and the GNWT asking that given the project straddles both federal and non-federal lands, those parties confirm the following approaches to managing, regulating, and inspecting this project:

- a) Issuance of one Land Use Permit and one Water Licence for the undertaking.
- b) Compliance will be monitored by the federal inspectors. Otherwise, clarify how the federal and territorial inspectors would interact and how the Land Use Permit and Water Licence could be drafted to facilitate this.
- c) The federal Minister will be the only minister to approve the Water Licence.²⁰

Both the GNWT and DIAND responded that only one permit and one licence needed to be issued for the project^{21 22}.

²⁰ [See Information Request from Technical Session dated June 23, 2016.](#)

The Board is confident that coordination of inspections can be handled through discussion between the various land managers. The issuance of two permits and two licences is in the Board's view redundant, adds to regulatory complexity and is unnecessary.

4.1 Requirements of Subsection 72.03(5) of the MVRMA: Conditions for Issuance

4.1.1 Existing Licensees

Seabridge Gold (NWT) Inc. (Seabridge) currently holds a Land Use Permit, MV2012C0025, adjacent to the Tundra Mine Site. This Permit is set to expire on December 27, 2017 but Seabridge still has the option to request a two-year extension to the Permit bringing the possible expiry date to December 27, 2019. Currently, Seabridge shares some infrastructure with DIAND-CARD at the Tundra Mine Site, specifically the airstrip, access road and bridge. DIAND-CARD has been engaging with Seabridge through the process as outlined in the engagement log that was submitted with the application.²³

Through the Board's process, Seabridge has been notified of the project and all upcoming events and submission due dates through the Online Review System.

After reviewing the submissions filed on the public registry, the Board is satisfied that, with respect to paragraph 72.03(5)(a) of the MVRMA, the granting of this Licence to the Applicant will not adversely affect, in a significant way, any existing Licensee, provided that Licence conditions are complied with. No Licensees contacted the Board in the statutory period. The Board is satisfied that no licensees or applicants are affected by the DIAND-CARD renewal.

4.1.2 Compensation

Paragraph 72.03(5)(b) of the MVRMA prohibits the issuance of a Licence unless the Board is satisfied that appropriate compensation has been or will be paid by DIAND-CARD to persons who were, at the time when DIAND-CARD filed its Application with the Board, members of the classes of water users, depositors, owners, occupiers, or holders listed under paragraph 72.03(5)(b), who would be adversely affected by the use of waters, or deposit of waste proposed by DIAND-CARD.

The Board received no claims for compensation from any person either during the prescribed period or afterwards. Provided that compliance with the Licence conditions takes place, the Board finds that there are no water users or persons listed in paragraph 72.03(5)(b) of the MVRMA who will be adversely affected by the use of waters or the deposit of waste proposed by the DIAND-CARD.

4.1.3 Water Quality Standards

With regards to subparagraph 72.03(5)(c)(i) of the MVRMA, the Board is satisfied that compliance with the Licence conditions will ensure that waste produced by DIAND-CARD 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 4.2.7 (Part F of the Licence: Conditions Applying to

²¹ [See Response to Information Request dated July 7, 2016](#)

²² [See INAC Response to Information Request July 7, 2016](#)

²³ [See DIAND-CARD Tundra Mine Remediation Project Engagement Plan dated January 2016.](#)

Waste and Water Management) and Section 4.2.10 (Annex A: Surveillance Network Program) of these Reasons.

4.1.4 Effluent Quality Standards

Consistent with subparagraph 72.03(5)(c)(ii) of the MVRMA, the Board is satisfied that the effluent quality standards set 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 discussed further in Section 4.2.7 (Part F of the Licence: Conditions Applying to Waste and Water Management) and Section 4.2.10 (Annex A: Surveillance Network Program) of these Reasons.

4.1.5 Financial Responsibility of the Applicant

The Board must satisfy itself of the financial responsibility of the Applicant under paragraph 72.03(5)(d) of the MVRMA before it can issue the Licence. The project will be undertaken by the Government of Canada through the Department of Indian and Northern Affairs Canada – Contaminants and Remediation Division. Therefore, there is no issue in the Board's view as to the capacity of the Licensee to meet any, or all, financial obligations set out in the MVRMA and the Licence.

4.2 Reasons for Decision on Term and Conditions of Licence MV2016L2-0011

The conditions set forth in the WL have been imposed in order to address the Board's statutory responsibilities and those concerns which arose during the regulatory process. In drafting the Licence and based on the evidence in this proceeding, changes were made based on the following overriding principles: consistency with existing type A water licences; consistency with existing plans, programs, studies and manuals; addressing comments from reviewers and Proponent; and overall clarity of licence requirements.

It is the opinion of the Board that compliance with the conditions of this Licence, including adherence to effluent quality criteria and management plans, studies, reports, and programs, will ensure that any potential adverse effects on other water users, which might arise as a result of the issuance of this Licence, will be minimized as required by subsection 72.04(2) of the MVRMA.

The format of the Licence has been reorganized from the MV2009L8-0008 Licence. These changes modernize the Licence and enhance its consistency with other recently issued licences in the Northwest Territories. Changes in the substance of the Licence reflect changes in proposed activities as the project moves from Phase II Remediation into the Adaptive Management Phase.

4.2.1 Term of Licence

DIAND-CARD requested a seven (7) year term to 2023 to see the project through the conclusion of the Phase II Remediation and to complete 5 years of Adaptive Management and short-term monitoring. DIAND-CARD noted that this would allow for a smooth transition from active management and monitoring to long-term monitoring which could be covered under a new Type B Water Licence in 2023.²⁴

²⁴Technical Session Transcript. [DIAND-CARD Tundra Type A Renewal](#). pp. 25

No comments were received on the proposed term of the Licence and the Board has decided to approve a term of seven years to cover the completion of Phase II Remediation and five years of Adaptive Management and Monitoring.

4.2.2 Part A: Scope and Definitions

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

Scope

The scope of the Licence ensures the Licensee is entitled to conduct activities which have been applied for. In setting out the scope of the Licence, the Board endeavoured to provide enough detail to describe the authorized activities, but not so much detail that DIAND-CARD's activities would be unduly restricted. As a result, the Board included a list of authorized activities in the scope of the Licence and referenced submissions that further describe the authorized activities. This includes reference to the technical session and information request responses (Part A, items a).

Part A, items 1 b) and 1 e) of this Licence were moved from Part B, items 1 and 2 of the original licence (MV2009L8-0008) to be consistent with other type A Licences. The addition of Part A, items c and d are also meant to maintain consistency with other type A Licences.

The scope of MV2016L8-0003 includes activities required to complete Phase II Remediation and move into the Adaptive Management Phase of the Tundra Mine Remediation Project. The trigger for the phase change will be the de-activation of the Wastewater Treatment Facility and the re-establishment of flow between Mill Pond and Hambone Lake. Conditions in the Licence, including the requirement for Board Plan approvals and changes in the Surveillance Network Program, will also help shape the transition between Phase II Remediation and Adaptive Management.

Definitions

The Board updated and added defined terms used in the Licence in order to ensure a common understanding of conditions and to avoid future differences in interpretation. Where appropriate, the definitions use wording similar to that found in Licence MV2009L8-0008 and in Licences recently issued by the Board. Where appropriate, these updated or new definitions are described below:

Definitions for the following have been added to the Licence:

- Acid Rock Drainage - replaces and builds upon 'Potentially Acid Generating (PAG)' to reflect use in the Licence.
- Adaptive Management - included to clarify the difference between 'Adaptive Management' as a process and the 'Adaptive Management Plan' as identified in the Application.
- Adaptive Management Phase - included to describe the project phase following active remediation (Phase II Remediation). There was some confusion during the review of the draft licence regarding the use of the term 'Adaptive Management' as a project phase. The traditional meaning and intent of Adaptive Management is captured in this Licence, however, the short-term monitoring phase following active remediation (Phase II Remediation) was called the 'Adaptive Management Phase' in the Applications and Project Description. This definition is not intended to limit or define 'Adaptive

Management' in a broad sense, but to define the activities and triggers of a Phase of remediation specific to this project.

