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### Reasons for Decision

Issued pursuant to section 22 and paragraph 40(2)(c) of the Mackenzie Valley Land Use Regulations (MVLUR) and

Sections 72.25 and 121 of the *Mackenzie Valley Resource Management Act* (MVRMA)

Water Licence and Land Use Permit Applications	
Preliminary Screener	MVLWB
File Number	MV2014L8-0006, MV2019L8-0002 and MV2014F0013
Company	Canadian Zinc Corporation
Project	Prairie Creek All Season Road – Liard Highway to Prairie Creek Mine, NT
Date of Decision	November 7, 2019

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These Reasons for Decision set out the Mackenzie Valley Land and Water Board's (the MVLWB/Board) regulatory process and decisions on the February 20, 2019 Post-EA Information Package submitted by Canadian Zinc Corporation to the Board for Water Licences (Licences) MV2014L8-0006 and MV2019L8-0002 and Land Use Permit (Permit) MV2014F0013 for the Prairie Creek All Season Road.

A summary of the Applications is provided in Section 2.0 below, followed by the regulatory process in Section 3.0. Section 4.0 describes the legislative requirements applicable to this regulatory process, leading to the Board's decisions with supporting rationale in Sections 5.0 and 6.0.

## 1.0 List of Abbreviations

ADKFN	Acho Dene Koe First Nation
Anniversary Date	Effective date of Licence as seen on the Licence cover page
Applicant	Canadian Zinc Corporation
Applications	Canadian Zinc Corporation's submissions in support of Water Licences MV2014L8-0006 and MV2019L8-0002 and Land Use Permit MV2014F0013
ASR	All Season Road
CanNor	Canadian Northern Economic Development Agency
CIRNAC	Crown-Indigenous Relations and Northern Affairs Canada
CNPA	<i>Canada National Parks Act</i>
CZN	Canadian Zinc Corporation
DFN	Dehcho First Nations
DFO	Fisheries and Oceans Canada
EA	Environmental Assessment
ECCC	Environment and Climate Change Canada
EQC	Effluent Quality Criteria
GNWT	Government of the Northwest Territories
GNWT-ECE	Government of the Northwest Territories – Education, Culture and Employment
GNWT-ENR	Government of the Northwest Territories – Environment and Natural Resources
GNWT-TLA	Government of the Northwest Territories – Territorial Lands Administration
GNWT-Lands	Government of the Northwest Territories – Lands
IAB	Indian Affairs Branch
IR	Information Request
INAC	Indigenous and Northern Affairs Canada
Inspector	Government of the Northwest Territories – Environment and Natural Resources – Water Resource Officer (Inspector) OR Government of the Northwest Territories – Lands – Resource Management Officer (Inspector) OR Crown-Indigenous Relations and Northern Affairs Canada - Resource Management Officer (Inspector) As the case may be.
Licence	Water Licence MV2014L8-0006 (Territorial land) or MV2019L8-0002 (IAB Land)
LKFN	Łı́ı́ııı Kúęę First Nation
ML	Metal Leaching
MVEIRB	Mackenzie Valley Environmental Impact Review Board (Review Board)
MVFAWR	Mackenzie Valley Federal Areas Waters Regulations
MVLUR	Mackenzie Valley Land Use Regulations
MVLWB or Board	Mackenzie Valley Land and Water Board
MVRMA	<i>Mackenzie Valley Resource Management Act</i>

Minister	Minister of Environment and Natural Resources for the Government of the Northwest Territories OR Minister of Lands for the Government of the Northwest Territories OR Minister of Crown-Indigenous Relations and Northern Affairs Canada As the case may be
MOU	Memorandum of Understanding
NBDB	Nahanni Butte Dene Band
NNPR	Nahanni National Park Reserve
NPMO	Northern Projects Management Office
Potentially Acid Generating	PAG
Party	As per the Board's <i>Rules of Procedures</i>
Permit	Land Use Permit MV2014F0013
Project	Prairie Creek All Season Road Project
PWNHC	Prince of Wales Northern Heritage Centre
Reviewer	As per the Board's <i>Rules of Procedure</i>
SNP	Surveillance Network Program
Standard Template	Board's <i>Standard Land Use Permit Conditions Template</i>
TK	Traditional Knowledge
TS-IR	Technical Session Information Requests
TSS	Total suspended solids

## 2.0 **Summary of Application(s)**

On April 23, 2014, Canadian Zinc Corporation (CZN) submitted Applications for a new Licence MV2014L8-0006 and new Permit MV2014F0013.<sup>1</sup> These Applications are for the Construction of an All Season Road (ASR) between the Liard Highway and the Prairie Creek Mine. The ASR will cross Territorial lands, Indian Affairs Branch (IAB) lands, and lands within the Nahanni National Park Reserve (NNPR).

### 2.1 **Distribution List**

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

## 3.0 **Regulatory Process**

### 3.1 **Environmental Assessment: EA1415-01**

On May 22, 2014, the Board referred the ASR Project to the Mackenzie Valley Environmental Impact Review Board (MVEIRB) for Environmental Assessment (EA).<sup>2</sup> On September 12, 2017, the MVEIRB released the Report of EA and Reasons for Decision for the Project and sent its recommendation to

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<sup>1</sup> See Water Licence MV2014L8-0006 and Land Use Permit MV2014F0013 Applications ([hyperlink](#)), submitted to the MVLWB on April 23, 2014.

<sup>2</sup> See Referral to Environmental Assessment ([hyperlink](#)), dated May 22, 2014.

the Minister of Crown-Indigenous Relations and Northern Affairs.<sup>3,4</sup> On October 9, 2018, the Minister of Crown-Indigenous Relations and Northern Affairs, with agreement from all responsible Ministers, adopted the recommendations of the MVEIRB, according to sub-paragraph 130(1)(b)(i) of *Mackenzie Valley Resource Management Act* (MVRMA).<sup>5</sup>

### 3.2 Post-Environmental Assessment Information Package

On October 9, 2018, the regulatory process for the Applications resumed as per subsection 72.22(2) of the MVRMA. Board staff sent a letter to CZN outlining the timelines and requirements to resume the licensing and permitting processes, including submission of a Post-EA Information Package.<sup>6</sup> This information was requested under section 72.1 of the MVRMA, subsection 19(2) of the Mackenzie Valley Land Use Regulations (MVLUR), and section 41.1 of CNPA within the NNPR. CZN submitted their Post-EA Information Package to support the Applications on February 20, 2019.<sup>7</sup>

### 3.3 Details of the Regulatory Process

On November 8, 2018, the Board invoked paragraph 22(2)(b) of the MVLUR for Permit MV2014F0013.<sup>8</sup>

On March 12, 2019, the Post-EA Information Package was deemed complete and the public review commenced.

On March 12, 2019, Board staff distributed preliminary drafts of Permit MV2014F0013 and Licence MV2014L8-0006 conditions, requesting that parties provide their comments and recommendations on the draft conditions; whether the development described in CZN's Post-EA Information Package had been modified from the development that underwent EA; and whether it should be deemed exempt from Part 5 of the MVRMA. Conditions for preliminary draft Licence MV2019L8-0002 were not distributed at this time since the Board proposed to draft these conditions based on the comments from the draft Licence MV2014L8-0006.

The following parties responded by April 24, 2019: Acho Dene Koe First Nation (ADKFN), Dehcho First Nations (DFN), Environment and Climate Change Canada (ECCC), Fisheries and Oceans Canada (DFO), the Government of the Northwest Territories – Education, Culture and Employment (GNWT-ECE), GNWT Department of Environment and Natural Resources (GNWT-ENR), GNWT Department of Lands (GNWT-Lands), Crown-Indigenous Relations and Northern Affairs Canada (CIRNAC), Łíídlı́ Kúé First Nation (LKFN), MVEIRB, and Racher Consulting, on behalf of LKFN and Nahanni Butte Dene Band (NBDB).<sup>9</sup> CZN responded to all the parties' comments on May 15, 2019.<sup>10</sup>

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<sup>3</sup> See Report of EA1415-01 ([hyperlink](#)), dated September 12, 2017.

<sup>4</sup> See MVEIRB's Recommendation to the Minister ([hyperlink](#)), dated September 12, 2017.

<sup>5</sup> See Minister Decision on EA ([hyperlink](#)), dated October 9, 2019.

<sup>6</sup> See MVLWB Letter – Request for Updated Project Description ([hyperlink](#)), dated October 9, 2018.

<sup>7</sup> See CZN – Updated Project Description ([hyperlink](#)), submitted to the MVLWB on February 20, 2019.

<sup>8</sup> See MVLWB Letter – Invoke paragraph 22(2)(b) of MVLUR ([hyperlink](#)), dated November 8, 2018.

<sup>9</sup> See Review Comment Summary Table – Applications ([hyperlink](#)), dated May 15, 2019.

<sup>10</sup> See Review Comment Summary Table – Applications ([hyperlink](#)), dated May 15, 2019.

A public notice of the Recommencement of Regulatory Process was published in *News North* during the week of March 25, 2019 to fulfill subsections 72.16(1) and 72.16(2) of the MVRMA and paragraphs 41(1)(a) and 43(2)(a) of the *Waters Act*.<sup>11</sup>

CZN's technical session presentation was submitted on June 5, 2019.<sup>12</sup> The technical session was held on June 5 – 7, 2019, in Yellowknife, NT, to discuss and seek clarity on issues raised by parties and Board staff, and to provide an opportunity to discuss the Post-EA Information Package in advance of parties submitting further comments and recommendations about the draft Licences and Permit to the Board. The technical session was facilitated by Board staff, and was transcribed.<sup>13</sup> Attendees included: CZN, Northern Projects Management Office (NPMO), GNWT-ENR, GNWT-Lands, GNWT-Territorial Lands Administration (GNWT-TLA), ECCC, DFO, CIRNAC, LKFN, Racher Consulting, Parks Canada, Arktis Solutions, DFN, Tetra Tech, Alpine Solutions, Shared Value Solutions, Hatfield Consultants, and the MVEIRB. Information requests (IR) resulting from the session were circulated to the distribution list on June 11, 2019.<sup>14</sup> There were 13 Technical Session Information Requests (TS-IR): TS-IR#9 was directed to CIRNAC and GNWT-Lands, and TS-IR#1 to 8, and 10 to 13 were directed to CZN. On June 24, 2019, CZN submitted responses to TS-IR#1-7, 10, 11, and 13.<sup>15</sup> CIRNAC and GNWT-Lands jointly responded to TS-IR#9 on June 28, 2019.<sup>16</sup> CZN submitted responses to TS-IR#8 on July 2, 2019.<sup>17</sup> On July 16, 2019, CZN submitted a response to TS-IR #12.<sup>18</sup>

On August 8, 2019, Board staff circulated version 2 of draft Licence MV2014L8-0006, version 1 of draft Licence MV2019L8-0002 for IAB lands, and version 2 of Permit MV2014F0013 to parties for review and comment. The draft conditions were based on comments on the Post-EA Information Package and the technical session discussions. The following parties responded by September 6, 2019: ADKFN, ECCC, DFO, GNWT-ENR, GNWT-Lands, GNWT-PWNHC, CIRNAC, and Racher Consulting.<sup>19</sup> CZN responded to all the parties' comments and provided comments on September 9, 2019.<sup>20</sup>

On October 2, 2019, Board staff sent an IR to CIRNAC regarding the security estimate for the land portion of the federal IAB lands.<sup>21</sup> CIRNAC responded on October 15, 2019.<sup>22</sup>

On October 7, 2019, Board staff sent an IR to CZN regarding its Waste Management Plan as more details were needed before the regulatory process could continue.<sup>23</sup> CZN responded to the IR on October 15, 2019.<sup>24</sup>

On November 7, 2019, the Board met to make decisions regarding the Applications.

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<sup>11</sup> See Notice of Recommencement of Regulatory Process ([hyperlink](#)), dated March 25, 2019.

<sup>12</sup> See CZN – Technical session presentation ([hyperlink](#)), submitted to the MVLWB on June 5, 2019.

<sup>13</sup> See Technical session – Transcripts ([hyperlink](#)), dated June 13, 2019.

<sup>14</sup> See Technical session – Information Requests ([hyperlink](#)), dated June 11, 2019.

<sup>15</sup> See CZN – Response to Information Request #1-7, 10, 11, 13 ([hyperlink](#)), submitted to the MVLWB on June 24, 2019.

<sup>16</sup> See CZN – Response to Information Request #9 ([hyperlink](#)), submitted to the MVLWB on June 28, 2019.

<sup>17</sup> See CZN – Response to Information Request #8 ([hyperlink](#)), submitted to the MVLWB on July 2, 2019.

<sup>18</sup> See CZN – Response to Information Request #12 ([hyperlink](#)), submitted to the MVLWB on July 16, 2019.

<sup>19</sup> See Review Comment Summary Table – Draft Licences and Permit ([hyperlink](#)), dated September 9, 2019.

<sup>20</sup> See Review Comment Summary Table – Draft Licence ([hyperlink](#)), dated September 9, 2019.

<sup>21</sup> See Information Request Re RECLAIM Security Estimate ([hyperlink](#)), dated October 2, 2019.

<sup>22</sup> See CIRNAC – Response to Information Request Re RECLAIM Security Estimate ([hyperlink](#)), dated October 15, 2019.

<sup>23</sup> See Information Request Re Waste Management Plan ([hyperlink](#)), dated October 7, 2019.

<sup>24</sup> See CZN – Response to Information Request Re Waste Management Plan ([hyperlink](#)), dated October 15, 2019.



#### **4.0 Legislative Requirements**

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

##### **4.1 General**

The use of land, water, and the deposit of waste proposed is of a nature contemplated by the MVRMA and the *Waters Act*.

As this Project is located in part on both federal IAB lands and Territorial lands, both the MVRMA and *Waters Act* are applicable to water use and the deposit of waste.

##### **4.2 MVRMA Part 3: Duty to Consult (Aboriginal Matters)**

When exercising its authority under Part 5 of the MVRMA, the Board must ensure that the concerns of Aboriginal people have been taken into account as per paragraph 114(c) of the MVRMA. It must also consider the importance of conservation to the well-being and way of life of Aboriginal peoples of Canada, as per paragraph 60.1(a) of the MVRMA, specifically those to whom section 35 of the *Constitution Act, 1982* applies and who use an area of the Mackenzie Valley. Accordingly, the Board works with applicants, affected parties (including Aboriginal organizations and governments), and other parties (such as other boards and regulators) to ensure that potential impacts of proposed projects are understood and carefully considered before decisions are made with respect to the issuance of Permits and Licences.

The ASR Project was subject to EA, which extensively involved the affected Aboriginal parties. On September 12, 2017, the Review Board released its Report of EA and reasons for Decision for the ASR Project. On January 19, 2018, the responsible Ministers sent an Information Request to CZN, which required CZN to provide detailed engagement records after engagement with NBDB, LKFN, and DFN.<sup>25</sup> On June 8, 2018, CZN submitted its response to the responsible Ministers' Information Request to the Northern Projects Management Office.<sup>26</sup> On October 9, 2018, the responsible Ministers adopted the Review Board's recommendations and the Federal Minister noted the following:

The responsible ministers and I believe that all issues raised relating to potential adverse impacts from the proposed Project on asserted or established Indigenous and/or treaty rights have been meaningfully and completely consulted on.

Following the conclusion of the responsible Ministers' engagement and consultation in the EA process, the Board notes that its engagement is in addition to the consultation and engagement efforts made in the EA process and by the responsible Ministers.

The Post-EA Information Package was distributed to stakeholders, including: appropriate federal and territorial government departments and agencies; land owners; affected communities and Aboriginal organizations; Renewable Resource Boards; heritage regulators; and other interested parties. For the Aboriginal organization on the distribution list that the Board used, see Table 1 below:

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<sup>25</sup> See Responsible Ministers' Information Request to CZN Re Engagement ([hyperlink](#)), dated January 19, 2018.

<sup>26</sup> See CZN's Response to Information Request Re Engagement ([hyperlink](#)), dated June 8, 2018.

**Table 1: Aboriginal organizations on the Distribution List for Applications for Licences MV2014L8-0006, MV2019L8-0002 and Permit MV2014F0013**

Acho Dene Koe First Nation
Deh Cho Land Use Planning Committee
Deh Gah Got'ie Dene Council
Dehcho First Nations
Dene Nation
Dene Tha' First Nation
Digaa Enterprises Ltd.
Fort Providence Metis Council #57
Fort Providence Resource Management Board
Fort Simpson Metis Local 52
Hamlet of Fort Liard
Hamlet of Fort Providence
Ka'a'gee Tu First Nation
Katlodeeche First Nation
Liard First Nation (Yukon)
Łı́ıdlı́ı Kúęé First Nation (Ft Simpson)
Nahanni Butte Dene Band
North Slave Metis Alliance
Pehdzeh Ki First Nation (Wrigley)
Ross River Dena Council
Sambaa Ke First Nation (Trout Lake)
Snap Lake Environmental Monitoring Agency - SLEMA
Tłı̄chq̄ Government
Tłı̄chq̄ Lands Protection Department
Tthets'ek'ehdeli First Nation (JMR)
Wek'èezhı̄ı Renewable Resources Board
West Point First Nation

*4.2.1 Notifications and Post-EA Engagement*

This section provides a high-level summary of notifications and post-EA engagement undertaken by CZN for the ASR Project. On February 20, 2019, CZN submitted an updated Engagement Record and Log with its Post-EA Information Package. The Engagement Record shows engagement details with NBDB and LKFN and covers the time period from January 2018 to January 2019. The record shows the discussions, progress, or results on a Process Agreement for an Environmental Management Agreement (EMA), and a Memorandum of Understanding (MOU) for a Traditional Land Use Agreement (TULA). No concerns from the Aboriginal Parties were brought to the Board’s attention after the Engagement Record dated February 20, 2019 was filed.

*4.2.2 Subsequent Engagement and Board Process*

Aboriginal communities and organizations were engaged throughout the Board process.

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

The Board has jurisdiction to issue this Permit and Licence under subsections 59(1), 60(1) and 60(1.1) of the MVRMA.

#### 4.3.1 General

As required by the MVRMA, the Board has considered the interests of the people and users of land and water in the Mackenzie Valley. This includes the importance of conservation to section 35 rights holders and any traditional knowledge (TK) as per section 60.1 of the MVRMA and any scientific information that was made available to it during this regulatory proceeding. More detail is provided in section 5.0 and section 6.0 of these Reasons.

#### 4.3.2 Water Use Fees

CZN is not required to pay Water Use Fees under Licence MV2019L8-0002 as there is no Water Use authorized on the IAB land. However, CZN is required to pay Water Use Fee as per section 8 of the Waters Regulations under MV2014L8-0006, prior to the start of operations. Water Use Fees must be paid thereafter for the duration of the Licence on or before its Anniversary date.

#### 4.3.3 Existing Licences

With respect to paragraph 72.03(5)(a) of the MVRMA and 26(5)(a) of the *Waters Act*, no other Licensees contacted the Board during the statutory period, and there are no applicants with precedence in the watershed as per subsection 72.26(1) of the MVRMA and 59(1) of the *Waters Act*. The Board is thus satisfied that the granting of these Licences will not adversely affect, in a significant way, any existing Licensee if compliance with the Licences occur.

#### 4.3.4 Compensation to Existing Water Uses

Paragraph 72.03(5)(b) of the MVRMA and 26(5)(b) of the *Waters Act* prohibit the issuance of the Licences unless the Board is satisfied that appropriate compensation has been or will be paid by the applicant to persons who would be adversely affected by the use of waters, or deposit of waste proposed by the applicant, at the time when the applicant filed its application with the Board.

The Board received no claims for compensation either during the prescribed period or afterwards. Provided compliance with the Licence conditions takes place, the Board finds that there are no water users or persons listed in paragraph 72.03(5)(b) of the MVRMA and 26(5)(b) of the *Waters Act* who will be adversely affected by the use of waters or the deposit of waste proposed.

#### 4.3.5 Water Quality Standards

With regards to subparagraph 72.03(5)(c)(i) of the MVRMA and 26(5)(c)(i) of the *Waters Act*, the Board is satisfied that compliance with the Licence conditions will ensure that waste will be collected and disposed of in a manner which will maintain water quality consistent with applicable standards and the Board's *Water and Effluent Quality Management Policy*. These matters are discussed further in Section 5.7 of these Reasons for Decision.

#### 4.3.6 Effluent Quality Standards

There are no Effluent quality standards prescribed in the Mackenzie Valley Federal Areas Waters Regulations and Waters Regulations. The Board has considered its *Water and Effluent Quality Management Policy* to be protective of the receiving waters and environment. The Board is satisfied that compliance with the Licence conditions will protect the receiving waters and environment.

#### 4.3.7 Financial Responsibility

The Board must satisfy itself of the financial responsibility of CZN under paragraph 72.03(5)(d) of the MVRMA and 26(5)(c) of the *Waters Act* before it can issue the Licences.

In the Request for the Post-EA Information Package, CZN was required to discuss how they will satisfy the financial responsibility under paragraph 72.03(5)(d) of the MVRMA and 26(5)(c) of the *Waters Act*. In CZN's Post-EA Information Package, CZN quoted the Board's Reasons for Decision for MV2008D0014, MV2008T0012, and MV2008L2-0002, and indicated that the same reasoning is applicable to this Project.<sup>27</sup> In the Board's Reasons for Decision of MV2008D0014, MV2008T0012, and MV2008L2-0002, the Board was satisfied that the financial responsibility requirement was met as the Board required phased security to be posted prior to commencement of activities. The Board imposed requirements that are sufficient to protect the environment and ensure that the Prairie Creek Mine site is restored. CZN indicated that it expects the Board to impose requirements sufficient to protect the environment and ensure the ASR Project is restored. In addition, CZN provided the following information on its parent company, NorZinc's financial capacity in its Post-EA Information Package:

As a further note on financial capacity, CZN's parent company, NorZinc, has a major shareholder called Resource Capital Funds (RCF). RCF manages assets of over C\$5 billion and through one of its funds (RCF VI CAD LLC) it owns approximately 41% of the shares of NorZinc. RCF is a major resource investment company, and the financing of the ASR, and the Prairie Creek Mine development, is well within the capacity of RCF, should it choose to do so.

In addition, at the same time as RCF invested an additional \$20 million in CZN in July 2018, Mr. Don MacDonald became NorZinc and CZN CEO. Mr. MacDonald's focus over much of his career has been on financing the development of mines. Over the past 30 years he has been involved in the raising of over \$5 billion of development financing for mining projects in Canada, the US and Chile.

No concerns were raised by reviewers regarding considerations related to CZN's financial responsibility during the regulatory proceeding.

The Board has set security requirements for the ASR Project as described in section 5.4 and 6.4 (26(1)(l) Security Deposit). CZN is required to post the security prior to commencement of each phase of activities. The Board has required additional deposits phased to match the increasing liability as the Project progresses. This approach is consistent with the CIRNAC's *Mine Site Reclamation Policy for the NWT*.<sup>28</sup> In other words, CZN cannot start any phase of project activities until it has posted the required security. This security has been set to finance the reclamation of the Project in the event of abandonment. Consequently, the Board is satisfied that the requirements it has imposed are sufficient to protect the environment and ensure that the ASR Project is restored.

As a result, and for the reasons set out above, the Board is satisfied that the financial capacity of the Applicant is adequate and meets the requirements of paragraph 72.03(5)(d) of the MVRMA and 26(5)(c) of the *Waters Act*.

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<sup>27</sup> See CZN – Post-EA Information Package ([hyperlink](#)). Dated February 20, 2019.

<sup>28</sup> See CIRNAC's Mine Site Reclamation Policy for the NWT ([hyperlink](#)), dated 2007.

#### *4.3.8 Minimization of Adverse Effects*

With regards to subsection 72.04(2) of the MVRMA and 27(2) of the *Waters Act*, it is the opinion of the Board that compliance with the Licence will ensure that any potential adverse effects on other water users, which might arise because of the issuance of the Licence, will be minimized.

#### *4.3.9 Time Limit*

The Board has met the timeline requirements under section 72.19 of the MVRMA and 48(1) of the *Waters Act*, which requires it to make a decision within a period of nine months after the day on which an application is made or a notice advertised as per subsections 72.16(1) and 72.16(2) of the MVRMA and 43(1) and 43(2) of the *Waters Act*.

### **4.4 MVRMA Part 5: Environmental Review**

#### *4.4.1 Environmental Assessment*

The Project was the subject of an Environmental Assessment conducted by the Mackenzie Valley Environmental Impact Review Board (Review Board): EA1415-01. Section 62 of the MVRMA requires that approved measures from EA1415-01 which are within the jurisdiction of the Board be reflected in conditions set out in any water licence or land use permit issued for the ASR by the Board.

