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Reasons for Decision

Issued pursuant to paragraph 40(2)(c) of the Mackenzie Valley Land Use Regulations (MVLUR) and Sections 72.03 and 72.25 of the *Mackenzie Valley Resource Management Act* (MVRMA).

Water Licence and Land Use Permit Applications	
File Number	W2020X0005 and W2020L8-0003 (Type A Land Use Permit/Water Licence)
Company	Crown-Indigenous Relations and Northern Affairs Canada – Contaminants and Remediation Division (CIRNAC-CARD)
Project	Rayrock Remediation
Location	Former Rayrock mine and exploration sites
Activity	Miscellaneous - remediation
Date of Decision	September 30, 2021

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These Reasons for Decision describe the Wek'èezhii Land and Water Board's (the WLWB or Board) regulatory process and how the Board arrived at its decisions on the Water Licence (W2020L8-0003) Application and Land Use Permit (W2020X0005) Application made by Crown-Indigenous Relations and Northern Affairs Canada – Contaminants and Remediation Division (CIRNAC-CARD) to the Board on September 21, 2020 to allow for the remediation activities at the former Rayrock Uranium Mine, the former Sun Rose Advanced Exploration Site, and affiliated sites.

A summary of the Application is provided in Section 2.0 below, followed by an outline of the regulatory process for this Applications in Section 3.0. Section 4.0 describes how the applicable legislative requirements have been met. The Board's decisions and supporting rationale are set out in Sections 5.0 and 6.0.

1.0 List of Acronyms

AEMP	Aquatic Effects Monitoring Program
Applications	The complete application package submitted by the Applicant for Water Licence W2020L8-0003 and Land Use Permit W2020X0005.
CIRNAC-CARD	Crown Indigenous Relations and Northern Affairs Canada – Contaminants and Remediation Division
Closure Guidelines	<i>Guidelines for the Closure and Reclamation of Advanced Mineral Exploration and Mine Sties in the Northwest Territories</i>
Distribution List	The list of individuals and organizations to whom materials from the regulatory proceeding were circulated.
DFO	Department of Fisheries and Oceans
DKFN	Deninu Kųé First Nations
EA	Environmental Assessment
ECCC	Environment and Climate Change Canada
FRMG	Fort Resolution Métis Government
GNWT	Government of the Northwest Territories
GNWT-ENR	Government of the Northwest Territories – Environment and Natural Resources
GNWT-Lands	Government of the Northwest Territories, Department of Lands
Inspector	As applicable: An Inspector designated under subsection 65(1) of the <i>Waters Act</i> OR Federal areas and/or permits: An Inspector designated under subsection 84(1) of the <i>Mackenzie Valley Resource Management Act</i>
Intervener	As per the MVLWB Rules of Procedures , any person or organization that has submitted an intervention in the Public Hearing phase of the regulatory proceeding, as outlined in the Rules.
IR	Information Request
KIA	Kitikmeot Inuit Association (KIA)
Licence	Water Licence W2020L8-0003
LWBs	Land and Water Boards of the Mackenzie Valley

Minister	Minister of Northern Affairs
MVEIRB	Mackenzie Valley Environmental Impact Review Board
MVLWB	Mackenzie Valley Land and Water Board
MVRMA	<i>Mackenzie Valley Resource Management Act</i>
NSMA	North Slave Métis Alliance
ORS	Online Review System (www.onlinereviewsystem.ca)
Party	As per the MVLWB Rules of Procedures , an applicant, a person, or an organization participating in this regulatory process.
Permit	Land Use Permit W2020X005
Project	Rayrock Remediation Project, the undertaking as described in Part A of the Licence and Part A of the Permit.
RAP	Remedial Action Plan
Review Board	Mackenzie Valley Environmental Impact Review Board
SNP	Surveillance Network Program
Standard Licence Conditions	MVLWB Standard Water Licence Conditions Template
Standard Permit Conditions	MVLWB Standard Land Use Permit Conditions Template
TG	Tłıchǫ Government
WLWB or Board	Wek'èezhìi Land and Water Board
YKDFN	Yellowknives Dene First Nation

2.0 Summary of Application

On September 1, 2020, CIRNAC-CARD submitted an Application for a Type A Water Licence (W2020L8-0003)¹ and an Application for a Type A Land Use Permit (W2020X0005).² The Applications were deemed incomplete on September 11, 2020.^{3,4} Complete Applications were submitted on September 21, 2020. The purpose of the Applications is to allow for remediation activities to take place at the former Rayrock Uranium Mine, the former Sun Rose Advanced Exploration Site, and affiliated sites. Prior to these Applications, CIRNAC-CARD had been conducting an evaluation of the necessary remediation at the Rayrock site under Type A Land Use Permit W2015X0006.⁵

3.0 Regulatory Process

CIRNAC-CARD submitted its complete Applications on September 21, 2020 that included: a covering letter,⁶ a Type A Water Licence Application, a Type A Land Use Permit Application, a Remedial Action Plan

¹ See WLWB (www.wlwb.ca) Online Registry for [Rayrock – Type A Water Licence Application – Sep 21 20](#)

² See WLWB Online Registry for [Rayrock – Type A Land Use Permit Application – Sep 21 20](#)

³ See WLWB Online Registry for [Rayrock – Water Licence Application – Incomplete – Sep 11 20](#)

⁴ See WLWB Online Registry for [Rayrock – Land Use Permit Application – Incomplete – Sep 11 20](#)

⁵ See WLWB Online Registry for [W2015X0006 – Rayrock – Land Use Permit – Extension – May 6 20](#)

⁶ See WLWB Online Registry for [Rayrock – Cover Letter – Type A WL and Type A LUP Application Package – Sep 21 20](#)

(RAP),^{7,8,9} a Land Use Plan Conformity Table,¹⁰ an Engagement Plan and Record,¹¹ and other management plans; Sediment and Erosion Control Plan, Spill Contingency Plan, Waste Management Plan, Wildlife Management and Monitoring Plan, and Emergency Management and Fire Protection Plan.^{12,13,14,15,16} The Application was circulated to the Rayrock Distribution List on September 29, 2020 for public review on the Online Review System (ORS). Parties were also asked to submit comments and recommendations on the draft Work Plan at that time.¹⁷ This included the scheduling of a Public Hearing as per paragraph 75.15(2)(a)(2)(b) of the MVRMA. Circulation of the Applications and draft Work Plan also served as notice to Parties that the legislated timelines set out in subsection 72.18(1) of the [MVRMA](#) had commenced. A public notice of the Application was published in *News North* during the week of October 12, 2020 to fulfill subsections 72.16(1) and 72.16(2) of the [MVRMA](#).¹⁸ The WLWB received comments on the draft Work Plan from the Tłı̨chǫ Government (TG) and Government of the Northwest Territories – Environment and Natural Resources (GNWT-ENR).¹⁹ The TG’s letter indicated it had no comments on the draft Work Plan. GNWT-ENR commented that the Pre-Hearing Conference was scheduled prior to the deadline for interventions and to discuss topics of concern from the interventions, the Pre-Hearing Conference should take place after interventions have been submitted. Therefore, GNWT-ENR recommended that the Pre-Hearing Conference be held after the deadline for intervention. The Work Plan was finalized on October 20, 2020 and did not include the update suggested by GNWT-ENR; the pre-Hearing conference is used to provide clarification on the Public Hearing process and to identify potential topics that will be discussed at the Hearing (i.e., contents of an intervention), as detailed in the Guide to the Water Licensing Process.²⁰

The Board received recommendations regarding the Applications from the following Parties by the review deadline of October 28, 2020: CIRNAC – Inspector, Environment and Climate Change Canada (ECCC), Department of Fisheries and Oceans (DFO), GNWT-ENR, GNWT-Lands, GNWT-Prince of Wales Northern Heritage Centre (PWNHC), the TG, and the Wek’èezhii Renewable Resources Board (WRRB); Board staff also submitted questions.²¹ On November 17, 2020, CIRNAC-CARD responded to the comments, recommendations, and Board staff’s questions.²²

⁷ See WLWB Online Registry for [Rayrock – Remedial Action Plan – Sep 21 20](#)

⁸ See WLWB Online Registry for [Rayrock – Remedial Action Plan – Appendix A – Sep 21 20](#)

⁹ See WLWB Online Registry for [Rayrock – Remedial Action Plan – Appendix B – Sep 21 20](#)

¹⁰ See WLWB Online Registry for [Rayrock – Land Use Plan Conformity Table – Sep 21 20](#)

¹¹ See WLWB Online Registry for [Rayrock – Engagement Plan and Record – Sep 21 20](#)

¹² See WLWB Online Registry for [Rayrock – Sediment and Erosion Control Plan – Sep 21 20](#)

¹³ See WLWB Online Registry for [Rayrock – Spill Contingency Plan – Sep 21 20](#)

¹⁴ See WLWB Online Registry for [Rayrock – Waste Management Plan – Sep 21 20](#)

¹⁵ See WLWB Online Registry for [Rayrock – Wildlife Management and Monitoring Plan – Sep 21 20](#)

¹⁶ See WLWB Online Registry for [Rayrock – Emergency Management and Fire Protection Plan – Sep 21 20](#)

¹⁷ See WLWB Online Registry for [Rayrock – Work Plan – Draft – Sep 29 20](#)

¹⁸ See WLWB Online Registry for [Rayrock – Notice of Applications – Oct 12 20](#)

¹⁹ See WLWB Online Registry for [Rayrock – Application – Draft Work Plan Responses – Oct 14 20](#)

²⁰ See WLWB Online Registry for [Rayrock – Work Plan – Oct 20 20](#)

²¹ See WLWB Online Registry for [Rayrock – Review Summary and Attachments – Nov 17 20](#)

²² *Ibid.*

During the public review of the Applications, several comments and proponent responses regarding potential impacts and mitigations of the Project referenced the Human Health and Environmental Risk Assessment (HHERA). The HHERAs were completed to understand the site-specific environmental risks at the Rayrock and Sun Main/Sun Rose sites, however, the HHERAs were not submitted for public review with the Applications. On November 19, 2020, an Information Request (IR) was issued to CIRNAC-CARD and DFO to obtain the HHERAs and additional information to assist with the preliminary screening.²³ Responses to the IR were received from CIRNAC-CARD and DFO before the deadline of November 26, 2020.^{24,25} A public review of the HHERAs was initiated on November 27, 2020 and the Work Plan was updated to include time for a public review period.²⁶ The Board received comments and recommendations by the deadline of December 21, 2020 from ECCC, GNWT-ENR, and the TG; Board staff also asked questions.²⁷ CIRNAC-CARD responded on January 5, 2021.²⁸

A Technical Session was held from January 26-28, 2021 in Yellowknife, NT at the Tree of Peace Friendship Centre to discuss and seek clarity on issues and questions raised by Parties and Board staff, and to provide an opportunity to discuss the Applications. The Technical Session was facilitated by Board staff. Attendees included: CIRNAC-CARD, the TG, ECCC, and Board staff. There were 17 Technical Session Information Requests (IR): IRs #1 and 3 through 16 were issued to CIRNAC-CARD, and IR #2 was issued to ECCC.²⁹ The Board issued IR #17 to CIRNAC-CARD in a second letter on February 9, 2021.³⁰ On February 10, 2021, CIRNAC-CARD responded to IR #1 and 3-16 and ECCC responded to IR #2.^{31,32} After reviewing CIRNAC-CARDs responses to its information requests, Board staff had additional questions and issued IR #18-21 to CIRNAC-CARD in a third letter on February 16, 2021.³³ CIRNAC-CARD responded to IR #17 on February 16, 2021 and the Work Plan was updated to incorporate additional review timelines.^{34,35} On February 24, 2021, CIRNAC-CARD responded to IR #18-21 on February 24, 2021.³⁶

The information provided in response to IRs #17-21 was determined to be additional information related to the proposed Project activities, therefore requiring an additional preliminary screening. IR #17 was

²³ See WLWB Online Registry for [Rayrock – Water Licence and Land Use Permit Applications – Information Request to CIRNAC-CARD and DFP – Nov 19 20](#)

²⁴ See WLWB Online Registry for [Rayrock – Information Request Response from CIRNAC-CARD – Nov 23 20](#)

²⁵ See WLWB Online Registry for [Rayrock – Information Request Response from DFO – Nov 25 20](#)

²⁶ See WLWB Online Registry for [Rayrock – Work Plan – Nov 27 20](#)

²⁷ See WLWB Online Registry for [Rayrock – WL and LUP Applications – HHERAs Review Summary – Jan 5 21](#)

²⁸ *Ibid.*

²⁹ See WLWB Online Registry for [Rayrock – Technical Session – Information Requests – Jan 29 21](#)

³⁰ See WLWB Online Registry for [Rayrock – Technical Session – Information Request – Feb 9 21](#)

³¹ See WLWB Online Registry for [Rayrock – Technical Session – CIRNAC IR Response – Feb 10 21](#)

³² See WLWB Online Registry for [Rayrock – Technical Session – ECCC IR Response – Feb 10 21](#)

³³ See WLWB Online Registry for [Rayrock – Technical Session – Information Requests – February 16 21](#)

³⁴ See WLWB Online Registry for [Rayrock – Technical Session – CIRNAC IR Response – Feb 16 21](#)

³⁵ See WLWB Online Registry for [Rayrock – Work Plan – Feb 16 21](#)

³⁶ See WLWB Online Registry for [Rayrock – Technical Session – CIRNAC IR Response – Feb 24 21](#)

distributed for public review on February 17, 2021. The Work Plan was updated to include the need for the public review of the information provided in response to IR #17.³⁷ Comments and recommendations were received by the deadline of March 2, 2021 and CIRNAC-CARD responded by the deadline on March 9, 2021.³⁸ IRs #18-21 were distributed for public review on February 24, 2021 and the Work Plan was updated accordingly to include the public review of the information provided in response to IR #18-21.³⁹ The Board received comments and recommendations by the deadline of March 11, 2021 from ECCC, DFO, GNWT-ENR, and the TG; Board staff also asked questions and CIRNAC-CARD responded by the deadline of March 18, 2021.⁴⁰

A pre-Hearing conference was held on February 18, 2021 via Zoom to discuss the potential content of the Public Hearing, written interventions and presentations, notices of intent to appear at the Hearing, and to briefly outline the MVLWB *Rules of Procedure*.⁴¹ The pre-Hearing conference was attended by CIRNAC-CARD, GNWT, ECC, EFO, the TG, the North Slave Metis Alliance (NSMA), and Board staff. Interventions were received from the TG and GNWT-ENR by the deadline of April 8, 2021.^{42,43} DFO submitted a letter indicating they would not be an intervenor for the rest of the Board's regulatory process.⁴⁴ CIRNAC-CARD responded to interventions by the deadline of April 19, 2021.⁴⁵ Additionally, letters were sent to the Canadian Nuclear Safety Commission (CNSC),⁴⁶ Health Canada (HC),⁴⁷ and ECCC⁴⁸ to request participation in the Public Hearing. CNSC, HC,⁴⁹ and ECCC⁵⁰ responded indicating representatives would be available for the Public Hearing.

On April 21, 2021, a Public Hearing agenda was circulated.⁵¹ A presentation from the GNWT was received by the deadline of April 20, 2021.⁵² The TG submitted its Public Hearing presentation on April 21, 2021.⁵³

³⁷ See WLWB Online Registry for [Rayrock – Work Plan – Feb 16 21](#)

³⁸ See WLWB Online Registry for [Rayrock – Technical Session – IR 17 Review Comment Table – Mar 30 21](#)

³⁹ See WLWB Online Registry for [Rayrock – Work Plan – Feb 24 21](#)

⁴⁰ See WLWB Online Registry for [Rayrock – Technical Session – IRs 18-21 Review Comment Table – Mar 30 21](#)

⁴¹ See WLWB Resources webpage for [Rules of Procedure](#)

⁴² See WLWB Online Registry for [Rayrock – Type A LUP and WL Applications – TG Intervention – Apr 8 21](#)

⁴³ See WLWB Online Registry for [Rayrock – Type A LUP And WL Applications – GNWT-ENR Intervention – Apr 8 21](#)

⁴⁴ See WLWB Online Registry for [Rayrock – Type A LUP and WL Applications – DFO Non-Intervention – Apr 7 21](#)

⁴⁵ See WLWB Online Registry for [Rayrock – Type A LUP and WL Applications – CIRNAC Intervention Response – Apr 19 21](#)

⁴⁶ See WLWB Online Registry for [Rayrock – Request for CNSC Participation in the Rayrock Public Hearing – Letter from WLWB – Mar 2 21](#)

⁴⁷ See WLWB Online Registry for [Rayrock – Request for HC and ECCC Participation in Rayrock Public Hearing – Letter from WLWB – Apr 13 21](#)

⁴⁸ *Ibid.*

⁴⁹ See WLWB Online Registry for [Rayrock – WLWB Request for Participation in Rayrock Public Hearing – Health Canada Response – Apr 27 21](#)

⁵⁰ See WLWB Online Registry for [Rayrock – Request for ECCC Participation in Hearing – ECCC Response – Apr 16 21](#)

⁵¹ See WLWB Online Registry for [Rayrock – Type A LUP and WL Application – Public Hearing – Agenda – Apr 21 21](#)

⁵² See WLWB Online Registry for [Rayrock – Type A LUP and WL Applications – Public Hearing – GNWT Presentation – Apr 20 21](#)

⁵³ See WLWB Online Registry for [Rayrock – Type A LUP and WL Applications – Public Hearing – TG Presentation – Apr 21 21](#)

CIRNAC-CARD submitted a Public Hearing presentation on April 21, 2021.⁵⁴ The Public Hearing was held on April 28 through 30, in Yellowknife, NT at the Explorer Hotel. Because of COVID-19 restrictions, arrangements were made to conduct the Hearing safely and some Parties appeared by teleconference. Additionally, centres were set up in the Tłı̄ch̄ communities of Behchok̄, Gamètj, Wekweètj, and Whatì to allow for the participation of members of the public who could not attend the Public Hearing in person. Translation services were provided, and the proceeding was recorded and transcribed.^{55,56,57} Attendees included: Grand Chief George Mackenzie; Tłı̄ch̄ elders and youth Komodo Jose, Joseph Judas, Jimmy Kodzin, Louise Zoe, Nicole Blackduck, Therese Zoe, Marion Apple, Sophie Williah, Joe Rabesca, Rosa Huskey, Noella Kodzin, Benjamin Pea'a, Kaylee Nitsiza, Joshua Jeremick'aa, Joseph Kuzma, Stephanie Beaverhoe, Hunter Mantla, Sky Football, Marie Adele Football, Bethany Apples, and Colby Rabesca; CIRNAC-CARD; GNWT-ENR; ECCC; CNSC; TG; HC; Public Services and Procurement Canada (PSPC); and Members of the Public. Undertakings resulting from the Hearing were recorded and circulated to the Rayrock Distribution List on April 30, 2021.⁵⁸ There were four undertakings directed to CIRNAC-CARD, three undertakings directed to the TG, and one undertaking directed at the GNWT. The TG,^{59,60} GNWT,⁶¹ and CIRNAC-CARD^{62,63} responded to the undertakings on May 14, 2021.