- Dam - identifies structures falling under the requirements of the Dam Safety Guidelines.
- Dam Safety Guidelines - identifies the Guideline and applicable sections referenced in the Licence.
- Discharge - added as consistent with recently issues Licences.
- Engagement Plan - added to support the requirement for this plan. Consistent with recently issued Licences.
- Engineered Structures - added as consistent with recently issues Licences.
- Freeboard - consistent with recently issued Licences.
- Land Treatment Area - added to describe the landfarm used for treating petroleum hydrocarbon contaminated soils and rock.
- Long-term Monitoring Phase - included to describe the project phase following adaptive management (adaptive management phase).
- Maximum Allowable Concentration – included due to usage in effluent quality criteria tables in Part F.
- Maximum Average Concentration - more specific to usage found in the Licence, replaces 'Average Concentration.'
- Petroleum Hydrocarbon (PHC) Wastewater Treatment Facility – added to differentiate this facility from the Tailings Wastewater Treatment Facility.
- Phase II Remediation - included to describe the project phase consisting of active remediation activities.
- Potentially Acid Generating (PAG) Rock - replaces 'Potentially Acid Generating (PAG) to reflect the use as found in the Licence conditions.
- Professional Engineer - replaces 'Engineer' to be consistent with recently issued Licences.
- Project - identified the Project as referred to throughout the Licence to replace the various terms that were previously used. Consistent with recently issued Licences.
- Receiving Environment - consistent with recently issued Licences.
- Remedial Action Plan - in response to DIAND-CARD recommendations on the draft Water Licence, this definition includes reference to the consolidation document and the entirety of the record as included in the previous Licence's definition provided for 'Phase 2 Remedial Action Plan'.
- Spill Contingency Plan - added to support the requirements for this plan. Consistent with recently issued Licences.
- Surveillance Network Program - consistent with recently issued Licences.
- Tailings Containment Area (TCA) Wastewater Treatment Facility – added to differentiate from Petroleum Hydrocarbon (PHC) Wastewater Treatment Facility.
- Traditional Knowledge - added as consistent with recently issues Licences.
- Unauthorized Discharge - consistent with recently issued Licences.

Definitions for the following have been changed or updated:

- Act - updated to reference the MVRMA to reflect applicable legislation.
- Analyst - updated to reference the MVRMA to reflect applicable legislation.
- Board - updated to reference the MVRMA to reflect applicable legislation.
- Inspector - updated to reference the MVRMA to reflect applicable legislation.
- Minister - updated to clarify the responsible Minister.
- Modification - updated to be consistent with recently issued Licences.
- Reclamation - updated to be consistent with recently issued Licences.
- Regulations - updated to reference the MVRMA to reflect applicable legislation.
- Sewage Disposal Facility - removed reference to Licence condition in body of the Licence.
- Tailings Containment Area - updated to reflect the TCA as identified in the renewal application.
- Waste - updated to reference the MVRMA to reflect applicable legislation.
- Waste Disposal Facilities - updated to reflect active waste disposal facilities at the Tundra Mine Site.
- Water(s) - updated to reference the MVRMA to reflect applicable legislation.
- Water Use - updated to reference the MVRMA to reflect applicable legislation.

Definition for the following have been removed from the Licence:

- Average Concentration - replaced with 'Maximum Average Concentration'.
- Engineer - replaced with 'Professional Engineer'.
- Landfill - there is no longer an open/active landfill on the Tundra Mine Site.
- Phase 2 Remedial Action Plan - replaced with 'Remedial Action Plan'.
- Potentially Acid Generating (PAG) - replaced with 'Potentially Acid Generating (PAG) Rock'.
- Sump - no longer used in the Licence.

4.2.3 Part B: General Conditions and Schedule 1

Part B of the Licence applies to matters regarding compliance and conformity with the MVRMA and *Waters Act*, and is consistent with standard conditions found in previous Licences issued by the Board. This section addresses conformity and compliance with plans, submission timelines for revisions and format, the Surveillance Network Program (SNP), and the Schedules which are annexed to and form part of the Licence. This section also addresses signage, measuring devices, public engagement requirements, and annual water licence reporting.

Part B, item 9 (and 10) of MV2009L8-0008 referred to the requirements to submit a Reclamation Plan prior to the decommissioning of site roads and reestablishment of natural site drainages impacted by roads and road crossings. A similar condition remains in MV2016L8-0003 but can now be found in Part H: Conditions Applying to Closure and Reclamation.

Part B, items 1 through 10 are standard conditions consistent with recently issued Licences. Part B, item 2, 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. As such, the previously used terminology “subsequent approved editions” was removed from the Licence.

Part B, item 3 provides guidance on submissions to the Board.

Part B, item 4 refers to adherence with previously approved plans, programs, studies and manuals. Many plans submitted under Licence MV2009L8-0008 remain applicable to the Project as described for Licence MV2016L8-0003 and do not require re-submission for Board approval. Others, however, may require updates or revisions for Board approval based on new or updated Project plans.

Part B, item 5 requires DIAND-CARD to annually review all plans, programs, studies and manuals and resubmit any updates or changes, as required, for Board approval. This condition replaces many conditions from MV2009L8-0008 which were written to require the same for individual plans. Updates and revisions to these plans, programs, studies and manuals must be approved by the Board prior to the implementation of any activity not identified in existing, approved plans, programs, studies and manuals. Previously approved plans, programs, studies and manuals include:

- Tundra Mine Tailings Wastewater Treatment Plant Design Report
- PHC Wastewater Facility Design Plan
- Land Treatment Area Design Plan
- Sewage Facility Design Report
- Water Treatment Monitoring and Discharge Plan
- Tailings Confirmatory Sampling Program
- PHC Soil and Waste Rock Management Plan
- Hydrocarbon Contaminated Material Treatment Plan
- Off-site Waste Disposal Management Plan
- Common Excavation Work Plan
- Incineration Management Plan
- Water Quality Monitoring Program Protocols and QA/QC Plan
- Tundra Mine Construction Monitoring, Long-term Monitoring and Status of the Environment Programs
- Erosion, Sediment and Drainage Control Plan
- Wastewater Treatment Plan Operations and Maintenance Manual
- PHC Wastewater Treatment Facility Operation and Maintenance Plan
- Sewage Disposal Facility Operation and Maintenance Plan
- Spill Contingency Plan
- Remedial Action Plan

Copies of these plans, programs, studies and manuals have been uploaded to the public registry for Licence MV2016L8-0003.²⁵ Some of the above-listed documents refer to the design of existing site infrastructure and completed Project phases (i.e. Tundra Mine Tailings Wastewater Treatment Plant Design Report and Tundra Mine Construction Monitoring, Long-term Monitoring and Status of the Environment Programs). Though sections of these plans and reports may no longer be relevant to current Project activities,

²⁵ [See MV2016L8-0003 Public Registry Page](#)

associated monitoring and maintenance information remains relevant and is understood to be included as part of the Project description.

There is one Schedule (Schedule 1) identified under Part B, item 6 included with this Licence which outlines the requirements for Annual Reports. The Reasons for Decision on changed requirements for Annual Reporting are identified under Part B, item 14, below.

The Reasons for Decision on changes made to the Surveillance Network Program identified in Part B, item 7 are described in section 4.2.10, below.