The Board carefully reviewed each measure, suggestion, and commitment from the EA. The Board notes that EA measures are sometimes written in broad terms which are not appropriate for direct inclusion in a regulatory instrument. In addition, some measures are not within the Board's jurisdiction. Furthermore, although the reflection of suggestions and commitments in a Licence and Permit is not mandatory, the Board has reviewed the suggestions and commitments to ensure the closest possible conformity with the EA decision made by the Responsible Ministers. Overall, the Board is confident that the Licences and Permit contain conditions that implement the relevant Review Board measures and the Minister's decisions to ensure that the Project will be adaptively managed, and that Project-related effects on the environment will remain within an acceptable range. Annex 1 attached to these Reasons for Decision contains a table detailing how the Board incorporated the measures and suggestions from the EA into Licence and Permit conditions. Based on this analysis, the Board is satisfied that the Licence and Permit have met the requirements of section 62 of the MVRMA.

The Board notes that the Report of EA includes a requirement (Measure 15-3) for annual reporting from government and regulatory authorities. The Board acknowledges that the requirements of Measure 15-3 are also directed to the Board. The Board has directed staff to work with the Review Board to determine how to best respond to this requirement.

#### *4.4.2 Preliminary Screening*

In order to ensure that the requirements of Part 5 of the MVRMA have been met, the Board needs to confirm that the development described in CZN's Post-EA Information Package has not been modified from the development that underwent EA. If the development has not been modified, then it is exempt from preliminary screening in accordance with the Exemption List Regulations; otherwise, the Board must conduct a screening. On August 8, 2019, the Board met jointly with Parks Canada to conduct a preliminary screening of the changes to the development since EA in satisfaction of section 125 of the MVRMA. The Board and Parks Canada conducted their preliminary screening based on a review of the initial Application dated April 16, 2014; the Mackenzie Valley Environmental Impact Review Board's Report of Environmental Assessment

EA1415-01; the Review Board's Response to the Post-EA Information Package; and comments and recommendations from other regulatory authorities and reviewers (public review, technical session, information requests). The Board and Parks Canada noted that changes were made to the development as outlined in the EA, including:

- Construction and operation of a barge crossing at the Liard River from a conventional barge to a hoverbarge, and the associated landings on both sides of the Liard River; and
- The construction, operation, closure and reclamation of the ASR along the south bank of Sundog Creek between km 34 and km 38.

On August 9, 2019, the Board sent a Notice of Preliminary Screening Determination to the Review Board.<sup>29</sup> The Board did not receive notice of referral to EA during the 10 days pause period and released the Preliminary Screening Report on August 20, 2019.<sup>30</sup> The Preliminary Screening Report includes its reasons for that decision, as required by section 121 of the MVRMA. The Board is satisfied the changes to development have been screened in accordance with section 125 of the MVRMA.

## **5.0 Decision – Water Licences MV2014L8-0006 and MV2019L8-0002**

On March 27, 2012, a Memorandum of Understanding (MOU) was signed between the Board and Parks Canada to agree on terms for working together cooperatively on the Project in the Prairie Creek area.<sup>31</sup> Although Parks Canada does not have a legislated timeline, Parks Canada agreed to make best efforts to follow the Board's regulatory process and timeline since the ASR Project crosses NNPR lands, Territorial lands, and IAB lands. Although the Board and Parks Canada coordinated on the regulatory proceeding of the ASR Project, the reasons set out below are for the decisions made by the Board only, and do not include the reasons for Parks Canada's decisions.

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

- 1) The comments and recommendations made during the scoping and technical phases of Environmental Assessment EA1415-01, which were conducted jointly between the MVLWB and the Review Board;
- 2) The Report of Environmental Assessment EA1415-01 and the measures and suggestions therein, as approved by the Responsible Ministers;
- 3) The comments and recommendations made during the regulatory processes;
- 4) The evidence and submissions from CZN received by the Board;
- 5) The written comments and submissions from parties received by the Board; and
- 6) The Staff Report prepared for the Board.

Having due regard to the facts, circumstances, and the merits of the submissions made to it, and to the purpose, scope, and intent of the MVRMA and the *Waters Act*, the Board has determined that Licences MV2014L8-0006 and MV2019L8-0002 should be issued, subject to the scope, definitions, conditions, and term contained therein. The Board's determinations and reasons for this decision are set out below. The Board recognizes that Reasons for Decisions are required for Licences MV2014L8-0006 and MV2019L8-0002. Since the terms and conditions in Licences are similar, the Board has decided to include the reasons for both Licences in Section 5. The Board has explicitly distinguished the differences between the reasons for the Licences in each section.

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<sup>29</sup> See Notice of Preliminary Screening Determination to Review Board ([hyperlink](#)), dated August 9, 2019.

<sup>30</sup> See MVLWB Preliminary Screening and Reasons for Decision ([hyperlink](#)), dated August 20, 2019.

<sup>31</sup> See MOU between Parks Canada and the Board ([hyperlink](#)), dated March 27, 2012.

The scope, definitions, conditions, and term set forth in the Licences have been developed to address the Board's statutory responsibilities and the concerns that arose during the regulatory process. The Reasons for Decision set out below focus on the major concerns and issues raised by parties, including those that were the subject of substantive argument submitted by one or more parties. Any standard conditions included that are consistent with previous licences are not explained in the Reasons for Decision below.

### **5.1 Term of Licences**

CZN has applied for a term of 20 years for the Licences. CZN requested this in section 1.2.2 of in the Main Report of the Post-EA Information Package.

Subsection 72(2) of the MVRMA and subsection 26(2) of the *Waters Act* allows for a Licence term of not more than 25 years or the duration of the undertaking. CZN provided ASR design specifications in its Post-EA Information Package and indicated that the road life expectancy would be 20 years. Board staff sought input from reviewers on the proposed term of 20 years during the review of draft Licences and Permit conditions. ENR provided comments on the term of Water Licence MV2014L8-0006 (ENR-5, Sept 9, 2019). ENR pointed out that CZN has indicated that the construction of the ASR will require 3 years, and CZN is proposing to operate the ASR for 15 years, and conduct reclamation for 2-3 years. ENR supports CZN's proposed 20-year term for Licence MV2014L8-0006. The CIRNAC Inspector commented on the term of Licence MV2019L8-0002 (CIRNAC Inspectors-1, Sept 9, 2019) and indicated that CZN's proposed term "appear to be appropriate considering the applied for construction, operation, and reclaim period" and agrees with the proposed term for Licence MV2019L8-0002.

After reviewing the submissions made during this regulatory process, and taking into consideration the closely linked Permit, the Board has determined an appropriate term for both Licence MV2014L8-0006 and MV2019L8-0002 is 20 years.

### **5.2 Scope and Definitions**

Part A of the Licence contains the scope and definitions for terms used throughout. Since the scope and definition is similar in both Licences, the following reasons are intended for both Licences unless otherwise indicated.

#### Scope

The scope of both Licences ensures that the Licensee is entitled to conduct activities which have been applied for, activities described in the Report of EA, and the changes proposed to the development after completion of the EA that have been screened by the Board. In setting out the scope of the Licences, the Board endeavoured to provide enough detail to identify and describe the authorized activities, without be unduly restrictive or prescriptive, and to allow for Project flexibility throughout the life of the Licence.

Activities including use of explosives, Construction and operation of camps, and development and operation of Borrow Pits, are included in the scope as those activities involve the use of Water or deposit of Waste. These activities were not initially included in the preliminary draft condition of Licence MV2014L8-0006.

The scope is revised to include the changes in development as described in the Preliminary Screening Report that was conducted by the Board and Parks Canada on August 8, 2019 and released on August 20, 2019.

The activity “Construction, operation, and maintenance of a Winter Road and All Season Road” is modified to “Construction, operation, and maintenance of All Season Road, including the Construction, operation, and maintenance of a temporary Winter Road” to reflect that the primary activity is the ASR, and the Winter Road is only built to support the All Season Road Construction and to transport supplies to the Mine.

The Board sought reviewer input on the activity “Construction, operation, and maintenance of flood control structures” in version 2 of MV2014L8-0006 (version 1 of MV2019L8-0002), and the CIRNAC Inspector recommended to include this activity in the scope so the Licence need not be amended at a later date if the proponent requires the activity (CIRNAC Inspectors-2, Sept 9, 2019). The Board agrees with the CIRNAC Inspector’s recommendation and has included this activity in the scope of both Licences.

These conditions ensure that the scope of the authorization includes all Water uses and deposits of Waste associated with the Project, reflect and comply with all applicable legislation for the life of the authorization, and consider and incorporate scientific and TK where available in the Licensee’s effort to protect the environment.

### Definitions

The Board has defined items in the Licences to ensure a common understanding of conditions, to avoid future differences in interpretation, and to use wording similar to that found in previously issued Licences. Where appropriate, the Board has created new definitions, changed standard wording, or used specific definitions to describe specific facilities related to this Project as described below:

- Adaptive Management is included to provide a clear description and to reference the requirements listed in REA Appendix B
- All Season Road is modified to road, used in all seasons, that conforms to the alignment and material configuration as presented in the Design and Construction Plan and Design Drawings to provide a clear description of the final alignment of the ASR that is reviewed and accepted by the Independent Technical Review Panel
- Application is removed because this word is not used in the conditions
- Analyst is removed as it is not referenced in any conditions
- Aquatic Effects Monitoring Program (AEMP) is removed and excluded as the conditions related to AEMP are removed
- Artesian Aquifer is removed as it is not referenced in any conditions
- Avalanche Professional is removed as conditions related to the Avalanche Hazard Management Plan is in the Permit but not in the Licences
- Average Concentration is removed as EQC conditions are removed
- Borrow and Borrow Pit are included while Quarry and Quarry Rock are removed and excluded in order to consistently use the same terms throughout the conditions. Borrow would encompass quarry rock, thus Borrow is selected over Quarry Rock (Racher-14, May 15, 2019).
- Option 2 of Closure and Reclamation Plan is removed and excluded as Option 2 does not reference the Mackenzie Valley Land and Water Board and Aboriginal Affairs and Northern Development Canada’s *Guidelines for the Closure and Reclamation of Advanced Mineral Exploration and Mine Sites in the Northwest Territories*, and other conditions in the Licences related to reclamation were developed based on the guidelines; the Board has decided to include this option for the definition contrary to ENR’s recommendations (ENR-55, May 15, 2019).
- Concentrate is included as it is referenced in the definition of Phase 3
- Effluent Quality Criteria is removed as EQC do not apply to these Licences
- Engineered Structure is revised to take out reference to structures/facilities considered to be



Engineered Structures of this Project based on CIRNAC's recommendation (CIRNAC-2, May 15, 2019)

- Geotechnical Investigations is included to define Phase 1 of the Project
- Hydrocarbon Contaminated Soil Treatment Facility is removed and excluded as CZN clarified in its responses to Board staff's comment (MVLWB-2, Sept 9, 2019) that the facility is not part of the scope of the ASR Project
- Independent Technical Review Panel (Panel) is added to conditions based on a Measure of EA1415-01
- Maximum Average Concentration is removed as it is not referenced in any conditions
- Maximum Grab Concentration is removed as it is not referenced in any conditions
- Metal Leaching is modified to the release of metals and metalloids in leachate Seepage of drainage or other materials associated with the Project to be consistent with definition in Parks Canada's Licence
- Minister in Licence MV2019L8-0002 is changed to "the Minister of Crown-Indigenous Relations and Northern Affairs Canada" based on recommendations (CIRNAC Inspectors-3; CIRNAC-1, 4, Sept 9, 2019)
- Non-Typical Winter Road definition is included to distinguish between regular and Non-Typical Winter Road, and it refers to the Design Drawings. CZN recommended revising the definition to include "Sections constructed of a mix of snow, fill, and organics and built as documented in the etc." (CZN-3, Sept 9, 2019). The Board notes that the Panel will be reviewing the non-typical section and do not wish to include specific material in the definition to restrict what the Panel recommends using to construct the Non-Typical Winter Road. Therefore, the Board has not adopted CZN's recommendation to revise this condition.
- Permafrost is included as the Permafrost related Management Plans are included in the conditions
- Phase 1 is included to ensure a clear description of the Construction and operation of the Winter Road as recommended by Racher Consulting and CZN (Racher-2, May 15, 2019; Technical Session Transcript pg. 44, line 8, June 5, 2019; CZN IR Response, June 24, 2019)
- Phase 2 is added to ensure a clear description of the Construction of the All Season Road as recommended by Racher Consulting (Racher-2, May 15, 2019) and CZN (IR Response, June 24, 2019) and as discussed during the technical session (Technical Session Transcript pg. 44, line 8, June 5, 2019). During the review of the draft Licence conditions, ENR recommended that Phase 3 is the operational phase of the ASR and Phase 2 should encompass the entire Construction of the ASR and recommended removing "commencement" from the definition (ENR-6, Sept 6, 2019). The Board agrees with ENR's recommendation and has removed "commencement" from the definition.
- Phase 3 is added to ensure a clear description of the operation of the ASR (Racher-2, May 15, 2019; CZN IR Response, June 24, 2019)
- Reclamation Research is included to reference the Board's *MVLWB Guidelines for the Closure and Reclamation of Advanced Mineral Exploration and Mine Sites in the Northwest Territories (2013)*<sup>32</sup>
- Remediation is removed as it is not referenced in any of the conditions
- Response Framework, Response Plan, and Significant Threshold are removed as the AEMP related conditions are removed
- Sewage Disposal Facilities is revised to 'Sump(s) and/or Sewage collection tank(s) and/or storage containers designed to hold Sewage' to reflect CZN's proposed Sewage management
- Shut Down Period is removed for operational flexibility. For the purposes of discussing compliance

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<sup>32</sup> See *MVLWB Guidelines for the Closure and Reclamation of Advanced Mineral Exploration and Mine Sites in the Northwest Territories (2013)* ([hyperlink](#)), dated November, 2013.

expectations, CZN will contact the Inspector following a seasonal shut down period, which would be between Spring Break-up and fall freeze-up (CZN-4, Sept 9, 2019)

- Sump is added as it is used in the definition of Sewage Disposal Facilities and for the Annual Licence Report for Waste Management Plan reporting
- Temporary Closure is included to describe the state of care and maintenance
- Typical Winter Road is included to distinguish between typical and Non-Typical Winter Roads, the description “that is for winter use only” is deleted as winter roads are only used during the winter;
- Waste Disposal Facilities is removed as it is not referenced in any conditions
- Waste Rock is included to clarify that it is material that is not utilized in Construction or reclamation, the term ‘rock’ is added to the definition to specify the extracted material as recommended by ENR (ENR-8, Sept 9, 2019)
- Winter Road is included to clarify that it encompasses both Typical and Non-Typical sections of the road; the condition is revised as recommended by ENR (ENR-9, Sept 9, 2019)

### 5.3 General Conditions and Schedule 1

Part B and Schedule 1 of Licences MV2014L8-0006 and MV2019L8-0002 contain general administrative conditions regarding compliance and conformity with the MVRMA and *Waters Act*. Since these Reasons are for decisions made for both Licences MV2014L8-0006 and MV2019L8-0002, the following rationale is intended for both Licences unless otherwise indicated.

Part B, condition 3 is revised to remove “to fulfill Report of EA Measure 10-1, 15-1, 15-4, and Suggestion 15-4”; instead this statement is added to Part B, condition 4 in version 2 of Licence MV2014L8-0006. Measure 10-1 of Report of EA sets out requirements for TK in order to mitigate impacts on heritage resources, Measure 15-1, Part 2 requires CZN to consider all available TK when developing monitoring programs, and Measure 15-4 requires CZN to support Aboriginal monitoring initiatives. Part B, condition 4 in the Licences require the Licensee to identify all recommendations based on TK received, described how the TK is incorporated into submissions, and provide justifications for not adopting any recommendations. The Board has referenced Report of EA Measure 10-1, 15-1, 15-4, and Suggestion 15-4 in Part B, condition 4 as to ensure this condition captures all the TK requirements listed in the Report of EA.

Part B, condition 5, 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 such documents are updated during the life of the Licences.

The condition to submit raw data in excel format is removed in version 2 of Licence MV2014L8-0006 and not included in version 1 of Licence MV2019L8-0002 as the Board’s 2019 *Document Submission Standard* details the raw data submission requirements and therefore does not need to be duplicated in the Licences.

Part B, condition 8 is intended to direct the Licensee to comply with the most recently approved submissions including plans, reports, studies, and programs. This condition is revised to include all the Project specific document types that require Board approval including the terms of reference, plans, reports, studies, and programs.

Part B, condition 9 in the Licences is intended to clarify the process for revising submissions such as plans, reports, studies, and programs and highlight that revisions must be approved by the Board before changes are implemented. This condition is revised to add the Project specific document

types that this condition applies to and as per a CIRNAC Inspector review comment (CIRNAC Inspectors-17, May 15, 2019).

These sections in the Licences address conformity and compliance with submissions to the Board. Part B, condition 10 in both Licences are intended to clarify the process for revising submissions for Phases 1, 2, and 3 of the Project, and the revisions must be approved by the Board before changes are implemented for each phase. This condition ensures that all applicable plans are regularly reviewed and updated so they reflect changes in technology and/or changes and phases of the Project throughout the life of the authorization.

The condition requiring CZN to not operate Phase 1 for more than two consecutive years has been removed from both Licences. This condition was intended to prevent CZN from hauling Concentrate during Phase 1. However, the scope of Phase 1 does not allow CZN to haul Concentrate and therefore this condition is not necessary, as indicated by CZN (CZN-11 and 47, Sept 9, 2019).

Part B, condition 12 is intended to direct the Licensee to comply with requirements of Adaptive Management as detailed in Appendix B of the Report of Environmental Assessment.

Part B, condition 14 introduces the Schedules that are annexed to and form part of the Licences. The condition is included to inform the Licensee of the requirements to comply with the Schedule. Changes to these Licence components are largely administrative matters and are within the Board's authority.

Part B, condition 15 introduces the Surveillance Network Program (SNP) which is annexed to and forms part of the Licences. Part B, condition 17 and 18 address SNP signage and measuring devices. Although Licence MV2019L8-0002 currently does not have any SNP requirements, the Board has decided to retain the SNP Annex, SNP conditions 15, 16, 17, 18, and Schedule 1, condition 1, item r) because the Water Monitoring Plan submitted to the Board for decision may require changes to the SNP.

Part B, condition 18 is intended to ensure consistency in sampling locations, and to allow the Inspector to easily locate sampling stations. A timeline of 30 days has been included to ensure signs are posted in a timely manner.

#### Part B, condition 19 and Schedule 1, condition 1: Annual Water Licence Report

The requirements for the Annual Water Licence Report are outlined in Part B, condition 20, and Schedule 1, condition 1. The purpose of the Annual Water Licence Report is to ensure that the Board and all stakeholders are updated annually on Project components and activities, and to provide an opportunity for stakeholders to submit comments, observations, feedback, and questions as necessary.

#### Part B, condition 20: Engagement

The Board assesses adequacy of engagement on applications by reference to the Board's *Engagement Guidelines for Applicants and Holders of Water Licences and Land Use Permits*, and the Board's *Engagement and Consultation Policy*. The Board notes that CZN's pre-engagement for the

Applications was determined to be in accordance with the Guidelines and Policy. CZN included a draft Engagement Plan and Log in the Applications dated February 20, 2019.<sup>33</sup>

During the review of the Post-EA Information Package, several reviewers provided comments regarding engagement including Parks Canada, ADKFN, and ENR, which are detailed below.

The Report of EA Measure 10-1 (iii) requires CZN to thoroughly consider and, where applicable, incorporate TK into Project design, mitigations, monitoring, and Adaptive Management. During the review, Parks Canada commented that CZN did not outline how TK was incorporated into the Post-EA Information Package, including the draft plans. Parks Canada recommended CZN outline how it will meet Measure 10-1. Parks Canada also requested each management plan detail the engagement and how TK will be incorporated. CZN responded that the TK requirement had not been included due to confidentiality concerns but does intend to incorporate TK into the appropriate plans for Phase 1 (PC-9, May 15, 2019). The Board notes that Parks Canada's comments above is also relevant to the Board's decisions as Measure 10-1 is within the Board's jurisdiction. The Board agrees with Parks Canada's comments and directs CZN to update the TK considerations for the Phase 1 winter road in accordance with Measure 10-1 (iii) and provide details of engagement for Plans that incorporated TK, along with the mechanism for incorporating TK.

Parks Canada noted that the draft Engagement Plan did not include the timeline for negotiation of agreements with LKFN and Nahanni Butte Dene Band (NBDB) and recommended CZN revise the draft Engagement Plan to include the timeline. In response, CZN referred to its response to Parks Canada's comment regarding incorporation of TK (PC-9, May 15, 2019). The Board notes that Parks Canada's comments described above also apply to the Board's jurisdiction. The Board agrees with Parks Canada's comments and directs CZN to update Engagement Records and Engagement Plan to include timeline for negotiation of agreements with Łíídlıı Kúé First Nation and Nahanni Butte Dene Band.

Parks Canada also pointed out that ADKFN have not been included in the Engagement Record (PC-111, May 15, 2019). In response, CZN indicated that they had engaged with ADKFN on February 23, 2018 and March 13, 2018 regarding the Information Request from the responsible Ministers and Indigenous participation in the ASR development. CZN also had conducted further engagement on April 17-18, 2019 and provided a letter from ADKFN. ADKFN recommended CZN continue to engage with ADKFN and that CZN communicate with ADKFN 'in a way that is both culturally appropriate and easily understood by the decision makers within the community (ADKFN-1 and 3, May 15, 2019). In response, CZN indicated that they will continue to engage with Chief, Council, and representatives regarding Project activities and opportunities, and will provide information. The Board notes that Parks Canada's comments described above also apply to the Board's jurisdiction. The Board agrees with Parks Canada's comments and notes CZN has responded to Parks Canada's comments adequately. The Board hereby directs CZN to revise the Engagement Record and Plan to include engagement with Acho Dene Koe First Nation.

On November 5, 2019, the Board received correspondence from the Chief of LKFN, followed by a response from CZN on November 6, 2019.<sup>34</sup> The Board has decided to accept the letters from LKFN and CZN into the record. LKFN letter provided an update to the Board regarding the status of negotiations between themselves and CZN on an Environmental Management Agreement, which is a matter outside of the Board's regulatory authority and jurisdiction, but does relate to engagement

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<sup>33</sup> See CZN's draft Engagement Plan and Record ([hyperlink](#)), dated February 20, 2019.

<sup>34</sup> See Correspondence from LKFN and CZN ([hyperlink](#)), dated November 6, 2019.

and CZN's compliance with several EA Measures. LKFN did not ask for any relief from the Board and indicated LKFN "wishes to ensure that the relevant regulatory authorities are aware that these areas remain a concern". The Board notes that the engagement requirements set in the Permit, specifically the requirement to revise and re-submit the Engagement Plan, will ensure that ongoing consultation and engagement with LKFN occurs. The Board expects the updated Engagement Plan will reflect and address the concerns raised by LKFN regarding cooperation with CZN on settling agreements related to compliance with EA Measures.

The draft Engagement Plan has been approved as an interim submission subject to the Board's decision that it be revised and re-submitted by **90 days prior to commencement of Phase 1 activities**. The revised Plan shall reflect updates as agreed to during the public review, reflect the scope of the proposed activities, meet applicable guidelines, and Board directives as indicated in the Board's decision letter. The revised Plan will be distributed for review and considered to be approved upon written confirmation of conformity from the Board.

The Board expects CZN to work with stakeholders when updating the Engagement Plan, to ensure their concerns and recommendations are addressed.

Part B, condition 23 and 24 for the Licences were included to align with the Permit MV2014F0013 condition "Contact Inspector", which allows the Inspector to facilitate inspections prior to the commencement of: the Project; Phase 1, 2, and 3; and between Spring Break-up and fall freeze up (shut down period). This condition will ensure that the Licensee is in compliance with the terms and conditions of the Licence. Part B, condition 23 in Licence MV2019L8-0002 has been revised to include the CIRNAC Inspector's number as recommended (CIRNAC Inspectors-8, Sept 9, 2019).

Part B, condition 25 was included to assist the Board, Inspectors, and reviewers in tracking compliance.

During the review, DFO recommended that the Board include conditions for the Fish and Fish Habitat Plan so that fish protection is consistent inside and outside the NNRP (DFO-2-3, Sept 9, 2019). The Board notes that there are provisions under DFO's jurisdiction in the *Fisheries Act* relating to Fish and Fish Habitat Protection. The Board has included Permit condition "Habitat Damage" (condition 71) as the fish habitat is under the Board's jurisdiction. The Board is satisfied the Permit condition "Habitat Damage" and other fish habitat protection related requirements such as the Sediment and Erosion Control Plan are sufficient to protect fish habitat. Since the protection of fish is not directly within the Board's jurisdiction, the Board has decided to not include conditions requiring Fish and Fish Habitat Protection Plan as recommended by DFO.