On May 27, 2021, Board staff circulated a Draft Water Licence and Draft Permit (the Board's Draft Water Licence and Permit) for review and comment.^{64,65} The CIRNAC Inspector, GNWT-ENR, and the TG responded with comments by the deadline of June 10, 2021.⁶⁶ CIRNAC-CARD provided its response on June 17, 2021.⁶⁷

On July 2, 2021, the TG, GNWT-ENR, and CIRNAC-CARD submitted written closing arguments to the Board.^{68,69} CIRNAC-CARD submitted its closing arguments after the deadline on July 15, 2021.⁷⁰ Parties had an opportunity, in their closing arguments, to update their position based on issues raised during the regulatory process, and to summarize their final recommendations to the Board.

⁵⁴ See WLWB Online Registry for [Rayrock – Type A LUP and WL Applications – Public Hearing – CIRNAC Presentation – Apr 21 21](#)

⁵⁵ See WLWB Online Registry for [Rayrock – Public Hearing Transcript form Day 1 of 3 – Apr 28 21](#)

⁵⁶ See WLWB Online Registry for [Rayrock – Public Hearing Transcript form Day 2 of 3 – Apr 29 21](#)

⁵⁷ See WLWB Online Registry for [Rayrock – Public Hearing Transcript form Day 3 of 3 – Apr 30 21](#)

⁵⁸ See WLWB Online Registry for [Rayrock – Type A WL and LUP Applications – Public Hearing – Undertakings – Apr 30 21](#)

⁵⁹ See WLWB Online Registry for [Rayrock – Public Hearing – Undertaking Response from TG – Part I – May 14 21](#)

⁶⁰ See WLWB Online Registry for [Rayrock – Public Hearing – Undertaking Response from TG – Part II – May 14 21](#)

⁶¹ See WLWB Online Registry for [Rayrock – Public Hearing – Undertaking Response from GNWT – May 14 21](#)

⁶² See WLWB Online Registry for [Rayrock – Public Hearing – Undertaking Response from CIRNAC – May 14 21](#)

⁶³ See WLWB Online Registry for [Rayrock – Public Hearing – Undertaking Response from CIRNAC – Appendix A – May 14 21](#)

⁶⁴ See WLWB Online Registry for [Rayrock – Type A Water Licence Application – Draft Water Licence – May 27 21](#)

⁶⁵ See WLWB Online Registry for [Rayrock – Type Land Use Permit Application – Draft Permit – May 27 21](#)

⁶⁶ See WLWB Online Registry for [Rayrock – Draft WL and LUP Review – Review Comment Table and Attachments – Jul 23 21](#)

⁶⁷ *Ibid.*

⁶⁸ See WLWB Online Registry for [Rayrock – Public Hearing – Closing Arguments – TG – Jul 2 21](#)

⁶⁹ See WLWB Online Registry for [Rayrock – Public Hearing – Closing Arguments – GNWT-ENR – Jul 2 21](#)

⁷⁰ See WLWB Online Registry for [Rayrock – Public Hearing – Closing Arguments – CIRNAC – Jul 15 21](#)

During Board staff's review of CIRNAC-CARD's response to the Draft Licence and Permit review, new activities were identified that had not been subject to Part 5 of the MVRMA. Therefore, the Board issued CIRNAC-CARD an information request on July 23, 2021.⁷¹ CIRNAC-CARD provided a response to the IR on August 5, 2021.⁷² Upon review of the additional information, it was determined that no additional preliminary screening was needed. This is further discussed in section 5.4 regarding Part C: Water Use.

4.0 Legislative Requirements Related to Licence and Permit Issuance

This Project is subject to the MVRMA and the Mackenzie Valley Federal Areas Waters Regulations (MVFAWR) with respect to licensing because it is located in a federal area. With respect to permitting, the MVRMA and the MVLUR apply.

As per the MVFAWR and the MVLUR, the proposed use of land and water, and the deposit of waste for this Project require a licence and a permit. Accordingly, the Board has jurisdiction to issue the Licence and Permit as per subsection 60(1) of the MVRMA and subsection 59(1) of the MVRMA.

In conducting its regulatory process for the Applications (as described in sections 3.0 and 4.0 above), the Board has ensured that section 62 of the MVRMA and all applicable legislative requirements have been satisfied as outlined in the subsections below. The Board has considered the people and users of the land and water in the Mackenzie Valley, and any Traditional Knowledge and scientific information that was made available to the Board during the regulatory proceeding, as per section 60.1 of the MVRMA. The consideration of information provided to the Board is discussed in detail below and in sections 5.0 and 6.0.

4.1 Consultation, Engagement, and Public Notice

In exercising its authority under the MVRMA, the Board must consider the importance of conservation to the well-being and way of life of Indigenous Peoples of Canada, as per subsection 60.1(a) of the MVRMA, specifically those to whom section 35 of the *Constitution Act*, 1982, applies and who use the area of the Mackenzie Valley. Accordingly, the Board works with applicants, affected Parties (including Indigenous governments and organizations), and other Parties (such as other boards and regulators) to ensure that potential impacts of proposed projects are understood and carefully considered before decisions are made with respect to the issuance of Licences and Permits.

The Board's requirements for engagement are set out in its *Engagement and Consultation Policy* (the Policy).⁷³ The Policy was developed to ensure that the Board's obligations for achieving meaningful consultation (as set out by land claims, applicable legislation, and law) with all affected Parties, including Indigenous groups in the Mackenzie Valley, are met and engagement and consultation results clearly

⁷¹ See WLWB Online Registry for [Rayrock – Information Requests – Additional Request – Jul 23 21](#)

⁷² See WLWB Online Registry for [Rayrock – Information Requests – Additional Request – CIRNAC Response – Aug 5 21](#)

⁷³ See WLWB 'Policies and Guidelines' webpage for MVLWB (2013) [Engagement and Consultation Policy](#).

articulated. The Applicant's engagement efforts are detailed in the September 21, 2020 Application and Engagement Record.^{74,75} Following issuance, the Applicant must continue engagement efforts as outlined in the approved Engagement Plan and as required in the Licence and Permit.⁷⁶

The Applications were posted to the Board's Public Registry and distributed through the ORS.⁷⁷ As the Project is located in the Wek'èezhii Resource Management Area, the appropriate organizations, governments, First Nations, and Indigenous organizations were included in the Distribution List.⁷⁸ The Distribution List was used in the proceeding to circulate submissions, information, and updates relevant to the proceeding; the List was periodically updated, and (when requested) individuals with specific interests in the Project were added. More information about the proceeding for the Applications is provided above in section 3.0.

The Board is satisfied that notice of, and access to, copies of the Applications were given to fulfill sections 63 and 64 of the MVRMA, and that a reasonable amount of time was given to communities, First Nations, and the public to participate in this regulatory process by making submissions to the Board.

4.2 Eligibility for Land Use Permit

As per section 18 of the MVLUR, eligibility must be determined before the Board can issue a permit. The Applicant provided a Waste Nuclear Substance Licence (W5-3208.0/2027) access agreement from the Canadian Nuclear Safety Commission to demonstrate eligibility under paragraph 18(b) of the MVLUR. No issues were raised regarding eligibility during this proceeding. Based on the supporting information provided, the Board has determined that eligibility requirements under section 18 of the MVLUR have been satisfied.

4.3 Land Use Plan Conformity

As per subsection 61(2) of the [MVRMA](#), where an approved Land Use Plan developed under a Tłıchq law applies, the Board must confirm conformity with the Land Use Plan before issuing a permit or licence. Section 1.3.4 of the Tłıchq Land Use Plan (TLUP) states "certain lands within this large block of Tłıchq and are 'excepted out' from Tłıchq ownership and, therefore, from the provisions of the Land Use Plan."⁷⁹ When referring to Chapter 18 of the Tłıchq Agreement, the Rayrock Mine Site and Sun Rose Claim are included in the list of lands that are 'excepted out' from the Tłıchq Agreement and therefore the TLUP does not apply. Additionally, for the lands surrounding the Rayrock Mine Site and Sun Rose Claim, Section

⁷⁴ See WLWB Online Registry for [W2020L8-0003 – Rayrock – Cover Letter – Type A WL and Type A LUP Application Package – Sep 21 20](#)

⁷⁵ See WLWB Online Registry for [W2020L8-0003 – Rayrock – Engagement Plan and Record – Sept 21 20](#)

⁷⁶ *Ibid.*

⁷⁷ See WLWB Online Registry for [W2020L8-0003 – Rayrock – Cover Letter – Type A WL and Type A LUP Application Package – Sep 21 20](#)

⁷⁸ See WLWB Online Registry for [Rayrock – WL and LUP Applications – Review Summary and Attachments – Nov 17 20](#)

⁷⁹ See WLWB Acts and Regulations webpage to access the [Tłıchq Land Use Plan](#)

18.6.1 of the Tłı̨chq Agreement allows the Government of Canada to conduct programs for contaminated sites cleanup. The area meets the Tłı̨chq Agreement’s definition of ‘contaminated site’ and therefore this land is also exempt from the TLUP.

4.4 Land Use Fees

The Project is located wholly or partially inside of a federal area; however, as per section 20 of the MVLUR, federal governments are exempt from paying permit application and land-use fees, so land-fees do not apply.

4.5 Water Use Fees

The Applicant is exempt from paying fees for the right to use water as per section 7 of the MVRMA.

4.6 Existing Licences

During the time period established in the Notice of Application, no licensees or applicants contacted the Board to identify potential effects from the Project on other projects, and there are no other applicants with precedence. Accordingly, with respect to paragraph 72.03(5)(a) of the MVRMA, the Board is satisfied that issuing the Licence to the Applicant will not adversely affect, in any significant way, any existing licensee or any other applicant, provided the Applicant complies with the conditions of the Licence.

4.7 Compensation to Existing Water Users

Paragraph 72.03(5)(b) of the MVRMA prohibits the issuance of the Licence unless the Board is satisfied that appropriate compensation has been or will be paid by the Applicant to persons who would be adversely affected by the use of waters, or deposit of waste proposed by the Applicant, at the time when the Applicant filed the Application with the Board.

The Board received no claims for compensation either during the time period established in the Notice of Application, or afterwards. Provided the Applicant complies with the Licence conditions, the Board is satisfied there are no water users or persons listed in paragraph 72.03(5)(b) of the MVRMA who will be adversely affected by the proposed use of waters or the deposit of waste.

4.8 Water Quality Standards

No water quality standards are included in the MVFAWR or in other regulations under the MVRMA; however, the MVLWB *Water and Effluent Quality Management Policy*⁸⁰ applies to the Licence, and the primary objective of the Policy is “protection of water quality in the receiving environment.” This objective is directly reflected in Part E, Condition 1 OBJECTIVE – WATER AND WASTE MANAGEMENT, and in accordance with the Policy and this objective, the Board has set out conditions in the Licence regarding

⁸⁰ See WLWB Policies and Guidelines Website for [MVLWB Water and Effluent Quality Management Policy](#)

site-specific Effluent Quality Criteria (EQC), water and waste management, and management plan requirements. The Board is satisfied that the conditions set out in the Licence are consistent with the Policy and compliance with these conditions will ensure that waste will be collected and disposed of in a manner that will be protective of water quality in the receiving environment. These conditions and detailed rationale are further discussed below.

4.9 Effluent Quality Standards

With regards to subparagraph 72.03(5)(c)(ii) of the MVRMA, no effluent quality standards have been set out in the MVFAWR or in any other regulation made under the MVRMA; however, as noted in section 4.8 above, the MVLWB *Water and Effluent Quality Management Policy* applies to the Licence.⁸¹ In the absence of prescribed standards, the Policy sets out when and how the Board will include EQC in a licence to protect water quality in the receiving environment, and Appendix 2 of the MVLWB/GNWT *Guidelines for Mixing Zones* describes the general principles and standard process the Land and Water Boards (LWBs) will apply in setting EQC for a project.⁸² The Board established the EQC for the Project based on both the evidence gathered during the proceeding and in accordance with the Policy and the principles and processes described in the Guidelines. Accordingly, the Board is satisfied that compliance with these criteria and associated conditions will ensure that effluent from the Project is disposed of in a manner that will be protective of water quality in the receiving environment. These conditions and criteria, and detailed rationale, are further discussed below in section 5.6.5

4.10 Financial Responsibility

Under paragraph 72.03(5)(d) of the MVRMA, before the Board can issue the Licence, it must be satisfied that the Applicant's financial responsibility is adequate to complete the Project, including any required mitigation measures, and the closure and reclamation of the site. The Board is confident that the Applicant which is a department of the Government of Canada is capable of meeting any financial obligations set out in the MVRMA and Licence concerning the use of water and deposit of waste for the purposes of the Project. No security is required of government applicants for water licences.

4.11 Minimization of Adverse Effects

With regards to subsection 72.04(2) of the MVRMA, the Board must ensure that the licence conditions minimize potential adverse effects on other water and land users from the proposed use of water and deposit of waste. As discussed above in section 4.1, the Applicant conducted pre-application engagement, and the Board also provided opportunities for potentially affected parties to make submissions to the Board during the regulatory proceeding. The Board did not receive notice of potentially adverse effects on other users of the water and lands in the Project area.

⁸¹ See WLWB Policies and Guidelines Website for [MVLWB Water and Effluent Quality Management Policy](#)

⁸² See WLWB Policies and Guidelines Website for [MVLWB/GNWT Guidelines for Effluent Mixing Zones](#)

Regardless, as noted in sections 4.8, 4.9, and 5 of this Reasons for Decision, the Board has set conditions in the licence to regulate waste management for the purpose of protecting the receiving environment. Additionally, as described in section 5.4, based on the evidence, the Board has set conditions regarding the use of water for the Project, including limitations on the sources and volumes of water the Licensee can use. It is the opinion of the Board that compliance with the Licence conditions that have been set to protect the water sources and the receiving environment will also minimize any potential adverse effects on other water and land users in the Project area.

4.12 Time Limit

As required under subsection 72.18(1) of the MVRMA, the Board made its decision on the Licence within nine months after receiving the complete Application. As per section 22 of the MVLUR, the Board is required to make its decision on a permit within 42 days of receiving a complete application. On September 23, 2020, the Board met and decided to apply paragraph 22(2)(b) of the MVLUR in order to pursue further investigation and align the timelines for the Land Use Permit (W2020X0005) and Water Licence (W2020L8-0003) applications.⁸³

4.13 Preliminary Screening

On January 14, 2021, the Board met and decided that based on the information provided in the Applications and the public review, mitigations available to the Board, lack of expressed public concern, and absence of comments indicating that these Applications should be referred to the Review Board, the proposed Project would not have a significant adverse impact on the environment or be a cause for public concern and therefore, decided not to refer the Project to environment assessment.⁸⁴ In accordance with section 125 of the MVRMA, the Board notified the Review Board of its preliminary screening determination,⁸⁵ and in the ten days following the Board's preliminary screening determination notification to the Review Board, the Board did not receive notice of referral to environmental assessment (EA). Subsequently, the Board continued with the regulatory proceeding.

Following the Technical Session, IRs were issued to various Parties, including CIRNAC-CARD. In response to IRs #17-21,^{86,87} new project areas and activities related to the Project were identified that had not been considered as part of the Board's preliminary screening determination in January 14, 2021. The additional information was distributed for public review to allow Parties to provide comments and recommendations.^{88,89} Under Part 1, Schedule 1, section 2.1 of the Exemption List Regulations to the MVRMA, project areas and activities that had been previously been subject to Part 5 of the MVRMA are

⁸³ See WLWB Online Registry for [CIRNAC – CARD – Rayrock – Request for Further Studies 22\(2\)\(b\) – Letter – Sep 23 20](#)

⁸⁴ See WLWB Online Registry for [Rayrock – Preliminary Screening – Determination and Notification – Jan 14 21](#)

⁸⁵ *Ibid.*

⁸⁶ See WLWB Online Registry for [Rayrock – Technical Session – CIRNAC IR Response – Feb 16 21](#)

⁸⁷ See WLWB Online Registry for [Rayrock – Technical Session – CIRNAC IR Response – Feb 24 21](#)

⁸⁸ See WLWB Online Registry for [Rayrock – Technical Session – IR 17 Review Comment Table – Mar 30 21](#)

⁸⁹ See WLWB Online Registry for [Rayrock – Technical Session – IR 18-21 Review Comment Table – Mar 30 21](#)

exempt from preliminary screening and only new Project activities and areas required screening by the Board in accordance with subsection 124(1) of the MVMRA. On April 15, 2021, the Board determined that the proposed changes to the Project will not have a significant adverse impact on the environment or be a cause of public concern as set out in paragraph 125(1)(a) of the MVRMA and decided not to refer the Project to Environmental Assessment.⁹⁰ In accordance with section 125 of the MVRMA, the Board notified the Review Board of its preliminary screening determination, and in the ten days following the Board's preliminary screening determination notification to the Review Board, the Board did not receive notice of referral to EA. Subsequently the Board continued with the regulatory proceeding.