Part B, items 8, 9 and 10 are standard conditions. Item 8 stipulates the Board's ability to update the schedule, SNP, and compliance dates at its discretion and how to address submission dates that fall on holidays. Items 9 and 10 refer to the maintenance of SNP stations and are carried over from MV2009L8-0008 items 6 and 7.

As identified in Part B, item 11, DIAND-CARD submitted an Engagement Plan with the Permit and Licence Applications. The Plan describes proposed engagement activities during the life of the Project and shall be in accordance with the Board's *Engagement and Consultation Policy* and the *Engagement Guidelines for Applicants and Holders of Water Licences and Land Use Permits*. This is a new condition, consistent with recently issued Licences.

On March 1, 2016, DIAND-CARD submitted an Interim Progress Status of Environment (SOE) Report to satisfy Part B, item 11 of Licence MV2009L8-0003. At the time this condition was written, it was believed that the reclamation work would be complete by 2015, and the intention was to summarize the complete reclamation program and monitoring results. A complete SOE Report, as described under Part B, item 11 and repeated in Licence MV2016L8-0003 in Part B, item 12, shall be submitted following the completion of the active remediation program. The anticipated date identified during the technical session was 2020 (approximately 18 months following the completion of Phase II Remediation).²⁶

The SOE Report is expected to provide information on any outstanding risks on the Tundra Mine site based on an analysis of monitoring data collected throughout active Remediation. It is expected that these results will help inform updates to monitoring programs for the Adaptive Management and Long-term Monitoring Phases of the Project. As such, Part B, item 13 requires DIAND-CARD to re-submit an updated Tundra Mine Construction Monitoring, Long-term Monitoring and Status of the Environment Programs for Board approval to reflect the findings of the SOE Report. This sequence of reporting was described by DIAND-CARD during the June 23, 2016 technical session.²⁷

Schedule 1 details the requirements for the Annual Water Licence Report required by Part B, item 14 of the Licence. The purpose of the Annual Report is to provide a summary of activities that have occurred on site of the past year. These activities include volumes of water (use, moved, Treated and deposits), volumes of waste (generated, moved, disposed of), Engagement activities, summary of works completed on site, summaries of all monitoring data, and anticipated activities for the following year.

²⁶ [See Technical Session Transcript page 104.](#)

²⁷ [See Technical Session Transcripts page 36.](#)

Most of the changes and additions to the Annual Report requirements are intended to provide clarity for the submission of information summaries already being captured through existing plans and programs and are not meant to be onerous. Others are standard requirements, consistent with recently issued Type A Licences.

4.2.4 Part C: Conditions Applying to Water Use

Part C of the Licence contains standard conditions related to water use for the Project. These conditions are largely the same as those found in MV2009L8-0008 with some minor additions to reflect project changes or clarify project activities.

Part C, item 1 identifies the water sources approved for use for the duration of the Project under MV2016L8-0003.

Part C, item 2 allows for the diversion of water from Mill Pond to Hambone Lake for the removal of the East Upper Dam upon approval of the Mill Pond Drainage Reestablishment Plan. This is a new condition. The Mill Pond Drainage Reestablishment Plan is required by Part D, item 12. This plan will describe water management, drainage channel construction, and monitoring activities for the Mill Pond drawdown and must be approved by the Board prior to the active movement of any water from Mill Pond.

The maximum quantity of water that can be withdrawn from the Matthew's Lake, Bulldog Lake and/or Sandy Lake for camp operations, dust suppression, and other tasks is set out in Part C, item 3. The Water use limit has been increased from 150 m³/day as set out in Part C, item 2 of MV2009L8-0008 to 500 m³/day. The previous water use limit of 150 m³/day has been difficult for DIAND-CARD to maintain when activities requiring water use arise in addition to camp requirements. Additional water uses include dust suppression, winter road construction, and tailings compaction activities. DIAND-CARD has requested that up to 500 m³/day be reflected in the Water Licence so that short duration tasks requiring additional water can be undertaken under the Licence conditions. The Board did not receive any other comments on the water use limit and has accepted DIAND-CARD's revised limit.

The addition of the reference to *Fish Screen Design Criteria for Flood and Water Truck Pumps, 2011* has been added to Part C, item 4 (formerly Part C, item 3) to reflect the use of water trucks in the collection of water for camp and dust suppression activities. This is otherwise a standard condition consistent with MV2009L8-0008 and recently issued Type A Licences. Part C, item 5 is also a standard requirement of Licences addressing the construction and use of winter roads and is consistent with Part C, item 4 of MV2009L8-0008 and recently issued Type A Licences.

4.2.5 Part D: Conditions Applying to Construction

Part D of the Licence contains conditions related to construction activities at the site. These conditions ensure that engineered structures are built to appropriate standards, and require the submission of design and engineering reports.

Part D, items 1 through 6 are all new conditions that are consistent with recently issued Licences. These conditions are designed to ensure the stability of site infrastructure and to prevent or minimize unauthorized discharges to the environment. Part D, item 2 requires DIAND-CARD to ensure that all Engineered Structures are designed, constructed, and maintained to meet or exceed the *Dam Safety Guidelines*. This condition is intended for

newly constructed structures specific to the Project, however, historic structures shall be inspected to ensure that they are structurally sound and functioning to minimize the escape of waste to the receiving environment.

Part D, items 7 through 10 refer to previously approved construction plans and as-built reports for the construction, design, operations and maintenance of existing waste management facilities and infrastructure. For those plans that have previously been submitted and approved, the Board has not removed the applicable conditions; these plans must be included in the Licence in order to apply Part B, item 4, which directs the Licensee to operate in accordance with approved management plans. DIAND-CARD are required to comply with these reports as previously approved, where applicable. The following construction and design plans have been approved under MV2009L8-0008 and continue to apply to the Project:

- Tundra Mine Tailings Wastewater Treatment Plant Design Report, submitted under Part D, item 1 of MV2009L8-0008 to provide design details of facility infrastructure, details about water treatment and sludge management, a quality assurance/quality control program, decommissioning details, and final drawing(s) stamped and signed by an Engineer;
- PHC Wastewater Facility Design Plan submitted under Part D, item 21 of MV2009L8-0008 to detail how wastewater will be treated and managed and to ensure it is constructed using best engineering practices;
- Land Treatment Area Design Plan submitted under Part D, item 15 of MV2009L8-0008 to ensure the LTA will be built using best engineering practices; and
- Sewage Facility Design Report submitted under Part D, item 40 of MV2009L8-0008 to provide design details of facility infrastructure, details about sewage treatment and sludge management, a quality assurance/quality control program, decommissioning details, and final drawing(s) stamped and signed by an Engineer.

For the above-listed plans, the Board has updated the Licence conditions to direct DIAND-CARD to adhere to the approved version of the plan. Under Part B, item 5, DIAND-CARD must review these plans annually and determine if revisions are necessary to reflect changes in operations. If revisions are required, updated plans must be submitted to the Board for approval sixty (60) days prior to implementing the proposed changes.

Part D, item 11 addresses the updated Tailings Containment Area Cover Design Report which was submitted as part of the Permit and Licence Application.²⁸ This condition is similar to Part D, item 28 of MV2009L8-0008. This Plan has not yet been approved by the Board. Upon issuance of the Licence, the Board will consider the Tailings Containment Area Cover Design Report through a separate review and approval process. The Board has maintained the Licence requirements and has updated the submission date to within ninety (90) days of Licence issuance. However, the Board notes that this document has been received.