The decisions regarding the Wildlife Management and Monitoring Plan is set out in Section 6.4 26(1)(h) Wildlife and Fish Habitat.

#### **5.4 Conditions Applying to Security Requirements and Schedule 2**

The Board is authorized to require the Licensee to provide security to the Ministers by section 72.11 of the MVRMA and subsection 35(1) of the *Waters Act*. Subsection 72.11(2) of the MVRMA and Subsection 35(2) of the *Waters Act* specifies how the security may be applied. The conditions applying to security requirements are different for Licences MV2014L8-0006 and MV2019L8-0002, which is reflected in the reasons set out below.

Part C of the Licence MV2014L8-0006, by reference to Schedule 2, sets the level of security to be maintained by the Licensee and set out requirements related to posting and updating security. The

Board may request a security update from the proponent at any time, and may adjust the security amount at any time, based on available information about project cleanup liabilities. Specifically, Licence MV2014L8-0006, Part C, conditions 3 and 4 stipulate that the Board can revise the security deposit and that the Licensee will post the revised deposit within 90 days following the Board's decision. This condition allows both increases and reductions in security. The conditions in this section are similar to those found in other Licences issued by the Board.

The Board has determined that the total security deposit amount shall be \$1,335,217 under Permit MV2014F0013 for Territorial land, \$82,703 under Permit MV2014F0013 for IAB lands, \$1,499,713 under Licence MV2014L8-0006 for Territorial lands, and no security required under the Licence MV2019L8-0002. A detailed explanation of how the Board determined the security deposits for these three instruments is provided in Appendix 1: Reclamation Security. They are discussed together since the estimates deal with the same Project and are intimately linked.

Since there is no security posted under Licence MV2019L8-0002, the conditions and schedule associated with maintaining security, adjusting, and posting security have been removed. However, Licence MV2019L8-0002, Part C, condition 1, has been included in case of Project changes, in which case, the Board could request a security estimate.

## **5.5 Conditions Applying to Water Use**

Since CZN has not applied for Water Use within IAB lands, the Board has not included conditions applying to Water Use in Licence MV2019L8-0002. The following reasons only apply to Water Use within Territorial lands under Licence MV2014L8-0006.

Part D, condition 1 is intended to ensure the Licensee is aware of the annual Water Use Fee payment due date. The effective date of the Licence is identified on the cover page.

Part D, condition 2 is intended to ensure the Licensee only takes Water from approved water sources, and to sets out the maximum authorized Water withdrawal volume for each Water source. The condition is revised to remove "for the Project" because the Project would include Water uses for the entire Project area, and the authorized Water Use in Part D, condition 2 is only within Territorial lands. Since there are multiple Water sources, a table is added to specify the maximum quantity for each source. Water sources including Prairie Creek, Grainger River, and Liard River are added to Part D, condition 2 as proposed by CZN's IR Response dated June 24, 2019.<sup>35</sup> The maximum quantities for the rivers are less than 10% instantaneous flow of Water as suggested by CZN. The maximum quantity for Water sources including Lake at Km 100-OR4, Lake at Km 115, Gap Lake at Km 121, Lake at Km 139, and Lake at Km 141 are obtained from CZN's Post-EA Information Package dated February 20, 2019. In version 1 of the preliminary draft Licence, a separate condition regarding Water Use under-ice is included. The condition ensures the Licensee does not exceed the maximum withdrawal volume during ice-covered seasons as it can affect aquatic habitat by depleting oxygen and littoral habitat areas. Since CZN provided the calculations of quantity of Water under ice in its Report on Water Sources dated December 28, 2012<sup>36</sup>, the Board has included the Maximum Quantity in any Single Ice-Covered Season in Part D, condition 2 as well. The Board notes that the Maximum Quantity (m<sup>3</sup> per year) already includes the Maximum Quantity in any Single Ice-Covered Season (m<sup>3</sup>). Therefore, the Maximum Quantity in any Single Ice-Covered Season is not in addition to the

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<sup>35</sup> See CZN Response to Technical Session Information Request ([hyperlink](#)), dated June 24, 2019.

<sup>36</sup> See CZN's Report on Water Source ([hyperlink](#)), dated December 28, 2012.

Maximum Quantity (m<sup>3</sup> per year) in Part D, condition 2. The Board has also included the geographic coordinates of each Water source as recommended by ENR and provided by CZN on September 16, 2019<sup>37</sup> (ENR-10, Sept 9, 2019).

#### Part D, condition 3: Maximum Water Use

ENR recommended the Board include a condition that specifies the maximum Water Use of 299 m<sup>3</sup>/day as per the Water Regulations for a Type B Licence (ENR-12, Sept 9, 2019). The Board agrees with ENR and has included Part D, condition 3. CZN has proposed several Water sources that are rivers and will require a maximum quantity that is less than 10% of instantaneous flow but will not have a specific authorized Water volume. Part D, condition 3 will ensure CZN does not exceed the maximum authorized Water withdrawal volume for all of the Water sources listed in Part D, condition 2.

During the review of Version 2 of the draft conditions, Board staff required clarification from CZN regarding the proposed maximum Water withdrawal quantity and noted that a Type B Water Licence authorizes a maximum of 299 m<sup>3</sup>/day, which would apply to the entire Project (including NNPR, Territorial, and IAB lands) (MVLWB-9, Sept 9, 2019). CZN and Racher Consulting (CZN-42, Racher-1, Sept 9, 2019) provided comments on Water Use limit for each jurisdiction, which indicates that it is not reasonable for CZN to be limited to 299 m<sup>3</sup>/day for the entire Project for the following reasons:

- Board staff and Parks Canada did not indicate that the Water use limit would be 299 m<sup>3</sup>/day for the entire Project until version 2 of the draft conditions was distributed;
- The Report of EA does not limit the Water use;
- There are mitigations in place to ensure Water sources are not impacted by Water use;
- There is no legal basis for limiting three authorizations that required three separate applications and approval to a total Water withdrawal limit that is normally approved for one authorization; and
- CZN did not try to circumvent the process for a Type A licence and was required to apply for three separate licences due to jurisdictional boundaries.

The Board agrees with CZN and Racher Consulting that CZN that 299 m<sup>3</sup>/day of Water Use could be authorized for each Licence for the following reasons:

- By law the Board and Parks Canada can authorize Water Use up to 299 m<sup>3</sup>/day in each of their respective Type B licences;
- Reviewers did not express concerns on the environmental impacts of proposed Water Use of 299 m<sup>3</sup>/day during the regulatory review;
- ENR has recommended the Board include a condition that specifies that the maximum Water Use of 299 m<sup>3</sup>/day (ENR-12, Sept 9, 2019); and
- The licence conditions imposed by the Board in its Type B licences are protective of the environment and if problems are identified the Board has the authority to propose licence amendments itself.

As a result, the Board has decided that the maximum Water Use for Licence MV2014L8-0006 is 299 m<sup>3</sup>/day.

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<sup>37</sup> See CZN's Water Draw Points Table ([hyperlink](#)), dated September 16, 2019.

Part D, condition 4 is included as the Water intake location was not identified during the proceeding. This condition allows the Inspector to ensure the proposed Water intake location is protective of fish habitat.

Part D, condition 5 ensures the Water intake location is protected from accidental damage or contamination, and to inform Inspectors and/or the general public of the location.

Part D, condition 6 ensures the Licensee takes Water using facilities that are reviewed and approved by the Board; however, the Inspector may authorize the temporary use of alternate facilities.

## **5.6 Conditions Applying to Construction**

Part D of Licence MV2019L8-0002 and Part E of Licence MV2014L8-0006 contain conditions applying to Construction activities for the Project. These conditions ensure that Engineered Structures are built to appropriate standards and require the submission of design and engineering reports. As the conditions applying to Construction are similar in both Licences, the reasons set out below apply to both Licences, unless otherwise specified.

Part D, condition 4 of Licence MV2019L8-0002 and Part E, condition 4 of Licence MV2014L8-0006 are intended to ensure Construction material does not contain PAG and contaminants. This condition refers to the Borrow Pit Management Plan and ensures the Licensee uses the sources that are approved in the Plan or by the Inspector.

### Independent Technical Review Panel

Part D, condition 6, 7, and 8 of Licence MV2019L8-0002 and Part E, condition 6, 7, and 8 of Licence MV2014L8-0006 apply to the Independent Technical Review Panel (Panel) that is required as per the Report of EA Measure 5-1. Measure 5-1 sets out the requirements associated with the Independent Technical Review Panel including the Panel mandate, composition, activities, timing and other considerations.

Part E, condition 7 requires the Licensee to submit the Panel's Terms of Reference for Board decision. The Board sought reviewer's input on whether the Terms of Reference should be for Board approval. Racher Consulting commented that: "we have no issue with board approval of the document", and CZN agreed (Racher-9, Sept 9, 2019). This will allow the reviewers to comment on the Panel's activities in each phase of the Project. The Terms of Reference will also determine which structures associated with the ASR are reviewed and accepted by the Panel. If changes to the Terms of Reference are proposed after it is approved, the Licensee must submit the revised Terms of Reference to the Board for approval prior to implementing the proposed changes. During the review of the draft conditions, CZN requested the timeline for revised Terms of Reference to be submitted 60 days prior to implementation instead of 90 days (CZN-12 and 54, Sept 9, 2019). The Board notes that version 1 of Terms of Reference is only for Phase 1, and the revised Terms of Reference will be for Phase 2, which could contain substantial amount of revisions. Therefore, the Board has not accepted CZN's recommendations to reduce the timeline from 90 days to 60 days.

### All Structures, Excluding Engineered Structures

Part D, condition 9 and Schedule 2, condition 1 of Licence MV2019L8-0002 and Part E, condition 9 and Schedule 3, condition 1 of Licence MV2014L8-0006 require the Licensee to submit Structure Descriptions and Construction Plans for Water and Waste Management structures that are not designed by a Professional Engineer but may still have potential effects on the Receiving Environment. The Board sought reviewer's input on this condition, and GNWT-Lands Inspector commented that this condition should be included (Lands Dehcho-4, Sept 9, 2019). This condition is intended to apply to all



Water and Waste management structures excluding Engineered Structures, unless otherwise authorized by the Inspector. During the review, CZN recommended adding “unless all structures are part of an approved Borrow Pit Management Plan” to condition 9 (CZN-54, Sept 9, 2019). The Board notes that the Structures Description and Construction Plan would be separate from the Borrow Pit Management Plan. The Borrow Pit Management Plan should only address Borrow Pits and should not be used to acquire approval of any structure such as the Water settling structure. Therefore, the Board has not revised the condition as suggested by CZN. The Licensee is encouraged to discuss planned structures and associated risks with the Inspector in advance of submitting this Plan. Detailed information requirements are set out in Schedule 2, condition 1 of Licence MV2019L8-0002 and Schedule 3, condition 1 of Licence MV2014L8-0006, which includes requirements for the Licensee to provide rationale for why the structure does not need to be engineered. If changes to a structure are proposed after the Structure Description and Construction Plan is approved, the Licensee must submit a revised Plan to the Board for approval prior to implementing the proposed changes.

#### Engineered Structures not Reviewed and Accepted by the Panel

To provide flexibility to the Panel’s decisions to review and accept structures in order to meet Measure 5-1, the Board has included conditions for any Engineered Structures that are not reviewed and accepted by the Panel. Part D, condition 10 and 11, and Schedule 2, condition 2 of Licence MV2019L8-0002 and Part E, condition 10 and 11, and Schedule 3, condition 2 of Licence MV2014L8-0006 apply to the Engineered Structures that are not reviewed and accepted by the Panel. Condition 10 of Part D and Part E in the respective Licence is intended to ensure that the Licensee submit the Design and Construction Plan for any specific Engineered Structures that require Board approval. Any Construction and Design Plans associated with Engineered Structures not reviewed and accepted by the Panel will require Board approval. Schedule 2, condition 2 of Licence MV2019L8-0002 and Schedule 3, condition 2 of Licence MV2014L8-0006 set out the detailed information requirements for the Design and Construction Plans. Condition 11 of Part D and Part E in the respective Licence is intended to ensure there is a detailed record of the design for future reference by the Board and the Inspector, and to ensure there is sufficient information for Closure and Reclamation planning should the Project be abandoned. The Drawings also allow a comparison against As-Builts submitted. These Drawings are to be submitted separately from the Design and Construction Plans as Board approval of Design Drawings are not required.

#### Structures Reviewed and Accepted by the Panel

Part D, condition 12, 13 of Licence MV2019L8-0002 and Part E, condition 12, 13 of Licence MV2014L8-0006 apply to all structures that are reviewed and accepted by the Panel. The submissions associated with the structures reviewed and accepted by the Panel will not be approved by the Board. Condition 12 of Part D and Part E in the respective Licence require the Licensee to submit a Final Report, which is a requirement in the Report of EA Measure 5-1, Part 4. The Measure states that “CanZinc will provide the panel’s reports to Parks Canada and the Mackenzie Valley Land and Water Board.” The Final Report shall indicate that the Panel has reviewed and accepted the Design and Construction Plan and Design Drawings for Engineered Structures or Structure Description and Construction Plan for any other structures that do not require to be engineered. This condition also requires the Licensee to submit to the Board the Plans and Drawings reviewed and accepted by the Panel. Condition 13 of Part D and E of the respective Licence require submission of the revised documents reviewed and accepted by the Panel to be submitted to the Board at a minimum of 45 days prior to implementing proposed changes.

Condition 14 of Part D and Part E in the respective Licence is to ensure the Licensee notifies the Board and Inspector prior to commencing Construction of an Engineered Structure. This initial contact is important to establish lines of regular communication between the Licensee, Inspector, and Board,

and to facilitate site inspections. Changes to the contact information and/or the expected commencement date are required in writing.

Condition 15 and 16 of Part D and Part E in the respective Licence are to ensure the structures are constructed as designed.

Condition 17 of Part D and Part E in the respective Licence require As-Built information to be submitted and available on the public record after Engineered Structures have been constructed. If changes to an Engineered Structure are approved and constructed, the Licensee must submit an As-Built Report reflecting the changes.

#### Road Construction and Management Plan

CZN submitted a draft Road Construction and Management Plan with their Post-EA Information Package.<sup>38</sup> The request for an Updated Project Description that was sent to CZN by Board staff on October 9, 2018 did not require submission of a Road Construction and Management Plan. The Plan was submitted by CZN because CZN had committed to a Road Construction and Maintenance Plan during the EA that would include a brochure of photographs of heritage resources that would be compiled and provided to contractors (commitment #62), and would include an inspection and monitoring plan for all stream crossing structures (Report of EA, pg. 174). CZN questioned the requirement for the Road Construction and Management Plan in the Licences and stated that “there is already a Design and Construction Plan requirement” (CZN-18, Sept 9, 2019). Further, in response to Racher Consulting’s reviewer comment (Racher-11, Sept 9, 2019), CZN indicated that it was not clear that there needs to be a Road Construction and Management Plan, given the requirement for Design and Construction Plans and a Traffic Control Mitigation and Road Operations and Maintenance Plan (see Section 6.4 26(1)(q) Biological and Physical Protection of the Land). The Board agrees and has removed the condition requiring a Road Construction and Management Plan. The commitments made during the EA about photographs of heritage resources being provided to contractors is required through a Cultural Heritage Protection Plan (Section 6.4 26(1)(j) Protection of Historical, Archaeological, and Burial Sites). The inspection and monitoring plan for all stream crossing structures should be included in the Sediment and Erosion Control Plan (Section 5.7).

### **5.7 Conditions Applying to Waste and Water Management**

Licence MV2019L8-0002 Part E and Schedule 3, and Licence MV2014L8-0006 Part F and Schedule 4 contain conditions applying to Waste and Water management activities for the Project. Site-specific conditions were developed where necessary. As the conditions applying to Waste and Water Management are similar in both Licences, the reasons set out below apply to both Licences unless otherwise specified.

Condition 1 sets out the objectives for the management of Water and Waste for the Project. This condition is consistent with the principles of objective-based regulation: it essentially defines the objectives of any required management actions, plans or reports. This condition is standard for Licences issued by the Board and reminds the Licensee of the need to manage Water and Waste with the goal of minimizing impacts on the Receiving Environment.

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<sup>38</sup> See CZN’s Road Construction Management Plan ([hyperlink](#)), dated February 20, 2019.

## Submission of Monitoring and Management Plans

During the review, there were comments on the submission timeline for various management plans (Racher-4; ENR-22, May 15, 2019; Racher-8-10, CZN-12 and 14, Sept 9, 2019). The Board notes that there are a substantial number of plans that will be distributed for review prior to Phase 1. Therefore, to ensure there is sufficient time for all reviewers to comment on the revised plans, the Board has required CZN to submit the plans 90 days prior to Phase 1 activities for the Board's approval prior to commencement of Phase 1 activities. CZN is encouraged to submit updated plans sooner, and the onus is on CZN to submit revised Plans that adequately address all requirements and reviewer comments.

## Waste Management Plan

The Boards' authority to regulate the management of Waste is set out in subsection 60(1) of the MVRMA, subsection 26(1) of the MVLUR and sections 11 and 27 of the *Waters Act*. Under these authorities the Board developed, and approved, *Guidelines for Developing a Waste Management Plan*.<sup>39</sup> These guidelines can be applied to a wide range of projects and are intended to ensure that all Waste management activities specific to each project are carried out in a way that is consistent with best practices and applicable guidelines to minimize Waste released from the Project. Waste Management Plan is a defined term in the Licence, ensuring that the required Plan adheres to the Board's Guidelines.

Submittal and compliance with a Waste Management Plan is a standard condition for Licences issued by the Board. CZN included a draft Waste Management Plan in its Applications, dated February 20, 2019.<sup>40</sup>

During the regulatory process, comments and recommendations on the draft Waste Management Plan were received from GNWT-ENR, GNWT-Lands, DFN, MVLWB staff, Parks Canada, and Racher Consulting. Reviewers provided comments on the details that CZN should provide regarding the incinerator, (ENR-4, 8, 113 and 165; Lands-11, May 15, 2019), bioremediation for contaminated soil (DFN-4, ENR-119, MVLWB-4, May 15, 2019), management of hazardous Waste (ENR-5, Lands-7, 10, 12, May 15, 2019), the confirmation as to the designation of domestic Waste (ENR-117, 118, Lands-8, May 15, 2019), and proposed Sewage disposal methods (ENR 121-122, MVLWB-18, Parks 128-129, 132-134, Racher-12 and 13, May 15, 2019, Technical Session Transcript pg. 10-15, June 7, 2019). Board staff reiterated that more information on CZN's proposed Sewage disposal methods was needed in order to draft the conditions (MVLWB-2 and 4, Sept 9, 2019). In response, CZN indicated that "onsite treatment may be necessary with effluent discharge to a sump, septic system or lagoon." On October 7, 2019, the Board sent an IR to CZN because CZN's response did not provide sufficient detail.<sup>41</sup> Board staff requested CZN to submit a revised draft Waste Management Plan that addresses the comments regarding CZN's proposed Sewage disposal methods and all reviewer comments and commitments made throughout the regulatory proceeding. On October 15, 2019, CZN submitted a cover letter and a revised draft Waste Management Plan.<sup>42</sup>

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<sup>39</sup> See [www.mvlwb.com](http://www.mvlwb.com) → Resources → Policies and Guidelines: [MVLWB Guidelines for Developing a Waste Management Plan](#) (March 31, 2011).

<sup>40</sup> See CZN's draft Waste Management Plan ([hyperlink](#)), dated February 20, 2019.

<sup>41</sup> See Information Request to CZN Re Waste Management Plan ([hyperlink](#)), dated October 7, 2019.

<sup>42</sup> See CZN's Response to Information Request and Revised Waste Management Plan ([hyperlink](#)), dated October 15, 2019.

*Managing Waste from ASR Project at Prairie Creek Mine:*

In CZN's draft Waste Management Plan dated February 20, 2019, CZN proposed to collect and haul Waste such as domestic Waste, Sewage, Greywater, hydrocarbon-contaminated soil, etc. to the Prairie Creek Mine. During the regulatory proceeding, reviewers commented that an approved Waste Management Plan associated with the Mine is required in order for CZN to transport the proposed Waste to the Mine (DFN-4, ENR-119, MVLWB-4, Racher-12, May 15, 2019, Technical Session Transcript pg. 16-19, June 7, 2019). After the Technical Session, Board staff provided further clarification to CZN as follows:

CZN has indicated that waste associated with the All-Season Road will be managed at the mine site in some cases, such as land farming for hydrocarbon contaminated soils, incineration, and waste rock management. Board staff note that the Mine Licence MV2008L2-0002 and Permit MV2008D0014 were both issued prior to the All-Season Road project Applications coming forward, and waste management activities for the All-Season Road were not covered by either authorization. As such, applications would be required to include these activities under the two authorizations prior to any waste from the All-Season Road being managed at the mine site. Please follow up with Board staff for further details.<sup>43</sup>

In CZN's revised Waste Management Plan dated October 15, 2019 submitted in response to the IR, CZN has indicated that they believe mining Licence MV2008L2-0002 and Permit MV2008D0014 would authorize CZN to treat and store Waste from the ASR Project at the Mine. CZN provided a few quotes from the Developer's Assessment Report for EA0809-002, which indicates that CZN had proposed taking Waste to the Mine.

The Board notes that CZN is required to apply for the Waste from the ASR Project to be managed at the Mine and submit a Waste Management Plan for Board decision under the Mining authorizations prior to depositing Waste at the Mine for the following reasons:

- The Board understands that the Report of EA0809-002 considers the activities for Prairie Creek Mine and the Winter Road. However, the Report of EA0809-002 was released on December 8, 2011, and subsequently the Mining Licence MV2008L2-0002 and Permit MV2008D0014 were issued by the Board on June 14, 2013. Both documents were released before CZN applied for the ASR Project on April 16, 2014, and the release of Report of EA1415-01 for the ASR Project. Therefore, Report of EA0809-002, Mining Licence MV2008L2-0002, and Permit MV2008D0014 could not have considered the Waste from the ASR Project.<sup>44 45</sup>
- CZN has not submitted a Waste Management Plan under the Mining Licence MV2008L2-0002 and Permit MV2008D0014 for Board decision. As per the Reasons for Decision for the Mining authorizations, Conditions Applying to Waste Management and Schedule 4:

The Board expects a WMP to be in place and approved prior to any waste management activities taking place under the Licence.<sup>46</sup>

Therefore, CZN would be required to apply for these activities under the Mining Licence and Permit and submit a Waste Management Plan for Board approval prior to any Waste from the ASR Project

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<sup>43</sup> See Distribution of IR Responses from Board staff ([hyperlink](#)), dated June 28, 2019.

<sup>44</sup> See Report of EA0809-002 ([hyperlink](#)), dated December 8, 2011.

<sup>45</sup> See ASR Applications ([hyperlink](#)), dated April 16, 2014.

<sup>46</sup> See Reasons for Decision for MV2008L2-0002 ([hyperlink](#)), dated July 30, 2013.

being managed at the Mine. The Board directs CZN to revise the Waste Management Plan to reflect that Waste from the ASR Project will not be managed at the Prairie Creek Mine until it is approved by the Board; and provide contingencies for any Waste that CZN was proposing to transport and manage at the Mine.

#### *Sewage and Graywater Management:*

In response to the Information Request, CZN submitted a revised Waste Management Plan on October 15, 2019 that provided further clarifications regarding its proposed Sewage treatment. CZN has proposed to Discharge Greywater in Sumps located 31 m away from the nearest Waterbody, and provided Sump locations at each camp. CZN has proposed to store and truck Sewage via septic truck to Kledo Construction in Fort Nelson for Disposal, and provided a Sewage dumping agreement from Kledo Construction. The Board notes that CZN has proposed to haul all Greywater out of NNRP. However, CZN has not specified where the Greywater from NNRP will be hauled to for disposal. Although Sewage disposal in the NNRP is Parks Canada's jurisdiction, the Board notes that Waste haul out of NNRP may be the Board's jurisdiction depending on CZN's proposed disposal location. Therefore, the Board directs CZN to clarify where the Greywater from NNRP will be transported to for disposal.