Therefore, the Board is satisfied that the requirements of Part 5 of the MVRMA have been met for the Project.

5.0 Decision – Water Licence W2020L8-0003

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

1. The evidence and submissions received by the Board from the Applicant;
2. The comments and recommendations, evidence, and submissions received by the Board from Parties during the regulatory process; and
3. Information received from the public, Tłı̨chǫ Government, and other Indigenous organizations

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 *Waters Act*, the Board has determined that Licence W2020L8-0003 and Land Use Permit W2020X0005 should be issued, subject to the scope, defined terms, conditions, and term contained therein. The Board's determinations and reasons for this decision are set out below.

The scope, defined terms, conditions, and term set forth in the Licence and Land Use Permit have been developed to address the Board's statutory responsibilities and the concerns that were raised 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.

Not All Conditions and Comments are Discussed in Detail in the Reasons for Decision Below

There were several conditions/definitions and comments addressed through this Proceeding for the Licence and Permit that are not discussed in detail in these Reasons for Decision. These include:

- Conditions/definitions that were included to reflect the Standard Licence and Permit Conditions and for which no comments indicating concern or opposition were received;
- Conditions/definitions that were updated to reflect recommendations made by either CIRNAC-CARD or Parties during review of the Draft Water Licence and Land Use Permit that were for minor

⁹⁰ See WLWB Online Registry for [Rayrock – Preliminary Screening – Determination and Notification – Apr 25 21](#)

clarifications or administrative updates and that did not change the intent of the condition/definition; and

- Definitions that were added specific to the Rayrock Project for which no comments indicating concern were received.

Comments Outside the Board's Jurisdiction

A number of comments were received on the draft Licence and in Closing Arguments with respect to concerns and recommendations outside of the Board's jurisdiction.

TG comment 6 speaks to shipping of radiologically contaminated materials. The shipping of nuclear substances is regulated by the Canadian Nuclear Safety Commission (CNSC).

TG comments 18, 19, and 20 refer to additional capacity building and funding commitments from CIRNAC-CARD to the TG. CIRNAC-CARD responded to these comments that it does not view funding for capacity-building as regulatory issue, and notes that capacity-building and reporting will be voluntarily reported by CIRNAC-CARD in the Annual Water Licence Report. CIRNAC-CARD noted that funding commitments between CIRNAC-CARD and the TG will be negotiated between the governments, and the scope and schedule of funding can be updated in the Engagement Plan, but these requirements should not be included as conditions for the Engagement Plan. The Board agrees that capacity-building and funding commitments are not a licensing issue pertaining to land and water use, and these elements have not been included in the Licence.

Throughout this proceeding, the TG has recommended that a Human Health and Ecological Risk Assessment (HHERA) be conducted after project completion and maintained that recommendation in TG comment 21 on the Draft Licence.^{91,92} CIRNAC-CARD responded that as discussed at the Hearing, the CNSC requires an assessment of risk after remediation as part of the Waste Nuclear Substance Licence (WNSC). In Closing Arguments, the TG noted that it would continue work on this issue through TG-led risk communication. The Board believes this recommendation falls within the CNSC jurisdiction.

TG comment 29 recommended the inclusion of radon and radiation monitoring during all phases of the Project. CIRNAC-CARD responded that radon and radiation monitoring and other Health and Safety requirements fall within jurisdictions of other authorities, and that radon and radiation concerns are addressed through CNSC. The Board agrees that radon and radiation monitoring requirements are addressed within other jurisdictions and has not included this recommendation in the Licence.

⁹¹ See WLWB Online Registry for [Rayrock – Public Hearing Transcript form Day 1 of 3 – Apr 28 21; p. 171-180](#)

⁹² See WLWB Online Registry for [Rayrock – Public Hearing – Closing Arguments – TG – Jul 2 21](#)

5.1 Term of Licence

Subsection 26(2) of the *Waters Act* allows for a Type A Licence term for the duration of the undertaking. CIRNAC-CARD has applied to for a seven-year term for the Licence and five-year term for the Permit. During the Public Hearing, the TG asked CIRNAC-CARD about the expected need for a water licence term length. CIRNAC-CARD responded that the application was intended to cover the remediation and any contingency years and noted that the proposed seven-year term would take the project through remediation activities of three years and into the first phase of monitoring. CIRNAC-CARD noted that after five years of monitoring post-remediation they would conduct a Performance Assessment Review, and that at that stage, they would assess any monitoring needs beyond the existing licence.⁹³ During the Hearing, CIRNAC-CARD also noted that typically it takes an average of three to five years for a reasonable vegetation cover to be established in the north, but that revegetation might be more challenging for the Rayrock Project site due to the differences of material being worked with. CIRNAC-CARD noted that the Sediment and Erosion Control Plan would need to be in place for up to five years post-remediation.⁹⁴ The Board notes that three years of remediation and five years of post-remediation monitoring would require an eight-year licence term and would not provide a buffer should unforeseen results or events take place. The Board agrees with CIRNAC-CARD's application that it is important for the Licence to have a term that considers the need for reasonable contingencies.

In the Draft Water Licence that was circulated for public review, a water licence term of ten years was proposed to allow for three years of remediation, at least five years of post-remediation monitoring, and two additional years to ensure closure objectives are achieved. No Parties raised concerns with the proposed term of 10 years and the CIRNAC-Inspector, GNWT-ENR, and the TG all indicated support of the proposed licence term, and CIRNAC-CARD responded that it agreed with their comments (CIRNAC-Inspector comment 5, GNWT-ENR comment 1, and TG comment 3).⁹⁵

5.2 Part A: Scope and Defined Terms

Part A of the Licence contains the scope and the defined terms used in the Licence.

5.2.1 Scope

The scope of the Licence is written to ensure the Licensee is entitled to conduct activities which have been applied for and have been subject to Part 5 of the [MVRMA](#). In setting out the scope of the Licence, the Board endeavoured to provide enough detail to identify and describe the authorized activities, without being unduly restrictive or prescriptive.

CIRNAC-CARD provided comments specifically on the scope of the Draft Licence presented in Condition 1(a). CIRNAC-CARD requested the addition of water treatment diluent for Mill Lake sediment remediation

⁹³ See WLWB Online Registry for [Rayrock – Public Hearing Transcript form Day 2 of 3 – Apr 29 21.; p. 26 and 61.](#)

⁹⁴ See WLWB Online Registry for [Rayrock – Public Hearing Transcript form Day 2 of 3 – Apr 29 21.;](#) p. 60-62

⁹⁵ See WLWB Online Registry for [Rayrock – Draft WL and LUP Review – Review Comment Table and Attachments – Jul 23 21](#)

for water uses at Sherman Lake to Condition 1(a) and 1(b) (CIRNAC-CARD WL comments 3 and 4). In its Closing Arguments, GNWT-ENR noted that the use of Sherman Lake water as a diluent was not previously discussed during the Licensing process and did not support the use of freshwater for purposes of dilution. This is further discussed in Section 5.4 regarding Part C: Water Use.

5.2.2 Defined Terms

Depending on the evidence in this proceeding and the comments made by Parties, the Board included Standard Licence Conditions where appropriate. Using language similar to that set out in other licences ensures consistency and assists with enforceability, ease of understanding, and implementation. The Board adopts the explanation and rationale set out in the Board's Standard Water Licence Conditions template for instances where it has chosen to use such conditions in this licence.⁹⁶ Where appropriate, the Board changed standard wording or used specific definitions to describe facilities related to the Rayrock Remediation Project. All other changes to definitions are discussed below.

Project-specific definitions to reflect the evidence are described below:

- **Waste Rock:** updated to reflect the activities related to rock materials not including ore and Tailings, with drilling and blasting operations at the site.
- **Engineered Structure:** this is adapted from a standard definition, however, the structures identified in this definition are particular to the Project and are meant to identify the parts of the Project for which reviewers can expect to see Design Plans and Construction Plans. Engineered Structures associated with the Project were identified by CIRNAC-CARD in response to the Information Requests that were issued following the Technical Session.⁹⁷

The TG recommended changes to a number of defined terms in its review of the draft Licence. The Board's consideration of these definitions is outlined below:

- **Closure and Reclamation:** The TG noted the cultural importance of the Rayrock area in the Tłı̄ch̄q region and recommended revising the definition to include at the end "in a way that is culturally and socially accepted within the Tłı̄ch̄q region." (TG comment 7). CIRNAC-CARD responded that it did not believe that the recommendation fell within the jurisdiction of the WLWB and the definition should not be changed, but is committed to ongoing engagement with the TG through all phases of remediation. While the Board recognizes the cultural and social importance of the region, it notes that Parties will have the opportunity to provide feedback through the required Workshop (see section 5.9.1) and review of Version 2.0 of the Remedial Action Plan to contribute to the development of the Closure Objectives and Closure Criteria that will ultimately guide the closure and remediation activities. For this reason the standard definition has not been changed.

⁹⁶ See WLWB Policies and Guidelines [Website for Standard Water Licence Conditions](#).

⁹⁷ See WLWB Online Registry for [Rayrock – Technical Session – CIRNAC IR Response – Feb 10 21](#)

- **Inspector:** The TG recommended adding to the definition that “during inspections, the Inspector shall, when feasible, be accompanied by a qualified co-Inspector or environmental monitor from the Tłjchq Government.” (TG comment 8). CIRNAC-CARD responded that it was not aware of other instances where Inspectors are directed within a Licence to include a third party in their inspection but supported the TG involvement in the inspection process. The Board notes that while it recognizes the desire for TG involvement in the inspection process, this involvement is better considered outside of the Licence requirements and left up to CIRNAC-CARD to work with Parties while staying within the boundaries of what is legally allowed. As such, the standard definition has not been changed.
- **Tailings Containment Facilities (Areas):** The TG recommended that the term be updated to refer to the defined area as “Tailings Storage Areas” (TG comment 9). The TG stated that “Tailings Storage Area” is more accurate than “Tailings Containment Areas” and that the tailings are not fully contained from downstream receptors (TG comment 4). CIRNAC-CARD noted that it would like the term “Tailings Containment Areas” to be used as this is common industry terminology, and that there was no evidence to suggest the tailings are not contained. The Board agrees that there has been no evidence to suggest the tailings are not contained and has revised the term to Tailings Containment Areas, to reflect the name used throughout the proceeding and historically at the site. The Board also notes that this term has remained the same as described in the scope for the same rationale.

In the Board’s view including requirements for actions in a definition is better handled by having the action required in a licence condition based on a clear understandable definition. The Board encourages the TG and other Parties to consider this moving forward.

In its comments on the Draft Licence, CIRNAC-CARD recommended that a distinction be made between Project activities and Construction activities, and that a definition be added for Project activities (CIRNAC-CARD WL comment 8). CIRNAC-CARD noted with this recommended distinction that it wanted to verify plans would be Board approved with Licence Issuance to allow initiation of Project activities, specifically winter road construction. Standard definitions were included in the Draft licence for “Project” and “Construction”. Therefore, Project activities apply to all activities related to the Project whereas Construction activities apply to any activities undertaken to construct or build structures, facilities or components of, or associated with the Project, as per the definition of Construction. The Board notes CIRNAC-CARD’s need for certainty with respect to the timing of commencement of winter road Construction and the timing for when certain plans would be needed, as the submission of some revised Plans is linked to the commencement of Construction activities. To ensure the necessary plans are approved for winter road construction, Construction activities in the *Waste Management Plan – Revised* and *Sediment and Erosion Control Plan – Revised* conditions have an exception for winter road Construction for the purposes of the submission timelines.

In response to IR #12, CIRNAC-CARD noted that a camp wastewater treatment system would be required to treat and filter a portion of process water from camp operations including, but not limited to, greywater, kitchen sumps, traps, and black water. CIRNAC-CARD noted that treated camp wastewater

would be placed into sumps in the ground, with the sump location approved by an Inspector. CIRNAC-CARD said that EQCs for camp wastewater would apply only to wastewater generated by the camp. In response to IR #20, CIRNAC-CARD noted that camp wastewater would consist of all water from camp operations, and that there was no distinction between camp wastewater and greywater. In review of the IR #20 response, GNWT-ENR noted that it was unclear if CIRNAC-CARD's definition of camp wastewater included toilet waste and recommended that if toilet waste was included in the camp wastewater stream, it be termed sewage in accordance with MVLWB Standard Water Licence conditions (GNWT-ENR IR 18-21 Review comment 6). CIRNAC-CARD responded that it intended to use "camp wastewater" to refer to all wastewater from camp operations, including greywater and toilet waste. In comments on the Draft Licence, the CIRNAC-Inspector recommended the consideration of removing greywater from the sewage definition, given that according to the draft sewage definition all greywater would need to be treated as sewage and that would create problems in the camp set up (CIRNAC-Inspector comment 7). CIRNAC-CARD agreed that the licence should allow for greywater to be treated separately from toilet wastes. While the Board recognizes this recommendation would result in more flexibility for CIRNAC-CARD, the Board notes this suggestion was received during comments on the Draft Licence and so there was not opportunity for clarification on what the "problems" would be. The Board notes that the Board's standard conditions list considers sewage to consist of all toilet wastes and greywater and that the Inspectors are involved in the determination of the Board's standard conditions. Further the Board does not believe it is fair to other Parties to create uncertainty regarding the management of camp wastewater at this late point in the proceeding. Therefore, the Board has retained the original sewage definition which reflects how CIRNAC-CARD proposed that all camp wastewater be managed and disposed of in the same manner. For clarity, the Board considers any reference to camp wastewater to be the same as sewage; for example, the EQC which apply to camp wastewater in Part E, Condition 18.

The Draft Licence included a definition for Maximum Grab Concentration. CIRNAC-CARD recommended the definition be revised to specify that analytical results be "collected in accordance with the sampling and analysis requirements specified in the SNP." The Draft definition did not specify how analytical results be collected and analyzed. It is unclear to the Board why CIRNAC-CARD is recommending this revision and notes that this recommendation was made late in the proceeding, no evidence was provided during the evidentiary phase of the proceeding to support to support the change. The Board has not changed the standard definition to allow flexibility in sampling and analysis specifications outside the SNP requirements.

The Board would like to clarify that whenever the Board, in these reasons, or in the Licence refers to Closure and Reclamation that Board intends to also include remediation activities.

5.3 Part B: General Conditions and Schedule 1

Part B and Schedule 1 of the Licence contain general administrative conditions regarding compliance and conformity with the MVRMA, as well as LWB policies and procedures. These conditions are consistent with the Standard Licence Conditions and are applicable to all licences.

In its comments on the Draft Water Licence conditions, the TG recommended that the Water Licence Annual Report be provided directly to the TG as well as directly to the WLWB as per the *Annual Water Licence Report* condition (TG comment 11). CIRNAC-CARD responded that the Annual Water Licence Report is submitted to the WLWB and is posted for public access. The Board notes that the Water Licence Annual Report will be distributed to all Parties on the Rayrock Project distribution list, including the TG, as per the Board's typical processes, therefore have included the condition as typically required.

Engagement

CIRNAC-CARD included an Engagement Plan and Engagement Log⁹⁸ as part of its Water Licence and Land Use Permit Applications. In response to IR #16, CIRNAC requested the Engagement Plan be approved with Licence issuance. The Board notes that CIRNAC-CARD's pre-application engagement required for the Water Licence and Land Use Permit Applications was determined to be in accordance with the *MVLWB Engagement and Consultation Policy and Engagement Guidelines for Applicants and Holders of Water Licences and Land Use Permits*, and significant issues were not raised regarding the Engagement Plan during the initial review. Board staff asked CIRNAC-CARD during the Hearing where commitments made from CIRNAC-CARD to the TG would be recorded, and CIRNAC-CARD replied that the Engagement Plan would be revised to capture some of the commitments made.⁹⁹ No concerns were raised by Parties during the Proceeding regarding the approval of the Engagement Plan with issuance. As such, Version 1.0 of the Engagement Plan has been approved by the Board, however the Board has required Version 2.0 of the Engagement Plan be submitted in accordance with the *MVLWB Engagement Guidelines for Applicants and Holders of Water Licences and Land Use Permits* and Schedule 2, Condition 1 in order to include this new information.¹⁰⁰

Reviewers were asked to comment on the *Engagement Plan – Revised* condition and indicate if there was a preference for the “within 90 days following the effective date of the Licence” or “a minimum of 90 days prior to commencement of activities” for the submission of a revised Engagement Plan. The TG and WRRB preferred that the Engagement Plan be submitted 90 days prior to commencement of Project activities (TG comment 12 and WRRB comment 1). The TG also recommended that the condition be revised to refer to include engagement guidelines set out by the Tłıchǫ. While the Board recognizes the significant amount of engagement and discussion with the TG by CIRNAC-CARD, the Engagement Plan is intended to outline all engagement requirements with all potentially affected parties. The Board encourages the TG and all other Parties to provide feedback on review of Version 2.0 of the Engagement Plan. The Board notes that given the timeline of Licence issuance and anticipated winter road mobilization, there may be insufficient time for CIRNAC-CARD to submit a revised Engagement Plan in advance of commencement of Project activities. Therefore, the Board has decided to require CIRNAC-CARD to submit a revised Engagement Plan within 90 days following the effective date of the Licence.

⁹⁸ See WLWB Online Registry for [Rayrock – Engagement Plan and Record – Sep 21 21](#)

⁹⁹ See WLWB Online Registry for [Rayrock – Public Hearing Transcript from Day 2 of 3 – Apr 29 21](#); p. 92-93

¹⁰⁰ See WLWB Policies and Guidelines website for [Engagement Guidelines for Applicants and Holders of Water Licences and Land Use Permits \(2018\)](#).

The Board also notes that the revisions to the Engagement Plan should include commitments made by CIRNAC-CARD over the course of the proceeding but does not require demonstration of the related activities at this point. As such, the condition was revised to remove the requirement of Board approval of the revised plan prior to commencement of Project activities.