Part D, item 12 is a new condition requiring the submission of a Mill Pond Reestablishment Plan. Currently, there is very little information on the design, operation, maintenance and monitoring required for the dewatering of Mill Pond, removal the East Upper Dam, and reestablishment of flow between Mill Pond and Hambone Lake. DIAND-CARD suggested the submission of this report to address all aspects of the Mill Pond drawdown and East

²⁸ [See Appendix E-9 Supporting Information for the Land Use Permit and Water Licence Renewal](#)

Upper Dam Removal process in its response to second round information requests.²⁹ This condition encompasses and expands upon Part D, item 31 of MV2009L8-0008.

Part D, item 13 is a standard condition consistent with recently issued Licences to ensure that any new engineered facility development is properly planned, described, and reviewed prior to construction.

Part D, item 14 refers to previously submitted Final Detailed Construction Plans for existing engineered structures that were submitted under Licence MV2009L8-0008 and remain valid for the life of MV2016L8-0003. The following engineered structures have final detailed plans that have been approved under MV2009L8-0008:

- Tailings Wastewater Treatment Facility (Part D, item 5 of MV2009L8-0008);
- Land Treatment Area (Part D, item 17 of MV2009L8-0008);
- Decontamination (PHC) Wastewater Treatment Facility (Part D, item 25 of MV2009L8-0008);
- Sewage Disposal Facility (Part D, item 46 of MV2009L8-0008); and
- access bridges (Part E, item 2 of MV2009L8-0008).

Part D, items 15 and 16 are standard conditions in the event of new construction requirements. These are consistent with recently issued Licences and will apply to, at a minimum, the TCA Cover and the Mill Pond drainage channel. Part D, items 13 through 16 expand upon and replace conditions found in Part E of MV2009L8-0008 as well Part D, items 30 and 33.

4.2.6 Part E: Conditions Applying to Modifications

Part E of the Licence contains conditions applying to modification of structures and facilities associated with the Project.

Part E, item 1(d) was added to formalize the step of an Inspector authorizing proposed modifications. All other requirements are the same as those identified in Part F of MV2009L8-0008. This update is consistent with previously issued Licences. All other requirements are standard and consistent with recently issues Licences.

4.2.7 Part F: Conditions Applying to Waste and Water Management

Part F of the Licence contains conditions applying to the management of waste and water for the Project.

Part F, item 1 is a new condition the Board added to the Licence; it describes the overall objectives of this portion of the Licence. Minor administrative changes were made throughout Part F to be consistent with recently issued Licence conditions and formats, and with updated definitions. These conditions mainly originated from Part D of the previous Licence MV2009L8-0008. Where conditions have been revised or new conditions added the Board's decisions are detailed in the following sections.

²⁹ [See Second Round Information Request Responses dated August 8, 2016.](#)

Management Plans and Monitoring Programs

Part F, items 2 through 11 refer to previously approved plans for the monitoring and management of water and waste. For those plans that have previously been submitted and approved, the Board has not removed the applicable conditions; these plans must be included in the Licence in order to apply Part B, item 4, which directs the Licensee to operate in accordance with approved management plans. DIAND-CARD is required to comply with these reports as previously approved. The following monitoring and management plans have been approved under the previous Licence, MV2009L8-0008, and continue to apply to the Project:

- Water Treatment Monitoring and Discharge Plan;
- Tailings Confirmatory Sampling Program submitted under Part D, item 11 of MV2009L8-0008 to ensure all contaminated material is excavated from Upper Pond;
- PHC Soil and Waste Rock Management Plan submitted under Part D, item 13a of MV2009L8-0008.
- Common Excavation Work Plan submitted under Part D, item 26 of MV2009L8-0008 to ensure that all PAG rock is excavated and disposed of in Lower Pond of the TCA;
- Water Quality Monitoring Program Protocols and QA/QC Plan submitted under Part D, item 50 of MV2009L8-0008 in accordance with Indian and Northern Affairs Canada's "Quality Assurance (QA) and Quality Control (QC) Guidelines for Use By Class "A" Licensees in Meeting SNP Requirements and for Submission of a QA/QC Plan, 1996";
- Hydrocarbon Contaminated Material Treatment Plan submitted under Part D, item 13 of MV2009L8-0008 to detail how PHC soil and Waste Rock are managed, how the Land Treatment Area (LTA) will be operated and maintained, and how areas that have been excavated will be reclaimed;
- Off-site Waste Disposal Management Plan submitted under Part D, item 47 of MV2009L8-0008 to detail the types of Waste to be generated and how they will be managed;
- Incineration Management Plan submitted under Part D, item 38 of MV2009L8-0008 to address EC concerns during the review of that application;
- Tundra Mine Construction Monitoring, Long-term Monitoring and Status of the Environment Programs submitted under Part D, item 34 of MV2009L8-0008 to address reviewer concerns regarding monitoring impacts on wildlife; and
- Erosion, Sediment and Drainage Control Plan submitted under Part D, item 9 of MV2009L8-0008 to avoid and minimize downstream erosion issues when treated water is discharged.

For the above-listed plans, the Board has updated the Licence conditions to direct DIAND-CARD to adhere to the approved version of the plan. Under Part B, item 5, DIAND-CARD must review these plans annually and determine if revisions are necessary to reflect changes in operations. If revisions are required, updated plans must be submitted to the Board for approval sixty (60) days prior to implementing the proposed changes.

Part F, item 12 requires the re-submission of the Erosion, Sediment and Drainage Control Plan which was submitted as part of the Permit and Licence Application.³⁰ This Plan requires updates in light of new construction activities planned to complete remediation. Specific details on the management of erosion and sedimentation are required for the Mill Pond Drawdown process, the reinstatement of flow between Mill Pond and Hambone Lake, and for the tailings cap. This Plan has not yet been approved by the Board. Upon

³⁰ [See Appendix E-9 Supporting Information for the Land Use Permit and Water Licence Renewal](#)

issuance of the Licence, the Board will consider the Erosion, Sediment and Drainage Control Plan through a separate review and approval process. The Board has maintained the Licence requirements and has updated the submission date to within ninety (90) days of Licence issuance. However, the Board notes that this document has been received.

Part F, item 13 requires DIAND-CARD to submit a stand-alone Adaptive Management Plan to identify a detailed approach to the Adaptive Management Phase of the remediation of the Tundra Mine site. This plan shall be submitted for Board approval prior to initiating the triggers that define the transition from active remediation (Phase II) to Adaptive Management. The submission of this document was discussed with DIAND-CARD during the Technical Session with no opposition.³¹ The Tundra Mine Construction Monitoring, Long-term Monitoring and Status of the Environment Program addresses a combination of the traditional meaning and intent of adaptive management through the life of the project, including an action plan response framework as required by other authorizations. This Plan is being updated as per Part B, item 13.

Part D, items 35, 36 and 37 from MV2009L8-0008 have not been repeated in this new Licence since seepage monitoring around the TCA has been established and is described in the SNP. Requirements for the incineration of waste are covered in the Incineration Management Plan (identified in Part F, item 8) and the Land Use Permit.

Operations of Structures and Facilities

Part F, items 14 through 16 refer to previously approved plans for the operations and maintenance of existing waste management facilities and infrastructure. For those plans that have previously been submitted and approved, the Board has not removed the applicable conditions; these plans must be included in the Licence in order to apply Part B, item 4, which directs the Licensee to operate in accordance with approved management plans. DIAND-CARD is required to comply with these reports as previously approved. The following operations and maintenance plans have been approved under the previous Licence, MV2009L8-0008, and continue to apply to the Project:

- Tailings Wastewater Treatment Plan Operations and Maintenance Manual submitted under Part D, item 3 of MV2009L8-0008 as committed to by DIAND-CARD in its Application;
- PHC Wastewater Treatment Facility Operation and Maintenance Plan submitted under Part D, item 23 of MV2009L8-0008 to ensure the equipment decontamination facility is operated and maintained according to the design report; and
- Sewage Disposal Facility Operation and Maintenance Plan submitted under Part D, item 42 of MV2009L8-0008 to detail which type of treatment system will be used, how it will be operated and maintained, and a contingency plan in the event treatment is unsuccessful.