There are outstanding comments and recommendations from reviewers that should be addressed in the Waste Management Plan. Therefore, the draft Waste Management Plan cannot be approved at this time and should be revised and re-submitted **90 days prior to commencement of Phase 1 activities** for Board approval. The revised Plan should be in accordance with the Board's *Guidelines for Developing a Waste Management Plan*, reflect updates as agreed to during the public review, reflect the scope of the proposed activities, and Board directives in the Board's decision letter.

#### Sediment and Erosion Control Plan

Condition 6 of Part F in Licence MV2014L8-0006 and Part E in Licence MV2019L8-0002 list the requirements for the Sediment and Erosion Control Plan. This Plan is required by the Licence to ensure sediment and erosion control is managed in accordance with the *Waters Act*, and the objectives listed in conditions 1 of Part E and F of the respective Licence. CZN included a draft Sediment and Erosion Control Plan in the Applications dated February 20, 2019.<sup>47</sup>

The Licensee is required to submit the Plan for the Board's approval prior to commencement of Phase 1 activities. This Plan is required for Phase 1 as CZN agreed to expand the scope to address potential sources of erosion and sedimentation as a result of Winter Road Construction and identify proposed control and mitigation measures to address these sources (PC-165, May 15, 2019). The Licensee is required to describe the sediment and erosion control activities associated with each phase. The Board recognizes that the Plan may require revision in subsequent phases. If changes to the sediment and erosion control activities are proposed after it is approved, the Licensee must submit the revised Sediment and Erosion Control Plan to the Board for approval prior to implementing the proposed changes. Part B, condition 10, applies to the Sediment and Erosion Control Plan if the Licensee propose changes to the Plan for Phase 2 and Phase 3 activities. The revised Plan must be approved by the Board prior to commencing Phase 2 or Phase 3 activities.

Schedule 4, condition 1 of Licence MV2014L8-0006 and Schedule 3, condition 1 of Licence MV2019L8-0002 set out the requirements for the Sediment and Erosion Control Plan. The Board has reviewed

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<sup>47</sup> See CZN's draft Sediment and Erosion Control Plan ([hyperlink](#)), dated February 20, 2019.

the comments submitted on the Sediment and Erosion Control Plan and found they have merits, thus, the Board has included schedule requirements that reflect the comments received during the public review (DFN-3, MVLWB-3, PC-167, 173 174 and 181, Racher-8, 11, May 15, 2019). The Schedule item c) in both Licences was revised to specify that the proposed control and mitigation measure specific to the hoverbarge infrastructure such as the hoverbarge landing should be included (CIRNAC-3, Sept 9, 2019).

The draft Sediment and Erosion Control Plan cannot be approved at this time and should be revised and re-submitted **90 days prior to commencement of Phase 1 activities** for Board approval. The plan should be revised in accordance with the Board directives in the Board's decision letter, Licence Schedule requirements, to reflect updates as agreed to during the public review, and to reflect the scope of the proposed activities.

In addition, the Board reminds CZN to link the Sediment and Erosion Control Plan and the Construction plans to the extent possible, as they should work together when being implemented (ENR-134, May 15, 2019). The Board further reminds CZN to include details of inspection, and the monitoring plan, for all stream crossing structures in the Sediment and Erosion Control Plan, given that the Road Construction and Management Plan is not a requirement of the Licences.

#### Permafrost Management and Monitoring Plan

Part F, condition 8 of Licence MV2014L8-0006 and Part E, condition 8 of Licence MV2019L8-0002 list the requirements for the Permafrost Management and Monitoring Plan. This Plan is required by the Licence to ensure Permafrost is managed in accordance with the *Waters Act*, Measure 12-1 of Report of EA, and the objectives listed in conditions 1 of Part F and E of the respective Licence. CZN included a draft Permafrost Management and Monitoring Plan in the Applications submitted February 20, 2019.<sup>48</sup>

Measure 12-1, Part 1 of Report of EA requires the Permafrost Management and Monitoring Plan to inform the design and construction of the Project and prevent impacts on the environment from the Project during construction. Therefore, the Licensee is required to submit this Plan for the Board's approval prior to commencement of Phase 1 activities. The Licensee is required to describe the Permafrost management and monitoring activities associated with each phase. During the review of the Applications, CZN indicated in its response to a Parks Canada review comment that "A different version will be prepared during the ASR detailed design and before construction" (PC-136, May 15, 2019). The Board recognizes that the Plan may require revision in subsequent phases. If changes to the Permafrost management and monitoring activities are proposed after it is approved, the Licensee must submit the revised Permafrost Management and Monitoring Plan to the Board for approval prior to implementing the proposed changes. Part B, condition 10, applies to the Permafrost Management and Monitoring Plan if the Licensee propose changes to the Plan for Phase 2 and Phase 3 activities. The revised Plan must be approved by the Board prior to commencing Phase 2 or Phase 3 activities.

Condition 2 of Schedule 4 in Licence MV2014L8-0006 and Schedule 3 in Licence MV2019L8-0002 set out the requirements of the Plan, including Report of EA Measure 12-1 Part 4 and the Adaptive Management requirements detailed in Appendix B of the Report of EA. The Schedule requirements are based on the comments received during the review (ENR-100, MVLWB-17, PC-2, 23, 135, 137, 138, Racher-9, 10, May 15, 2019).

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<sup>48</sup> See CZN's draft Permafrost Management and Monitoring Plan ([hyperlink](#)), dated February 20, 2019.

The Board has reviewed comments received on the draft Permafrost Management and Monitoring Plan, and found they have merits, thus, the Board directs CZN to address those comments, as summarized in the Board's decision letter, in a revised Permafrost Management and Monitoring Plan. Therefore, the draft Permafrost Management and Monitoring Plan cannot be approved at this time and should be revised and re-submitted **90 days prior to commencement of Phase 1 activities** for Board approval. The revised Plan should be in accordance with Board directives in the Board's decision letter (includes reviewer comments), Schedule requirements, reflect updates as agreed to during the public review, and reflect the scope of the proposed activities.

#### Geochemical Verification Program

Part F, condition 10 of Licence MV2014L8-0006 and Part E, condition 10 of Licence MV2019L8-0002 list the requirements for the Geochemical Verification Program. This Plan is required by the Licence to ensure the Potentially Acid Generating (PAG) and Metal Leaching (ML) material is characterized and managed in accordance with the *Waters Act*, and the objectives listed in conditions 1 of Part F and Part E of the respective Licence. CZN included a draft Geochemical Verification Program in the Applications dated February 20, 2019.<sup>49</sup>

During the review, ENR recommended CZN clarify when the geochemical characterization will take place for the bedrock materials, as well as the additional overburden materials. ENR recommended the geochemical verification study be completed prior to development of each Borrow source and prior to the material's use in the ASR Construction (ENR-123, May 15, 2019). During the review, Racher Consulting commented that the Geochemical Verification Program could be required 60 days prior to commencement of Phase 1 as they expect the Plan for Phase 1 to be less complicated (Racher-20, September 9, 2019). The Board notes that if Borrow source is needed for the Construction during Phase 1, CZN shall submit a Geochemical Verification Program 90 days prior to Phase 1. If Borrow source is not required for Phase 1, CZN shall submit a letter to the Board requesting for the Geochemical Verification Program to be submitted after Phase 1, with supporting rationale. The Board notes that there are a substantial number of plans that will be distributed for review prior to Phase 1. Therefore, to ensure there is sufficient time for all reviewers to comment on the revised Plan, the Board has required CZN to submit this Plan 90 days prior to Phase 1 activities for the Board's approval prior to commencement of Phase 1 activities. CZN is encouraged to submit proposed revisions sooner, and the onus is on CZN to submit revised Plans that adequately address all requirements and reviewer comments.

Schedule 4, condition 3 in Licence MV2014L8-0006 and Schedule 3, condition 3 of Licence MV2019L8-0002 set out the requirements of the Plan and references the Adaptive Management requirements detailed in Appendix B of the Report of EA. The Board has reviewed comments received on the draft Geochemical Verification Program, and found they have merits, thus, the Board has included schedule requirements that reflect the comments received during the review (Racher-19, 20, May 15, 2019). Suggestion 8-2 of Report of EA suggests the Board enforces strict acid rock drainage and metal leaching conditions; thus, the Board has required CZN to provide criteria for defining PAG, non-PAG, and Metal Leaching material in the Schedule requirements. The Licensee is required to describe the geochemical verification activities associated with each phase. The Board recognizes that the Plan may require revision in subsequent phases. If changes to the PAG/ML material management and monitoring activities are proposed after it is approved, the Licensee must submit the revised Geochemical Verification Program to the Board for approval prior to implementing the proposed changes. Part B, condition 10, apply to the Geochemical Verification Program if the Licensee propose

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<sup>49</sup> See CZN's draft Geochemical Verification Program ([hyperlink](#)), dated February 20, 2019.

changes to the Plan for Phase 2 and Phase 3 activities. The revised Plan must be approved by the Board prior to commencing Phase 2 or Phase 3 activities.

The draft Geochemical Verification Program cannot be approved at this time and should be revised and re-submitted **90 days prior to commencement of Phase 1 activities** for Board approval. If Borrow source is not required for Phase 1, CZN shall submit a letter to the Board requesting for the Geochemical Verification Program to be submitted after Phase 1, with supporting rationale. The Program should be in accordance with Board directives in the Board's decision letter, Schedule requirements, reflect updates as agreed to during the public review, and reflect the scope of the proposed activities.

#### Borrow Pit Management Plan

Part F, condition 12 of Licence MV2014L8-0006 and Part E, condition 12 of Licence MV2019L8-0002 list the requirements for the Borrow Pit Management Plan. This Plan is required by the Licence to ensure Borrow Pits are managed in accordance with the *Waters Act*, and the objectives listed in conditions 1 of Part E and Part F of the respective Licences. CZN included a draft Borrow Pit Management Plan in the Applications dated February 20, 2019.<sup>50</sup>

During the review of the draft conditions, CZN indicated that Borrow Pits will not be required for Phase 1 (CZN-38, Sept 9, 2019). The Board has revised the submission timeline for the Borrow Pit Management Plan to "prior to development of any Borrow Pit". The Licensee is required to submit this Plan 90 days prior to developing any Borrow Pits for the Board approval.

During the regulatory process, there were discussions on the submission sequence and approval of the Borrow Pit Management Plan (Racher-24, May 15, 2019, Technical Session Transcript pg. 158-174, dated June 5, 2019). Reviewers have commented that reviewing site-specific Borrow Pit Management Plans would be too burdensome given the number of proposed Borrow Pits. Racher Consulting suggested that the generic plan could be approved by the Board, and site-specific plans could be approved by an Inspector (Technical Session Transcript pg. 163, lines 10-20, June 5, 2019). The Board notes that the MVLUR does not give an Inspector authority to approve site-specific Borrow Pit Management Plans. Therefore, the Board cannot delegate that authority to an Inspector. During the review, CZN commented that "consideration is needed for the fact that certain Borrowings will be designed, approved, and developed before others" (CZN-38, Sept 9, 2019). The Board recognizes that CZN may submit a revised Plan for Board approval to include additional Borrow Pits. Therefore, the Board has included a Schedule item that requires "A schedule, including proposed sequence and timing of Borrow development". If changes to Borrow Pit management are proposed after it is approved, the Licensee must submit the revised Borrow Pit Management Plan to the Board for approval prior to developing any additional proposed Borrow Pit. Part B, condition 9 applies to the Borrow Pit Management Plan if the Licensee proposes changes to the Plan.

Schedule 4, condition 4 in Licence MV2014L8-0006 and Schedule 3, condition 4 in Licence MV2019L8-0002 set out the requirements for the Plan. The Board has reviewed the comments received on the Borrow Pit Management Plan, and found they have merits, thus, the Board has included schedule requirements that are developed based on review comments (DFN-5, Lands-Dehcho-4, PC-36, 43, 44, 179, Racher-21, 22, 23, 24, 25, May 15, 2019).

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<sup>50</sup> See CZN's draft Borrow Pit Management Plan ([hyperlink](#)), dated February 20, 2019



The draft Borrow Pit Management Plan cannot be approved at this time and should be revised and re-submitted 90 days prior to developing any Borrow Pits for Board approval. The revised Plan should be in accordance with the Board directives in the Board's decision letter, Schedule requirements, reflect updates as agreed to during the public review, and reflect the scope of the proposed activities.

### Water Monitoring Plan

Part F, condition 14 of Licence MV2014L8-0006 and Part E, condition 14 of Licence MV2019L8-0002 list the requirements for the Water Monitoring Plan. This Plan is required by the Licence to ensure the Water is managed in accordance with the *Waters Act*, Measure 8-1 of Report of EA, and the objectives listed in conditions 1 of Part E and F of the respective Licence. The Report of EA Measure 8-1 Part 4 states the following:

CanZinc has identified many different plans, programs, and commitments for monitoring Project effects on water during construction and operation. CanZinc will amalgamate these plans, programs, and commitments, to the extent feasible and practical, so that water monitoring is consolidated and coordinated. The Review Board understands that for operational purposes, CanZinc may wish to keep certain aspects of water monitoring separate. The Review Board encourages the developer to consolidate where it can, in order to simplify the number of plans to create and report on.

During the review, ENR also recommended all water monitoring and management for the Project be merged into a single plan (ENR-82, 88, 89 and 138, May 15, 2019; ENR-22, Sept 9, 2019). Report of EA Measure 8-1, Part 1, item iii requires CZN to combine monitoring programs and plans to coordinate water monitoring efforts.

The Licensee is required to submit this Plan within 90 days following the effective date of the Licences, and the Licensee shall not commence Phase 1 activities for the Board's approval prior to commencement of Phase 1 activities. Schedule 4, condition 5 of Licence MV2014L8-0006 and Schedule 3, condition 5 of Licence MV2019L8-0002 set out the requirements of the Plan. Report of EA Measure 8-1 Part 1, item i and Part 2 requires CZN to collect baseline data for a minimum of one year prior to start of activities, and that CZN will work with Parks Canada, Fisheries and Oceans Canada, and the Board to determine the water baseline data required to inform mitigation, future monitoring, and Adaptive Management. During the review, reviewers recommended water monitoring components such as total suspended sediment, dissolved oxygen, conductivity, pH, and metal analysis be included (PC-175, DFN-2, ENR-136-139, ECCC-11-13, May 15, 2019). Reviewers also suggested to conduct runoff and seepage, and surface water monitoring to support the Geochemical Verification Program and Borrow Pit Management Plan (RC-20, PC-161, ENR-83, 92, 93, 129-130; May 15, 2019). The Report of EA Measure 8-1, Part 1, item ii, iv, and Part 5 requires CZN to establish an Adaptive Management framework as per requirements listed in Appendix B. Reviewers recommended CZN provide a response framework with Action Levels and response actions such as exceedance for TSS and/or turbidity guidelines and potential mitigation measures (ECCC-13, ENR-140, PC-177, 181, May 15, 2019). ENR commented that SNP 2019-2 include monitoring for nutrients at all major stream crossings (ENR-20, Sept 9, 2019). In response, CZN agreed but noted that blast residue is short-lived. The Board agrees with CZN and has included the blast residue monitoring as a Schedule requirement for the Water Monitoring Plan, which would allow the sampling locations to be based on the Borrow area and Runoff potential. The Board has reviewed and agrees with the comments received on the requirements for the Water Monitoring Plan. Therefore, the Board has specified the monitoring items that reviewers have recommended in the Schedule for the Water Monitoring Plan (PC-177, 178, 180, ENR-90, 92, 136, 137, 139, 143; DFN-2; Racher-11, May 15, 2019).

Measure 8-1, Part 2 requires CZN to use the collected data from hydrometric stations for a minimum of one year prior to construction of watercourse crossings. The Board has included the baseline monitoring in the Schedule requirements for the Water Monitoring Plan. Measure 8-1, Part 2 also requires the data collection to continue into construction. The Board has included the requirement for CZN to identify short-term and long-term monitoring in the Schedule of the Water Monitoring Plan.

The Licensee is required describe the management of Water associated with each phase. The Board recognizes that the Plan may require revision in subsequent phases. If changes to the Water management and monitoring activities are proposed after it is approved, the Licensee must submit the revised Water Monitoring Plan to the Board for approval prior to implementing the proposed changes. Part B, condition 10, apply to the Water Monitoring Plan if the Licensee propose changes to the Plan for Phase 2 and Phase 3 activities. The revised Plan must be approved by the Board prior to commencing Phase 2 or Phase 3 activities. This will ensure CZN collects sufficient baseline data prior to constructing any Watercourse crossings as per Measure 8-1.

#### Explosives Management Plan

Part F, condition 16 of Licence MV2014L8-0006 and Part E, condition 16 of Licence MV2019L8-0002 list the requirements for the Explosives Management Plan. This Plan is required by the Licences to ensure explosives are managed in accordance with the *Waters Act*, and the objectives listed in conditions 1 of Part E and F of the respective Licence. CZN included a draft Explosives Management Plan in the Applications dated February 20, 2019.<sup>51</sup>

During the Technical Session, CZN was asked if they will be using explosives for Phase 1, and if the Explosives Management Plan should be required for Phase 1. CZN responded that, while they think it is unlikely, it is a possibility that one location of the Winter Road could require blasting and that the assumption is that if any blasting would be done they would require the Explosives Management Plan to be in place (Technical Session Transcript pg. 176 line 14 - pg. 179 line 11, June 5, 2019). Therefore, the Board has decided that the Licensee is required to submit this Plan for the Board's approval, prior to handling, use, or storing explosives. The Board recognizes that the Plan may require revision in subsequent phases. If changes to explosives management are proposed after it is approved, the Licensee must submit the revised Explosives Management Plan to the Board for approval prior to implementing the proposed changes. Part B, condition 10, apply to the Explosives Management Plan if the Licensee propose changes to the Plan for Phase 2 and Phase 3 activities. The revised Plan must be approved by the Board prior to commencing Phase 2 or Phase 3 activities. Schedule 4, condition 6 in Licence MV2014L8-0006 and Schedule 3, condition 6 in Licence MV2019L8-0002 set out the requirements for the Plan. The Schedule requirements are based on requirements for explosives management and mitigation from previous Licences issued by the Board.

The draft Explosives Management Plan cannot be approved at this time and should be revised and re-submitted 90 days prior to handling, use, or storing explosives. The Program should be in accordance with the Board directives in the Board's decision letter, Schedule requirements, reflect updates as agreed to during the public review, and reflect the scope of the proposed activities.

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<sup>51</sup> See CZN's draft Explosives Management Plan ([hyperlink](#)), dated February 20, 2019.

### **Operations of Structures and Facilities**

During the review, the Board sought reviewer input on a condition for setting limitations or specifications that apply to the Construction, operation, and maintenance of specific structure and facility. The CIRNAC Inspector commented that this condition should apply to all Engineered Structures (CIRNAC Inspectors-4, Sept 9, 2019). The Board notes that the condition is intended for Project-specific requirements based on a certain type of structure or facility using information gathered during the regulatory process. The Board notes that no comments were received on any limitations or specification for any specific structure or facility. Therefore, the Board has decided to remove this condition.

Condition 18 of Part F in Licence MV2014L8-0006 and Part E in Licence MV2019L8-0002 is intended to prevent Waste from entering Watercourses and affecting Water quality, fish, and other aquatic life, and downstream users.

Condition 19 of Part F in Licence MV2014L8-0006 and Part E in Licence MV2019L8-0002 is to prevent environmental impacts from operation and failure of any Waste containment area or structures.

### **Inspections of Structures and Facilities**

During the review, the Board sought reviewer input on a condition where more frequent inspections would be required for a specific structure. The CIRNAC Inspector commented that bi-annual inspection should be conducted for all Engineered Structures (CIRNAC Inspectors-5, Sept 9, 2019). The Board notes that this condition is intended for specific Engineered Structures that require more frequent inspection if any was identified during the regulatory process. The Board notes that no comments regarding more frequent inspection for any specific structure were received during the review. As a result, the Board has decided to remove this condition. The Board notes that if any structures require more frequent inspections, the frequency can be commented on during the review of the Design and Construction Plan or Structure Description and Construction Plan.

Condition 20 of Part F in Licence MV2014L8-0006 and Part E in Licence MV2019L8-0002 is to ensure signs of erosion are detected and addressed as Discharge locations are susceptible to erosion. The Board notes that the Schedule for the Sediment and Erosion Control Plan requirements includes more detailed inspection information.

Condition 21 of Part F in Licence MV2014L8-0006 and Part E in Licence MV2019L8-0002 set out the requirement for detailed annual inspection of Water and Waste management structures by a Professional Engineer as part of on-going monitoring and evaluation. During the review, CZN commented that:

There is no need for a professional geoscientist to undertake such an inspection. There will be nothing to see. Monitoring water samples will be collected which will help to confirm and validate geochemical characterizations. Collection of these does not require the presence of a geochemist (CZN-60, Sept 9, 2019).

The Board notes that for any structures with ARD or ML, a Professional Geoscientist must also conduct an annual geochemical inspection. These professionals are intended to be third-party to the Project, and not directly involved in the design or day-to-day management of on-site structures/facilities. After events that exceed design criteria, an additional inspection must be conducted to determine whether the stability or function of the structures has been affected. Therefore, the Board has not accepted the recommendation made by CZN.

## **Effluent Quality Criteria**

The Board's approach to managing the deposit of Waste to the Receiving Environment through water licence conditions is described in the Board's *Water and Effluent Quality Management Policy*.<sup>52</sup>

### **Effluent Quality Criteria - Sewage**

The Board sought reviewer input on Effluent Quality Criteria (EQC) during the review. During the distribution of the draft conditions, the Board included Effluent authorization limits that outlined the Wastewater System Effluent Regulations should CZN require Discharge of Sewage to surface Water.<sup>53</sup> As detailed in the Board's reasons for the Waste Management Plan, the Board distributed an IR to CZN to acquire more information on CZN's proposed Sewage disposal method.<sup>54</sup> In response to the IR, CZN clarified that Sewage will be hauled to Kledo Construction Ltd. in Fort Nelson, BC, while Greywater will be filtered and deposited in Sumps.<sup>55</sup> CZN also provided Sump locations in maps for review and Board decision. The Board has removed the EQC requirements as CZN has not proposed to treat and Discharge to surface Water. The Board has also removed any EQC related conditions from the Licences.

During the review, ENR recommended the Board include limits for total suspended solids (TSS) in the Licences to be applied during Construction (ENR-19, Sept 9, 2019). The Board agrees with ENR and has included the TSS guidelines for freshwater quality for the protection of aquatic life from the Canadian Council of Ministers of the Environment (CCME) in condition 22 of Part F in Licence MV2014L8-0006 and Part E in Licence MV2019L8-0002. Although there are currently no SNP requirements for Licence MV2019L8-0002, the Board has retained Part E, condition 22, in case the required Monitoring Water Plan identifies any TSS monitoring locations within the IAB lands.

## **5.8 Conditions Applying to Aquatic Effects Monitoring Program**

Conditions regarding comprehensive monitoring and aquatic effects monitoring were included in the draft Licence MV2014L8-0006 as per Suggestion 8-1 of Report of EA, which states that "the Review Board also recommends to regulatory agencies that many aspects of Measure 8-1 could be incorporated into an aquatic effects monitoring program". During the review, reviewers commented that a Comprehensive Effects Monitoring and/or Aquatic Effects Monitoring Program is not required if proper and effective mitigation are in place (Racher-6; ENR-156, May 15, 2019). The Board is satisfied with the monitoring requirements (e.g. Water Monitoring Plan) for the effectiveness of mitigations set out in the Licences. The Board believes the Water Monitoring Plan is sufficient to satisfy the requirements of Measure 8-1. As a result, the Board has not adopted Suggestion 8-1 and has removed the requirements of the Comprehensive Effects/Aquatic Effects monitoring program. For the same reasons stated above, conditions applying to aquatic effects monitoring program are not included in Licence MV2019L8-0002.

## **5.9 Conditions Applying to Contingency Planning**

Part G of Licence MV2014L8-0006 and Part F of Licence MV2019L8-0002 contain conditions related to spill contingency planning and reporting, reclamation of spills and Unauthorized Discharges, and

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<sup>52</sup> See [www.mvlwb.com](http://www.mvlwb.com) → Resources → Policies and Guidelines: [MVLWB Water and Effluent Quality Management Policy](#) (March 31, 2011).

<sup>53</sup> See Wastewater Systems Effluent Regulations ([hyperlink](#)).

<sup>54</sup> See Information Request to CZN Re Waste Management Plan ([hyperlink](#)), dated October 7, 2019.

<sup>55</sup> See CZN's Response to Information Request and Revised Waste Management Plan ([hyperlink](#)), dated October 15, 2019.

emergency response for the Project. The purpose of this part of the licences is to ensure that CZN is prepared to respond to spills and Unauthorized Discharges. The planning and reporting requirements in this part ensure that CZN 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 the conditions applying to Contingency Planning are similar in both Licences, the reasons set out below apply to both Licences unless otherwise indicated.