TG comment 2 on the Draft Licence recommended that the Engagement Plan incorporate the solicitation and inclusion of TG input in design and development of plans, and timely sharing of information in an accessible form. CIRNAC-CARD responded that it anticipates WLWB's standard conditions related to submissions would apply to the Rayrock Project as well. As described in the Boards' *Engagement and Consultation Policy*, the Board emphasizes the importance that CIRNAC-CARD engages with Parties **prior** to development of Designs and Plans, when appropriate.

5.3.1 Traditional Knowledge

In review of the Draft Licence, the TG commented on the *Incorporate Scientific Information and Traditional Knowledge* condition, stating that the ownership, identification, and appropriate use of TK should be the responsibility of the TG, and that the condition should acknowledge that TK needs to be considered and incorporated following guidance and direction from the TG (TG comment 10). CIRNAC-CARD responded that the condition states that "the Licensee shall make every reasonable effort to consider and incorporate any scientific information and Traditional Knowledge that is made available to the Licensee" and noted that as such the TG is responsible for the ownership, identification, and appropriate use of TK, and that that the wording was appropriate for purposes of CIRNAC-CARD and the TG. The Board has included the standard condition as proposed and expects the parties to communicate on aspects such as ownership, identification, and appropriate use of TK.

5.3.2 Schedule 1

In review of the Draft Licence, GNWT-ENR recommended that the Board define "main source areas" in relation to Schedule 1 (m) water quality monitoring results from quarry areas for the Quarry Management Plan (GNWT-ENR comment 7). CIRNAC-CARD responded with additional detail that the rock quarries are to be built in the Confined Disposal Facility (CDF) location (i.e., in the Mill Lake drainage basin) and that seepage would be monitored through water quality analysis at previously established locations. CIRNAC-CARD therefore recommended the removal of Licence conditions related to seepage monitoring and related action levels. The Board notes that the Draft Licence included these standard conditions, but as CIRNAC-CARD has noted, these rock quarries are in the Mill Lake drainage basin and water from this area during remediation will go through the Mill Lake Water Treatment Facility and need to meet EQCs. SNP locations have been established for the outlet of the Mill Lake drainage basin post-remediation activities to characterize this water quality before it travels down Mill Creek. There is a requirement for annual reporting on SNP data as per Schedule 1, Condition 1, Item q. An AEMP will also be in place to determine any down-stream environmental effects. Therefore, the Board has removed the requirements related to seepage monitoring under the Quarry Management Plan from the standard Schedule conditions.

The Draft Licence proposed that the Annual Water Licence Report include separate reporting on monthly and annual volumes of treated Wastewater from the CDF and Mill Lake. CIRNAC-CARD recommended combining this reporting information because all effluent from these locations would be Discharged through the Mill Lake Water Treatment Facility (CIRNAC-CARD WL comment 31). The Board notes that during the Hearing, CIRNAC-CARD stated that any seepage gathered within the CDF post-construction would potentially require removal and treatment post-remediation.¹⁰¹ The Board recognizes that these Wastewater streams would be through the same location during remediation activities and has combined the reporting information in Schedule 1, Condition 1 Item j (v) to encompass the Mill Lake drainage basin. During the Hearing, CIRNAC-CARD specified that once the CDF is covered and the project is essentially completed, the water treatment system would be removed from the site. CIRNAC-CARD noted that if water treatment was needed for seepage in the internal CDF sump, a water treatment system would need to be brought to the site if water needed to be removed. CIRNAC-CARD also noted that it anticipated water quality from the CDF could need to meet EQC as established for the Mill Lake Treatment Facility.¹⁰² The Board recognizes that Version 2 of the RAP will provide an additional opportunity for Parties to provide input into the timing of the removal of the water treatment plant and that this may be dependent on the certainty related to CDF water quality predictions. The Board has added a requirement for reporting any treated Wastewater from the CDF post-remediation to Schedule 1, Condition 1 to address this potential scenario and encourages CIRNAC-CARD to advance this discussion with Parties through their ongoing engagement leading up to the development of Version 2.0 of the RAP.

5.4 Part C: Conditions Applying to Water Use

Part C of the Licence contains conditions related to water use for the Rayrock Remediation Project. Water will be required from various sources to support remediation activities including camp operations, washing, dust suppression, winter road construction, and other remediation activities outlined in the approved Remedial Action Plan.

The *Water Source and Maximum Volume* condition is based on the information from the Water Licence Application and CIRNAC-CARD's response to Information Request #18, that identify the various water sources.^{103,104}

In its comments on the Draft Water Licence, CIRNAC-CARD commented that it wanted the addition of "water treatment diluent" to the definition for Part A Condition 1 (b) and (c), noting that the Project might require withdrawal of water from Sherman Lake as "diluent (or make-up water) of the Mill Lake sediments if the sediment-water ratio needs adjustment (CIRNAC-CARD WL comments 3, 4, and 12).¹⁰⁵ In its Closing Arguments, GNWT-ENR made note of this comment from CIRNAC-CARD, and that this use

¹⁰¹ See WLWB Online Registry for [Rayrock – Public Hearing Transcript form Day 2 of 3 – Apr 29 21](#); p. 79-81

¹⁰² See WLWB Online Registry for [Rayrock – Public Hearing Transcript form Day 2 of 3 – Apr 29 21](#).; p. 79-88

¹⁰³ See WLWB Online Registry for [Rayrock – Type A Water Licence Application – Sep 21 20](#)

¹⁰⁴ See WLWB Online Registry for [Rayrock – Technical Session – CIRNAC IR Response – Feb 24 21](#)

¹⁰⁵ See WLWB Online Registry for [Rayrock – Draft WL and LUP Review – Review Comment Table and Attachments – Jul 23 21](#)

had not been previously discussed during the proceeding, and that it did not support the use of freshwater for the purposes of dilution.¹⁰⁶ CIRNAC-CARD responded in its Closing Arguments that it had been recently noted that in certain conditions make-up (diluent) water from Sherman Lake would be required to conduct the slurring process or remediation of Mill Lake sediments. CIRNAC-CARD noted that it “feels that the use of Sherman Lake water as a diluent in the sediment remediation process is in the spirit of general water use descriptions provided in the licence application.” An Information Request was distributed to CIRNAC-CARD requesting confirmation of the requested use of Sherman Lake water as a sediment diluent, noting that it had not previously been a use explicitly identified in the proceeding.¹⁰⁷ CIRNAC-CARD responded that it noted that “while the direct dilution of Mill Lake sediments has not been previously described, washing activities (which would be collected in Mill Lake if the washing was for removal of metal contamination) and Mill Lake bedrock washing would both be means of adding diluent for the sediment”, and that it believes the direct addition of Sherman Lake water was within the scope of water uses previously described. CIRNAC-CARD noted that the potential impacts of this water addition to Mill Lake water is negligible as Mill Lake water is already more affected, and the water from Mill Lake will undergo treatment. CIRNAC-CARD also wrote that it would like to revise its comment on the Draft Water Licence and proposed the addition of “water treatment diluent” be revised to “other remediation activities” to account for other activities associated with the remediation project such as the watering of revegetated areas. The Board notes that CIRNAC-CARD is not proposing a change to the proposed annual withdrawal volume presented in the Application, and that the volume and water source has previously been screened for during the proceeding.¹⁰⁸ Given that the potential impacts and mitigations for this water use remain the same as those screened and the maximum volume use proposed from Sherman Lake has not changed, the Board believes that it is appropriate to include the use of Sherman Lake for remediation activities in the scope of the Licence to account for those activities that will be approved through the Remedial Action Plan. This update is reflected in Part A Condition 1 (a) and (b) and Part C Condition 1.

In their comments on the Draft Licence, the CIRNAC-Inspector recommended that the Applicant be allowed to request a new source to avoid amendments to the Licence in the future, and to consider adding a statement to allow the Applicant to request authorization of a new water source (CIRNAC-Inspector comment 8). The Board notes that this recommendation is not possible as Inspectors do not have the legislated or delegated authority to approve the use of new water sources.

The initial Application proposed a volume of >100 to <300 m³ per day for winter road construction of Rayrock spur roads for each river water source. In its review of the draft Licence, CIRNAC-CARD noted that the Emile River was mislabelled as a lake and requested that the maximum quantity for the Emile River and Marian River be based on instantaneous flow instead of an authorized volume per day (CIRNAC-CARD WL comment 11). The Board notes that within CIRNAC-CARD’s response to IR #18, the Emile River

¹⁰⁶ See WLWB Online Registry for [Rayrock – Public Hearing – Closing Arguments – GNWT-ENR – Jul 2 21](#)

¹⁰⁷ See WLWB Online Registry for [Rayrock – Information Requests – Additional Request – Jul 23 21](#)

¹⁰⁸ See WLWB Online Registry for [Rayrock – Preliminary Screening – Determination and Notification – Jan 14 21](#)

and Marian River were identified as potential water sources for use in the Tłjchq Winter Road system and were subsequently screened again for that use.¹⁰⁹ GNWT-ENR identified in review of the IR #18 response that CIRNAC-CARD had not provided calculations for total available water use and maximum annual water withdrawal for river water sources and recommended that the maximum withdrawal rate for rivers should not exceed 10% of the instantaneous flow as per DFO guidance.¹¹⁰ In response, CIRNAC-CARD proposed that maximum water withdrawal rates for each river be less than 10% of the instantaneous flow volume averaged for the location. Parties did not raise any issues in their Interventions with the proposed maximum water withdrawal rates. This use and associated volumes from IR #18 and the subsequent review include the maximum quantity being based on instantaneous flow, therefore this condition has been updated to reflect that review and preliminary screening.

5.5 Part D: Conditions Applying to Construction and Schedule 3

Part D and Schedule 3 of the Licence contain conditions applying to Construction activities for the Rayrock Remediation Project.

5.5.1 Engineered Structures

In its response to the Information Requests from the Technical Session, CIRNAC-CARD proposed that Design and Construction Plans be separate requirements (i.e., a Design Plan and a Construction Plan instead of a Design and Construction Plan); however it was unclear why at that time. The Board notes that the proposed draft Licence conditions had included a condition for submission of a combined Mill Lake CDF Design and Construction Plan. The Standard Water Licence Conditions List includes a requirement for the submission of a combined Design and Construction Plan for Board approval for all Engineered Structures. This standard condition was included in the draft Licence for the Confined Disposal Facility, Sun Main Waste Rock Cover, and the Mill Lake Water Treatment Facility. In its comments on the draft Licence, CIRNAC-CARD further explained that Design Plans and Construction Plans could not be submitted at the same time because construction details would need to be provided by the remediation contractor, and those details would not be available 90 days prior to the commencement of the winter road mobilization activities (CIRNAC-CARD WL comment 13). Related conditions were identified in association with this comment (CIRNAC-CARD WL comment 16). The Board recognizes CIRNAC-CARD's desire for a greater level of certainty with respect to the Design Plans for the Sun Main Waste Rock Cover and the CDF before proceeding with the tender process, and the reality of the federal procurement process. The Board recognizes that the public review and approval process for the Design Plans will ensure Parties have an opportunity to provide input into the remediation of these facilities and that this approach to separating the Design and Construction Plans is similar to the recent water licence for the Giant Mine remediation Project.¹¹¹ As no Parties raised concerns regarding the separation of the Design and Construction Plans throughout the proceeding, the Board has adjusted Part D, Conditions 6, 7, 8, 9, and 13. The Board believes

¹⁰⁹ See WLWB Online Registry for [Rayrock – Preliminary Screening – Determination and Notification – Apr 25 21](#)

¹¹⁰ See WLWB Online Registry for [Rayrock – Technical Session – IR 18-21 Review Comment Table – Mar 30 21](#)

¹¹¹ See MVLWB Online Registry for [MV2007L8-0031 - CIRNAC-GIANT - Issuance - Type A Water Licence - Sept18-20](#)

these conditions provide CIRNAC-CARD flexibility to address the challenges of its procurement process while still ensuring an opportunity for meaningful input from Parties. The Board has also adjusted the related Conditions in Part E and Schedule 3 to reflect the separation of the Design and Construction Plans (i.e., Part E Conditions 6 and 7 for the CDF and Conditions 8 and 9 for the Sun Main Waste Rock Cover).

The Rayrock Remediation Project includes plans to repair previously existing engineered structures. Specifically, CIRNAC-CARD identified the Tailings Containment Areas (TCAs) and Decommissioned Waste Dumps as existing engineered components that meet the WLWB definition of an Engineered Structure (i.e., are related to water use or the deposit of Waste) and that will require maintenance during the Project.¹¹² During the Public Hearing, the TG asked if there would be a document so that they “can understand the work that’s being undertaken there and see it on the drawings.”¹¹³ During the Public Hearing, Board staff asked if the repairs and maintenance to the TCAs and decommissioned waste dump would require sign-off from a professional engineer, to which CIRNAC-CARD responded that an engineer’s stamp would be required.¹¹⁴ Board staff also asked if there was any reason why CIRNAC-CARD could not provide a construction plan or design specifications to the Board. CIRNAC-CARD replied that it can’t “see why not if the Board requests those drawings.”¹¹⁵ The draft Water Licence subsequently included the standard condition *Design Drawings – Tailings Containment Areas and Decommissioned Waste Dump*. In its comments on the draft Water Licence, CIRNAC-CARD stated that the planned repairs did not involve movement or disturbance of wastes or work involving water and asked why those activities were being regulated and submissions required (CIRNAC-CARD WL comment 14). These Engineered Structures contain deposits of waste, and repairs may involve movement or disturbance of waste/materials that could enter the receiving environment. Considering the TG’s request, CIRNAC-CARD’s response at the Hearing, and that Design Drawings are typically submitted to the Board, the Board has included a requirement for submission of the Design Drawings for the various Engineered Structure repairs in Part D, Condition 11.

In CIRNAC-CARD’s comments on the Draft Licence, it recommended the removal of the condition requiring notification ten days prior to commencing Construction because “...Part B *Notification-Commencement* and *Notification – Re-commencement* conditions already required notification for the commencement of Project activities, and that requiring notification a minimum of ten days prior to the commencement of construction on any project is onerous and limits contractor flexibility for sequencing of remediation activities (CIRNAC-CARD WL comment 15).” The Board notes that the conditions in Part B are for the initial commencement of Project activities and following any temporary shutdown, whereas the *Notification – Construction – Engineered Structures* condition is intended to ensure regular communication between the Licensee, Inspector, and Board, and to facilitate site inspections specifically for Engineered Structures. The Board doesn’t believe that providing notification prior to the Construction of an Engineered Structure is

¹¹² See WLWB Online Registry for [Rayrock – Technical Session – CIRNAC IR Response – Feb 10 21](#)

¹¹³ See WLWB Online Registry for [Rayrock – Public Hearing Transcript form Day 2 of 3 – Apr 29 21](#); p. 15

¹¹⁴ See WLWB Online Registry for [Rayrock – Public Hearing Transcript form Day 2 of 3 – Apr 29 21](#); p. 42

¹¹⁵ See WLWB Online Registry for [Rayrock – Public Hearing Transcript form Day 2 of 3 – Apr 29 21](#); p. 42-44

unreasonable because Licensees for projects of this scale are expected to have adequate and professional planning carried out well in advance of the ten-day notification requirement. The Board recognizes there are no non-engineered structure(s) intended to contain, withhold, divert, or retain Water or Wastes, so believes that the *Notification – Construction* standard condition is duplicative and has removed it from the Licence.

CIRNAC-CARD commented on the *As-Built Report – Engineered Structures* condition and asked about how it was determined which facilities required as-builts, and when. CIRNAC-CARD asked if it was appropriate to have as-builts for temporary Engineered Structures such as the water treatment plant, and when construction would be considered complete for a structure such as the CDF. CIRNAC-CARD noted that it had previously suggested putting as-built information into the Remediation Completion Report to streamline submittals (CIRNAC-CARD WL comment 17). The Board notes that the *As-Built Report – Engineered Structures* is a standard Licence condition for all Engineered Structures regardless of being temporary or permanent, and that while CIRNAC-CARD had proposed putting as-built information into the Remediation Completion Report in its response to Information Request #16, clear rationale for why had not been provided.¹¹⁶ The Board also notes that the Giant Mine Remediation Project Licence contains the same standard condition.¹¹⁷ The Board notes that the intent of submitting as-builts for completed structures is to ensure that the information is available on the public record, and that if changes are made to Engineered Structures that are approved and constructed, a revised As-Built report would require submission as per the *Revisions* condition. The Board believes CIRNAC-CARD can determine when construction is complete for a structure and provide rationale when necessary.

The TG recommended that Schedule 3, Condition 1 include a bullet for the volume and characteristic of natural material to be removed or regraded for the CDF construction, to which CIRNAC-CARD responded that as the CDF is located in an area that was previously disturbed for mining activities it would not be able to differentiate between natural and impacted materials (TG comment 23). Given CIRNAC-CARD's rationale that the CDF is in a previously disturbed area with indiscernible material types, the Board has decided Schedule 3, Condition 1 (d) is sufficient for identifying Construction materials.

The TG also requested additional background information and information related to seepage management be provided in the CDF Design Plan (TG comment 24) and recommended that Schedule 3, Condition 1(c) include hydraulic conductivity of the underlying material, the factor of safety of the CDF, and the risk associated with these factors. CIRNAC-CARD responded that including all results of historical data and details of all-natural site physical processes outside of construction elements would make the Plan unwieldy. CIRNAC-CARD also noted that providing a factor of safety for the entire CDF was not practical. The Board notes that Schedule 3 outlines **minimum** requirements for the development of the CDF Design Plan that is based on engineering standards and the Board's experience regulating similar facilities within the NWT. The Board believes that the information required by Schedule 3, Condition 1 (c)

¹¹⁶ See WLWB Online Registry for [Rayrock – Technical Session – CIRNAC IR Response – Feb 10 21](#)

¹¹⁷ See MVLWB Online Registry for [MV2007L8-0031 - CIRNAC-GIANT - Issuance - Type A Water Licence - Sept18-20](#)

and (m) directly addresses the TG’s concern regarding hydraulic conductivity and seepage management. Because this submission requires Board approval prior to Construction, Parties will have the opportunity to provide rationale during the public review believe if they believe additional information is required in the CDF Design Plan. With respect to a factor of safety, the Board understands that because this is an Engineered Structure that is likely to include geosynthetic liners, in accordance with the CNSC requirements for low-level radiation facilities, the CDF Design Plan should consider geotechnical stability from both a global and an internal component-to-component perspective and multiple factors of safety should be considered. The Board understands that this is typically standard practice for Engineered Structures of this type. The Board has included this requirement in Schedule 3, Condition 1, Item k. The Board has also included a requirement for a Quality Control details as part of the Confined Disposal Facility Construction Plan, as per Schedule 3, Condition 2, Item b. This has been included as it is a typical requirement of detailed infrastructure construction.