For the above-listed plans, the Board has updated the Licence conditions to direct DIAND-CARD to adhere to the approved version of the plan. Under Part B, item 5, DIAND-CARD must review these plans annually and determine if revisions are necessary to reflect changes in operations. If revisions are required, updated plans must be submitted to the Board for approval sixty (60) days prior to implementing the proposed changes.

³¹ [See Technical Session Transcript page 159, dated June 23, 2016.](#)

Part F, item 17 requires the re-submission of the Sewage Disposal Facility Operation and Maintenance Plan in light of changes to the sewage treatment contingency plan, specifically the removal of chlorine additives, as discussed during the technical session.³²

Part F, items 18 and 19 are standard conditions consistent with recently approved licences that are designed to ensure the appropriate level of monitoring and maintenance of waste disposal facilities are undertaken to protect the surrounding environment from unauthorized discharges. Part D, item 49 of MV2009L8-0008 contained similar requirements as Part F, item 19 for the operation and maintenance of the landfill. Though the landfill has been remediated, the new condition now applies to any waste storage facility at the Tundra Mine site.

Inspections of Structures and Facilities

Part F, items 20 through 23 refer to inspection requirements for the downstream environment and engineered structures on site to ensure site stability. Daily erosion inspections required under Part F, item 20 is required to ensure that the seasonal discharge of excess water from the TCA and Mill Pond (up to 300m³/day) does not disturb adjacent lands and downstream watercourse crossings. Geotechnical inspections required under Part F, item 21 is a standard condition of many Licences for projects with engineered waste or water-retaining structures. Part F, item 22 stipulates the reporting requirements for the Boards based on inspection results and recommendations. Weekly inspections and records required under Part F, item 23. These are new conditions consistent with recently issued Licences.

Discharge Locations and Rates

Part F, item 24 identifies the existing discharge location at Hambone Lake and sets a discharge rate of 300 m³ per hour. This limit is carried over from the previous Licence (Part D, item 8) and was agreed upon by reviewers and DIAND-CARD during application review and technical sessions. This discharge limit includes all water from the Water Treatment Facility and Mill Pond drawdown.

Part F, items 25 and 26 identify discharge locations for sewage and wastewater for treatment prior to being discharged to the environment. These are new conditions.

Effluent Quality Criteria

Part F, item 27 lists the criteria that must be met for soils and Waste Rock that are to be excavated on-site or removed from the Land Treatment Area. These criteria were carried from MV2009L8-0008 and were reviewed with the draft Licence.

Part F, items 28, 30, 33, and 36 set out the Effluent Quality Criteria (EQC) for discharge from the wastewater treatment and sewage disposal facilities. For the most part, the criteria set out in this Licence mirror the criteria required by MV2009L8-0008 (Part D, items 6, 13, 18, 19, and 44). Part F, item 28 now encompasses EQCs identified in Part D, items 13 and 18 of MV2009L8-0008. Part F, item 36 introduces new EQCs for compliance monitoring during the Adaptive Management Phase following decommissioning of the Water Treatment Facility. These criteria and rationale were provided by DIAND-CARD in

³² [See Technical Session Transcript page 106, dated June 23, 2016.](#)

their response to second round IRs.³³ All EQC were reviewed under the draft water licence.

Part F, items 32, 35 and 37 direct DIAND-CARD in the event of non-compliance discharges with reference to the appropriate approved management plan. These conditions are similar to those found in Part D, items 20 and 45 of MV2009L8-0008. As per Part F, item 35, following a non-compliance event from the TCA, DIAND-CARD may not resume discharge to the receiving environment until water quality results demonstrate compliance, and the Inspector has authorized the discharge. This is a new condition.

Part F, items 31 and 34 requires DIAND-CARD to provide the Inspector with water quality information at Hambone Lake and the Sewage Disposal Facility prior to discharge events. Item 34 is a carry-over from MV2009L8-0008, Part D, item 7.

Part, F, item 37 requires the Licensee to take corrective actions to mitigate any exceedances of the criteria listed in item 34. The corrective actions will be outlined in the Adaptive Management Plan, submitted as per Part F, item 13.

4.2.8 Part G: Conditions Applying to Contingency Planning

Part G of the Licence contains conditions applying to spills, unauthorized discharges, and emergency response for the Project. The purpose of this part is to ensure that the Licensee is fully prepared to respond to spills and unauthorized discharges. The planning and reporting requirements in this part ensure that DIAND-CARD 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.

As noted earlier in these Reasons, Part G, item 1 directs the Licensee to adhere to the existing Spill Contingency Plan previously approved under MV2009L8-0008 (Part G, item 1), with annual reviews and necessary updates to the Plan as per Part B, item 6. This is consistent with the requirements for other submissions within the Licence and with recently issued Licences and replaces the requirements of Part G, items 2 and 3 of MV2009L8-0008.

Part G, item 2 mirrors the intent Part G, item 4 of MV2009L8-0008, outlining the requirements to clean and report spills. Part G, item 2(c) was added to formalize the step of informing the Inspector and the Board of each unauthorized discharge. This update is consistent with previously issued Licences. Part G, item 3 clearly outlines the requirement to reclaim all spills. Part E, item 1(d) was added to formalize the step of an Inspector authorizing proposed modifications. All other requirements are the same as those identified in Part F of MV2009L8-0008. This is a standard condition consistent with recently issued Licences.

³³ [See DIAND-CARD Response to Second Round IRs dated August 8, 2016.](#)

4.2.9 Part H: Conditions Applying to Reclamation

As noted earlier in these Reasons, Part H, item 1 directs the Licensee to adhere to the existing Remedial Action Plan previously approved under MV2005L8-0014 (Part G, item 4), with annual reviews and necessary updates to the Plan as per Part B, item 6. This is consistent with the requirements for other submissions within the Licence and with recently issued Licences.

The Board requires the submission of a Final Reclamation Plan to address the final aspects of site remediation, including the decommissioning of site roads, bridges, staging areas, quarries, and associated infrastructure remaining at the Tundra Mine site and the re-establishment of drainages impacted by roads and road-crossings. This condition was recommended by DFO in their October 14, 2009 joint intervention with EC and carried over from MV2009L8-0008 Part B, item 9. Page 16 of the intervention states:

Restoration of water bodies impacted by quarrying and mining activities and all natural drainages impacted by winter or all-season road crossings should be included in the final site Reclamation plans.³⁴

Part F, item 4 is a standard condition consistent with recently issued Licences.

4.2.10 Annex A: Surveillance Network Program

Annex A of the Licence contains conditions applying to the Surveillance Network Program (SNP). The SNP for the remainder of Phase II Remediation was largely adopted from Type A Water Licence MV2009L8-0008³⁵ with the addition of existing monitoring stations established under the construction monitoring, long-term monitoring, and status of the environment programs.³⁶ The SNP for the Adaptive Management Phase largely mirrors the Phase II Remediation Phase with a few exceptions. Since the objective of reclamation is to bring the site to a steady state, many SNP stations may be deactivated based on recommendations in the Status of Environment Report and approved update of the Tundra Mine Construction Monitoring, Long-term Monitoring and Status of the Environment Programs. Other stations, such as those currently monitoring seepage from the landfill and the TCA and those directly monitoring waters from the WTP, may be deactivated upon completion of the tailings cap and decommissioning of the WTP. Five new stations have also added for Adaptive Management: SNP 0014-10, 0014-11, 0014-12, 0014-13, and 0014-14. These are discussed in more detail, below.