### Spill Contingency Plan

Spill Contingency Plan is a defined term in the Licence, referencing the Indian and Northern Affairs Canada's *Guidelines for Spill Contingency Planning*.<sup>56</sup> CZN included a draft Spill Contingency Plan in the Applications dated February 20, 2019.<sup>57</sup>

Condition 3 of Part G in Licence MV2014L8-0006 and Part F in Licence MV2019L8-0002 set the requirements for the Spill Contingency Plan. The Board recognizes that the Plan may require revision in subsequent phases. If changes to the spill contingency are proposed after it is approved, the Licensee must submit the revised Spill Contingency Plan to the Board for approval prior to implementing the proposed changes. Part B, condition 10, apply to the Spill Contingency Plan if the Licensee propose changes to the Plan for Phase 2 and Phase 3 activities. The revised Plan must be approved by the Board prior to commencing Phase 2 or Phase 3 activities.

The Board has reviewed the review comments on the draft Spill Contingency Plan and has found that they have merits. Therefore, the Board directs CZN to revise the Spill Contingency Plan to address the comments received on the draft Spill Contingency Plan during the review. The Board has summarized these comments as Board directives in the Board's decision letter. The Board has approved the draft Spill Contingency Plan as an interim submission and directs CZN to revise and re-submit the revised Plan **90 days prior to commencement of Phase 1 activities**. The revised Plan should be in accordance with Board directives in the Board's decision letter, reflect the guidelines, updates as agreed to during the public review, and reflect the scope of the proposed activities. The revised Plan will be considered to be approved upon written confirmation of conformity from Board staff. The Board notes that the Spill Contingency Plan must be approved and implemented at the beginning of a Project to prevent contamination of land and Water in case of any spills. Therefore, CZN cannot begin Phase 1 until the Spill Contingency Plan is considered approved.

During the review, CZN commented on condition 4 of Part G in Licence MV2014L8-0006 and Part F in Licence MV2019L8-0002, indicated that "we don't believe discharge that does not meet EQC legally constitutes a 'spill'. It should not be relevant to the Spill Plan either as that should not be what the plan is for." (CZN-63, Sept 9, 2019). The Board notes that although EQC has been removed from these Licences, any Discharge that do not meet EQC would be considered an Unauthorized Discharge. Spill reporting would be required and CZN would have to seek direction from an Inspector immediately.

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<sup>56</sup> See [www.mvlwb.com](http://www.mvlwb.com) → Resources → Policies and Guidelines: [INAC Guidelines for Spill Contingency Planning](#) (April, 2007).

<sup>57</sup> See CZN's draft Spill Contingency Plan ([hyperlink](#)), dated February 20, 2019.

## Emergency Response Plan

A condition requiring adherence to an Emergency Response Plan was included as condition 8 of the draft Licences (Part G Licence MV2014L8-0006 and Part F Licence MV2019L8-0002). This Plan was included in the draft Licences to address how the Licensee will respond to non-spill emergencies and was based on a commitment made during the EA (commitment #244). CZN included a draft Emergency Response Plan in the Applications dated February 20, 2019.<sup>58</sup>

During the public review there was a comment that some sections/aspects of the Traffic Control and Management Plan, the Road Construction Management Plan, the Road Operations and Maintenance Plan, and the Emergency Response Plan duplicate information, and that this could be problematic as changes to one plan would necessitate changes in another plan (Racher-7, May 15, 2019). At the technical session there was a discussion that reducing the number of plans required by the Licences and Permit, and merging plans where appropriate, could be a way to decrease overlap and inconsistency between plans (Technical Session Transcript pg. 51, line 18 - pg. 62 line 25, June 12, 2019). The Board has decided to remove the conditions about the Emergency Response Plan, and instead requires the Plan to be appended to the Spill Contingency Plan in order to reduce overlap and inconsistency.

The Board directs CZN to include the Emergency Response Plan as an appendix in the revised Spill Contingency Plan, and submit the revised Plan 90 days prior to commencement of Phase 1 activities.

### **5.10 Conditions Applying to Closure and Reclamation**

Part H of Licence MV2014L8-0006 and Part G of Licence MV2019L8-0002 contain conditions applying to Closure and Reclamation of the Project. CZN included a draft Closure and Reclamation Plan in the Applications dated February 20, 2019.<sup>59</sup> As the conditions applying to Closure and Reclamation are similar in both Licences, the reasons set out below apply to both Licences unless otherwise indicated.

During the public review, ENR commented that the definition for Closure and Reclamation should not reference the *Guidelines for the Closure and Reclamation of Advanced Mineral Exploration and Mine Sites*<sup>60</sup> (Closure Guidelines) in the Northwest Territories, but the concepts within the Closure Guidelines such as Closure Objectives and Closure Criteria should be written into the Water Licence or schedule (ENR-155, May 15, 2019). During the EA, CIRNAC recommended CZN follow the Closure Guidelines for closure and reclamation on IAB lands.<sup>61</sup> Suggestion 14-1 of the EA recommends CZN develop clear closure principles for the Project in consultation with potentially affected Aboriginal groups. Given that Suggestion 14-1 aligns with the intent of the Closure Guidelines, the Board has followed the Closure Guidelines to develop the Closure and Reclamation conditions in the Licences.

In response to Parks Canada review comment, CZN indicated that Phase 1 and Phase 2 Closure and Reclamation Plans will be submitted (PC-141, May 15, 2019). The Board recognizes that the Plan may require revision in subsequent phases. If changes to the Closure and Reclamation activities are proposed after it is approved, the Licensee must submit the revised Closure and Reclamation Plan to the Board for approval prior to implementing the proposed changes. Condition 2 of Part H and Part G

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<sup>58</sup> See CZN's draft Emergency Response Plan ([hyperlink](#)), dated February 20, 2019.

<sup>59</sup> See CZN's draft Closure and Reclamation Plan ([hyperlink](#)), dated February 20, 2019.

<sup>60</sup> See [www.mvlwb.com](http://www.mvlwb.com) → Resources → Policies and Guidelines: [Guidelines for the Closure and Reclamation of Advanced Mineral Exploration and Mine Sites](#) November 2013.

<sup>61</sup> See MVEIRB document 'Indigenous and Northern Affairs Canada Technical Report' (Public Registry #450) ([hyperlink](#)), dated March 10, 2017.

requires submission of a revised Closure and Reclamation Plan prior to Phase 2. Condition 3 of Part H and Part G respectively requires submission of a revised Closure and Reclamation Plan either three years prior to the expiration of the Licence, or two years before the end of operations.

Schedule 5, condition 1 in Licence MV2014L8-0006 and Schedule 4, condition 1 in Licence MV2019L8-0002 set out the requirements of the Closure and Reclamation Plan. The schedule requirements include the Suggestion 14-1 in the Report of EA, which includes the suggestions for preventing post-closure impacts (RC-30, May 15, 2019).

The draft Closure and Reclamation Plan cannot be approved at this time and should be revised and re-submitted by **February 5, 2020** for Board approval. The revised Plan should be in accordance with Board directives in the Board's decision letter, the Schedule requirements, reflect updates as agreed to during the public review, and reflect the scope of the proposed activities.

During the review, CZN questioned the need for a component-specific Closure and Reclamation Plan (CZN-35, May 15, 2019). This condition is intended for the Closure and Reclamation of specific Project components committed to or planned prior to approval of the final version of the overall Closure and Reclamation Plan for the Project. The Board notes that no specific components that require a separate Closure and Reclamation Plan had been identified during the review, therefore, the Board has decided to remove this condition.

The Licence conditions applying to the security deposit (Part C of the Licences) are closely related to this Part J; the security deposit is directly related to the activities described in the closure plans, and updates to closure plans often result in updates to the security deposit.

The Licences require CZN to submit a Final Closure and Reclamation Plan a minimum of two years prior to the end of operations or three years prior to expiration of this Licence. This is a standard requirement of Licences issued by the Board and will ensure the Project is reclaimed in accordance with Schedule requirements and expectations of reviewers and the Board.

Condition 8 of Part H in Licence MV2014L8-0006 and Part G in Licence MV2019L8-0002 set out the requirements of the Performance Assessment Report. The general purpose of the Performance Assessment Report is to provide a detailed comparison of conditions at the site against the appropriate Closure Objectives and Closure Criteria. During the review, ENR commented that the submission timeline should be 4-6 months after completing reclamation of a specific component of the Project (ENR-16, 17, Sept 19, 2019). The Board agrees with ENR and has revised the submission timeline to be 4 months. Subsequent Performance Assessment Reports may be required by the Board when longer-term Closure Objectives are in place. Therefore, the Board has revised the condition to include "The Licenses shall submit subsequent Report(s) as directed by the Board" so the submission timeline for subsequent Report can be specified by the Board and dependent on the Project component.

### **5.11 Annex A: Surveillance Network Program**

Annex A of the Licence MV2014L-0006 contains conditions applying to the Surveillance Network Program (SNP). Annex A in Licence MV2019L8-0002 is currently empty as there is no Water source or Sewage Discharged within IAB lands. However, the Board has kept Annex A in Licence MV2019L8-0002 in case the approved Water Monitoring Plan requires changes to SNP in Licence MV2019L8-0002. The SNP details the sampling and monitoring requirements related for compliance with numerous conditions and plans required by the Licence. The SNP requirements are different for each of the Licences, which is reflected in the reasons set out below.

The SNP station related to the Sewage was removed as CZN has not proposed to treat Sewage and Discharge to surface Water. This decision applies to both Licences.

In the Licence MV2014L8-0006, CZN commented that there is no Water crossing at Bay Creek. The Board has removed Bay Creek from SNP 2019-2 from Licence MV2014L8-0006. The sampling locations for SNP 2019-2 in Licence MV2014L8-0006 is consistent with the major stream crossings as indicated in CZN's Main Report (Table 1-13) dated February 20, 2019.

CZN also commented that "Water withdrawal will likely be tracked by tanker load with a known quantity. A meter isn't necessary" (CZN-71, Sept 9, 2019). Water quantity from all sources must be recorded and reported. This is a standard requirement of a Water Licence. Tracking volume use through tanker loads of known quantities is an acceptable alternative. The Board has revised the SNP to allow tracking volume use through tanker loads of known quantities in Licence MV2014L8-0006.

During the review, ENR commented that:

Should CZN install water settling structures to allow natural settling and filtering of water, more detail will be required such as a description of water quality, location, distance from all nearby waterbodies, engineering designs, and operation and maintenance plans. Should CZN intend to discharge from these settling structures, SNP stations may be required to ensure nearby waterbodies are not adversely impacted from the collected runoff (ENR-92, May 15, 2019).

The Board has included the requirements for the Water settling structure mentioned in CZN's draft Borrow Pit Management Plan in the Water Monitoring Plan in both Licences. If CZN proposes to construct the Water settling structure as indicated in the draft Borrow Pit Management Plan, the Board could change the SNP to include monitoring associated with the Water settling structure to ensure nearby waterbody is not impacted from the collected Runoff.

ENR also recommended that SNP 2019-2 in Licence MV2014L8-0006 be clarified to require sampling occur downstream of the crossing at the near-field location to capture any influence on Water quality that is as a result of the Project, not at a far-field station (ENR-18, Sept 19, 2019). In response, CZN disagreed and indicated that "sample locations are intended to not only monitor stream crossings, but other potential influences, such as the road itself. Therefore, we believe the far-field locations are more suitable than the near-field ones". The Board notes that the rationale for SNP station 2019-2 is to ensure compliance with TSS/Turbidity criteria in Part F, condition 22 during in-Water Construction, and to monitor the direct impacts of stream crossing. The Board agrees with ENR that near-field would be more appropriate because the SNP station is intending to detect influence attributable to the crossing or road operation in the vicinity of the creek and allow mitigations to be implemented to address any issues. Monitoring at a far-field (100 m downstream), would likely result in dilution and no detection of impacts. However, the turbidity/TSS should follow the near, mid-, and far-field approach as required in the Schedule of the Water Monitoring Plan. The Board has revised the description of SNP 2019-2 in Licence MV2014L8-0006 to "The surface Water quality at near-field (2-5 m) downstream of the major stream crossings" to reflect ENR's recommendation.

ENR commented that nutrients should be included as a parameter in SNP 2019-2 in Licence MV2014L8-0006 for capturing the effects of blasting residue (ENR-20, Sept 9, 2019). In response, CZN noted that they are not opposed to monitoring nutrients, but the blast residue will be short-lived. The Board agrees with CZN that the blast residue is a short-term effect to monitor and have included the blast residue monitoring requirement in the Water Monitoring Plan. This would allow the sampling



locations to be based on the actual Borrow area and Runoff potential, but not just at the major crossing. Therefore, the Board has not included nutrients in SNP 2019-2 in Licence MV2014L8-0006 as suggested by ENR.

### **5.12 Annex B: Table of Submissions**

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

### **5.13 Annex C: Table of Revision History**

Annex C of the Licence contains a table which identifies updates and tracks changes made to the Licences. This table will be updated throughout the life of the Licence.

## **6.0 Decision – Land Use Permit MV2014F0013**

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

- 1) The comments and recommendations made during the scoping and technical phases of Environmental Assessment EA1415-01, which were conducted jointly between the MVLWB and the Review Board;
- 2) The Report of Environmental Assessment EA1415-01 and the measures and suggestions therein, as approved by the Responsible Minister;
- 3) The comments and recommendations made during the regulatory processes;
- 4) The evidence and submissions from CZN received by the Board;
- 5) The written comments and submissions from parties received by the Board; and
- 6) The Staff Report prepared for the Board.

Having due regard to the facts, circumstances, and the merits of the submissions made to it, and to the purpose, scope, and intent of the MVRMA, the Board has determined that Permit MV2014F0013 should be issued, subject to the scope, definitions, conditions, and term contained therein. The Board's determinations and reasons for this decision are set out below.

The scope, definitions, conditions, and term set forth in the Permit have been developed to address the Board's statutory responsibilities and the concerns that arose during the regulatory processes. The Reasons for Decision set out below focus on the major concerns and issues raised by parties, including those that were the subject of substantive argument submitted by one or more parties. Any standard conditions included that are consistent with the Board's Standard Template or previous permits are not explained in the Reasons for Decision below.

### **6.1 Term of Permit**

CZN has applied for a term of 5 years for the Permit. This was indicated in their initial Application submitted in April 2014, as well as in Section 1.2.2 of the Main Report submitted with the Post-EA Information Package.<sup>62</sup> Subsection 26(5) of the MVLUR allows for a Permit term of not more than five years. No review comments were made regarding the term of the Permit during either public review periods. After reviewing the submissions made during this regulatory process, the Board has determined an appropriate term for this undertaking is 5 years.

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<sup>62</sup> See CZN – April 16, 2014 Application for Land Use Permit and Water Licence ([hyperlink](#)), Application form (page 5)

## 6.2 Part A: Scope of Permit

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

CIRNAC recommended that Option 1 from the preliminary draft be used for b) as “Construction, operation, and maintenance of a Winter Road and All Season Road” would allow the most flexibility in the future (CIRNAC NWT Inspectors-1, May 9, 2019). The Board agrees with the CIRNAC Inspector’s recommendation and has included this activity in the scope of the Permit.

Part A, conditions 1 b) through j) are consistent with previous Permits issued by the Board and indicate activities that trigger a Type A Land Use Permit as per the MVLUR. For Part A condition 3 CZN commented that Tłıchq could be removed from the condition (CZN-1, Sept 9, 2019). As the Tłıchq law does not apply to the CZN ASR Project area, the Board agrees with CZN’s recommendation and has removed Tłıchq from the condition.

## 6.3 Part B: Definitions

The Board has defined items in the Permit to ensure a common understanding of conditions, to avoid future differences in interpretation, and to use wording similar to that found in previously issued Permits. Several definitions used wording from the Board’s *Standard Land Use Permit Conditions Template* (Standard Template). Where appropriate, the Board has created new definitions, changed standard wording, or used specific definitions to describe specific facilities related to this Project as described below:

- Acid Rock Drainage (ARD) is included to align with the Licenses, and because it is used for the Geochemical Verification Program condition
- Adaptive Management is included to provide a clear description and to reference the requirements listed in REA Appendix B
- Action Level is included to align with the Licenses, and because it is used throughout the Permit to describe the requirements of management plans
- All Season Road is modified to road, used in all seasons, that conforms to the alignment and material configuration as presented in the Design and Construction Plan and Design Drawings to provide a clear description of the final alignment of the ASR that is review and accepted by the Independent Technical Review Panel
- Avalanche Professional is included as it is required in a condition about observing avalanche paths, which is included based on Suggestion 5-2 of the EA
- Borrow and Borrow Pit are included while Quarry and Quarry Rock are removed and excluded in order to consistently use the same terms throughout the conditions. Borrow would encompass quarry rock, thus Borrow is selected over Quarry Rock (Racher-14, May 15, 2019)
- Closure Cost Estimate is included to align with the Licenses, and because it is used for closure conditions (section 26(1)(o) Restoration of the Lands)
- Closure Criteria is included to align with the Licenses, and because it is used for closure conditions (section 26(1)(o) Restoration of the Lands)
- Closure Objectives is included to align with the Licenses, and because it is used for closure conditions (section 26(1)(o) Restoration of the Lands)
- Option 2 of Closure and Reclamation Plan is removed and excluded as Option 2 does not reference the Mackenzie Valley Land and Water Board and Aboriginal Affairs and Northern Development Canada’s *Guidelines for the Closure and Reclamation of Advanced Mineral Exploration and Mine*

*Sites in the Northwest Territories*, and other conditions in the Permit related to reclamation are developed based on the guidelines. The Board has decided to include this option for the definition contrary to ENR's recommendations (ENR-55, May 15, 2019)

- Concentrate is included as definition of Phase 3 includes this term
- Construction is included to align with the Licences and because Construction conditions are used in the Permit (26(1)(d) Methods and Techniques)
- Durable Land is removed based on a reviewer comment (CZN-7, Sept 9, 2019) about the Camp Setback condition, which is updated to not include the Durable Land definition
- Engineered Structure is revised to take out reference to structures/facilities considered to be Engineered Structures of this Project based on CIRNAC's recommendation (CIRNAC-2, May 15, 2019)
- Environmental Assessment is included to align with the Licences and because it is used to define Report of EA
- Geotechnical Investigations is included to define Phase 1 of the Project
- Hydrocarbon Contaminated Soil Treatment Facility is removed and excluded as CZN clarified in its response to Board staff's comments (MVLWB-2, Sept 9, 2019) that the facility is not part of the scope of the ASR Project
- Independent Technical Review Panel (Panel) is added to conditions based on a Measure of the EA
- Metal Leaching is added to align with Licences, and because it is used to describe the requirements of the Geochemical Verification Program
- Minister is updated to "the Minister of Crown-Indigenous Relations and Northern Affairs Canada" based on a reviewer comment (CIRNAC-1 and 4, Sept 9, 2019)
- Non-Typical Winter Road definition is included to distinguish between regular and Non-Typical Winter Road and it refers to the Design Drawings. CZN recommended revising the definition to include 'Sections constructed of a mix of snow, fill, and organics and built as documented the etc.' (CZN-3, Sept 9, 2019). The Board notes that the Panel will be reviewing the non-typical section and does not wish to include specific material in the definition to restrict what the Panel recommends using to construct the Non-Typical Winter Road. Therefore, the Board has not adopted CZN's recommendation to revise this condition.
- Potentially Acid Generating (PAG) Rock is included to align with the Licences, and because it is used for Construction conditions and for the Geochemical Verification Program
- Phase 1 is included to ensure a clear description of the Construction and operation of the Winter Road as recommended by Racher Consulting and CZN (Racher-2, May 15, 2019; Technical Session Transcript, pg. 44, line 8; June 5, 2019; CZN IR Response, June 24, 2019)
- Phase 2 is added to ensure a clear description of the Construction of the ASR as recommended by Racher Consulting (Racher-2, May 15, 2019) and CZN (IR Response, June 24, 2019) and as discussed during the Technical Session (Technical Session Transcript pg. 44, line 8, June 5, 2019). During the review of the draft Licence and Permit conditions, ENR recommended that Phase 3 is the operational phase of the ASR and Phase 2 should encompass the entire Construction of the ASR and recommended removing "commencement" from the definition (ENR-6, Sept 6, 2019). The Board agrees with ENR's recommendation and has removed "commencement" from the definition
- Phase 3 is added to ensure a clear description of the operation of the ASR (Racher-2, May 15, 2019; CZN IR Response, June 24, 2019)
- Project is included to align with the Licences
- Receiving Environment is added to align with the Licences and because it is used for Construction conditions (26(1)(d) Methods and Techniques)
- Reclamation Research is added to align with the Licences, and because it is used for closure conditions (section 26(1)(o) Restoration of the Lands)

- Report of Environmental Assessment is included to align with the Licences and because it is used throughout the Permit for conditions that are created based on Measures of the EA
- Response Framework, Response Plan, and Significant Threshold are removed as the AEMP related conditions are removed
- Seepage is added to align with the Licences and because it is used for the Geochemical Verification Program
- Sewage Disposal Facilities is revised to ‘Sump(s) and/or Sewage collection tank(s) and/or storage containers designed to hold Sewage’ to reflect CZN’s proposed Sewage management
- Shut Down Period is removed for operational flexibility. For the purposes of discussing compliance expectations, CZN is required to contact the Inspector following a seasonal shut down period, which would be between spring break-up and fall freeze-up (CZN-4, Sept 9, 2019)
- Spring Break-up is defined as “March 31 each year, for the purpose of this operation” based on a recommendation from CIRNAC (CIRNAC Inspectors-9, Sept 9, 2019)
- Temporary Closure is added to describe the state of care and maintenance
- Traditional Knowledge is included as it was used in conditions in response to a Measure of the EA
- Typical Winter Road is included to distinguish between Typical and Non-Typical Winter Roads; the description “that is for winter use only” is deleted as winter roads are only used during the winter (CZN-5, Sept 9, 2019)
- Unauthorized Discharge is included to align with the Licences and because it is used in conditions related to conditions about spills
- Waste Rock is added to clarify that it is material that is not utilized in Construction or reclamation; the term “rock” is added to the definition to specify the extracted material as recommended by ENR (ENR-8, Sept 9, 2019)
- Winter Road is included to clarify that it encompasses both Typical and Non-Typical sections of the road. The condition is revised as recommended by ENR (ENR-9, Sept 9, 2019)

#### **6.4 Part C: Conditions Applying to All Activities**

The subheadings below correspond to the headings in the conditions section of the Permit, as outlined in section 26(1) of the MVLUR. Several conditions in the Permit are from the Board’s Standard Template, and are not discussed in detail in these Reasons for Decision unless their inclusion is noteworthy due to recommendations or concerns raised during the public review. Where applicable, the Board’s reasons for including non-standard conditions are discussed.

Land Use Permit conditions “Use Existing Camp”, “Use Approved Equipment”, “Equipment: Watercourse Buffer”, “Chemicals”, “Minimize Area Cleared” include the phrase “complete application”. CZN’s Post-EA Information Package Application was deemed complete on March 12, 2019 by Board staff. CZN’s “application” consists of any documents submitted for the Post-EA Information Package and during the Public Record for the Proceeding, as outlined in the Board’s Rules of Procedure.<sup>63</sup> Based on Rule 38 of the Board’s Rules of Procedure, the Public Record closed on September 9, 2019 when CZN’s responses to reviewer comments and recommendations on the draft Licences and Permit were received. However, as per Rule 39 of the Board’s Rules of Procedure, documents that were submitted to the Board after this date in response to IRs from the Board also become part of the Public Record and are also considered to be part of CZN’s “application”. Therefore, CZN’s submission of the Waste Management Plan on October 16, 2019 is the last document considered for the “complete application”.

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<sup>63</sup> See [www.mvlwb.com](http://www.mvlwb.com) → Resources → Rules of Procedure: [Rules of Procedure Including Public Hearings](#) (December, 2018).

### 26(1)(a) Location and Area

For the standard Permit condition “Private Property Setback”, CZN recommended that 100 m be used (CZN-6, Sept 9, 2019), but both the federal and non-federal Inspectors recommended that the setback be 300 m (GNWT-Lands-1; CIRNAC Inspectors-10, Sept 9, 2019). The Board agrees with the Inspectors recommendation. The Board cannot delegate the authority to alter the private property setback to an Inspector, therefore CZN would be required to seek authorization from the Board when the 300 m setback cannot be met as per the Board’s Standard Land Use Permit Conditions.