Comments were raised by the TG with respect to recommending a long design life for the CDF and recommended a 1000-year horizon in its Intervention and during the Public Hearing. CIRNAC-CARD responded that it is very difficult to design for a thousand years, and that it becomes prohibitive when considering engineering, cost, and climate change factors. CIRNAC-CARD noted that the cell design for the CDF considers a lifespan of around 100 years and that the Waste Nuclear Substances Licence requires perpetual management of the site, which would include monitoring of the CDF. Any failures or concerns identified during monitoring would be repaired.¹¹⁸ The TG commented on the draft Licence that it recommended the CDF design incorporate extra conservatism due to the long life of the structure. CIRNAC-CARD responded that it has requested the CDF designer be conservative in the design (TG comment 28). Given the long-term nature of this facility and the uncertainty around the lifespan of the liners, the Board has included requirements for the CDF Design Plan to address these concerns and CIRNAC-CARD’s commitments in Schedule 3, Condition 1, Items l, o, and p.

The TG requested that a description of routine and non-routine maintenance, design life of materials, and how materials would be replaced (TG WL review comment 25), to which CIRNAC-CARD responded that requested elements could be included in Schedule 3 and 7. The Board agrees that these details are helpful in understanding the expected performance for, and maintenance of, the CDF, and has included these as requirements in Schedule 3, Condition 1, Item p.

5.5.2 In-water Activities

During the Technical Session, it was noted that there was potential for in-water construction activities related to Discharge, and Information Request #4 requested CIRNAC-CARD identify and describe whether there were potential in-water construction activities and to propose associated EQC for these activities or provide rationale for why they were not needed.¹¹⁹ In its response, CIRNAC-CARD noted that

¹¹⁸ See WLWB Online Registry for [Rayrock – Public Hearing Transcript form Day 1 of 3 – Apr 28 21](#), pg. 172-175

¹¹⁹ See WLWB Online Registry for [Rayrock – Technical Session – Information Requests – Jan 29 21](#)

“considerations for work in water” were made for the design for the water treatment plant discharge to Sherman Lake, the potential for dock expansion or a new dock, and silt curtains. CIRNAC-CARD noted that it did not consider dock expansion or silt curtain/Sediment and Erosion Control measures to be in-water construction.¹²⁰ A subsequent Information Request (IR#19) noted that the Standard Water Licence Conditions define Construction as “any activities undertaken during any phase of the Project to construct or build any structures, facilities or components of, or associated with, the development of the Project”, and asked CIRNAC-CARD to confirm if it was requesting consideration of in-water construction as part of the Scope of its Applications.¹²¹ In its response CIRNAC-CARD noted that an expansion of the dock would require anchoring of floating dock pieces to the lakebed using pilings, and did not consider dock expansion “in-water construction”. CIRNAC-CARD noted that if the Contractor wished to construct a new dock it would require the Contractor and CIRNAC-CARD to apply for a Water Licence amendment and confirmed that it was not requesting consideration of in-water construction as part of the Scope of the Applications.¹²²

During the review of IR#19, DFO, GNWT-ENR, and Board staff (DFO comment 1, GNWT-ENR comment 5, and Board staff comment 2) asked for additional information regarding the proposed dock expansion. In response, CIRNAC-CARD noted that while it did not consider floating dock expansion to be “in-water construction”, it acknowledged that the Board’s definition is sufficiently broad that the expansion work could meet the definition. CIRNAC-CARD noted in its responses that it considered the expansion of the dock would have no impact on the aquatic environment and that no mitigative measures were proposed for the installation or removal. In the Preliminary Screening decision, the Board noted that stated that it was confident the dock expansion work could be addressed within DFO’s Request for Review process (DFO comment 1).

In its Intervention, GNWT-ENR recommended that in-water construction be considered as part of the proceeding for the dock expansion work, and that a description of potential impacts and mitigations be included in the SECP.¹²³ CIRNAC-CARD’s Intervention response acknowledged that the dock expansion was in-water construction, which aligns with the Board’s understanding of in-water Construction.¹²⁴ During the Hearing, GNWT-ENR recognized that the level of detail and mitigations for the description of potential impacts from the dock should be appropriately scaled to reflect the level of disturbance.¹²⁵ As such, the draft Licence included the dock expansion in its scope, and the recommendation from GNWT-ENR for inclusion of potential impacts and mitigations was added to the SECP in Schedule 4, Condition 2. In its Closing Arguments, GNWT-ENR considered its recommendations related to dock expansion resolved.¹²⁶ CIRNAC-CARD had no further comments in its Closing Arguments regarding the dock expansion.

¹²⁰ See WLWB Online Registry for [Rayrock – Technical Session – CIRNAC IR Response – Feb 10 21](#)

¹²¹ See WLWB Online Registry for [Rayrock – Technical Session – Information Requests – Feb 16 21](#)

¹²² See WLWB Online Registry for [Rayrock – Technical Session – CIRNAC IR Response – Feb 24 21](#)

¹²³ See WLWB Online Registry for [Rayrock – Type A LUP and WL Applications – GNWT-ENR Intervention – Apr 8 21](#)

¹²⁴ See WLWB Online Registry for [Rayrock – Type A LUP and WL Applications – CIRNAC Intervention Response – Apr 19 21](#)

¹²⁵ See WLWB Online Registry for [Rayrock – Public Hearing Transcript from Day 3 of 3 – Apr 30 21](#); p.53-54

¹²⁶ See WLWB Online Registry for [Rayrock – Public Hearing – Closing Arguments – GNWT-ENR – Jul 2 21](#)

5.6 Part E: Conditions Applying to Waste and Water Management and Schedule 4

Part E and Schedule 4 of the Licence contain conditions applying to Waste and Water management activities for the Rayrock Remediation Project. The conditions are consistent with standard conditions included in previous Licences issued by the Board and site-specific conditions were developed where necessary in this Licence.

In comments on the Draft Licence, CIRNAC-CARD requested that Item c of the *Engineered Structures* condition with respect to reporting of deterioration or erosion of constructed structures/facilities to an Inspector be removed from the Licence, as Item d requires reporting to an Inspector and the Board if deterioration or erosion requires repairs (CIRNAC-CARD WL comment 21). The Board notes that these conditions are distinct in that not all deterioration or erosion may require repair and allows CIRNAC-CARD flexibility with respect to determination of the condition of structures/facilities. As such, the Board has not changed this condition.

CIRNAC-CARD also commented on the *Annual Geotechnical Inspection* condition in review of the Draft Licence (CIRNAC-CARD WL comment 22) and noted that the Licence requirement for geotechnical inspections every five years after the initial five years post-construction extended beyond the Licence term. The Board notes that if the Licence expires before the “every five years thereafter” geotechnical inspection requirement is applicable, then the Licence requirements will not be relevant to the Project. The Board also recognizes that long-term monitoring that will be proposed by CIRNAC-CARD in the PCMMP can consider the need for geotechnical inspections. The condition has not been changed.

5.6.1 Site Wide Management and Monitoring Plans

Site-wide Management and Monitoring Plans include: the Waste Management Plan (WMP), Sediment and Erosion Control Plan (SECP), and Quarry Management Plan (QMP). During the response to IR #16, CIRNAC-CARD requested interim approval of the WMP and SECP with Licence issuance; these plans were included with the original Applications. Through the regulatory review process, comments and recommendations were received from reviewers regarding the WMP and SECP, including suggestions for further information that should be included. The concerns and commitments identified during the regulatory review are reflected in Schedule 4, Conditions 1 and 2 of the Licence. The Board has decided to approve the Waste Management Plan and Sediment and Erosion Control Plan at this time but requires submission of revised Plans for approval, a minimum of 90 days prior to commencement of Construction activities. This timeline was proposed by CIRNAC-CARD in its response to IR 16, and Parties did not raise concerns during review of the draft Licence.¹²⁷ The WMP, SECP, and QMP are discussed further below.

¹²⁷ See WLWB Online Registry for [Rayrock – Technical Session – CIRNAC IR Response – Feb 10 21](#)

5.6.2 Sediment and Erosion Control Plan – Part E, Conditions 5 and 6 and Schedule 4, Condition 2

Part E, Conditions 5 and 6, and Schedule 4, Condition 2 outline the requirements for the Sediment and Erosion Control Plan (SECP). This Plan is required to ensure any potential release of sediment is managed in accordance with the *Waters Act*, and the conditions outlined in Part E, Condition 1 of the Licence. CIRNAC-CARD included a SECP in its Licence Application.

During the proceeding, recommendations were made regarding the SECP Schedule conditions. In its Intervention and Closing Arguments, GNWT-ENR recommended that CIRNAC-CARD identify mitigations and control measures to be implemented if the CDF construction is delayed following the dewatering and treatment of Mill Lake water, and suggested that these could be provided in the SECP.^{128,129} In its response to Interventions, CIRNAC-CARD noted that the CDF Construction Plan would be provided to the WLWB prior to the commencement of construction of the CDF and provide activity-specific monitoring and mitigation details for the construction period.¹³⁰ CIRNAC-CARD did not comment on its recommendation in its Closing Arguments. Given that the CDF Construction Plan is not for approval and noting GNWT-ENR's concern about addressing potential erosion and transport of Mill Lake sediments, the Board believes it is suitable to include these details in the SECP and has reflected this in Schedule 4, Condition 2.

During the Public Hearing, GNWT-ENR asked CIRNAC-CARD in what submission post-remediation sediment and erosion control descriptions would be provided. CIRNAC-CARD suggested that this information be included in the Post-Closure Monitoring and Maintenance Plan because it would be difficult to predict exactly what the post-remediation sediment and erosion control would look like.¹³¹ CIRNAC-CARD also noted in the Public Hearing that after remediation is complete, there would be a need to maintain sediment and erosion controls in the Mill Creek outlet.¹³² In its Closing Arguments, GNWT-ENR recommended that CIRNAC-CARD outline sediment and erosion control measures to capture suspended sediment that will remain in place following remediation activities in the SECP.¹³³ CIRNAC-CARD did not comment on this recommendation in its Closing Arguments. The Board recognizes the desire and commitment for post-remediation sediment and erosion controls and believes post-remediation monitoring and maintenance would ideally all be outlined in one location to ensure all Parties know where to find that information. The Board believes that the Post-Closure Monitoring and Maintenance Plan is typically the Plan that houses those types of details and has updated Schedule 7, Condition 3 accordingly.

In its Intervention and Closing Arguments, GNWT-ENR maintained recommendations that: i) CIRNAC-CARD develop a general response framework for action level exceedances in the event of a sedimentation event; ii) develop a site-specific TSS/turbidity curve as a back up if a field device malfunctions or is unreliable; the

¹²⁸ See WLWB Online Registry for [Rayrock – Type A LUP And WL Applications – GNWT-ENR Intervention – Apr 8 21](#)

¹²⁹ See WLWB Online Registry for [Rayrock – Public Hearing – Closing Arguments – GNWT-ENR – Jul 2 21](#)

¹³⁰ See WLWB Online Registry for [Rayrock – Type A LUP and WL Applications – CIRNAC Intervention Response – Apr 19 21](#)

¹³¹ See WLWB Online Registry for [Rayrock – Public Hearing Transcript form Day 1 of 3 – Apr 28 21](#); p. 139-140

¹³² See WLWB Online Registry for [Rayrock – Public Hearing Transcript form Day 1 of 3 – Apr 28 21](#); p. 136

¹³³ See WLWB Online Registry for [Rayrock – Public Hearing – Closing Arguments – GNWT-ENR – Jul 2 21](#)

TG also recommended a TSS/turbidity curve be developed in its Intervention; and iii) total metals sampling (for EQC parameters) be conducted in the event of a turbidity and/or TSS action level exceedance in order to monitor any potential changes to water quality. CIRNAC-CARD responded to the Intervention that a general Response Framework would be required as part of the Contractor submitted SECP and that CIRNAC-CARD could not specify the exact means by which TSS is measured and that it was to the discretion of the Contractor. The Board has updated Schedule 4, Condition 2, Item j to reflect the requirement for a response framework in the next version of the SECP to be submitted 90 days prior to Construction. However, given CIRNAC-CARD's rationale for how the TSS measurement method cannot be specified to the contractor, the Board finds that the TG and GNWT-ENR's recommendation regarding the TSS/turbidity curve is sufficiently captured in Schedule 4, Condition 2 Item k. This condition requires CIRNAC-CARD to provide a back up/contingency option for measuring TSS if a field device for measuring TSS malfunctions or is unreliable.

With respect to total metals sampling, CIRNAC-CARD responded in its Closing Arguments that it had asked GNWT-ENR why including metal concentrations for sediment events was necessary, and GNWT-ENR had replied that such sampling would be to help in later interpretation of water quality data that would be collected in the SNP and AEMP. CIRNAC-CARD wrote that "only a complete failure of the Sediment and Erosion Control Plan (SECP) response framework would result in a long-term water quality effect that would be picked up in the SNP and potentially result in environmental impacts, and that scenario would not be allowed to happen during construction." CIRNAC-CARD also noted that the concentrations of associated metals in the sediment would be immaterial to the SECP response. CIRNAC-CARD requested greater clarity about how the data would be utilized if this requirement was included in the Licence. While the Board recognizes that the SECP is designed to prevent sedimentation events and respond to increases in sediment levels, it is possible for sedimentation events to occur despite the most diligent of operators and when all precautions and best practices are being followed. The Board has included a requirement in Schedule 4, Condition 2 for the inclusion of a general response framework for sedimentation events. At this time, evidence does not suggest the need for total metals sampling. As noted by CIRNAC-CARD, the SNP and AEMP are in place to determine if any effects to water quality are observed. When Version 2 of the SECP is submitted for approval, reviewers can consider if additional requirements are necessary for total metals sampling. The Board also notes that it has not been standard practice to include total metals sampling for sedimentation events in TSS response frameworks for other licences.

The TG recommended that the SECP schedule include a requirement for site drainage monitoring during freshet and during/following precipitation (TG comment 30). CIRNAC-CARD responded that it would need more information on what freshet monitoring would require and suggested if this monitoring is appropriate and required it could be included in the next version of the SECP. CIRNAC-CARD also noted that site access during freshet would be limited. The Board notes that the TG didn't include any further information in its Closing Arguments regarding this recommendation. As such, the Board believes there is opportunity for CIRNAC-CARD to engage with the TG prior to the submission of Version 2.0 of the SECP and determine what freshet monitoring, if any, would be suitable for the Rayrock Project. This is reflected in an added general condition to Schedule 4, Condition 2.

In its comments on the Draft Licence, CIRNAC-CARD recommended an exception be made with respect to the *Discharge Location – Ordinary High-Water Mark* for treated Mill Lake water to Sherman Lake (CIRNAC-CARD comment 23). The Board agrees that because the Licence includes conditions specifying effluent discharge conditions for Camp Wastewater and from the Mill Lake Water Treatment Facility that this condition isn't necessary and has removed it from the Licence.

5.6.3 Waste Management Plan

Part E, Conditions 3 and 4, and Schedule 4, Condition 1 outline the requirements for the Waste Management Plan. This Plan is required to ensure any onsite wastes are managed in accordance with the *Waters Act*, and the conditions outlined in Part E, Condition 1 of the Licence. CIRNAC-CARD included a Waste Management Plan in its Licence Application.

The requirement for a Waste Management Plan is standard for Licences issued by the Board. Through the regulatory review process, comments and recommendations were received from reviewers regarding the Waste Management Plan, including suggestions for further information that should be included. CIRNAC-CARD has requested that the Waste Management Plan be approved with issuance.

The Board believes commitments made by CIRNAC-CARD during the proceeding address concerns raised regarding the WMP and were reflected in the Draft Licence Schedule 4, Condition 1. No concerns were raised with the Draft Schedule for the WMP. The Board made some adjustments to Schedule 4, Condition 1 to reflect the *MVLWB Guidelines for Developing a Waste Management Plan* and ensure adequate guidance on required information is available for CIRNAC-CARD. The Board has approved Version 1.0 of the Waste Management Plan, and notes that Version 2.0 of the Plan will need to be submitted to the Board for approval 90 days prior to commencement of Construction activities to satisfy the requirements of Schedule 4.

5.6.4 Quarry Management Plan

During the initial review of the Licence Application, GNWT-ENR noted that while it was proposed by CIRNAC-CARD that a Quarry Management Plan (QMP) be considered, it was not available at the time of review. CIRNAC-CARD responded that the QMP would be provided by the contractor after the contract was awarded.¹³⁴ In an Information Request resulting from the Technical Session, CIRNAC-CARD was asked to propose which submission(s) would include proposed geochemical criteria for material to be used for construction. CIRNAC-CARD responded that the Quarry Management Plan, proposed to be submitted 90 days prior to the start of any quarrying activities for Board approval, would provide geochemical criteria and a description of intended application during the project.¹³⁵ Appendix D of the IR response also outlined further details to be included in the QMP. CIRNAC-CARD noted that the geochemical characterization and development of geochemical criteria was in progress and not anticipated to be finalized until after licence

¹³⁴ See WLWB Online Registry for [Rayrock – Technical Session – Information Requests – Jan 29 21](#)

¹³⁵ See WLWB Online Registry for [Rayrock – Technical Session – CIRNAC IR Response – Feb 10 21](#)

issuance. Information Request #21 asked for additional details on potential impacts and mitigations from potential use of Potentially Acid-Generating (PAG) rock in construction, and to clarify any contingencies for bedrock that didn't meet geochemical criteria. CIRNAC-CARD responded that the QMP would provide additional detail on the management of PAG and noted that any acid-generating rock would be fully encapsulated if identified in blasting areas of the CDF and Mill Creek outlet.¹³⁶ The Board recognizes this is an important design objective.