The suggestion to include all existing monitoring stations from various site monitoring programs into the SNP was discussed at the June 23, 2016 Technical Session with no objection.³⁷ The inclusion of all existing monitoring stations into the SNP provides a clear and consistent framework for reporting the results of all water monitoring programs under the Water Licence. These stations are located to help better understand the full magnitude and spatial extent of any adverse effects in waterbodies downstream of the TCA and Mine site as well as monitor improvements resulting from remediation activities. Consistent with recently issued Licences, the Board has included more detail in Part A, item 2 (of the SNP) outlining information expectations for monthly SNP Reports.

³⁴ [Joint Intervention by Environment Canada and Fisheries and Oceans Canada, Contaminants and Remediation Directorate, Indian and Northern Affairs Canada, Water Licence Application MV2009L8-0008 dated October 14, 2009](#)

³⁵ [Water Licence MV2009L8-0008](#)

³⁶ SENES (2011). [Final Report on Development of Tundra Mine Construction Monitoring, Long-term Monitoring, and Status of the Environment Programs.](#)

³⁷ [June 23, DIAND-CARD Tundra Type A Renewal 2016 Technical Session: pp 171-172.](#)

Six new SNP stations have been added for the remainder of Phase II Remediation. New SNP stations, 0014-15, 0014-16, and 0014-17, have been established to document water used from all three potential water sources (Matthew's Lake, Bulldog Lake, and Sandy Lake). This more accurately represents water use at the Tundra Mine site. SNP station 0014-1 is now correctly described as monitoring downstream water quality of Bulldog Lake at Matthew's Lake inflow and not water use at the site. SNP station 0014-2.6 has also been assigned a dual purpose. In addition to monitoring seepage in the northwest corner of the TCA (when wet), this station will also be used to monitor water quality in the event of any discharges from the sewage treatment facility. Previous to this Licence, there was no SNP established to monitor any potential sewage discharges to lands adjacent to or downstream of the sewage treatment facility.

New SNP stations, 0014-18 and 0014-19, have been established to document any quarry runoff into a small lake (unnamed) north of the quarry.

New SNP station 0014-20, has been created to monitor water being discharged from the Land Treatment Area. This is a new compliance point. The criteria are in Part F, item 27 of the licence.

There are two primary drainage pathways connecting the arsenic-impacted Tundra Mine Site to Courageous Lake. These pathways consist of chains of small lakes and connecting channels and are referred to as Pathway I and Pathway II.

- Pathway I receives the treated effluent discharge from the TCA. During active remediation, TCA water is treated to reduce concentrations of arsenic and other metals such as nickel and zinc. Treated effluent is intermittently discharged into Hambone Lake, which flows north to Powder Mag Lake via a small marshy channel. From Powder Mag Lake, flow passes through two small unnamed lakes and then flows into Sandy Lake. Water drains from Sandy Lake through two small unnamed lakes, which receive additional inflow from their respective drainage areas, and the combined flow discharges to Whaletail Lake, which then flows into Courageous Lake. Trans Saddle Lake also flows into Sandy Lake, but it is not connected to Hambone or Powder Mag lakes and, therefore, does not receive treated effluent discharged in Pathway I. Although Trans Saddle Lake is not located in the discharge pathway and is unlikely to receive substantial flow from the Catchment Interceptor (CI) Trench, there is a remote possibility that sub-surface seepage from the north dam of the TCA is entering the lake.³⁸
- Pathway II also has the potential to be influenced by the TCA, landfill seepage, and past mining and remediation activities near Mill Pond and Bulldog Lake³⁹. Pathway II begins south of the Mine at Mill Pond, which flows through a series of diversion ditches near the landfill (formerly the Dump Pond) and into Bulldog Lake. Water flows from Bulldog Lake into Matthews Lake and ultimately into Courageous Lake.

³⁸ Staples R. (2011). Tundra Mine, NWT, Remediation Environmental Monitoring Program: Water Quality. Part J: 2010 and Historic Results. Prepared for Contaminants and Remediation Directorate, Aboriginal Affairs and Northern Development Canada. March 2014

³⁹ Staples R. (2007). Final Report: Tundra Mine Environmental Monitoring Program: Water Quality Part E: 2006 Results. Prepared for Contaminants and Remediation Directorate, Indian and Northern Affairs Canada. January 2007

The Board has included the descriptions of existing stations as provided in the 2015 Water Licence Annual Report.⁴⁰ As mentioned above, for SNP station 0014-1, the description and rationale has been updated from that provided in the previous Licence to better reflect the purpose of the monitoring station as currently established. Water use from Matthew's Lake, Bulldog Lake, and Sandy Lake for camp use and dust suppression will now be captured under SNP stations 0014-15, 0014-16, and 0014-17. Water quantities are also to be recorded and reported separately as outlined in Part A, section 2(f) of the SNP.

Sampling frequency and sampling parameters for active remediation have not changed from those currently being collected and reported. Sampling parameters are site specific but have been informed by the Canadian Water Quality Guidelines for the Protection of Aquatic Life,⁴¹ Health Canada Guidelines for Canadian Drinking Water Quality⁴², Metal Mining Effluent Regulations⁴³, and results from the 2008 Human Health and Ecological Risk Assessment.⁴⁴ The parameters monitored and compliance points established are considered to be both necessary for monitoring potential downstream effects on the receiving and downstream environment and achievable. Historically, elevated concentrations of metals and metalloids (e.g., arsenic, chromium, copper, zinc, nickel, and iron) and major ions have occurred in Hambone, Trans Saddle, Powder Mag, and Sandy lakes.

The Board notes that there was no clear link between previous SNP stations and compliance points identified in Part D, item 6 of the MV2009L8-0008 for waters pumped from the TCA into Hambone Lake. Starting in 2009, a discharge limit for arsenic was established. Since that time, arsenic concentrations in the TCA have exceeded discharge limits necessitating treatment of the TCA water prior to discharge. Compliance reporting has consisted of a summary of results from SNP stations 0014-6A in Lower Pond, 0014-7A in Upper Pond, and the End-of Pipe monitoring at the WTP. The End-of-Pipe monitoring station is sampled daily during discharge by WTP operators. As water continues to be treated and discharged from the WTP while the TCA cap is being constructed, the End-of-Pipe location provides the most logical place for Waters to meet discharge criteria.

As discussed above, the SNP will be revised as the project moves from Phase II Remediation activities into Adaptive Management. Specific 'de-activation' triggers are identified for stations that are not required for the Adaptive Management Phase. Likewise, activities that trigger the Adaptive Management Phase (i.e. tailings cap completion and re-establishment of natural drainage between Mill Pond and Hambone Lake) will also trigger the need for new SNP stations. These are identified in more detail below.

DIAND-CARD has recommended, once water is no longer being discharged from the WTP, that the downstream compliance point for the Adaptive Management Phase be the Sandy Lake outflow, between Sandy and Whaletail lakes (SNP station 0014-6H).⁴⁵ The

⁴⁰ Golder Associates Ltd. (2016). [Public Works and Government Services Canada Tundra Mine, NWT Remediation Environmental Monitoring Program: Water Quality: 2015 and Historical Results.](#)

⁴¹ CCME (2003). [Canadian Water Quality Guidelines for the Protection of Aquatic Life](#)

⁴² Government of Canada (2014). [Health Canada Guidelines for Canadian Drinking Water Quality.](#)

⁴³ Government of Canada (2002). [Metal Mining Effluent Regulations.](#)

⁴⁴ SENES (2008). [Human Health and Ecological Risk Assessment of Water Management Alternatives Tundra Mine Site.](#)

⁴⁵ [DIAND-CARD IR Response dated June 30, 2016](#)

2008 Human Health and Ecological Risk Assessment (HHERA)⁴⁶ determined that Hambone Lake and Powder Mag Lake sediments are likely too impacted from the historic mining to be in compliance with CCME for protection of freshwater aquatic life in the post-remediation phase but that Sandy Lake should be consistently below the guideline. An Updated HHERA is expected in 2020.