The standard Permit condition “Camp Setback” has been changed to “Camp Location” based on the CZN comment that recommended the condition is too restrictive (CZN-7, Sept 9, 2019). The Board agrees with CZN and has changed the condition to align with the Parks Canada condition that references the approved Structure Description and Construction Plan or approved Design and Construction Plan.

The standard Land Use Permit condition “Quarry Setback” has been changed to “Borrow Pit Setback” to consistently use the same terms used by CZN in their Post-EA Information Package. CZN had clarified that Borrow would encompass Quarry (Racher-14, May 15, 2019).

The standard Land Use Permit condition “Parallel Watercourse Setback” has been modified based on CZN’s comment that there are long sections of road parallel to Prairie Creek, Funeral Creek, Sundog Creek and Grainger River within 100 m and the road is already built, was previously built, or is designed to be there, and should be deleted as per the Park’s Canada Permit. The Board does not agree with CZN’s recommendation to remove the condition because clearing of vegetation for roads, trails, and right-of-ways within 100 metres of the Ordinary High Water Mark should be avoided for other roads associated with the Project, such as access roads. The Board has changed the condition to “The Permittee shall locate all lines, trails, and right-of-ways to be constructed parallel to any Watercourse a minimum of 100 metres from the Ordinary High Water Mark, except at crossings, or as approved in the Design and Construction Plans or Structure Description and Construction Plans”. This will allow for operational flexibility in areas where the Winter Road or ASR alignment is within 100 metres of the Ordinary High Water Mark, but will allow other roads, such as access roads, that could require a Structure Description and Construction Plan, to go through an approval process if CZN intends to locate them within 100 metres of the Ordinary High Water Mark. The phrase “unless otherwise authorized by an Inspector” has been removed from this condition as the Board cannot delegate the authority for the Inspector to authorize the parallel Watercourse setback as per the MVLUR. The Board reminds CZN to include updated sections of the Winter Road and ASR that are within 100 m of the Ordinary High Water Mark in Design and Constructions Plans or Structure Description and Construction Plans, where appropriate, so the Inspector is aware of these sections.

The standard Land Use Permit condition “Width Right-of-Way” has been modified based on CZN’s comment that there are parts of the road on slopes or bends where the right-of-way would need to exceed 30 metres due to a wider embankment footprint (CZN-9, Sept 9, 2019). The condition has been changed to “The Permittee shall confine the width of the right-of-way in accordance with the approved Design and Construction Plan or Structure Description and Construction Plans” to allow flexibility of the road width while still requiring an approval process for road width.

### 26(1)(b) Time

A non-standard condition “Written Notification” has been included in the Permit to align with a condition used in the Licences, and in order to give the Inspectors adequate notice prior to beginning a new Project phase. This will be important given the remote Project area. The federal Inspector agreed with the proposed notification timeline (CIRNAC Inspectors-11, Sept 9, 2019).

The standard Land Use Permit condition “Initial Notification – Contact Inspector” has been modified to require the Field Supervisor to provide ten days notice to the Inspectors prior to the commencement of the land-use operation, as opposed to the 48 hours that is specified in the Board’s Standard Template. This will be important given the remote Project area.

The standard Land Use Permit condition “Seasonal Notification – Contact Inspector” has been modified to require the Permittee to provide ten days notice to the Inspectors following a seasonal shut down period. CZN recommended not to insert specific dates due to annual changes to these periods of time (CZN-4, Sept 9, 2019). The Board agrees, and “shut down period” is not capitalized or defined in the Permit. It refers to spring break-up or fall-freeze up when work at the Project site is not occurring.

The standard Land Use Permit condition “Reports Before Seasonal Removal” has been modified to not capitalize “shut down period” for the same reasons as described above for the “Seasonal Notification – Contact Inspector” condition.

A non-standard condition “Annual Permit Report” has been added to require CZN to submit an Annual Permit Report no later than March 31 beginning March 31, 2020. The purpose of the Annual Water Permit Report is to provide the Board and all stakeholders the opportunity to be annually updated on Project components and activities, and to provide a platform for stakeholders to submit comments, observations, feedback, and questions as necessary. The Board organized these requirements to coincide with the layout of the Permit. Where applicable, overlap between the Annual Permit Report requirements and Annual Water Licence Report (MV2014L8-0006 and MV2019L8-0002) requirements exists. The Board expects CZN to submit one report that addresses the requirements of both the Annual Water Licence Report for MV2014L8-0006 and MV2019L8-0002, and the Annual Permit Report.

The condition requiring CZN to not operate Phase 1 for more than two consecutive years has been removed from both Licences and the Permit. See section 5.3 for the Board’s reasons.

### 26(1)(c) Type and Size of Equipment

The standard condition “Portable Ramps” has been modified to include “aquatic vessels, including ships, boats, and barges” to ensure that all vessels used for crossing waterbodies for the Project use portable ramps during loading and unloading.

### 26(1)(d) Methods and Techniques

The GNWT lands Inspector recommended that all Construction conditions be included in the Permit (GNWT-Lands-3, Sept 9, 2019). The Board agrees, and has included the following conditions in the Permit: “Engineered Structures – General”; “Construction Material – Geochemical Criteria”; “Construction Material – Source”; “Geochemical Records”; “Independent Technical Review Panel – Establishment”; “Independent Technical Review Panel – Terms of Reference”; “Terms of Reference – Comply”; “Structure Description and

Construction Plan”; “Design and Construction Plan”; “Design Drawings”; “Independent Technical Review Plan – Final Report”; “Independent Technical Review Panel – Revisions to Final Report”; “Notification – Construction”; “Construct As Designed – Structures”; “Construct As Designed – Engineered Structures”; “As-Built Report – Engineered Structures”. These non-standard construction conditions align with the conditions required under Part E of MV2014L8-0006 and Part D of MV2019L8-0002. The Board’s reasons for including these submissions, and requiring revisions and re-submittals, are described above in Section 5.6. To the extent possible, the Board has mirrored these conditions with the requirements of the Licences to ensure one submission will satisfy conditions of both the Licences and Permit.

A Road Construction and Management Plan has been removed from the Permit. The Board’s reasons for not including the Road Construction and Management Plan are described in Section 5.6.

CZN commented about the modified standard condition ‘Tree Screen’, stating that the ASR joins the Nahanni Butte access road and not the Liard Highway. The Board agrees and has removed the Tree Screen condition.

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

A Sediment and Erosion Control Plan has been included to align with Part F of MV2014L8-0006 and Part E of MV2019L8-0002. The Board’s reasons for including this Plan, and requiring revisions and re-submittals, are described above in Section 5.7. To the extent possible, the Board has mirrored these conditions with the requirements of the Licences to ensure one submission will satisfy conditions of both the Licences and Permit. Condition 129 applies to the Sediment and Erosion Control Plan if the Permittee proposes changes to the Plan for Phase 2 and Phase 3 activities. The revised Plan must be approved by the Board prior to commencing Phase 2 or Phase 3 activities.

DFO recommended that the standard condition “Culvert Size” be changed to align with the condition proposed by Parks Canada that specified culverts should be installed and maintained such that undercutting, blockages, and overflow do not occur, in addition to scouring (DFO-1, Sept 9, 2019). CZN agreed to this recommendation. The Board has decided to change the condition to align with the wording used by Parks Canada.

A Permafrost Management and Monitoring Plan has been included to align with Part F of MV2014L8-0006 and Part E of MV2019L8-0002. The Board’s reasons for including this Plan, and requiring revisions and re-submittals, are described above in Section 5.7. The Board has mirrored these conditions with the requirements of the Licences to ensure one submission will satisfy conditions of both the Licences and Permit. Condition 129 applies to the Permafrost Management and Monitoring Plan if the Permittee proposes changes to the Plan for Phase 2 and Phase 3 activities. The revised Plan must be approved by the Board prior to commencing Phase 2 or Phase 3 activities.

### 26(1)(h) Wildlife and Fish Habitat

CZN included a Wildlife Management and Monitoring Plan with the Applications dated February 20, 2019.<sup>64</sup> The Plan details mitigations to reduce or eliminate impacts to wildlife and wildlife Habitat. The Board notes that provisions in the MVLUR apply to protection of wildlife Habitat, not wildlife. Impacts to wildlife are under the jurisdiction of the GNWT through the *Wildlife Act*. During the public review, ECCC recommended the Board include conditions for the WMMP so that the mitigations related to wildlife are implemented for the entire ASR (ECCC-1, Sept 19, 2019). ENR recommended conditions related to the WMMP should not be included and that other processes already require the submission of the Plan. ENR indicated that “On October 27, 2017 ENR notified Canadian Zinc Corporation that under section 95 of the *Wildlife Act* a WMMP is required for the Prairie Creek All Season Road. The WMMP must be approved by ENR prior to construction of the Prairie Creek All Season Road. The WMMP is also required under Measure 6-2 from the Report of EA and Reasons for Decision for the Prairie Creek All Season Road (EA1415-01)” (ENR-1, Sept 9, 2019). The Board has included the Habitat Damage condition 71 in the Permit, which requires CZN to prevent damage to wildlife and fish Habitat. This is a condition from the Board’s Land Use Permit Standard Template, and is intended to ensure CZN conducts their land-use operation in such a way as to minimize disturbance to wildlife Habitat. For these reasons, the Board has not adopted ECCC’s recommendation and has decided not to require that the WMMP be submitted to the Board.

During the review, DFO recommended that the Board include conditions for the Fish and Fish Habitat Plan so that fish protection is consistent inside and outside the NNRP (DFO-2-3, Sept 9, 2019). The Board’s decision on the Fish and Fish Habitat Plan is in section 5.3 of these reasons.

### 26(1)(i) Storage, Handling, and Disposal of Refuse or Sewage;

A Waste Management Plan is a standard requirement for land use permits issued by the Board. This Plan is intended to ensure that all Waste management activities are carried out in a way that is consistent with best practices and applicable guidelines to minimize Waste released from the Project. This Plan is also required under Part F of MV2014L8-0006 and Part E of MV2019L8-0002, and the Board’s reasons for including this Plan, and requiring revisions and re-submittals, are described above in Section 5.7. To the extent possible, the Board has mirrored these conditions with the requirements of the Licences to ensure that one submission will satisfy conditions of both the Licences and Permit. Condition 129 applies to the Waste Management Plan if the Permittee proposes changes to the Plan for Phase 2 and Phase 3 activities. The revised Plan must be approved by the Board prior to commencing Phase 2 or Phase 3 activities.

The standard condition “Sewage Disposal – Sump Setback” has been deleted following CZN’s submission of an updated Waste Management Plan<sup>65</sup> on October 16, 2019 in response to an IR. In the updated Waste Management Plan, CZN indicated that only filtered Greywater will be Discharged to Sumps, and Sewage will be taken off-site for disposal. Therefore, the Board has decided this condition is not relevant and has deleted it. CZN will still be required to

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<sup>64</sup> See CZN’s Wildlife Management and Monitoring Plan ([hyperlink](#)), dated February 20, 2019.

<sup>65</sup> See CZN’s Response to Information Request and Revised Waste Management Plan ([hyperlink](#)), dated October 15, 2019.



dispose of all Sewage and Greywater as described in the approved Waste Management Plan, as per condition 76.

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

The contact information for the PWNHC in the standard condition “Site Discovery and Notification” has been updated in response to a comment (GNWT-PWNHC-1, Sept 9, 2019).

Non-standard condition 81 lists the requirements for a Cultural Heritage Protection Plan. The Plan is required by the Permit so the Permittee will develop an accidental finds protocol, a plan to provide training on accidental finds to persons working under the authority of the Permit, and a heritage resource booklet including photographs to be provided to persons working under the authority of the Permit.

The Permittee is required to submit the Plan **90 days prior to commencement of Phase 1 activities** for the Board’s approval prior to commencement of Phase 1 activities. This Plan is required for Phase 1 as it is important for CZN to have the Plan completed prior to any land-use operation, similar to the standard “AIA” condition (80). Given that the Board is no longer requiring a Road Construction and Management Plan, the Cultural Heritage Protection Plan will ensure CZN honours commitment #62 from the EA to develop a brochure of photographs of heritage resources to provide to contractors working on the Project. The Board notes that the requirement for a Cultural Heritage Protection Plan in the Permit aligns with a Permit condition in the Parks Canada Permit. The Board recognizes that the Plan may require revision in subsequent phases. If changes to the Cultural Heritage Protection Plan are proposed after it is approved, the Permittee must submit the revised Cultural Heritage Protection Plan to the Board for approval prior to implementing the proposed changes. Condition 129 applies to the Cultural Heritage Protection Plan if the Permittee proposes changes to the Plan for Phase 2 and Phase 3 activities. The revised Plan must be approved by the Board prior to commencing Phase 2 or Phase 3 activities.

26(1)(k) Objects and Places of Recreational, Scenic, and Ecological Value

Non-standard condition 83 lists the requirements for a Rare Plant Management Plan. This Plan is required by the Permit to ensure rare plants are managed in accordance with Suggestion 11-2. CZN included a draft Rare Plant Management Plan in the Applications submitted February 20, 2019.<sup>66</sup>

Measure 11-1, Part 2 of Report of EA requires development of a Rare Plant Management Plan in NNPR prior to construction, that will include mitigation, monitoring, and Adaptive Management for rare plants. According to the EA Measure, the Plan is to be reviewed and approved by Parks Canada prior to construction. Suggestion 11-2 in the EA is for the MVLWB to consider requiring a Rare Plant Management Plan for the portion of the Project it regulates that could be combined with the Plan for NNPR. The Plan submitted by CZN in February is for the entire Project. The Board agrees that the Plan should be included in the Permit for the Territorial lands and IAB lands. Measure 11-1 requires the Plan to be submitted prior to construction, and during the technical session Parks Canada indicated that vegetation clearing associated with Phase 1 would be a key source of impact to vegetation and rare plants (Technical Session Transcript pg. 75-76, June 7, 2019). Therefore, the Permittee is required to

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<sup>66</sup> See CZN’s draft Rare Plant Management Plan ([hyperlink](#)), dated February 20, 2019.

submit this Plan for the Board's approval prior to commencement of Phase 1 activities. Condition 83 sets out the requirements of the Plan, including EA Measure 11-1, Part 2 and 15-1 (monitoring by the developer), and the Adaptive Management requirements detailed in Appendix B of the Report of EA. The requirements for the Rare Plant Management Plan align with the requirements set out by Parks Canada in the draft Permit for NNPR. If changes to the Rare Plant Monitoring Plan are proposed after it is approved, the Permittee must submit the revised Rare Plant Monitoring Plan to the Board for approval prior to implementing the proposed changes. Condition 129 applies to the Rare Plant Monitoring Plan if the Permittee proposes changes to the Plan for Phase 2 and Phase 3 activities. The revised Plan must be approved by the Board prior to commencing Phase 2 or Phase 3 activities.

The Rare Plant Management Plan cannot be approved at this time and should be revised and re-submitted **90 days prior to commencement of Phase 1 activities** for Board approval. The revised Plan should be in accordance with Board directives in the Board's decision letter, the requirements outlined in the condition and reflect updates as agreed to during the public review, and to reflect the scope of the proposed activities.

Non-standard condition 84 lists the requirements for an Invasive Species Management Plan. This Plan is required by the Permit to reduce the likelihood of significant impacts on vegetation through the spread of invasive species according to Measure 11-2. CZN included a draft Invasive Species Management Plan in the Applications submitted February 20, 2019.<sup>67</sup>

Measure 11-2 requires an Invasive Species Management Plan to be reviewed and approved by Parks Canada and the Board prior to commencement of construction. Therefore, the Permittee is required to submit this Plan prior to Phase 1 activities for the Board's approval prior to commencement of Phase 1 activities. The Plan is to include baseline to inform the mitigation measure and Adaptive Management for invasive species management. Condition 85 sets out the requirements of the Plan, including the EA Measure 11-1, Part 4 and 15-1 (monitoring by the developer), and the Adaptive Management requirements detailed in Appendix B of the Report of EA. If changes to the Invasive Species Management Plan are proposed after it is approved, the Permittee must submit the revised Invasive Species Management Plan to the Board for approval prior to implementing the proposed changes. Condition 129 applies to the Invasive Species Management Plan if the Permittee proposes changes to the Plan for Phase 2 and Phase 3 activities. The revised Plan must be approved by the Board prior to commencing Phase 2 or Phase 3 activities.

The Invasive Species Management Plan cannot be approved at this time and should be revised and re-submitted **90 days prior to commencement of Phase 1 activities** for Board approval. The revised Plan should be in accordance with Board directives in the Board's decision letter, the requirements outlined in the condition, reflect updates as agreed to during the public review.

#### 26(1)(l) Security Deposit

The Board is authorized to require the Permittee to provide security to the Minister by subsection 32(1) of the MVLUR. Subsection 32(2) of the MVRMA specifies how the security may be applied.

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<sup>67</sup> See CZN's Invasive Species Management Plan ([hyperlink](#)), dated February 20, 2019.

The Board has included a requirement for security in the Permit. The Board's reasons associated with this section are described above in Section 5.4 and Appendix 1, in conjunction with reasons for security required by the Licences. The security deposits required by these two instruments are discussed together since the estimates deal with the same Project and are intimately linked.

#### 26(1)(m) Fuel Storage

A Spill Contingency Plan is a standard requirement for land use permits issued by the Board. This Plan is intended to ensure that an action plan(s) for responses to spills and Unauthorized Discharges has been established to effectively control and clean up spills and Unauthorized Discharges, with the goal of preventing or limiting damage to the Receiving Environment. This Plan is also required under Part F of Licence MV2019L8-0002 and Part G of Licence MV2014L8-0006 and the Board's reasons for including this Plan, and requiring revisions and re-submittals, are described above in Section 5.9. To the extent possible, the Board has mirrored these conditions with the requirements of the Licences to ensure one submission will satisfy conditions of both the Licences and Permit. Condition 129 applies to the Spill Contingency Plan if the Permittee proposes changes to the Plan for Phase 2 and Phase 3 activities. The revised Plan must be approved by the Board prior to commencing Phase 2 or Phase 3 activities.

#### 26(1)(o) Restoration of the Lands

The following conditions related to Closure and Reclamation have been included in the Permit to align with Part H of MV2014L8-0006 and Part G of MV2019L8-0002: "Closure and Reclamation Plan"; "Closure and Reclamation Plan – Revised"; "Closure and Reclamation Plan – Final"; "Progressive Reclamation – Carry Out As Approved"; "Progressive Reclamation – Notification"; "Closure and Reclamation Completion Report"; and "Performance Assessment Report". The Board's reasons for including these conditions are described above in Section 5.10. To the extent possible, the Board has mirrored these conditions with the requirements of the Licences to ensure one submission will satisfy conditions of both the Licences and Permit.

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

Non-standard condition 124 has been added so that the Permittee ensures all submission to the Board are in accordance with the MVLWB's *Document Submission Standards* and include a conformity statement or table which identifies where the pertinent requirements of the Permit or direction from the Board are addressed. This condition aligns with a condition in the Licences and should improve the consistency and efficiency of the submission and review process.

Non-standard condition 125 has been added to ensure that the Permittee submits all management plans according to the MVLWB's *Standard Outline for Management Plans*. This condition aligns with a condition in the Licences and should assist the Permittee in preparing management in a consistent way that allows reviewers to locate information efficiently.

Non-standard condition 126 has been added to ensure the Permittee complies with all terms of reference, plans, reports, studies and programs approved as per the conditions of this Permit, including revisions. This condition aligns with a condition in the Licences and is to ensure the Permittee complies with the most-recently approved terms of reference, plans, reports, studies and programs.

Non-standard condition 127 has been added so that the Permittee can revise terms of reference, plans, reports, and programs at any time, to be submitted to the Board for approval a minimum of 90 days prior to implementing the proposed update. This condition aligns with a condition in the Licences and highlights that revisions must be approved by the Board before changes are implemented.

Non-standard condition 128 has been added so that the Board can direct the Permittee to revise any submission as per the Board's direction, for resubmittal and approval. This condition aligns with a condition in the Licences and may be initiated in response to other information made available to the Board, such as inspection reports or revisions to a related submission.

Non-standard condition 129 aligns with a condition in the Licences. See Section 5.3 for the Board's reasons.

Non-standard condition 130 aligns with a condition in the Licences. See Section 5.3 for the Board's reasons.

An Engagement Plan is a standard requirement for land use permits issued by the Board. This Plan is intended to ensure adequate and effective engagement with potentially affected parties has occurred prior to the submission of the Application (in the form of the Engagement Log) and is planned for throughout the life of the Project. This Plan is also required under Part B of the Licences, and required revisions and re-submittals are described above in Section 5.3. To the extent possible, the Board has mirrored these conditions with the Licence requirements to ensure one submission will satisfy conditions of both the Licence and Permit.

The Emergency Response Plan has been removed as a condition from the Permit. The Plan is also removed as a condition from Part F of Licence MV2019L8-0002 and Part G of Licence MV2014L8-0006. The Board's reasons are described in Section 5.9.

Non-standard condition 133 lists the requirements for an Avalanche Hazard Management Plan. This Plan is required by the Permit to reduce the likelihood of potential adverse impacts on human safety and Project infrastructure resulting from avalanches according to Suggestion 5-1 of the Report of EA. Suggestion 5-2 recommends that the MVLWB and Parks Canada consider the Alpine Solutions recommendations made during the EA<sup>68</sup>, CZN's commitments, and Suggestion 5-1 when setting land use permit conditions. CZN included a document titled "Updated Access Road Avalanche Hazard Maps and Assessment of Avalanche Risk to Crossing Structures"<sup>69</sup> completed by Alpine Solutions, in the Applications submitted February 20, 2019.

Suggestion 5-1 recommends that the Avalanche Hazard Management Plan be prepared prior to construction. During the Technical Session, CZN indicated that the Avalanche Hazard Management Plan would be required prior to Phase 1 (Technical Session Transcript pg. 200, line 24 - pg. 201, line 5, June 5, 2019). Therefore, the Permittee is required to submit this Plan

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<sup>68</sup> See MVEIRB document 'CanZinc response to outstanding adequacy items' (Public Registry #178) ([hyperlink](#)), dated April 12, 2016

<sup>69</sup> See CZN's Updated Access Road Avalanche Hazard Maps and Assessment of Avalanche Risk to Crossing Structures ([hyperlink](#)), dated February 20, 2019

prior to Phase 1 activities for the Board's approval prior to commencement of Phase 1 activities. The Plan is to include all measures employed to reduce risk to vehicles and occupants from avalanches. Condition 133 sets out the requirements of the Plan, based on recommendations from Alpine Solutions, reviewer comments, the Report of EA Suggestion 5-1, and the Adaptive Management requirements detailed in Appendix B of the Report of EA. If changes to the Avalanche Hazard Management Plan are proposed after it is approved, the Permittee must submit the revised Avalanche Hazard Management Plan to the Board for approval prior to implementing the proposed changes. Condition 129 applies to the Avalanche Hazard Management Plan if the Permittee proposes changes to the Plan for Phase 2 and Phase 3 activities. The revised Plan must be approved by the Board prior to commencing Phase 2 or Phase 3 activities.

The Avalanche Hazard Management Plan shall be submitted **90 days prior to commencement of Phase 1 activities** for Board approval. The Plan should be in accordance with the requirements outlined in the condition and reflect updates as agreed to during the public review, to reflect the scope of the proposed activities.

Non-standard condition 135 requires that an Avalanche Professional observe avalanche paths a minimum of once per winter season. This condition is in response to a recommendation by Alpine Solutions that indicates that "in order to decrease uncertainty associated with the avalanche hazard assessment, avalanche paths should be observed for avalanche occurrences at least once per winter. This typically involves coordination by an avalanche professional, and could be achieved through fixed wing aerial observations coinciding with the end of other major avalanche cycles in the region". This recommendation is in the document titled "Updated Access Road Avalanche Hazard Maps and Assessment of Avalanche Risk to Crossing Structures"<sup>70</sup> that was submitted in CZN's Applications on February 20, 2019 in the Post-EA Information Package. During the public review, the CIRNAC Inspector recommended that winter seasons will need to be defined so the condition can be enforced (CIRNAC Inspectors-16, Sept 9, 2019). As no recommendations were received about how the Board should define "winter season" during the public review of the draft Permit, the Board has updated the condition to read "A minimum of once per winter season, avalanche paths shall be observed for avalanche occurrences by an Avalanche Professional as per the approved Avalanche Hazard Management Plan". The Board reminds CZN to specify in the Avalanche Hazard Management Plan when during the winter season avalanche paths will be observed, including justification.