GNWT-ENR's Intervention recommended that geochemical criteria for defining PAG material, as well as a bedrock geochemistry monitoring plan, be outlined in the QMP, and be submitted post-issuance of the Licence for review and approval by the Board.¹³⁷ The Board understands that GNWT-ENR's recommendation for a bedrock geochemistry monitoring plan was to reflect how "planned additional bedrock sampling should be described." The Board notes that CIRNAC-CARD's response to Interventions noted that geochemical criteria for PAG material would be included in the QMP but did not address the bedrock geochemistry monitoring plan recommendation. The Board notes that the Draft Licence included a requirement in the Schedule for a bedrock geochemistry monitoring plan including timing and frequency.¹³⁸ No comments on this proposed requirement were received from CIRNAC-CARD or any other Parties except for the GNWT, in either their comments on the Draft Licence and their Closing Arguments. In its Closing Arguments, GNWT noted that CIRNAC-CARD didn't address inclusion of a bedrock geochemistry monitoring plan and restated this recommendation.¹³⁹ The Board believes that this information may be useful in understanding potential impacts to the environment and that no Parties raised concerns with this requirement. Therefore, this requirement has been retained in Schedule 4, Condition 3.

5.6.5 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 MVLWB *Water and Effluent Quality Management Policy*.¹⁴⁰

Effluent Quality Criteria (EQC) for the discharge from the Mill Lake Water Treatment Facility to Sherman Lake were proposed by CIRNAC-CARD in its Application. Over the course of the proceeding, it was noted that EQC might also be required for the discharge of camp wastewater, which CIRNAC-CARD confirmed in its response to IR #12.¹⁴¹

CIRNAC-CARD's response to IR #12 proposed EQC as maximum grab concentrations (MGC). In its Intervention, GNWT-ENR recommended that the proposed EQC values include maximum average

¹³⁶ See WLWB Online Registry for [Rayrock – Technical Session – CIRNAC IR Response – Feb 24 21](#)

¹³⁷ See WLWB Online Registry for [Rayrock – Type A LUP And WL Applications – GNWT-ENR Intervention – Apr 8 21](#)

¹³⁸ See WLWB Online Registry for [Rayrock - Type A Water Licence Application - Draft Water Licence - May 27 21](#)

¹³⁹ See WLWB Online Registry for [Rayrock – Public Hearing – Closing Arguments – GNWT-ENR – Jul 2 21](#)

¹⁴⁰ See WLWB 'Policies and Guidelines' webpage for MVLWB (2011) [Water and Effluent Quality Management Policy](#).

¹⁴¹ See WLWB Online Registry for [Rayrock – Technical Session – CIRNAC IR Response – Feb 10 21](#)

concentrations (MAC) as well as MGC.¹⁴² CIRNAC-CARD responded that the selected use of MAC was from discussion with the TG and Elders, and agreement that there was preference to keep proposed criteria as MGC. In its Closing Arguments, GNWT-ENR noted that it understood the proposed singular use of MGC values had been discussed with the TG, and essentially would be more conservative for environmental protection.¹⁴³ GNWT-ENR didn't have further comments, and the Board believes the use of MGC for the EQC is suitable given the rationale provided by CIRNAC-CARD.

The consideration of selected EQC for each waste stream are discussed separately below.

Mill Lake Water Treatment Facility Discharge

The EQC proposed by CIRNAC-CARD in the Licence Application were discussed during the proceeding. After the Technical Session, revised EQC were proposed by CIRNAC-CARD in the response to IR #12.¹⁴⁴ CIRNAC-CARD noted that the parameters selected for the EQC reflected the Contaminants of Potential Concern (COPCs) identified in the Human Health and Ecological Risk Assessment for Rayrock.¹⁴⁵ CIRNAC-CARD also noted in the IR response that due to the need to blast bedrock in the Mill Lake basin, it was also including nitrate, nitrite, and ammonia (total) in the EQCs. CIRNAC-CARD also proposed that all EQCs be considered maximum grab concentrations, and no average concentration EQCs were proposed in the revision. CIRNAC-CARD further proposed that TSS EQC were not required, with the rationale that TSS concentrations would need to be low to achieve compliance for metals and couldn't be provided as a strict value. GNWT-ENR's Intervention recommended inclusion of a TSS and TPH EQC and recommended both MAC and MGC. CIRNAC-CARD responded that while it didn't believe it was necessary, TSS would be measured on a regular basis, and they could apply the recommended EQC. CIRNAC-CARD did not agree with including a TPH EQC and responded that ENR's rationale "assumed that the Contractor will not abide by the Spill Contingency Plan and will allow for uncontrolled releases to the environment" and did not agree that uncontrolled TPH releases are inevitable. The recommended addition of TSS and TPH as EQCs was identified again by GNWT-ENR at the Public Hearing and in review of the Draft Licence (GNWT-ENR comment 5). GNWT-ENR comment 5 re-iterated the recommended maximum grab EQC for TSS and TPH. CIRNAC-CARD agreed with the TSS EQC but again disagreed with the TPH EQC, citing the same previous rationale as well as that the water treatment system is not designed to remove organic contaminants (i.e. including petroleum hydrocarbons). GNWT-ENR's Closing Arguments noted that while it supported the implementation of spill contingency plan, sampling of TPH was still a requirement at operational and remediation industrial sites to ensure mitigations are functioning properly. GNWT-ENR again recommended EQC for TSS and TPH in its Closing Arguments. CIRNAC-CARD did not comment on the recommendation in its Closing Arguments. The Board does not agree with CIRNAC-CARD's rationale as it recognizes that spills occur even by the most diligent of operators and when all precautions and best practices are being followed. While it is noted that the water treatment system is not designed to remove

¹⁴² See WLWB Online Registry for [Rayrock – Type A LUP And WL Applications – GNWT-ENR Intervention – Apr 8 21](#)

¹⁴³ See WLWB Online Registry for [Rayrock – Public Hearing – Closing Arguments – GNWT-ENR – Jul 2 21](#)

¹⁴⁴ See WLWB Online Registry for [Rayrock – Technical Session – CIRNAC IR Response – Feb 10 21](#)

¹⁴⁵ See WLWB Online Registry for [Rayrock – Information Request Response from CIRNAC-CARD – Nov 23 20](#)

organic contaminants and as such would not be able to remove petroleum hydrocarbons if detected above EQC, the inclusion of a TPH EQC is reasonable for the remediation of an industrial site and will ensure proper practices are being employed and that responses occur as needed to avoid harm and/or contamination to the environment. The Board has included Maximum Grab Concentrations for TSS and TPH in the EQC for the Mill Lake Water Treatment discharge.

GNWT-ENR's Intervention also outlined that a more conservative EQC for zinc was found to be a minimum calculated guideline for Sherman Lake at 15 µg/L, rather than the proposed 23 µg/L for MGC. CIRNAC-CARD responded with additional rationale regarding pH, hardness, and dissolved organic carbon (DOC) of Sherman Lake, and the measurement of total zinc concentration, rather than dissolved zinc. GNWT-ENR's Closing Argument noted that it was supportive of the proposed zinc EQC of 23 µg/L given the provided rationale. Therefore, the Board has included the proposed zinc EQC in the Licence.

In its Intervention, the TG noted that selenium should be added as a contaminant of concern. CIRNAC-CARD had responded that it did not need to be considered as sediment assessments considered a "weight of evidence approach using sediment chemistry and benthic community studies". CIRNAC-CARD also noted that selenium had not been identified in concentrations greater than CCME Freshwater Aquatic Guidelines in Mill Lake water samples. At the Hearing, the TG was asked for clarification on its recommendation regarding selenium, and what EQC value it was recommending be included in the Licence. The TG responded that the recommendation came from the presence of selenium in Mill Lake sediments, and that it wanted to see selenium monitored as part of the SNP and considered as a potential EQC in the licence.¹⁴⁶ At the Hearing, Board staff asked if the TG had a recommended EQC for selenium, however the TG declined to provide one.¹⁴⁷ The Board notes that the Hearing was the first point in the Proceeding when a recommendation for inclusion of selenium as an EQC in the Licence was proposed. The Board also notes that no Undertaking was requested to obtain information regarding a potential EQC for selenium. In its review of the Draft Licence, the TG reiterated its recommendation that an EQC for selenium be included for the discharge from Mill Lake due to the elevated levels in Mill Lake sediments (TG comment 14). CIRNAC-CARD responded that selenium was detected in concentrations above sediment guidelines but not above water guidelines. In consideration of CIRNAC-CARD's response, the Board is not convinced an EQC for selenium is required at this time and given that a recommended selenium EQC was not provided, the Board has not included selenium EQC in this Licence at this time. The Board also notes that total metals are a requirement of the SNP, which includes selenium. Selenium will be monitored through the SNP and actions can be taken as needed within the framework of the Aquatic Effects Monitoring Program. The Board notes that a draft AEMP Design Plan was submitted for information purposes prior to the Technical Session and includes selenium but has not been publicly reviewed or approved yet.¹⁴⁸

¹⁴⁶ See WLWB Online Registry for [Rayrock – Public Hearing Transcript form Day 3 of 3 – Apr 30 21](#); p. 31-32

¹⁴⁷ See WLWB Online Registry for [Rayrock – Public Hearing Transcript form Day 3 of 3 – Apr 30 21](#)

¹⁴⁸ See WLWB Online Registry for [Rayrock – AEMP – Design Plan – V 1.0 – Dec 18 20](#)

The Board notes in ECCC's comment #5 of its initial review of the Application, that it was recommended that an EQC be established for Ra-226 (Radium-226). CIRNAC-CARD responded that based on water quality data previously collected from the site, Ra-226 and other radionuclides were not found to be high in the area, and that Ra-226 and Pb-210 (Lead-210) would be monitored as part of the AEMP., The Board notes that there were no further questions at the Technical Session and no further recommendation from ECCC regarding EQC for radionuclides. At the Public Hearing, the TG asked if there were any suggestions or guidance on setting appropriate EQC for uranium decay products in water treatment discharge. CIRNAC responded that you can "definitely identify what you would potentially be expecting for the decay products from the uranium series. And so, if you have low concentrations of uranium, you would definitely be expecting lower concentrations of radionuclides." CNSC also responded to the TG that once remediation began, CNSC would be looking at the lab data that comes in on a regular basis to determine if the filtration system is working accordingly.¹⁴⁹ The TG recommended in their comments on the draft Licence that an EQC for radionuclides be added to the Mill Lake Water Treatment discharge parameters. The TG noted that Mill Lake sediments contain elevated radionuclides beyond uranium, and that licence limits should be set for radionuclides such as Pb-210, Ra-226, and potentially others, as they were mine-related and present at potential effect levels in sediments (TG comment 15). CIRNAC-CARD responded that information provided at the Hearing noted that concentrations for radionuclides would always be a set ratio of the uranium concentration, that since uranium was the principal contaminant of concern, if uranium concentrations were measured below reasonable EQC, all radionuclides would be, and that establishment of separate radionuclide EQC is not necessary. The Board also notes that radionuclides are included in the SNP, including lead-210, polonium-210, radium-226, thorium-230, and uranium-238, and believes any concentrations observed in the environment can be reported through the SNP and/or AEMP. The Board notes that it was unclear until TG's review of the Draft Licence that it was recommending inclusion of radionuclide EQC in the Licence. The Board also notes that ECCC did not further comment on the inclusion of Ra-226 in EQC in the proceeding and that as the nuclear activities' authority, CNSC did not raise concerns with CIRNAC's information regarding relative uranium and radionuclide concentrations. As such, the Board has not included radionuclide EQC in the Licence.

Camp Wastewater Discharge

EQC for the Camp Wastewater Discharge were proposed by CIRNAC-CARD in response to IR #12.¹⁵⁰ GNWT-ENR's Intervention noted general support for the proposed EQC parameters, with some recommended changes. GNWT-ENR recommended that the TSS EQC be changed from 100 mg/L to 25 mg/L for the MGC. CIRNAC-CARD responded that 100 mg/L is consistent with other CIRNAC-CARD projects for sewage disposal EQCs. GNWT-ENR also recommended that the mineral oil and grease EQC be replaced with a TPH EQC of mg/L for MGC. CIRNAC-CARD responded that oil and grease analysis would capture petroleum-based hydrocarbons and non-petroleum products, while TPH analysis would not capture non-petroleum products that appear in camp wastewater, and therefore is not preferred. GNWT-ENR also recommended that fecal coliforms EQC be presented as 10 CFU/100 ml rather than 10,000 CFU/dL, which CIRNAC-CARD

¹⁴⁹ See WLWB Online Registry for [Rayrock – Public Hearing Transcript form Day 2 of 3 – Apr 29 21](#); p. 27-30

¹⁵⁰ See WLWB Online Registry for [Rayrock – Technical Session – CIRNAC IR Response – Feb 10 21](#)

noted represented a 1000-fold decrease in criteria which was already applied at other CIRNAC-CARD sites for sewage. CIRNAC-CARD noted that units of 10,000 CFU/100 mL would work. In its review of the Draft Licence (GNWT-ENR comment 6) and Closing Arguments, GNWT-ENR noted that it agreed with CIRNAC-CARD's rationale from the Intervention responses, and didn't have further recommendations. The Board has reflected these levels in the Part E, Condition 18 EQC.

5.6.6 Toxicity of Discharge to Sherman Lake

The Licence includes requirements for toxicity sampling, and there were comments and discussion regarding the type and frequency of the toxicity testing during this proceeding.

In its Review of the Licence Application, GNWT-ENR recommended inclusion of the *Effluent Quality - Toxicity* standard condition, which states that Discharge shall not be acutely toxic (GNWT-ENR comment 16). CIRNAC-CARD responded that acute toxicity was unlikely but that this condition could be applied. The Draft Licence included the standard condition and proposed monthly acute toxicity analysis for Rainbow Trout and *Daphnia magna* in Annex A of the Draft Licence. In its review of the Draft Licence, the TG commented that chronic toxicity testing is more sensitive than acute toxicity testing; therefore, to confirm that Discharge is safe, it would like to see both acute and chronic toxicity testing requirements. The Board notes that CIRNAC-CARD had previously committed to acute toxicity testing and the proposal from the TG with regards to chronic testing had not been previously raised in the Proceeding. The intent of the *Effluent Quality – Toxicity* standard condition is to ensure that Discharge(s) to the aquatic Receiving Environment is not acutely toxic to aquatic life. There was no evidence supporting the need for chronic toxicity testing on the record before the review of the Draft Licence was initiated, as such there is no evidence to support such a condition. The licence includes the standard condition for acute toxicity testing and the Board is not persuaded that additional toxicity testing is necessary. The Board also notes that there is a requirement for an AEMP (see section 5.7 of this Reasons for Decision), which is expected to include monitoring of effects to aquatic species and allow for adaptive management to avoid long-term chronic effects.

During the public review of the Draft Licence, the TG also had comments about the timing of toxicity sampling. The TG noted that upon treatment start up, the plant inflow will be relatively clean lake water, but that during sediment dewatering the plant inflow will likely be significantly worse (TG comment 45). To address this, the TG recommended that toxicity sampling be conducted at different times (TG comment 45). While the TG did not have a recommendation regarding the frequency of testing, they noted that monthly testing might be excessive and does not seem to target Discharge at its worst case (TG comment 45). CIRNAC-CARD responded that monthly testing did not seem appropriate but would agree to testing at the start of each water treatment season or any other appropriate annual timing. In its general comments on the Draft Licence, CIRNAC-CARD noted that it found monthly acute toxicity testing to be unnecessary and costly, and proposed annual chronic toxicity testing. CIRNAC-CARD also commented that monthly toxicity testing would only be justified if a dilution zone were proposed (CIRNAC-CARD comments 25 and 42). The Board is unclear why CIRNAC-CARD believes monthly toxicity testing is only required for Discharge with a dilution zone. The Board notes that other Licences issued by the Board, including the

Licence for the Giant Mine Remediation Project (MV2007L8-0031) typically require monthly sampling during Effluent Discharge for acute toxicity and quarterly sampling during Effluent Discharge for sublethal toxicity.¹⁵¹ A typical acute toxicity testing frequency is monthly. While the Board recognizes that monthly acute toxicity sampling may be more costly this is a standard frequency, no evidence was provided during the evidentiary phase of the proceeding to support a different frequency. The TG's recommendation to test at periods of deteriorated water quality is of value but no specific triggers were provided for the Board's consideration. It remains unclear what the frequency for acute toxicity testing should be at this time. In the absence of alternative information, the Board is adopting the typical frequency that has been used in other recent Licences. The Board notes that typical acute toxicity testing is monthly, and an SNP update can be made with rationale for changes to Annex A at any point without a Licence amendment.

The Licence includes a condition for testing Effluent prior to Discharge (i.e., *Testing Before Discharge – Mill Lake Water Treatment Facility and Camp Wastewater Sump*; Part E, Condition 20). Based on CIRNAC-CARD WL comment 26, it appears that CIRNAC-CARD had two potential interpretations for the testing requirements associated with this condition: providing SNP results five days prior to commencement/recommencement of activities or requiring five days of results from the SNP station. The Board would like to clarify that the condition means that SNP station samples need to be collected a minimum of five days prior to commencement or resumption of Discharge of Effluent.