DIAND-CARD recommended the deactivation of many SNP stations upon two consecutive years of COC concentration variability statistically similar as the Control Lake or the Control Well. Board staff found that defining statistically similar was difficult as it can vary depending on how a statistical analysis was setup. For that reason the Board has linked the deactivation of SNP stations to be based on the submission of the Status of Environment Report which is not for Board approval but forms the basis of the Tundra Mine Construction Monitoring, Long Term Monitoring and Status of Environment Programs which is for Board approval.

Stations identified by DIAND-CARD that may be deactivated during the Adaptive Management Phase include SNP stations 0014-1 (Matthew's Lake inflow), 0014-4 (Landfill outflow leachate), 0014-6A (Lower Pond), 0014-7A (Upper Pond), 0014-6B (Hambone Lake inflow), 0014-6C (Hambone Lake outlet), 0014-6D (Trans Saddle Lake outlet), 0014-6E (Powder Mag Lake), 0014-6F (Sandy Lake inlet), 0014-6G (Powder Mag outflow), 0014-7B (Mill Pond/southeast corner of Upper Pond), 0014-7C (Bulldog Lake), BH 3 (toe of east Lower Pond dam), BH 4 (north end of the Lower Pond dam), BH 7 (downgradient of the former main mine site take farm), BH 8 (downgradient of the former main mine site take farm), BH E (north of the divider dam between the Upper and Lower Ponds), BH G (50 m from the shore of Bulldog Lake downgradient from the landfill), BH H (50 m from the shore of Bulldog Lake downgradient from the main mine site tank farm), and BH I (10 m from the shore of Bulldog Lake). DIAND-CARD has suggested that once water quality variability is within a similar range to the Control Lake, then it can be assumed that the site has reached a steady state.

DIAND-CARD has also recommended the deactivation of SNP stations 0014-2.1 through 0014-2.5, Control Seep, End-of-Pipe, Hambone Lake, 0014-3, 0014-5, and 0014-9, following completion of the water treatment program. SNP stations 14-2.1 to 14-2.5 (and Control Seep) are monitoring points for seepage from the former tailings ponds (i.e. Upper Pond and Lower Pond) through the tailings containment dams. These stations currently monitor seepage of tailings impacted water through dams that are mostly tailings core dams. DIAND-CARD's rationale for the removal of these stations is that post remediation, there will no longer be any tailings ponds, the majority of dams will be removed, and these areas will be mostly dry. Therefore, there should be no water available for seepage and no dams remaining to seep through, as the dams will mostly be removed, and the site will be mostly dry.⁴⁷

The End-of-Pipe and Hambone Lake stations currently monitor water discharged from the WTP. Once decommissioned, the End-of-Pipe station will no longer be available and the Hambone Lake station will be redundant. Similarly, DIAND-CARD has argued that SNP station 0014-9, which monitors for erosion at the Sandy Lake crossing be deactivated since active discharge from the mine site will cease.

⁴⁶ SENES (2008). [Human Health and Ecological Risk Assessment of Water Management Alternatives Tundra Mine Site.](#)

⁴⁷ [See DIAND-CARD Response to Second Round Information Requests dated August 8, 2016.](#)

With regard to SNP stations 0014-3 and 0014-5, which monitor landfill leachate, DIAND-CARD have argued that due to the construction of the East Upper Dam, Mill Pond currently discharges towards Bulldog Lake, along the Landfill discharge pathway. Post Phase II remediation, Mill Pond will no longer be discharging along the Landfill discharge pathway, which is anticipated to dramatically reduce the flow along the lower toe of the Landfill. Because of this, it is anticipated that leachate transport will be reduced post-remediation. SNP station 0014-4 is located at the Landfill Outflow, and will monitor any leachate being transported from the Landfill. SNP stations 0014-3 and 0014-5 are somewhat redundant to station 0014-4.⁴⁸

DIAND-CARD has recommended that, though they may close for Adaptive Management, SNP Stations 0014-4 and all groundwater (BH) station infrastructure will be maintained for Long-term Monitoring as identified in DIAND-CARD's response to first round IRs.⁴⁹

The Matthew's Lake (far field), Whaletail Lake outflow, and Courageous Lake stations have also been sampled historically as part of water monitoring for the Tundra Remediation Project. The SNP now incorporates these far field monitoring stations so that downstream monitoring can take place in the event of any unanticipated exceedances in Water quality criteria at the established compliance point.

New SNP stations have been included to monitor water ponding on the TCA, draining from the TCA, and moving from Mill Pond to Hambone Lake upon the re-establishment of the natural drainage pathway between Mill Pond and Hambone Lake. SNP 0014-10 will monitor the quality and quantity of ponded Water on the TCA cover; SNP 0014-11 will monitor Water quality after quality leaving the TCA from a discharge channel post remediation; SNP station 0014-12 will monitor Mill Pond drawdown water, and stations 0014-13 and 0014-14 will monitor water flow and TSS to ensure protection of the downstream environment during active drawdown. Once drawdown is complete and the East Upper Dam has been completely removed, drainage between Mill Pond and Hambone Lake will be re-established. Two new SNP stations, one mid-way through the drainage channel (SNP 0014-13) and one at the outlet to Hambone Lake (SNP 0014-14) will monitor the quality of water passing through the site.

4.2.11 Annex B: Table of Items Requiring Submission

Annex B of the Licence contains a table that summarizes the information DIAND-CARD is required to submit as required by Licence conditions.

4.2.12 Annex C: Table of Revision History

Annex C of the Licence contains a table that 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.

⁴⁸ [See DIAND-CARD Response to Second Round Information Requests dated August 8, 2016.](#)

⁴⁹ [See DIAND-CARD Response to First Round Information Requests dated June 30, 2016](#)

4.3 Reasons for Decision on Term and Conditions of Permit MV2016X0011

The conditions set forth in the Permit have been imposed in order to address the Board's statutory responsibilities and the concerns which arose during review. These Reasons are issued pursuant to paragraph 40(2)(c) of the *Mackenzie Valley Land Use Regulations* (MVLUR).

DIAND-CARD currently holds a Permit MV2009X0019, which allows DIAND-CARD to conduct activities associated with the remediation of the abandoned gold mining and milling operation at the Tundra Mine site. The Board is satisfied that the development was screened by the MVLWB on December 17, 2009 pursuant to subsection 124(1) of the MVRMA and has therefore been exempt from screening pursuant to Part 1(2) of Schedule 1 (Section 2) of the Exemption List Regulations. This Permit has been issued for the maximum of five years with the option for a two year extension. This timeline coincides with the Water Licence and should provide enough time to complete Phase II Remediation and collect five years of information under the Adaptive Management Phase.

4.3.1 Eligibility for Land Use Permit under Section 18(b) of the Mackenzie Valley Land Use Regulations

On May 18, 2016, Board staff inquired as to how INAC met Section 18(b) of the MVLUR, relating to access to lands administered by the Government of the Northwest Territories. INAC responded and provided the following information:

Our understanding is that INAC's right and responsibility to access these lands for the purposes of remediation are defined and outlined in several ways as referenced below:

Access to Federal Land

NWT Devolution Agreement - Responsibility for Waste Sites

Section 6.4(a) Subject at all times to the express provisions of this Chapter 6, the allocation of responsibility for the Management of Waste Sites among the Parties pursuant to this Agreement is based upon the following principles: Canada is responsible for the Management of Waste Sites on Public Lands which were wholly created prior to the Transfer Date;

Sites Requiring Remediation

Section 6.43 All Sites Requiring Remediation listed in Part D of the Inventory of Sites at the Transfer Date shall be excluded from the transfer of administration and control referred to in Section 3.1 and shall be included in the inventory of exclusions referred to in Section 3.34.