A Geochemical Verification Program has been included to align with Part F of MV2014L8-0006 and Part E of MV2019L8-0002. The Board's reasons for including this Plan, and requiring revisions and re-submittals, are described above in Section 5.7. To the extent possible, the Board has mirrored these conditions with the requirements of the Licences to ensure one submission will satisfy conditions of both the Licences and Permit. Condition 129 applies to the Geochemical Verification Plan if the Permittee proposes changes to the Plan for Phase 2 and Phase 3 activities. The revised Plan must be approved by the Board prior to commencing Phase 2 or Phase 3 activities.

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<sup>70</sup> See CZN's Updated Access Road Avalanche Hazard Maps and Assessment of Avalanche Risk to Crossing Structures ([hyperlink](#)), dated February 20, 2019

A Borrow Pit Management Plan has been included to align with Part F of MV2014L8-0006 and Part E of MV2019L8-0002. The Board's reasons for including this Plan, and requiring revisions and re-submittals, are described above in Section 5.7. To the extent possible, the Board has mirrored these conditions with the requirements of the Licences to ensure one submission will satisfy conditions of both the Licences and Permit. Condition 129 applies to the Borrow Pit Management Plan if the Permittee proposes changes to the Plan for Phase 2 and Phase 3 activities. The revised Plan must be approved by the Board prior to commencing Phase 2 or Phase 3 activities.

An Explosives Management Plan has been included to align with Part F of MV2014L8-0006 and Part E of MV2019L8-0002. The Board's reasons for including this Plan, and requiring revisions and re-submittals, are described above in Section 5.7. To the extent possible, the Board has mirrored these conditions with the requirements of the Licences to ensure one submission will satisfy conditions of both the Licences and Permit. Condition 129 applies to the Explosive Management Plan if the Permittee proposes changes to the Plan for Phase 2 and Phase 3 activities. The revised Plan must be approved by the Board prior to commencing Phase 2 or Phase 3 activities.

A non-standard condition #142 lists the requirement for a Traffic Control Mitigation and Road Operations and Maintenance Plan. This Plan is required by the Permit to manage access control mitigations and all traffic on the road, including mine and non-mine traffic, according to Report of EA Measure 5-2, and to ensure that proper procedures are implemented and followed at all times to promote the safety of road users and wildlife in the area according to commitments made by CZN during the EA. CZN included a separate draft Traffic Control Mitigation and Monitoring Plan<sup>71</sup> and Road Operations and Maintenance Plan<sup>72</sup> in the Applications submitted February 20, 2019.

During the EA, CZN submitted<sup>73</sup> and committed to implementing a Road Operations Plan (commitment #106). During the public review there was a comment that some sections/aspects of the Traffic Control and Management Plan, the Road Construction Management Plan, the Road Operations and Maintenance Plan, and the Emergency Response Plan duplicate information, and that this could be problematic as changes to one plan would necessitate changes in another plan (Racher-7, May 15, 2019). At the technical session there was a discussion that reducing the number of plans required by the Licences and Permits, and merging plans where appropriate, could be a way to decrease overlap and inconsistency between plans. CZN agreed to combining the draft Traffic Control Mitigation and Monitoring Plan and the draft Road Operations and Maintenance Plan to decrease the number of plans and overlapping content in plans (Technical Session Transcript pg. 51, line 18 - pg. 62 line 25, June 5, 2019). Later in the proceeding, CZN commented that the title for the combined plan should be "Traffic Control Mitigation and Road Operations and Maintenance Plan" (CZN-40, Sept 9-19). The Board agrees that the Traffic Control Mitigation and Monitoring Plan and Road Operations and Maintenance Plan should be combined into one plan and that the name of the Plan should be "Traffic Control Mitigation and Road Operations and Maintenance Plan".

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<sup>71</sup> See CZN's draft Traffic Control Mitigation and Management Plan ([hyperlink](#)), dated February 20, 2019

<sup>72</sup> See CZN's draft Road Operations and Maintenance Plan ([hyperlink](#)), dated February 20, 2019

<sup>73</sup> See MVEIRB document 'Road Operations Plan (winter), 2012' (Public Registry #135) ([hyperlink](#)), dated January 27, 2016

Condition 142 sets out the requirements of the Plan, including the Report of EA Measure 5-1 and 15-1 (monitoring by the developer), and the Adaptive Management requirements detailed in Appendix B of the Report of EA. Measure 5-1 Part 1 requires the Traffic Control Mitigation and Management Plan to consider all Project phases ; consequently this Plan is required prior to Phase 1. If changes to the Traffic Control Mitigation and Road Operations and Maintenance Plan are proposed after it is approved, the Permittee must submit the revised Traffic Control Mitigation and Road Operations and Maintenance Plan to the Board for approval prior to implementing the proposed changes. Condition 129 applies to the Traffic Control Mitigation and Road Operations and Maintenance Plan if the Permittee proposes changes to the Plan for Phase 2 and Phase 3 activities. The revised Plan must be approved by the Board prior to commencing Phase 2 or Phase 3 activities.

The Traffic Control Mitigation and Road Operations and Maintenance Plan cannot be approved at this time and should be revised and re-submitted **90 days prior to commencement of Phase 1 activities** for Board approval. The revised Plan should be in accordance with Board directives in the Board's decision letter, the requirements outlined in the condition, reflect updates as agreed to during the public review, and to reflect the scope of the proposed activities.

The non-standard condition lists the requirement for a Contaminant Loading Management Plan. This Plan is required by the Permit to manage and mitigate contaminant loading to the environment associated with Phase 2 and Phase 3, according to Suggestion 11-3, commitments made during the EA, and public review comments. In the Road Operations and Maintenance Plan submitted by CZN on February 20, 2019, a section was included in the Plan about Potential Contaminant Loading which outlined a method to sample soils and vegetation around the ASR for contaminant loading.

Suggestion 11-3 states:

The Review Board suggests that the Mackenzie Valley Land and Water Board and Parks Canada should consider potential impacts on vegetation from contamination from spills, concentrate loading, and road dust, and determine if sampling of vegetation contaminant levels prior to operations (start of hauling), is necessary.

In the EA CZN made commitments about a Contaminant loading management plan. Firstly, CZN committed to follow the existing draft Contaminant Loading Management Plan<sup>74</sup> and soils sampling along the road bed both before and during haul operations (commitment #152). Secondly, CZN committed to updating the plan in consultation with ECCC and Parks, with approval required before Concentrate haul commences (commitment #151). Finally, CZN committed that monitoring of annual soil, snow, dust fall, and ambient dust sampling will be included in the Contaminant Loading Management Plan, and the Plan would include trigger or action levels and Adaptive Management plans.

During the public review, ECCC recommended that CZN provide further rationale on snow monitoring not being appropriate for an all season road, as CZN had indicated in an updated

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<sup>74</sup> See MVEIRB document 'Canadian Zinc Prairie Creek Mine Contaminant Loading Management Plan' (Public Registry #133) ([hyperlink](#)), dated January 27, 2016

commitments table<sup>75</sup> provided with the Applications (ECCC-14, May 15, 2019). ECCC further recommended that CZN provide additional information on a program to monitor dust fall or airborne particulate near the ASR (ECCC-14, May 15, 2019). During the Technical Session ECCC stated that they disagreed with CZN about not believing dust fall monitoring is warranted, and that they would like to see a form of dust fall monitoring, at least in initial stages for baseline data (Technical Session Transcript pg. 78 line 18 - pg. 79 line 4). Later ECCC indicated that they were content about the response CZN had given during the public review regarding the comment not to monitor snow, but indicated that they would like to see sampling for dust from the road, especially during the summer months to determine whether or not metals or other contaminants in the road dust could get into water courses (Technical Session Transcript pg. 90, lines 11-18, June 6, 2019). Different opinions were heard in response to a question by Board staff about if monitoring vegetation for contamination should be required before Construction of the ASR and Phase 2, or prior to Phase 3 and Concentrate hauling. Racher commented that baseline monitoring just before Concentrate hauling should be sufficient and satisfy the requirement of the EA, while Parks Canada indicated that, given that Construction of the ASR could result in the development of dust, baseline data should be collected prior to Phase 2 road Construction or embankment Construction. CZN did not think it was necessary to monitor prior to hauling given that contaminants would not get into the dust during ASR Construction (Technical Session Transcript pg. 90 line 22 - pg. 95 line 9, June 6, 2019).

Following the technical session, the draft Permit was updated to include specific requirements for contaminant loading monitoring and management as a requirement of the Traffic Control Mitigation and Road Operations and Maintenance Plan. During the final review of the draft Permit, ECCC indicated that their request that air quality monitoring be incorporated into the Permit remained outstanding, and that dust fall monitoring and active particulate monitoring for airborne particulates along the road be captured in the appropriate management plan. The Board agrees with ECCC and has included requirements for dust fall and airborne particulate monitoring along the right-of-way, including the requirement to establish baseline conditions, collected prior to Phase 2. Considering the evidence, the Board agrees with Parks Canada and believes that vegetation and contaminant monitoring data along the right-of-way should be completed prior to Phase 2 to establish baseline conditions. Given that the Traffic Control Mitigation and Road Operations and Maintenance Plan already lists several requirements, and would be challenging to review if it also included requirements for contaminant loading, the Board has decided to require CZN to submit a separate Contaminant Loading Management Plan prior to Phase 2 activities, as the Plan will not be necessary for Construction of the Winter Road in Phase 1. The Board suggests that CZN engages with ECCC about the Contaminant Loading Management Plan prior to developing the Plan.

The Permittee is required to describe monitoring and management of contaminants for Phase 2 and 3. The Board recognizes that the Plan may require revision in Phase 3. If changes to the contaminant monitoring and management activities are proposed after it is approved, the Permittee must submit the revised Contaminant Loading Management Plan to the Board for approval prior to implementing the proposed changes. Condition 129 applies to the Contaminant Loading Management Plan if the Permittee propose changes to the Plan for

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<sup>75</sup> See CZN's Updated Commitments Table ([hyperlink](#)), dated February 20, 2019



Phase 3 activities. The revised Plan must be approved by the Board prior to commencing Phase 2 or Phase 3 activities.

Non-standard condition 146 aligns with a condition in the Licences. See Section 5.3 for the Board's reasons.

Non-standard condition 147 aligns with a condition in the Licences. See Section 5.3 for the Board's reasons.

## 7.0 Conclusion

Subject to the scopes, definitions, conditions, and terms set out in the Licence and Permit, and for the reasons expressed herein, the MVLWB is of the opinion that the land-use activities, Water Use, and Waste disposal associated with the Project can be completed by Canadian Zinc Corporation while providing for the conservation, development, and utilization of Waters in a manner that will provide the optimum benefit for all Canadians and in particular for the residents of the Mackenzie Valley.

Water Licence MV2014L8-0006, MV2019L8-0002 and Land Use Permit MV2014F0013 contain provisions that the Board deems necessary to ensure and monitor compliance with the MVRMA, *Waters Act*, and the Regulations made thereunder, and to provide appropriate safeguards in respect of Canadian Zinc Corporation's use of the land and Water affected by the Licence.

SIGNATURE

Mackenzie Valley Land and Water Board



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Mavis Cli-Michaud, Chair

December 10, 2019

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Date

## Appendices and Annexes

Water Licence and Land Use Permit Applications	
Preliminary Screener	MVLWB
File Numbers	MV2014F0013, MV2014L8-0006, MV2019L8-0002
Company	Canadian Zinc Corporation
Project	Prairie Creek All Season Road Project, NT

### Appendix 1: Reclamation Security for Project

#### 1.0 Introduction

As the ASR crosses Territorial and IAB Lands, the Board considered security for activities on Territorial and IAB lands in Permit MV2014F0013, Licence MV2014L8-0006, and Licence MV2019L8-0002. During the regulatory proceeding, ENR, CZN, and CIRNAC provided comments on the security estimates for this Project. Reviewers developed security estimate using the RECLAIM model, which is the Board's preferred closure cost estimation model as indicated in the Board's *Guidelines for Closure and Reclamation Cost Estimates for Mine*.<sup>76</sup> The RECLAIM model can segregate the security estimates into land or water related cost by assigning a percentage depending on the site-specific conditions. The land related cost becomes the security estimate under the Permit, while the water related cost becomes the security estimate under the Licence. The Board has considered the submitted evidences related land and water related security estimates on Territorial and IAB lands as summarized below.

ENR submitted security estimates for Territorial lands provided by Brodie Consulting Ltd. dated April 18, 2019 during the review of the Post-EA Information Package (ENR-81, 187, May 15, 2019). During the Technical Session, an Information Request (TS-IR#8) to CZN required updated security estimates for all jurisdictions, divided by Project phase, to inform ENR, CIRNAC, and Parks Canada's final estimates (Technical Session Transcripts pg. 6, line 15, June 6, 2019), which was submitted on July 2, 2019.<sup>77</sup> During the review of version 2 of the draft Permit and Licence conditions, ENR submitted revised security estimates for Territorial lands provided by Brodie Consulting Ltd. dated August 28, 2019 after reviewing CZN's revised security estimate from July 2, 2019 (ENR-23 and 29, Sept 19, 2019). On October 2, 2019, the Board issued an Information Request to CIRNAC requesting comments on security estimates on IAB lands.<sup>78</sup> On October 3, 2019, CZN submitted their final security estimates based on ENR's security estimates dated August 28, 2019, which is consistent with ENR's August 29, 2019 security estimates.<sup>79</sup> CZN also applied the same methods in the memo by Brodie Consulting Ltd. to calculate the security estimates for IAB land. On October 15, 2019, CIRNAC provided a response to the Board's Information Request regarding the security estimates on IAB land.<sup>80</sup> The submissions of security estimates on Territorial and IAB lands are detailed below.

#### **1.1 Security for Activities on Territorial Lands**

In ENR's preliminary security estimates for Territorial lands dated April 18, 2019, ENR estimated a total of \$3,823,989, \$1,935,718 under the Permit MV2014F0013 and \$1,888,271 under the Licence

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<sup>76</sup> See [www.mvlwb.com](http://www.mvlwb.com) → Resources → Policy and Guidelines → *MVLWB/GNWT/INAC Guidelines for Closure and Reclamation Cost Estimates for Mines (2017)* ([hyperlink](#))

<sup>77</sup> See CZN – Response to IR #8 Re Security ([hyperlink](#)), dated July 2, 2019

<sup>78</sup> See Information Request to CIRNAC Re Security ([hyperlink](#)), dated October 2, 2019

<sup>79</sup> See CZN – Final Security Estimates ([hyperlink](#)), dated October 3, 2019

<sup>80</sup> See CIRNAC Response to Information Request Re Security ([hyperlink](#)), dated October 15, 2019

MV2014L8-0006 (ENR-160, May 15, 2019). ENR also indicated that if CZN provides additional information, ENR would be open to revising its security estimates accordingly (ENR-161, May 15, 2019).

In CZN's July 2, 2019 response to Information Request #8, CZN proposed security estimates for each phase. For Phase 1, CZN proposed \$1,460,937 in total, \$1,090,402 under Permit MV2014F0013 and \$370,535 under Licence MV2014L8-0006. For Phase 2, CZN proposed \$2,787,906 in total, where \$1,288,193 would be required under Permit MV2014F0013 and \$1,499,713 would be required under Licence MV2014L8-0006.

After reviewing CZN's estimates dated July 2, 2019, ENR submitted revised security estimates provided by Brodie Consulting Ltd. dated August 28, 2019. For Phase 1, ENR estimated the security required to be \$1,451,650 in total, \$1,115,309 under Permit MV2014F0013, and \$336,341 under Licence MV2014L8-0006 (ENR-25, Sept 19, 2019). For Phase 2, ENR estimated the security required to be \$3,043,881 in total, \$1,335,217 under Permit MV2014F0013, and \$1,708,665 under Licence MV2014L8-0006. Therefore, Prior to Phase 2 activities, CZN shall post an additional of \$219,908 for Permit M2014F0013 to maintain a total of \$1,335,217, and an additional \$1,372,324 for Licence MV2014L8-0006 to maintain a total of \$1,708,665.

<b>Security on Territorial Land</b>	<b>Prior to Phase 1</b>	<b>Prior to Phase 2</b>	<b>Total maintained</b>
<b>Permit MV2014F0013</b>	\$1,115,309	\$219,908	\$1,335,217
<b>Licence MV2014L8-0006</b>	\$336,341	\$1,372,324	\$1,708,665
<b>Total</b>	\$1,451,650	\$1,592,231	\$3,043,881

CZN's final security estimates dated October 3, 2019 is consistent with ENR's security estimates above.

## 1.2 Security for Activities on IAB Lands

CZN's estimates dated July 2, 2019 provided security for IAB lands. For Phase 1, CZN proposed \$25,345 in total, all held under Permit MV2014F0013 and for Phase 2, CZN proposed \$80,436 in total, all held under Permit MV2014F0013.

In CZN's updated estimates dated October 3, 2019, CZN proposed security estimate of \$25,981 for Phase 1, all held under Permit MV2014F0013, and \$82,703 for Phase 2, all held under Permit MV2014F0013. Prior to Phase 2 activities, CZN shall post an additional \$56,722 for Permit MV2014F0013 to maintain a total security of \$82,703.

In CIRNAC's response to the Board's Information Request, CIRNAC indicated that they are in support of CZN's October 3, 2019 updated security estimates.

<b>Security on IAB Land</b>	<b>Prior to Phase 1</b>	<b>Prior to Phase 2</b>	<b>Total maintained</b>
<b>Permit MV2014F0013</b>	\$25,981	\$56,722	\$82,703
<b>Licence MV2019L8-0002</b>	\$0	\$0	\$0
<b>Total</b>	\$25,981	\$56,722	\$82,703

## 2.0 Decision on Security

The Board may consider the following items from subsection 32(2) of the MVLUR in setting the amount of security:

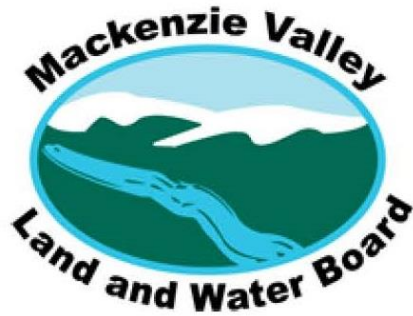
- a) The ability of the applicant or prospective assignee to pay the costs referred to in that subsection;
- b) The past performance of the applicant or prospective assignee in respect of any other permit;
- c) The prior posting of security by the applicant pursuant to other federal legislation in relation to the land-use operation; and
- d) The probability of environmental damage or the significance of any environmental damage.

The Board has chosen to set security at \$82,703 under Permit MV2014F0013 for IAB lands, \$1,335,217 under Permit MV2014F0013 for Territorial land, \$1,708,665 under Licence MV2014L8-0006, and no security under Licence MV2019L8-0002.

The financial security conditions in the Licence require an initial deposit prior to commencing operations, with additional deposits phased (as described in the tables above) to match the increasing liability as the Project progresses. In this way, the liability at the site is matched by security deposits as the Project proceeds through each phase of Construction, operation and closure. This is consistent with INAC's *Mine Site Reclamation Policy for the Northwest Territories*.<sup>81</sup> Consequently, the Board is satisfied that the requirements it has imposed are sufficient to protect the environment and ensure that the Project is restored. Due to CZN's financial position, past performance, and security provisions in the Licences will ensure closure of the Project will be financed ahead of any liabilities that will be incurred.

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<sup>81</sup> See [www.mvlwb.com](http://www.mvlwb.com) → Resources → Policies and Guidelines: [INAC – Mine Site Reclamation Policy for the NWT](#) (2007).



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**Annex 1: Incorporation of Measures and Suggestions from Environmental Assessment EA1415-01 for Project**

**Table 2: Measures 5-1 to 15-4 from the Environmental Assessment EA1415-01 for the Project\***

#	Topic	Measure	Where item was addressed in the Licence and Permit
5-1, Part 1	Independent Technical Review Panel	In order to prevent significant adverse impacts on people and the environment, CanZinc will establish and fund an independent technical review panel to evaluate and approve the final road design. The developer will follow the final recommendations of the review panel with respect to road design. CanZinc will develop a terms of reference for the panel based on the requirements of this measure.	Licence MV2014L8-0006 Part E, condition 7, 8, 15, 16 Licence MV2019L8-0002 Part D, condition 7, 8, 15, 16 Permit condition 25, 33, 34
5-1, Part 2	Panel Mandate	<p>The mandate of the independent technical review panel will be to provide independent expert advice and recommendations on the design and construction of the road to minimize: traffic-related accidents, road failure or malfunctions, and any resulting significant adverse impacts on human safety or the environment.</p> <p>The panel will ensure that the road is designed and constructed to an appropriate standard that is highly protective of people and the environment, including consideration of:</p> <ul style="list-style-type: none"> <li>i. the number and type of mine and non-mine related vehicles expected to use the road;</li> <li>ii. two-way traffic;</li> <li>iii. human safety and minimizing traffic related accidents;</li> <li>iv. permafrost degradation and impacts on water quality; and,</li> <li>v. appropriate road design criteria, including but not limited to:</li> </ul>	Licence MV2014L8-0006 Part E, condition 7 & 8 Licence MV2019L8-0002 Part D, condition 7 & 8 Permit condition 25, 146, 147,

		<ul style="list-style-type: none"> <li>• watercourse crossings;</li> <li>• right of way clearing width;</li> <li>• road alignment, grades, subgrade width, and road widening at curves;</li> <li>• cut and fill slopes, cut and fill slope angles, slope stability; and</li> <li>• number of, and distance between, pullouts.</li> </ul>	
5-1, Part 3	Panel Composition	At a minimum, the panel will be comprised of three members who are professional engineers and geoscientists. The panel must have expertise in northern road design, including permafrost and mountainous terrain experience. Members of the panel will have knowledge and experience to appropriately address the mandate in Measure 5-1 part 2 and considerations in Measure 5-1 part 5. CanZinc will engage with Parks Canada, the Mackenzie Valley Land and Water Board, the Government of the Northwest Territories, Nahanni Butte Dene Band, Liidlii Kué First Nation, and Dehcho First Nations on the panel composition. Members of the panel will be independent and will be approved by the Mackenzie Valley Land and Water Board and Parks Canada.	Permit Condition 24 Condition 6 of Part E Licence MV2014L8-0006 & Part D Licence MV2019L8-0002
5-1 Part 4	Panel Activities and Timing	<p>The panel will be established prior to detailed design of the road. CanZinc will engage with Parks Canada, the Mackenzie Valley Land and Water Board, the Government of the Northwest Territories, Nahanni Butte Dene Band, Liidlii Kué First Nation, and Dehcho First Nations on the panel activities. CanZinc will provide the panel's reports to Parks Canada and the Mackenzie Valley Land and Water Board. At a minimum, the panel will complete the activities listed below.</p> <p>i. Prior to detailed design of the road:</p> <ul style="list-style-type: none"> <li>• review and comment on the Panel's terms of reference.</li> </ul> <p>During detailed design of the road:</p> <ul style="list-style-type: none"> <li>• work with CanZinc to review updated information, design plans, and detailed design work, including the terrain stability assessments undertaken for the proposed cut and fill slopes, and the developer's detailed interpretation of the permafrost conditions at the site upon completion of geotechnical site investigation work; and,</li> <li>• provide advice and recommendations for improving road design, following the mandate above, and considering construction, operations and maintenance, closure and reclamation, and temporary closure.</li> </ul> <p>ii. Following detailed design of the road:</p> <ul style="list-style-type: none"> <li>• review the detailed design documents for the road;</li> <li>• provide a preliminary report to CanZinc on the panel's findings and conclusions, including any additional or outstanding recommendations;</li> <li>• review CanZinc's response and justification for any recommendations the developer does not wish to follow;</li> <li>• prepare and submit a final report to CanZinc that includes the panel's findings and conclusions on the final design.</li> </ul> <p>iii. During construction:</p>	Licence MV2014L8-0006 Part E, condition 12 & 13 Licence MV2019L8-0002 Part D, condition 12 & 13 Permit condition 30 & 31

		work with the developer and regulatory authorities to determine the frequency and nature of the panel's activities during construction (at a minimum, the panel will be consulted and have the opportunity to revise its final report if any material changes to design are made following the panel's report).	
5-1, Part 5	Other Panel Considerations	<p>The independent technical review panel will also consider any relevant information on the record from EA1415-01, information gathered as a result of relevant CanZinc commitments, and the requirements and outcomes of Review Board measures. This includes, but is not limited to:</p> <ul style="list-style-type: none"> <li>i. the updated risk assessment (Appendix C, commitment #241);</li> <li>ii. terrain stability assessment reports (Appendix C, commitment #137) and any additional mitigation required to address instability;</li> <li>iii. avalanche related information (Appendix C, commitment #114; Suggestion 5-1);</li> <li>iv. individual detailed borrow site plans and designs (Appendix C, commitment #119);</li> <li>v. geotechnical, geophysical, permafrost, and hydrological investigations (Appendix C, commitments #129, #156, #232, #235; measure 12-1; measure 8-1);</li> <li>vi. the Traffic Control Mitigation and Management Plan (Measure 5-2); relevant management plans and proposed mitigations;</li> <li>vii. extreme weather events;</li> <li>viii. climate change; and,</li> <li>ix. karst features.</li> </ul>	<p>Licence MV2014L8-0006 Part E, condition 7 &amp; 8 Licence MV2019L8-0002 Part D, condition 7 &amp; 8 Permit condition 25</p>
5-2 Part 1	Traffic Control Mitigation and Management Plan	<p>In order to prevent significant adverse impacts from the Project on human safety, water quality, and wildlife from accidents and increased harvest along the road, CanZinc will create a Traffic Control Mitigation and Management Plan. The purpose of the plan is to manage access control mitigations and all traffic on the road, including mine and non-mine traffic. The plan will consider all Project phases (construction, operation, closure [including temporary closure]) as well as seasonal or weather related closure. This plan will replace Section 7.1 of the Road Operations Plan.</p> <p>Prior to construction, the developer will submit this plan to the Mackenzie Valley Land and Water Board and Parks Canada for approval, as a condition of respective land use permits. CanZinc will operate in accordance with the approved plan</p>	Permit Condition 146, 147
5-2, Part 2	Managing Traffic on the Road	<p>CanZinc will include all the mitigations it has identified for controlling non-mine traffic on the road in the Traffic Control Mitigation and Management Plan. The plan will describe roles and responsibilities for non-mine traffic mitigation and monitoring. At a minimum CanZinc will:</p> <ul style="list-style-type: none"> <li>i. exercise its right to control access on the lease parcels at the Liard River to control non-mine traffic;</li> <li>ii. operate a checkpoint when haul trucks are using the road and document all traffic known to be on the road; and</li> </ul>	Permit Condition 146, 147