5.7 Part F: Conditions Applying to Aquatic Effects Monitoring Program and Schedule 5

Part F and Schedule 5 contain conditions applying to the Aquatic Effects Monitoring Program (AEMP) for the Rayrock site. CIRNAC-CARD's Cover Letter to its applications clarified that while the RAP indicated an AEMP would be part of the Application, the AEMP had not been finalized so was not included as part of the Application Package. The Cover Letter indicated an anticipated completion date of November or December 2020. CIRNAC-CARD submitted an AEMP Design Plan on December 18, 2020. The AEMP Design Plan Cover Letter indicated it was submitted in response to a request during the public review of the Applications. At the time of submission, the requirements of an AEMP Design Plan were unknown. The AEMP Design Plan was distributed for information purposes and for potential discussion during the scheduled Technical Session. In its Intervention, GNWT-ENR noted that it had not reviewed the draft AEMP as part of CIRNAC-CARD's Applications. GNWT-ENR also noted in its Intervention that it had offered during the Technical Session to meet with CIRNAC-CARD to discuss the AEMP in advance of baseline sampling for the open water season, but that a meeting had not yet been requested.¹⁵² CIRNAC-CARD responded that the AEMP had been developed to allow for consistent monitoring before, during, and after remediation. CIRNAC-CARD also noted that informal comments on the AEMP would be considered by CIRNAC-CARD at any point.¹⁵³ CIRNAC-CARD's proposed Licence conditions included standard conditions for an AEMP, AEMP Design Plan, and related reporting. The Draft Licence included the same standard conditions and a

¹⁵¹ See MVLWB Online Registry for [MV2007L8-0031 - CIRNAC-GIANT - Issuance - Type A Water Licence - Sept18-20](#)

¹⁵² See WLWB Online Registry for [Rayrock – Type A LUP And WL Applications – GNWT-ENR Intervention – Apr 8 21](#)

¹⁵³ See WLWB Online Registry for [Rayrock – Type A LUP and WL Applications – CIRNAC Intervention Response – Apr 19 21](#)

Schedule for inclusion of an AEMP. No comments were received on these Draft conditions. GNWT-ENR wrote in its Closing Arguments that it supported the inclusion of the requirement for an AEMP and recommended that it be submitted to the Board following issuance of the Licence for review and approval.¹⁵⁴ As the AEMP Design Plan submitted in December 2020 was only distributed for information purposes, and has not undergone public review, it has not been approved with Licence issuance. The Board expects that baseline sampling from 2021 will be incorporated into an updated AEMP Design Plan submission. Given the lack of concern raised with the Draft Licence conditions for an AEMP, the Board requires CIRNAC-CARD to submit an updated AEMP Design Plan within 90 days of the effective date of the Licence.

In review of the Draft Licence, CIRNAC-CARD noted that a mixing zone was not proposed, and recommended deleting the Schedule 5 Condition 1 Item f that requires a comparison of predicted mixing and dilution of Effluent in Sherman Lake in the AEMP Annual Report (CIRNAC-CARD WL comment 38). The Board notes that this standard condition is not tied to the presence of a mixing zone and can be considered for any effluent discharge to a waterbody. If CIRNAC-CARD does not conduct this comparison it can provide rationale for why in its Annual AEMP Report. As such this condition has not been removed.

5.8 Part G: Conditions Applying to Contingency Planning and Schedule 6

Part G and Schedule 6 of the Licence contain conditions related to spill contingency planning and reporting, reclamation of spills and unauthorized discharges, and emergency response for the Rayrock Project sites. The requirement for a Spill Contingency Plan is standard for Licences issued by the Board. CIRNAC-CARD included a Spill Contingency Plan (SCP) in its Application package and proposed Licence conditions included standard conditions for a SCP submission and implementation. Through the regulatory review process, comments and recommendations were received from reviewers regarding the Spill Contingency Plan, including suggestions for further information that should be included.

In its response to IR #16, CIRNAC-CARD noted that it proposed the SCP be approved with Licence issuance so it would be in place for winter mobilization activities and a revised SCP be submitted 90 days prior to the commencement of Construction activities.

In their review of the Draft Licence, the CIRNAC-CARD-Inspector recommended the *Report Spills* and *Material Storage – Ordinary High-Water Mark* conditions be revised to mirror similar Permit conditions. It was recommended that immediate reporting to the inspector be included for the *Report Spills* condition (CIRNAC-Inspector comment 9) and that the addition of authorization of fuel caches by the Inspector be added to the *Material Storage – Ordinary High-Water Mark* condition (CIRNAC-Inspector comment 10). CIRNAC-CARD agreed with both of these recommendations. The Board notes that similar conditions have been included in recent Licence and Permit issuances, and aligning the Licence and Permit is necessary. As such both conditions have been revised for the recommended changes.

¹⁵⁴ See WLWB Online Registry for [Rayrock – Public Hearing – Closing Arguments – GNWT-ENR – Jul 2 21](#)

The Board believes commitments made by CIRNAC-CARD during the proceeding address concerns raised regarding the SCP during the initial review (GNWT-ENR comment 22, TG comments 44, 45, 46, 49, 50, and 53) and were reflected in the Draft Licence, Schedule 6, Condition 1. The Board has approved Version 1.0 of the Spill Contingency Plan, and notes that Version 2.0 of the Plan will need to be submitted to the Board in accordance with Part G, Condition 3 (*Spill Contingency Plan – Revised*).

5.9 Part H: Conditions Applying to Closure and Reclamation and Schedule 7

Part H and Schedule 7 of the Licence contain conditions applying to Closure and Reclamation of the Rayrock site. Because this is a remediation project, CIRNAC-CARD submitted a Remedial Action Plan (RAP) with its Permit and Licence Applications. In its cover letter, CIRNAC-CARD provided a table that identified where the RAP satisfied the requirements outlined in the MVLWB's *Guidelines for the Closure and Reclamation of Advanced Mineral Exploration and Mine Sites in the Northwest Territories* (2013).¹⁵⁵ In its response to IR #16, CIRNAC-CARD outlined its expectations for proposed submissions under the Licence and noted that approval of the RAP was being requested with issuance and that no timeline for resubmission was proposed. Over the course of the proceeding, it was noted that a number of updates and/or edits were required to the RAP, including closure and reclamation activities related to operational activities, updated uncertainties, and revised Closure Objectives and Criteria. CIRNAC-CARD also previously noted in responses to comments that if necessary, the RAP could be updated if remediation creates any new risks to human health or the environment. During the Hearing, Board staff asked CIRNAC-CARD if there were any limitations to revising the RAP to include new information. CIRNAC-CARD responded that the RAP "is a comprehensive document that would – that we are confident in – in its current state and would be reluctant to – to revise it. We could, however, consider an addendum to the RAP with that additional information."¹⁵⁶

The Draft Licence included standard conditions requiring a CRP. Given that the RAP was submitted in place of a CRP, the intention was for these standard conditions to reflect the same requirements that would be expected for a CRP. In its comments on the Draft Licence, CIRNAC-CARD reiterated its belief that the RAP contains the information typically required in a CRP. CIRNAC-CARD believes if the Board determines that a CRP is required than it should only focus on operational activities, such as the camp and fuel tanks, and that the RAP would cover remediation of legacy liabilities (CIRNAC-CARD WL comment 28). While the Board recognizes there is legacy contamination at the Rayrock and associated sites, it is unclear to the Board how the proposed remediation activities can be separated from the closure criteria (yet to be developed and approved). It is these criteria that will indicate when those closure activities have achieved the closure objectives (also yet to be developed and approved). The Board nonetheless sees merit in a single document that contains all of the necessary details to guide the remediation and reclamation process and is open to different formats for how the closure submission is prepared, as long as the format

¹⁵⁵See WLWB Online Registry for [Rayrock – Cover Letter – Type A WL and Type A LUP Application Package – Sep 21 20](#)

¹⁵⁶ See WLWB Online Registry for [Rayrock – Public Hearing Transcript form Day 2 of 3 – Apr 29 21](#); p. 73-75

chosen achieves the MVLWB/AANDC *Guidelines for the Closure and Reclamation of Advanced Mineral Exploration and Mine Sites in the Northwest Territories*.

Given that the RAP has been submitted in place of a CRP, the Board will refer to this document as a RAP in the Licence conditions and further in these Reasons for Decision, with the understanding that it is fulfilling the intent and requirements of a CRP. Given that this is a remediation project, the Board understands that a degree of certainty is needed to advance planning and procurement. The Board believes that Parties are in general support of the proposed remediation and closure activities, and for these reasons the Board has approved Version 1.0 of the RAP with the exceptions detailed below.

5.9.1 What Does Approval of the RAP Mean?

Approval of the RAP at this stage will allow CIRNAC-CARD to continue moving forward with the closure planning and remediation process, however, the Board has decided that approval of Version 1.0 of the RAP does not include approval of Closure Objectives and Closure Criteria, and there is additional information still required as per Schedule 7, Condition 2.

Closure Objectives and Closure Criteria

Over the course of the proceeding, comments were raised regarding the proposed Closure Objectives and Closure Criteria. Proposed Closure Objectives and Criteria were submitted with CIRNAC-CARD's Applications. In response to IR #8, CIRNAC-CARD provided an updated Appendix C Table C1 with revised Closure Objectives and Criteria.

GNWT-ENR noted in its Intervention that it believed CIRNAC-CARD's response to IR #8 had improved some of the Closure Criteria, but that further refinement was needed, and outlined a number of examples. GNWT-ENR recommended that the Closure Criteria should not be approved and that they be resubmitted for public review and Board approval post-issuance of the Licence.¹⁵⁷ CIRNAC-CARD responded to the intervention that it believed the revised table to be complete and ready for approval, but recognized that specific monitoring details and end points were not presented, and those were currently under development with detailed design. CIRNAC-CARD proposed that refined closure criteria could be submitted to the Board for approval with the appropriate Design Plan. CIRNAC-CARD also noted that the Post-Closure Monitoring and Maintenance Plan (PCMMP) could clearly communicate final closure criteria to demonstrate that measurable criteria would be used to evaluate success of remediation activities.¹⁵⁸ While closure criteria may inform proposed design plans or proposed remediation and reclamation activities, the Board does not agree that it is appropriate for closure criteria to be developed as part of the PCMMP. This would not be in line with the Boards' *Guidelines for the Closure and Reclamation of Advanced Mineral Exploration and Mine Sites in the Northwest Territories*, and in the Board's view, leaving this work until the development of the PCMMP is too late to properly inform closure and remediation planning.

¹⁵⁷ See WLWB Online Registry for [Rayrock – Type A LUP And WL Applications – GNWT-ENR Intervention – Apr 8 21](#)

¹⁵⁸ See WLWB Online Registry for [Rayrock – Type A LUP and WL Applications – CIRNAC Intervention Response – Apr 19 21](#)

At the Hearing, CIRNAC-CARD accepted an Undertaking to answer a number of questions related to closure criteria. In its response to Undertaking #3, CIRNAC-CARD asserted that the closure being discussed was specific for the Water Licence and Land Use Permit, noting that the Waste Nuclear Substance Licence (WNSL) would be in force indefinitely.

CIRNAC-CARD noted that closure criteria proposed in the Board's process are intended to guide the successful closure of activities authorized under the Licence and Permit. The Board recognizes that the CNSC requires a separate Licence for the Rayrock site to address the continued containment of radioactive substances. The Board's jurisdiction, however, encompasses the effective closure, reclamation, and remediation of the Rayrock site as outlined in, and authorized by, the Licence. The Board sees no reason based on the evidence in this proceeding or law to deviate in any significant way from its practice and licensing requirements in relation to Closure and Reclamation. CIRNAC-CARD must meet the requirements of the CNSC and its licence and the Board and the MVRMA and the water licence and land use permit. In so doing, the Board notes that it may also choose to set more stringent design or closure criteria than other regulators where those requirements are within the Board's authority and appropriate.

In CIRNAC-CARD's response to Undertaking #3 it also provided a second update to the Appendix C Table C1.¹⁵⁹ Table C1 was noted as being updated for all closure criteria as one submission, but that additional specific criteria would be provided in the Post-Remediation Monitoring and Maintenance Plan. CIRNAC-CARD also noted that "while specific metrics have not been proposed for the closure criteria, the adjustments to Table C1 better define the conditions under which the criteria is considered to be met." The Board notes that this updated Table C1 was received in response to an Undertaking so there was no opportunity for input from Parties to CIRNAC-CARD's response through a public review.

An Undertaking was also asked of GNWT-ENR and the TG, to determine if these Parties believed the updated closure objectives from the IR #8 Response should be approved. Both Parties responded that they did not believe the closure objectives provided in response to IR #8 should be approved.^{160,161}

In its Closing Arguments, GNWT-ENR maintained its recommendation that the proposed Closure Criteria not be approved and a public review of revised closure criteria be conducted post-Licence issuance.¹⁶² In its Closing Arguments, CIRNAC-CARD stated that "the provision of MVLWB-defined closure criteria for CIRNAC-CARD's remediation project is requiring CIRNAC-CARD to explain what measures they will take to make certain that project liabilities do not, at the close of the project, become the responsibility of Government of Canada, as represented by CIRNAC-CARD." CIRNAC-CARD said that the Closure and Reclamation Plan process was developed to protect the Crown from potential liabilities from licensed

¹⁵⁹ See WLWB Online Registry for [Rayrock – Public Hearing – Undertaking Response from CIRNAC – May 14 21](#)

¹⁶⁰ See WLWB Online Registry for [Rayrock – Public Hearing – Undertaking Response from GNWT – May 14 21](#)

¹⁶¹ See WLWB Online Registry for [Rayrock – Public Hearing – Undertaking Response from TG – Part II – May 14 21](#)

¹⁶² See WLWB Online Registry for [Rayrock – Public Hearing – Closing Arguments – GNWT-ENR – Jul 2 21](#)

developments. CIRNAC-CARD also noted that closure objectives and criteria outside of those needed for closure of the Licence could be negotiated between other Parties and CIRNAC-CARD but that they should not be a part of the Licence conditions. CIRNAC-CARD also commented on GNWT-ENR's Closing Arguments and noted that GNWT had no objection or comment to the updated Closure Criteria provided in CIRNAC-CARD's Undertaking Response, and that GNWT-ENR could have provided these comments in its closing arguments. The Board notes that new evidence cannot be provided in Closing Arguments as per the Boards' Water Licensing Process and Boards' Rules of Procedure, Rule 93,^{163,164} and that GNWT-ENR's Closing Argument reiterated that it believed that the Closure Criteria should not be approved.

Given the disagreement regarding the acceptability of the proposed Closure Criteria and Closure Objectives, the Draft Licence included a condition requiring the Licensee to co-host a Closure Objectives and Criteria Workshop within 90 days of Licence issuance (*Closure Objectives and Criteria Workshop* condition). The Board is of the view that engaging with relevant Parties to collaboratively develop Closure Objectives and Closure Criteria is the most efficient and effective path forward, especially considering CIRNAC-CARD requires this information to advance remediation and closure planning. The Board has updated Schedule 7 Condition 1 (b) to clarify the requirement for engagement prior to the submission of the draft Closure Criteria and Closure Objectives, and has extended the timing in condition *Closure Objectives and Criteria Workshop*.

In its comments on the Draft Licence, the TG requested that Closure Objectives and Criteria be co-developed in order to achieve the objective of designing for social and cultural remediation and reconciliation. The TG recommended that the *Closure Objectives and Criteria Workshop* condition be revised to include co-design with the TG of objectives and criteria (TG comment 16). CIRNAC-CARD responded that co-development with the TG of closure objectives for the objective of designing for social and cultural remediation and reconciliation was necessary but noted that some of these objectives are outside of the licensing and permitting process. The Boards' process for development and approval of closure objectives and criteria is inclusive, interactive, and subject to Board approval. Through that process the Parties will have the opportunity to provide input into the appropriate objectives and criteria for the Rayrock and associated sites.

CIRNAC-CARD also commented on the *Closure Objectives and Criteria Workshop* condition during review of the Draft Licence and asked who would be expected as attendees, as well as if Board feedback would be received on Closure Objectives and Closure Criteria proposed in Undertaking #3 (CIRNAC-CARD WL comment 29). The Board notes that the Workshop would be co-hosted with the WLWB and CIRNAC-CARD will coordinate with Board staff regarding event logistics.

The Board agrees with the GNWT and the TG that additional engagement and work is needed to develop appropriate Closure Objectives and Closure Criteria, and therefore has not approved these at this time.

¹⁶³See WLWB Policy and Guidelines Website for the [Guide to the Water Licensing Process](#); p. 34

¹⁶⁴ See WLWB Resources webpage for [Rules of Procedure](#)

Because the objectives and criteria are fundamental in guiding the proposed activities at the Rayrock site, and because there was additional information identified during the proceeding that is needed to paint a fulsome picture of the proposed activities at Rayrock, the Board is requiring Version 2.0 of the RAP be submitted in accordance with the *Closure and Reclamation Plan – Revised* condition.

The Board recognizes the challenge of managing the procurement and contractor timelines for CIRNAC-CARD and that the nine-month timeline for submission of Version 2.0 of the RAP is a minimum requirement. If CIRNAC-CARD would like certainty with respect to the RAP that it is encouraged to submit Version 2.0 of the RAP as soon as possible.

5.9.2 Closure Reporting Requirements

In its response to IR #16, CIRNAC-CARD noted that a Remediation Completion Report that provides details around the completed remediation and remaining monitoring would be provided within one year of completion of remediation.¹⁶⁵ Given this, the Draft Licence included a standard condition for the submission of a Closure and Reclamation Completion Report (*Closure and Reclamation Completion Report* condition) for specific components. In its comments on the Draft Licence, CIRNAC-CARD stated that all remediation would be completed by 2025 and noted that a description of remediation would be updated in the annual water Licence Reports and finalized in the Remediation Completion Report, and recommended that separate Closure and Reclamation Completion Reports would therefore not be required as per the draft *Closure and Reclamation Completion Report* condition. Recognizing the duration of the remediation project is only three years, the Board agrees with CIRNAC-CARD that one submission is appropriate in these circumstances, and the Board has updated the condition accordingly.