Right to Access GNWT Land

NWT Devolution Agreement - Access by Canada

Section 6.62 Canada shall have the right to access Public Lands and Waters and the right to use natural resources in or on Public Lands in order to fulfill its responsibilities in respect of this Chapter 6.

Responsible Minister - Sites Requiring Remediation by INAC

NWT Devolution Agreement - Schedule 4, Part 6

Schedule 4, Part 6, lists and describes all waste sites to which INAC has specific responsibility. These sites are further described under Schedule 7, Part D, of the Agreement.⁵⁰

4.3.2 Part A: Scope of Permit

The scope of the Permit provided in Part A, item 1 ensures the Permittee is entitled to conduct activities which have been applied for pursuant to Part 5 of the MVRMA and the components that were screened by the Board on December 17, 2009. In setting out the scope of the Permit, the Board endeavoured to provide enough detail to identify and enable the authorized activities, but allows for project flexibility throughout the life of the Permit. Specific coordinates for the Project have been removed and replaced with the identification of the Tundra Mine site. This is understood as the lands described and identified in the Application.

Part A, item 2 and 3 are standard conditions consistent with MV2009X0019 and recently issued Permits. Part A, item 4 has been included so as to identify the dual responsibilities of the federal and territorial governments for inspections on site since the Project crosses jurisdictional boundaries.

4.3.3 Part B: Definitions

The Board defined a number of terms used in the Permit in order to ensure a common understanding of conditions and to avoid future differences in interpretation. For the most part, the definitions used wording from the MVLWB's Standard Land Use Permit Conditions Template (Standard Template).⁵¹ Additions from the Standard Template include:

- Durable Land
- Engagement Plan
- Fuel Storage Container
- Fuel Storage Tank
- Habitat
- Minister
- Ordinary High Water Mark
- Permittee
- Secondary Containment
- Sewage Disposal Facilities
- Spill Contingency Plan
- Toxic Material
- Waste
- Watercourse

No definitions were removed from the previous Permit but the definition of Sump has been updated to be consistent with recently issued Permits.

⁵⁰ [See Tundra Eligibility for LUP dated May 18, 2016 on the Public Registry](#)

⁵¹ <http://mvlwb.com/resources/policy-and-guidelines>.

4.3.4 Part C: Conditions Applying to All Land-Use Operations

The subheadings below correspond to the headings in the conditions section of the Permit, as outlined in section 26(1) of the MVLUR. Many conditions were based on wording from the MVLWB's Standard Template.

4.3.4.1 26(1)(a) Location and Area

Conditions provided in Part C, condition 1 through 6 are found in the MVLWB's Standard Template with the exception of condition 5 as outlined below.

Condition 5 (Existing Camp) - The Permittee shall use an existing campsite, as described in the complete application, or relocate the camp as approved by an Inspector. This condition was modified to allow the Inspector to authorize the relocation of that camp. In the application it was identified that the contractor may want to relocate the camp when the size of the camp is reduced.⁵²

4.3.4.2 26(1)(b) Time

Part C, conditions 7, 8 and 9 require DIAND-CARD to contact both the Federal and Territorial Inspectors prior to commencement of activities covered under MV2016X0011 and prior to completion of the land-use operation. Responses to Information Request #5 from INAC and the GNWT identify the roles and jurisdiction.

Condition 9 (Spring break-up) - The Board, for the purpose of this operation, designated April 15, as spring break-up. This date was suggested by the inspector to allow the flexibility for work to continue if the weather allows. There are conditions in the Permit that are in place to such as prevention of rutting that will be enforced regardless of date.

4.3.4.3 26(1)(f) Control or Prevention Ponding of Water, Flooding, Erosion, Slides, and Subsidence of Land

Condition 19 (Off- Road Vehicle Travel) Permittee shall not conduct off-road vehicle travel in areas without snow-covered surfaces, authorized in writing by an Inspector. This condition has been modified as a result of comments received from the proponent indicating that this condition as previously written would not allow for test pits to be assessed during summer months (no snow cover). Having the Inspector authorize the off road vehicle travel will ensure that they are aware of the activity as well as relating to the movement of vehicles and any mitigation measures that should be implemented.

4.3.4.4 26(1)(g) Use, Storage, Handling and Ultimate Disposal of Any Chemical or Toxic Material

A Waste Management Framework was submitted in the application and was developed in accordance with the MVLWB *Guidelines for Developing a Waste Management Plan*. The guidelines "provide a template for proponents to write a plan and a benchmark for reviewers to evaluate a proponent's plan, thus ensuring that waste management plans are submitted and reviewed in a consistent way". Permit conditions require waste to be managed in accordance with the Waste Management Plan. The Waste Management Plan is intended to ensure that all waste management activities are carried out in a

⁵² [Land Use Permit application dated May 4, 2016](#)

way that is consistent with best practices and applicable guidelines in order to minimize waste released from the Project.

4.3.4.5 26(1)(h) *Wildlife and Fish Habitat*

In the previous Permit MV2009X0019, condition 36 required the submission of a Wildlife Management Plan. The Board has removed this condition from this Permit because wildlife management is not within the jurisdiction of the Board.

Condition 39 (Habitat Damage) has been added to the new permit as it relates to habitat which is in the Boards jurisdiction.

4.3.4.6 26(1)(j) *Protection of Historical, Archaeological, and Burial Sites*

Condition 43 (Site Discovery and Notification) was updated to include the contact information for both the federal and non-federal inspectors, as outlined in responses to IR5 (see also Section 3.3.4.1 Time, above).

Archaeological buffer condition has expanded from 30 m in the previous Permit MV2009X0019 (condition 42, "Operate Vehicle") to 150m in the new Permit. The intent of this to protect cultural sites, whether known or suspected. The distance noted in this condition was set in consultation with the GNWT - Prince of Whales Northern Heritage Centre.

Contact information for the discovery of historical, archaeological, and burial sites has been updated.

4.3.4.7 26(1) *Security Deposit*

Reclamation security is not applicable for this Application as per section 94 of the Mackenzie Valley Resource Management Act, as the applicant is the federal government.

4.3.4.8 26(1)(m) *Fuel Storage*

The Board has included the requirement for a Spill Contingency Plan as is typical in most permits. This Plan is also required under Part G of the Licence and the Board's reasons for including this plan are described above in section 3.2.8.

4.3.4.9 26(1)(q) *Biological and Physical Protection of the Land*

The Board has included a requirement for an Engagement Plan as is typical in most permits. The Engagement Plan is intended to ensure that affected parties are able to develop an understanding of a proposed project or component of a project, provide feedback during the engagement process and work towards building relationships with the proponent. It is the Board's opinion that this engagement requirement, and the associated review and approval process, will be adequate to ensure engagement is managed responsibly for the Project. This Plan is also required under Part B, item 11 of the Licence.

5.0 Conclusion

Subject to the terms and conditions set out in the Licence, and for the reasons expressed herein, the MVLWB is of the opinion that the licensed undertaking for water use and waste disposal associated with the Tundra Mine Remediation Project can be completed by DIAND-CARD 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.

Land Use Permit MV2016X0011 and Water Licence MV2016L8-0003 contains provisions that the Board feels necessary to ensure and monitor compliance with the MVRMA and the Regulations made thereunder and to provide appropriate safeguards in respect of the Applicant's use of the land affected by the Permit.

Signed on behalf of the Mackenzie Valley Land and Water Board



October 20, 2016

Floyd Adlem, A/Chair

Date