		<p>iii. install signs indicating that the road is operated as a mine haul road and any public traffic using the road does so entirely at its own risk.</p> <p>In the Traffic Control Mitigation and Management Plan, CanZinc will also address mitigation and management strategies for all traffic on the road, including how this relates to the Journey Management System that CanZinc intends to use for mine traffic. Mitigations to increase safety on the road with both mine and non-mine traffic present should consider:</p> <p>a. the independent technical review panel’s conclusions on road design and safety; and,  b. data sources that can provide information about high wildlife collision areas and non-mine traffic presence (such as wildlife camera traps [see Measure 6-3] and the harvest monitoring program[see Suggestion 7-1]).</p> <p>CanZinc will monitor non-mine traffic on the road and establish adaptive management, following the guidance in Appendix B of this Report of EA, within the Traffic Control Mitigation and Management Plan.</p>	
8-1, Part 1	Water baseline data, mitigation, monitoring, and adaptive Management	<p>To ensure that the road and crossings are designed to an appropriate standard, and constructed and operated in a manner that will be protective of the environment, CanZinc will:</p> <p>i. collect additional baseline data;  ii. identify and implement appropriate mitigation to prevent significant adverse impacts;  iii. combine monitoring programs and plans to coordinate water monitoring efforts; and  iv. incorporate principles of adaptive management into road and crossing design and monitoring.</p> <p>Parks Canada, Fisheries and Oceans Canada, and the Mackenzie Valley Land and Water Board will (within their respective jurisdictions) review and approve CanZinc’s actions to ensure the requirements of this measure are satisfied.</p>	<p>Part E, condition 14, 15, Schedule 3, condition 5, in Licence MV2019L8-0002</p> <p>Part F, condition 14, 15, Schedule 4, condition 5 in Licence MV2014L8-0006</p>
8-1, Part 2	Baseline Data	<p>CanZinc will collect baseline data necessary to enable the design, construction, and maintenance of watercourse crossings that are protective of the environment and inform future monitoring. CanZinc will install hydrometric stations and use the resulting data in its road and crossing designs. These stations will measure continuous streamflow data during the open water season and instantaneous flow measurements during the ice-covered period for a minimum of one year prior to construction of watercourse crossings. The stations will be established to:</p> <p>i. characterize spatial variability;  ii. characterize variability in watershed size;  iii. measure conditions at Sundog Creek and other key locations<sup>3</sup> (to be determined in consultation with regulators); and,  iv. provide locations for ongoing monitoring during operations.</p>	<p>Part E, condition 14, 15, Schedule 3, condition 5, in Licence MV2019L8-0002</p> <p>Part F, condition 14, 15, Schedule 4, condition 5 in Licence MV2014L8-0006</p>



		A minimum of one year of this data will be collected prior to the start of activities related to construction of watercourse crossings, and data collection will continue into construction (see Measure 8-1 part 4). CanZinc will work with Parks Canada, Fisheries and Oceans Canada, and the Mackenzie Valley Land and Water Board to determine what, if any, other water baseline data is required prior to construction to inform mitigation, future monitoring, and adaptive management.	
8-1, Part 3	Mitigate Impacts on water quality	CanZinc will use the baseline data collected, as well as any other relevant information and best management practices, to determine appropriate mitigation prior to construction and to revise detailed design plans for watercourse crossings.  The developer will share the baseline data with all relevant regulatory authorities and the independent panel (Measure 5-1) to facilitate Project review, permitting, and licensing.	Part E, condition 14, 15, Schedule 3, condition 5, in Licence MV2019L8-0002 Part F, condition 14, 15, Schedule 4, condition 5 in Licence MV2014L8-0006
8-1, Part 4	Monitoring	CanZinc has identified many different plans, programs, and commitments for monitoring Project effects on water during construction and operation. CanZinc will amalgamate these plans, programs, and commitments, to the extent feasible and practical, so that water monitoring is consolidated and coordinated. The Review Board understands that for operational purposes, CanZinc may wish to keep certain aspects of water monitoring separate. The Review Board encourages the developer to consolidate where it can, in order to simplify the number of plans to create and report on. The Review Board considers that this may be relevant to the following commitments (Appendix C): #55, #93, #94, #211, #212, #217, #218, and #239, among others.  Regarding ongoing monitoring at hydrometric stations, Parks Canada and the Mackenzie Valley Land and Water Board will review and approve monitoring plans, through the water licenses, and determine if and when ongoing monitoring can be phased out.	Part E, condition 14, 15, Schedule 3, condition 5, in Licence MV2019L8-0002 Part F, condition 14, 15, Schedule 4, condition 5 in Licence MV2014L8-0006
8-1, Part 5	Adaptive Management	As part of the water monitoring program(s), CanZinc will establish and implement an adaptive management framework that satisfies the requirements of Appendix B. This will include thresholds and actions that will be developed and adapted using all available baseline information, effects monitoring results, and Traditional Knowledge and will consider ways to coordinate or compliment Aboriginal monitoring initiatives (see Measure 15-4).	Part E, condition 14, 15, Schedule 3, condition 5, in Licence MV2019L8-0002 Part F, condition 14, 15, Schedule 4, condition 5 in Licence MV2014L8-0006
10-1	Traditional Knowledge	In order to prevent significant adverse impacts on heritage resources, and to support Traditional Knowledge requirements in other measures in this Report of EA, the developer will:	Permit Condition 80, 132, 133, 151 Part B condition 4, 20, 21 in both Licences

		<ul style="list-style-type: none"> <li>i. engage with potentially-affected Aboriginal groups, including Nahanni Butte Dene Band, Liidlíí Kué First Nation, and Dehcho First Nations, about ways to avoid impacts from the Project, including impacts on heritage resources;</li> <li>ii. conduct this engagement prior to the Archaeological Impact Assessment (AIA), so that the resulting information can inform the AIA (see Measure 10- 2);</li> <li>iii. thoroughly consider and, where applicable, incorporate Traditional Knowledge into Project design, mitigations, monitoring, and adaptive management; and</li> <li>iv. submit an updated engagement record and plan in accordance with Mackenzie Valley Land and Water Board (MVLWB) Engagement Guidelines<sup>4</sup> for review and approval by Parks Canada and the MVLWB.</li> </ul> <p>The developer will do this in a culturally-appropriate way that respects applicable Traditional Knowledge policies and protocols.</p>	
10-2	AIA	<p>In order to prevent significant adverse impacts on heritage resources, the developer will conduct an Archaeological Impact Assessment to the specifications detailed in commitments #215 and #216 in Appendix C of this Report. The Archaeological Impact Assessment will also:</p> <ul style="list-style-type: none"> <li>i. be developed in consultation with Parks Canada, the Government of the Northwest Territories, Nahanni Butte Dene Band, Liidlíí Kué First Nation, and Dehcho First Nations;</li> <li>ii. incorporate all evidence of place names, traditional land use, Traditional Knowledge, cultural and spiritual use, and harvesting in the vicinity of the Project;</li> <li>iii. be conducted along the final alignment of the All Season Road, at borrow site locations, and other areas where ground disturbance is proposed; and</li> <li>iv. be completed prior to any new ground disturbance.</li> </ul>	Permit condition 80
11-1	Rare plant and rare plant assemblage baseline surveys and management in the Nahanni National Park Reserve	<p>In order to inform effective mitigations, adaptive management, and reclamation and to prevent significant adverse impacts on vegetation within Nahanni National Park Reserve, the developer will complete vegetation field surveys focussed on the presence of rare plants and rare plant assemblages prior to ground disturbance or clearing<sup>5</sup> within Nahanni National Park Reserve. Parks Canada will approve the details of these surveys, including timing, seasonality, and methods.</p> <p>CanZinc will use the results of the baseline surveys to inform the following:</p> <ul style="list-style-type: none"> <li>i. understanding impacts on rare plants and rare plant assemblages;</li> <li>ii. identifying appropriate mitigation to prevent significant adverse impacts;</li> <li>iii. monitoring and adaptive management; and</li> <li>iv. closure and reclamation.</li> </ul> <p>The results of the baseline surveys will be submitted to Parks Canada.</p>	Permit condition 83, 84,

11-1, Part 2	Rare Plant Management Plan	<p>In order to prevent significant adverse impacts on rare plants as a result of construction and operation, CanZinc will develop a Rare Plant Management Plan prior to construction. This plan will include mitigation, monitoring, and adaptive management for rare plants.</p> <ul style="list-style-type: none"> <li>• Mitigation: CanZinc will use the information gathered in the surveys required by Measure 11-1 part 1, as well as any other relevant information, to identify appropriate mitigation within the plan to minimize significant adverse impacts on rare plants or rare plant assemblages.</li> <li>• Effects monitoring: The plan will include details on how rare plants will be identified and monitored during construction and operations activities. The plan will include effects monitoring for any identified rare plants or rare plant assemblages.</li> <li>• Adaptive management: The plan will include the principles of adaptive management outlined in Appendix B. This will include identifying the actions that will be taken if rare plants are identified at any time during construction and operation of the Project.</li> </ul> <p>The Rare Plant Management Plan will be reviewed and approved by Parks Canada prior to construction. The developer will operate in accordance with the approved plan.</p>	Permit condition 83, 84,
11-2 Part 1	Invasive Species Management	<p>In order to reduce the likelihood of significant impacts on vegetation through the introduction or spread of invasive species, the developer will survey the right-of- way, mitigate the spread of invasive species, monitor for the presence of invasive species, and incorporate adaptive management, as described in the rest of this measure.</p>	Permit Condition 85, 86
11-2, Part 2	Baseline	<p>CanZinc will survey the entire right-of-way for the presence of invasive species, prior to ground disturbance during construction<sup>6</sup>, focussing on areas with higher likelihood for the establishment of invasive species. CanZinc will use the results of the surveys to inform Parts 3 and 4 of this measure.</p>	Permit Condition 85, 86
11-2, Part 3	Mitigation	<p>CanZinc will mitigate the potential spread of invasive species by implementing the mitigations it has already identified (e.g., the wheel-wash station). CanZinc will work with the Government of Northwest Territories and Parks Canada to identify additional mitigation that will prevent the spread of invasive species</p>	Permit Condition 85, 86
11-2, Part 4	Invasive Species Management Plan	<p>CanZinc will revise the invasive species management framework and create an Invasive Species Management Plan prior to construction, considering off-site as well as on-site prevention and control. CanZinc will include the adaptive management principles set out in Appendix B within the invasive species management framework, the Invasive Species Management Plan, and any individual weed control plans, if or as they are developed.</p> <p>Prior to the commencement of construction, the Invasive Species Management Plan will be reviewed and approved by Parks Canada and the Mackenzie Valley Land and Water Board, with input from the</p>	Permit Condition 85, 86

		Government of Northwest Territories where appropriate, as conditions in their respective land use permits. The developer will implement the approved plan(s).	
12-1, Part 1	Permafrost Management	In order to avoid permafrost degradation and prevent associated significant adverse impacts on the environment from the Project during construction, operations, closure, and post-closure, the developer will conduct additional permafrost investigations to inform design and construction of the Project and will develop and implement a permafrost management plan.	Permit Condition 48, 49, 50 Part E, Condition 8, 9, & Schedule 3, condition 2 in Licence MV2019L8-0002 Part F, Condition 8, 9 & Schedule 4, condition 2 in Licence MV2014L8-0006
12-1, Part 2	Permafrost Investigations	The developer will investigate permafrost and collect baseline permafrost data for the road alignment and borrow pits, provide the data and results to the independent technical review panel and to regulators, and use the information and results to inform detailed and final design.	Licence MV2014L8-0006 Part E, condition 12 & 13 Licence MV2019L8-0002 Part D, condition 12 & 13 Permit condition 30 & 31
12-1, Part 3	Design and Construction of the Project	CanZinc will design and construct the road, borrow pits, and other infrastructure in a way that anticipates and avoids permafrost degradation and associated impacts on the surrounding environment during all phases of the Project, including post-closure.	Permit Condition 50, 141, Part E, condition 12, 13, Schedule 3, condition 4 in Licence MV2019L8-0002 Part F, condition 12, 13, Schedule 4, condition 4 in Licence MV2014L8-0006
12-1, Part 4	Permafrost Management Plan	The developer will establish and implement a Permafrost Management Plan that includes permafrost monitoring and adaptive management.  The Permafrost Management Plan must include:	Permit Condition 48, 49, 50 Part E, Condition 8, 9, & Schedule 3, condition 2 in Licence MV2019L8-0002

		<ul style="list-style-type: none"> <li>• monitoring to measure the effects of the Project on permafrost (with an emphasis on early detection of any changes in permafrost) and evaluate the effectiveness of Project design and mitigations in preventing or minimizing permafrost degradation; and,</li> <li>• an adaptive management framework that satisfies the requirements of Appendix B.</li> </ul> <p>The Permafrost Management Plan will be for review and approval by the Mackenzie Valley Land and Water Board and Parks Canada.</p>	Part F, Condition 8, 9 & Schedule 4, condition 2 in Licence MV2014L8-0006
15-1	Monitoring by Developer	<p>In order to ensure that the measures the developer is responsible for are fully and effectively implemented and to inform adaptive management throughout all phases of the development, the developer will establish and implement monitoring programs that fulfill the following objectives:</p> <ul style="list-style-type: none"> <li>i. to measure the effects of the Project on the environment;</li> <li>ii. to assess the implementation and effectiveness of the measures in this Report of EA for preventing or minimizing impacts on the environment;</li> <li>iii. to inform the implementation of the adaptive management frameworks required by measures in this Report of EA, so that mitigation can be adjusted to ensure significant adverse impacts do not occur;</li> <li>iv. to assess the accuracy of the developer's predictions made during the environmental assessment, regarding the impacts of the Project on the environment; and</li> <li>v. where applicable, to provide relevant data and information to support other monitoring initiatives (such as Aboriginal monitoring initiatives and government monitoring).</li> </ul> <p>These objectives must be incorporated into all monitoring programs that are identified in measures in this Report of EA, either by revising existing programs or creating new programs.</p>	<p>Part E, condition 14, 15, Schedule 3, condition 5, in Licence MV2019L8-0002</p> <p>Part F, condition 14, 15, Schedule 4, condition 5 in Licence MV2014L8-0006</p> <p>Appendix B of Report of EA included in all monitoring plans</p>
15-1, Part 2	Traditional knowledge and inclusion of Aboriginal groups	<p>The developer will engage and consider the advice of Nahanni Butte Dene Band, Liidlii Kué First Nation, and Dehcho First Nations, and consider all available Traditional Knowledge when developing its monitoring programs.</p> <p>To the extent possible, the developer will involve potentially-affected Aboriginal groups, including Nahanni Butte Dene Band, Liidlii Kué First Nation, and Dehcho First Nations, in the implementation of the developer's monitoring programs.</p>	<p>Permit condition 132, 151</p> <p>Part B, condition 4, 20 in both Licences</p>
15-3	Annual reporting from government and regulatory authorities	<p>In order to evaluate the effectiveness of mitigation measures for the protection of the environment, each regulatory authority or government that is wholly or partly responsible for implementation of any measure in this Report of EA will prepare an annual Report on Implementation of Measures. The Report will:</p> <ul style="list-style-type: none"> <li>a) describe the actions being undertaken to implement the measures or the part(s) of the measures for which the regulatory authority or government is responsible; and</li> </ul>	Section 5.4.1 of these Reasons for Decision

		<p>explain how these actions, including those implemented through adaptive management, fulfill the intent of the EA measures, including consideration of the following questions:</p> <ul style="list-style-type: none"> <li>i. How are implementation actions addressing a likely significant adverse impact on the environment?</li> <li>ii. How effective are implementation actions at reducing, controlling, or eliminating the impact or its likelihood?</li> </ul> <p>Government and regulators will provide a copy of this annual report to the Review Board by June 30 of each year.</p>	
15-4	Support Aboriginal monitoring initiatives	<p>To help prevent significant adverse impacts on the environment and on Aboriginal rights, the developer will support, to the greatest extent practicable, independent monitoring of the Project area through monitoring initiatives undertaken by Nahanni Butte Dene Band, Liidlii Kué First Nation, and Dehcho First Nations. The developer will provide access to the All Season Road for these Aboriginal groups to conduct their monitoring activities throughout all phases of the Project, whenever it is safe to do so. The developer will also provide in-kind support for independent community monitors to conduct their monitoring activities (e.g., accommodations, meals, transportation and appropriate safety training to operate on the road).</p>	Permit condition 132, 151, Part B, condition 4, 20 in both Licences

\* Measures 6-1, 6-2, 6-3, 9-1, and 15-2 relate to topics which are not within the jurisdiction of the MVLWB, including wildlife and the development of environmental or socio-economic agreements, or were not directed at the MVLWB.

**Table 3: Suggestions from the Environmental Assessment EA1314-01 for the Project\***

#	Topic	Suggestion	Where item can be addressed in the Licence/Permit
5-1	Avalanches (for proponent)	<p>In order to reduce the likelihood of potential adverse impacts on human safety and Project infrastructure resulting from avalanches, the Review Board suggests the developer implement the following recommendations, prior to construction in high avalanche risk areas, based on the Alpine Solutions report<sup>23</sup> and CanZinc’s commitments.</p> <ul style="list-style-type: none"> <li>i. Review and update the avalanche hazard maps based on the final road alignment.</li> <li>ii. Complete a helicopter based reconnaissance in order to refine avalanche path locations and hazard areas. The helicopter based access will allow for ground based assessments in select areas. This reconnaissance could be completed in summer or winter.</li> <li>iii. Prepare an Avalanche Hazard Management Plan prior to construction. The plan will specify all measures employed to reduce risk to vehicles and occupants. This plan could be stand-alone or housed within the Emergency Response Plan (Appendix C, commitment #244).</li> </ul>	Permit condition 136, 137

		<ul style="list-style-type: none"> <li>iv. If CanZinc or the independent technical review panel determine that more detailed avalanche risk assessment is required, complete a linear risk analysis. A typical method which can be used to compare with other industrial roads is the 'Avalanche Hazard Index'.<sup>24</sup></li> <li>v. Incorporate the potential impacts of avalanches on crossings structures near avalanches paths (see also Appendix C, commitment #116). Use all avalanche assessment and mapping information, including relevant mitigation options identified in the Alpine Solutions report, when updating the Road Operations Plan and the Avalanche Hazard Management Plan.</li> <li>vi. Provide the results of the above work to the independent technical panel (Measure 5-1).</li> </ul> <p>The Review Board acknowledges that there may be new or preferred methods of completing the above work and preventing significant impacts from avalanches and encourages the developer to use these where applicable.</p>	
5-2	Avalanches (for regulators)	The Review Board suggests that the Mackenzie Valley Land and Water Board and Parks Canada consider the Alpine Solutions recommendations, CanZinc's commitments, and Suggestion 5-1 when setting land use permit conditions.	Permit condition 136, 137
8-1	Regulator coordination for water monitoring	The Project crosses a number of jurisdictional boundaries and that water will be regulated by several different government agencies, including Parks Canada, Fisheries and Oceans Canada, and the Mackenzie Valley Land and Water Board. The Review Board encourages all regulators involved in the review and approval of the Project to work collaboratively to minimize duplication of monitoring and reporting requirements and develop consistency between monitoring program components. The Review Board also recommends to regulatory agencies that many aspects of Measure 8-1 could be incorporated into an aquatic effects monitoring program.	Section 5.8 of these Reasons for Decision Part E, condition 14, 15, Schedule 3, condition 5, in Licence MV2019L8-0002 Part F, condition 14, 15, Schedule 4, condition 5 in Licence MV2014L8-0006
8-2	ARD and metal leaching	The Review Board suggests that Parks Canada and the Mackenzie Valley Land and Water Board enforce strict acid rock drainage and metal leaching conditions to minimize any potential impacts on water quality or fish from acid rock drainage or metal leaching.	Part D, condition 3 in Licence MV2019L8-0002 Part E, condition 3 in Licence MV2014L8-0006
11-2	Rare Plant Management Plan	The Review Board suggests that the Mackenzie Valley Land and Water Board consider requiring a Rare Plant Management Plan for the portion of the Project it regulates. The Review Board suggests that this plan could be combined with the one for NNPR and Parks Canada.	Permit condition 83, 84,
11-3	Vegetation Contaminant Levels	The Review Board suggests that the Mackenzie Valley Land and Water Board and Parks Canada should consider potential impacts on vegetation from contamination from spills, concentrate loading, and	Permit condition 147, 148

		road dust, and determine if sampling of vegetation contaminant levels prior to operations (start of hauling), is necessary.	
14-1	Closure and Reclamation Plan (for the developer)	In order to prevent post-closure impacts from the All Season Road, the developer should:  define clear closure principles in consultation with potentially-affected Aboriginal groups, including Nahanni Butte Dene Band, Liidlíí Kué First Nation, and Dehcho First Nations, and applicable regulators and land managers; and incorporate pre-disturbance information (including vegetation, wildlife, and permafrost conditions) into closure and reclamation planning.	Schedule 4, condition 1 in Licence MV2019L8-0002 Schedule 5, condition 1 in Licence MV2014L8-0006
14-2	Closure and reclamation plans (for regulators and land managers)	Regulators and land managers should proceed with closure and reclamation plans along the road alignment in a consistent manner, where appropriate.	Licence MV2019L8-0002 Part G Licence MV2014L8-0006 Part H
15-1	Systematic adaptive management in all applicable plans	The Board encourages the developer to incorporate adaptive management principles (e.g., action levels, management responses, etc.), based on Appendix B of this report, into all relevant management plans and monitoring programs. The Review Board encourages regulators to consider these adaptive management principles when setting regulatory requirements and when reviewing and approving management plans and monitoring programs.	Schedule requirement I applicable Plans
15-2	Public review process for regulatory authorizations and plans	The Review Board strongly encourages all regulators to provide opportunities for engagement of Aboriginal groups in review of authorizations and related management and monitoring plans for the Project. (For example, the Mackenzie Valley Land and Water Board's standard practice is to request input from Aboriginal groups and other interested or affected parties on all regulatory decisions).	Section 3.0 (Regulatory Process) of these Reasons for Decision
15-3	Regulatory coordination, including coordination of public registries	The Review Board encourages all regulatory authorities to take a coordinated approach, to the extent practicable, to minimize duplication and promote consistency.  The Review Board suggests that Parks Canada investigate sharing the Mackenzie Valley Land and Water Board's public registry or developing a coordinated registry for regulatory documents related to the Project.	Section 3.0 (Regulatory Process) of these Reasons for Decision

\* Suggestions 7-1, 7-2, 7-3, 9-1, 11-1, and 15-4 relate to topics which are not within the jurisdiction of the MVLWB, including wildlife and the development of environmental or socio-economic agreements, or were not directed at the MVLWB.