In its comments on the Draft Licence, the TG noted that *the Post-Closure Monitoring and Maintenance Plan* and *Performance Assessment Report – Component-Specific* conditions should be revised to acknowledge the importance of Tłjchq involvement in development and implementation of the monitoring plan and assessing remediation work performance (TG comment 17). As described in the *Boards’ Engagement and Consultation Policy*, the Board emphasizes the importance that CIRNAC-CARD engages with Parties **prior** to development of Designs and Plans, when appropriate. The Board notes that the approved Engagement Plan includes requirements for engagement with the TG to review requirements for post-remediation monitoring and provide feedback.¹⁶⁶ Further the Board adds that the Post-Closure Monitoring and Maintenance Plan will be submitted for Board approval and all Parties will have an opportunity to provide input at that time. As such, the Board has not revised these conditions from the Draft Licence.

¹⁶⁵ See WLWB Online Registry for [Rayrock – Technical Session – CIRNAC IR Response – Feb 10 21](#)

¹⁶⁶ See WLWB Online Registry for [Rayrock – Engagement Plan and Record – Sep 21 20](#)

5.9.3 Schedule 7 – Conditions Applying to Closure and Reclamation

Schedule 7, Condition 2 was included in the Draft Licence and reflects the Boards' Standard Conditions for closure and reclamation requirements. CIRNAC-CARD made an overarching comment on the Draft Schedule 7 that the scope needed to be clarified based on consideration of the RAP and other documents provided (CIRNAC-CARD WL comment 39). Given the Board's decision to consider the RAP in place of a typical CRP, the Board believes the requirements outlined and Schedule 7 conditions are appropriate for the submission of Version 2.0 of the RAP.

The TG had a number of comments on the Draft Schedule 7, some of which were also reflected in its Closing Arguments. The TG recommended that the requirements for the Closure Objectives and Criteria Workshop include aspects of reconciliation and restoration of the area of land back into Tłı̨cẖ use (TG comment 32). CIRNAC-CARD responded that it was committed to reconciliation objectives and intended to work with the TG to find solutions, however it believes that this recommendation does not fall within the WLWB jurisdiction. The Board notes that Schedule 7, Condition 1 specifies the outcome but does not stipulate or make any assumptions about the details for what the Closure Objectives and Criteria might be. The Board recognizes that the development of Closure Objectives and Closure Criteria involves various Parties and will include both a workshop and a subsequent public review of that information, so Parties will be able to discuss their views and then provide evidence to the Board prior to its consideration.

The TG also recommended that radiological conditions should be added to the description list of the pre-existing and current Project environment, to which CIRNAC-CARD responded that legacy radiological conditions were described in the RAP (TG comment 31). Given that CIRNAC-CARD has confirmed this information is already in the RAP, the Board believes that including this requirement in Schedule 7 Condition 2 doesn't result in any additional or undue burden to CIRNAC-CARD and will ensure this information will be maintained in future Versions.

The TG recommended that cultural, social, and spiritual conditions be added to the Project environment description (TG comment 33) and that the site history be revised to include social and cultural experience of the Tłı̨cẖ people (TG comment 34). CIRNAC-CARD responded that these recommendations do not fall within the jurisdiction of the WLWB, and that investigations of cultural, social, and spiritual conditions of Rayrock have been completed and committed to these investigations being ongoing. The Board acknowledges CIRNAC-CARD's commitment and also believes Schedule 7, Condition 2, Item f (vii) addresses traditional end use of the area.

The TG recommended that the Post-Closure Monitoring and Maintenance Plan (PCMMP) include a requirement for Tłı̨cẖ consultation and collaboration for the entire monitoring program, not just sample site selection as per the Draft Schedule 7, Condition 3 Item b (vii) (TG comment 35). The Board notes that the condition specifies the minimum information requirements, but they are not limited to these. The condition requiring TG involvement in the monitoring program was specifically included to address this

specific concern.¹⁶⁷ The Board notes that, as described in the Boards' *Engagement and Consultation Policy*, CIRNAC-CARD is expected to engage with Parties regarding the development of Designs and Plans, when appropriate. The Board also notes that all Parties will be able to provide feedback on the PCMMP through the Boards' public review process. The Board has not revised the condition except to change it from "Tłjchq" to "Tłjchq Government" to be consistent with TG comment 22 on the Draft Licence. The TG also recommended that the PCMMP include a description of how the Tłjchq Government and Tłjchq citizens would be involved in the monitoring programs, which CIRNAC-CARD accepted (TG comment 36). This requirement has been added to Schedule 7, Condition 3 Item c.

In review of the Draft Licence and Closing Arguments, the TG recommended a requirement be included for the PAR to identify and evaluate new or emerging containment or remediation technologies, and discuss the feasibility of implementing these technologies (TG comment 27). The TG noted in Closing Arguments that if no emerging technologies were observed in the term of the Licence, CIRNAC-CARD could state this in the PAR, and noted this would help provide certainty in assessing new technology if CIRNAC-CARD were to be required to report on emerging technologies. In response, CIRNAC-CARD noted that there would not be better containment or remediation technology within the term of the Licence, and the CDF was being designed to not include retaining structures that would require on-going water licencing. CIRNAC-CARD did not agree with the TG's recommendation. The Board understands that the PAR is intended for monitoring/assessing remediation work that has already been conducted and does not believe that consideration of new technology for already-constructed facilities is appropriate. The Board notes that submission of Version 2.0 of the RAP will provide Parties an opportunity to identify any new technologies not already considered. However, given the short duration of the Project, the Board understands the low likelihood of emerging technologies being considered in the time frame of this Licence.

5.10 Annex A: Surveillance Network Program

Annex A of the Licence contains conditions applying to the Surveillance Network Program (SNP). The SNP details the sampling and monitoring requirements related to compliance with several conditions in this Licence.

CIRNAC-CARD submitted a proposed Annex A with its Licence Application. During the public review of the Application Package, comments and recommendations were received on the proposed Annex A, which were further discussed at the Technical Session. After the Technical Session, a revised proposed Annex A was submitted by CIRNAC-CARD in response to IR #13. GNWT-ENR and the TG had further recommendations in their Interventions regarding the proposed revised Annex A that are discussed further below.

¹⁶⁷ See WLWB Online Registry for [Rayrock – Public Hearing – Undertaking Response from TG – Part I – May 14 21](#)

5.10.1 SNP Station Locations

The revised Annex A from the IR #13 response did not include monitoring stations at the Mill Creek inflow or outflow. In its Intervention, GNWT-ENR recommended that if the capture of surface run off from the Mill Lake Basin was not possible, there should be an SNP station at the Mill Lake outflow (i.e., to Mill Creek). The TG also recommended in its Intervention that the Mill Creek inlet and outlet be monitored and sampled prior to, during, and following remediation, which the Board understands is in reference to sampling through the SNP. CIRNAC-CARD responded that an SNP station here was unnecessary because contaminated sediments from Mill Lake would be fully encapsulated and remediation activities would be complete before flow through Mill Creek would be resumed; the outflow will be blocked during remediation activities in the Mill Lake basin. CIRNAC-CARD also noted that this monitoring was not currently proposed within its monitoring plans, but that the TG could conduct this monitoring within its own programs. Because there will be no flow to Mill Creek during remediation in the Mill Lake basin, the Board has not included an SNP station for this time frame.

At the Hearing, GNWT-ENR asked CIRNAC-CARD how it would be determined that run-off through Mill Creek from the Mill Lake basin after remediation would be of adequate quality without an SNP station.¹⁶⁸ CIRNAC-CARD responded that after remediation, metals concentrations in the Mill Lake basin are expected to be low and any runoff from there would be clean outside of potential elevated TSS. CIRNAC-CARD noted that sediment and erosion control measures would remain in place until vegetation is established to prevent sediment from flowing to Mill Creek. CIRNAC-CARD also indicated that it is difficult to monitor Mill Creek because it is almost always dry, with flows typically only occurring after an extended period of rainfall where there is spillover from Mill Lake. CIRNAC-CARD expects it to be the same type of flow after remediation is complete.

At the Hearing, the TG accepted an Undertaking to clarify its recommendation for sampling from the Mill Creek outlet to Sherman Lake. In its response to Undertaking #6, the TG noted that monitoring of the outlet should focus on the south branch and noted that water flow at this location had been observed relatively consistently.¹⁶⁹ To address this, an SNP Location at the south branch (i.e., SNP 1663-13) was included in the Draft Licence.

Based on the recommendations from GNWT-ENR and the TG, the Draft Licence also included SNP Stations for Mill Creek Inlet and Mill Creek Outlet (1663-12 and 1663-13 respectively), with activation of the stations following remediation of Mill Lake and allowing for sampling to be dependent on the presence of flow. No comments on the inclusion of SNP Stations 1663-12 and 1663-13 were received. The Board believes these added SNP Stations adequately address concerns for monitoring the quality of flow to and from Mill Creek, and will provide verification of water quality post-remediation. As noted by CIRNAC-CARD, there will be no flow from the Mill Lake basin during remediation as the Mill Creek inlet will be blocked off; therefore, these stations will not be required until post-remediation. Because it is unclear if there will be regular flow at these locations, the Board believes it is appropriate to have the option for

¹⁶⁸ See WLWB Online Registry for [Rayrock – Public Hearing Transcript form Day 1 of 3 – Apr 28 21](#); p. 135

¹⁶⁹ See WLWB Online Registry for [Rayrock – Public Hearing – Undertaking Response from TG – Part I – May 14 21](#)

sampling to be dependent on the presence of flow. Therefore, the Board has included the following sampling frequency: check monthly for flow and sampled if flow is detected. The Board recognizes that post-remediation monitoring would typically be included in the Post-Closure Monitoring and Maintenance Plan (PCMMP); however, the PCMMP will not be submitted until up to 90 days after the Project is completed. Thus, there is uncertainty on the monitoring that will occur in this area following remediation of the Mill Lake basin, especially if additional time is required for remediation activities in other areas of the Rayrock Project. Including these SNP stations now will ensure verification of water quality leaving the Mill Lake basin and CDF once remediation of those components is completed.

In review of the Draft Licence, the TG noted the 1663-9 Station for New Control Lake A was only accessible by floatplane or helicopter and asked if it would be better to select a background site with easier access (TG comment 39). CIRNAC-CARD responded that New Control Lake was selected to replace Control Lake due to access issues, and noted it was the only SNP Station that required aerial access. Given CIRNAC-CARD's rationale that the location was already changed due to access issues, a floatplane or helicopter will be needed to access the site in general, regardless, and no other concerns were raised with this location over the proceeding, the Board has not revised the 1663-9 location.

5.10.2 SNP Sampling Frequency

Stations 1663-1 to 1663-4, and 1663-6 are for verification of any effects from remediation work, and Station 1663-5 is for testing water for use in the camp. In its review of the Licence Application, GNWT-ENR recommended that sampling at SNP Stations 1663-1 to 1663-6 be conducted every two weeks during open water, as well as during any visible sedimentation events (GNWT-ENR comment 18). GNWT-ENR commented that CIRNAC-CARD's proposed monthly sampling was insufficient to establish any water quality trends given a short open water season, and that if results showed minimal variability while remediation work was ongoing, CIRNAC-CARD could request a reduced sampling frequency. CIRNAC-CARD responded that water chemistry had been monitored at site since 1979, and that monthly open-water frequency has commonly been used at other locations, including Colomac.

In CIRNAC-CARD's revised Annex A provided in response to IR #12, no changes were proposed to the sampling frequency for SNP Stations 1663-1 to 1663-6. In the revised Annex A, CIRNAC-CARD also added SNP stations 1663-8 and 1663-10 for testing water quality of Sherman Lake near the Mill Lake Discharge.¹⁷⁰ In its Intervention, GNWT-ENR maintained its recommendation that the sampling frequency for SNP stations 1663-1 through 1663-6, 1663-8, and 1663-10 occur once every two weeks during open water. CIRNAC-CARD responded that EQCs for Mill Lake Water Treatment Discharge are very conservative, thus Discharge is not expected to have a measurable effect on the water quality of Sherman Lake. In addition, CIRNAC-CARD noted that there will be no on-land work close to Sherman Lake, and that the SECP would be applicable whenever work occurs close to waterbodies. CIRNAC-CARD also highlighted that there were additional health and safety risks and costs associated with GNWT-ENR's proposed frequency. CIRNAC-CARD did not outline these risks and costs in their Intervention response.

¹⁷⁰ See WLWB Online Registry for [Rayrock – Technical Session – CIRNAC IR Response – Feb 10 21](#)

At the Hearing, GNWT-ENR acknowledged that water quality monitoring had occurred for an extended period of time at the Rayrock site, but that its recommendation for bi-weekly sampling was related to water quality during remediation activities. GNWT-ENR also asked CIRNAC-CARD what additional health and safety risks and costs were expected with additional sampling. CIRNAC-CARD noted that on some project sites, samples were collected into October and there were uncertainties around how ice is formed and if sampling can be conducted safely. CIRNAC-CARD said that costs would double for analysis of samples, and there would be some additional costs with having people on site doing the monitoring instead of other types of monitoring. Costs were also noted for having health and safety controls in place, particularly with respect to dealing with wildlife hazards. CIRNAC-CARD responded that monitoring and management of water quality was sufficient through the SECP and AEMP. CIRNAC-CARD noted the historical data set should provide a sufficient idea of what water quality should be, and that monthly sampling at these SNP stations should pick up any significant changes. In addition, CIRNAC-CARD explained that the AEMP would allow for increased sampling frequency if increased trends in measured parameters were observed.¹⁷¹ CIRNAC-CARD asked GNWT-ENR for additional justification for more frequent sampling and what the dataset would be used for. GNWT-ENR responded that its recommendation for more frequent sampling was to monitor for effects of the remediation work itself, not for monitoring for indication of remediation success.

At the Hearing, Board staff asked CIRNAC-CARD and GNWT-ENR if a trigger for bi-weekly sampling could be considered to resolve the different positions on sampling frequency. For example, Board staff suggested bi-weekly sampling could be triggered by remediation activities upstream from an SNP station. CIRNAC-CARD maintained that it considered the SECP and AEMP to be robust enough¹⁷², whereas GNWT-ENR responded that a trigger would address its concerns, and that the example trigger provided by Board staff was a good option.¹⁷³

The Draft Licence proposed bi-weekly sampling frequency be triggered during upstream remediation activities at SNP stations 1663-1 through 1663-6, 1663-8, and 1663-10. In its comments on the Draft Licence, CIRNAC-CARD reiterated its position that monthly samples would be sufficient to track any changes in water quality parameters and that the advantage of more frequent sampling remains unclear (CIRNAC-CARD WL comment 40).

For SNP Stations 1663-8 and 1663-10, the Board is not requiring bi-weekly sampling for the rationale below. In response to TG comment 37 on the Draft Licence, CIRNAC-CARD also noted that Discharge from the Mill Lake Water Treatment Facility would not be considered a trigger. The Board notes that Discharge from the Mill Lake Water Treatment Facility is to be tested on daily frequency for in situ ecological parameters and metals, and weekly for in situ ecological parameters, major ions, nutrients, solids, standard lab parameters, total metals, and total radionuclides, with EQC parameters requiring compliance

¹⁷¹ See WLWB Online Registry for [Rayrock – Public Hearing Transcript form Day 1 of 3 – Apr 28 21](#); p. 128

¹⁷² See WLWB Online Registry for [Rayrock – Public Hearing Transcript form Day 2 of 3 – Apr 29 21](#)

¹⁷³ See WLWB Online Registry for [Rayrock – Public Hearing Transcript form Day 3 of 3 – Apr 30 21](#); p. 90-91

for Discharge. As such, the Board believes that the inclusion of any bi-weekly sampling for SNP Stations 1663-8 and 1663-10 is unnecessary given the quality of water entering Sherman Lake undergoes extensive testing before Discharge. The Board also notes that the AEMP is a requirement for monitoring for project-related effects. As such, the Board has decided to remove the bi-weekly sampling trigger from the 1663-8 and 1663-10 stations.

For SNP Stations 1663-1 through 1663-6, the Board has included the requirement for triggered bi-weekly sampling as discussed below. CIRNAC-CARD also commented on the Draft Licence that measurements for potential sedimentation in the water would be taken before and during remediation work occurring near water to monitor for the effectiveness of the SECP. In its Closing Arguments, CIRNAC-CARD highlighted that GNWT-ENR stated at the Hearing that the purpose of biweekly sampling was “more to monitor effects of the remediation works as opposed to recovery of the project of the site.” CIRNAC-CARD posited that since remediation works near water will only involve placement of borrow material, it was unclear what effects were being monitored. CIRNAC-CARD noted that it understands an increase in suspended solids will often produce a short-term increase in total metals (especially iron and aluminum) but that the intent of the SNP is to show long-term stability. CIRNAC-CARD believes that increasing sampling frequency to understand short term changes to water quality from sediment is outside the objective of this water quality monitoring. The Board notes that as discussed in section 5.6.2, CIRNAC-CARD has previously outlined that it didn’t believe total metal sampling was necessary within the SECP. Given CIRNAC-CARD’s understanding that suspended solids can often produce a short-term increase in total metals, the Board believes this sampling is better suited within the SNP program. The Board notes that it is unclear why CIRNAC-CARD believes the intent of the SNP is to show long-term stability of water quality. As per the Boards’ *Guidelines for Aquatic Effects Monitoring Programs*, the SNP is for monitoring at key locations on the project site, often to ensure compliance with specific water licence conditions. The Board believes GNWT-ENR’s recommendations align with the intent of the SNP to monitor key locations on the project site during Construction activities, and that the use of a trigger for bi-weekly sampling is an appropriate compromise given CIRNAC-CARD’s concerns regarding health and safety, and cost. For SNP Stations 1663-1 through 1663-6, the Board has included the requirement for triggered bi-weekly sampling. The Board also notes that CIRNAC-CARD can request to update Annex A should initial results suggest that less frequent sampling is required.

In review of the Draft Licence, GNWT-ENR and the TG both commented that it was not clear how “upstream remediation activities” would be defined (GNWT-ENR comment 8 and TG comment 37). The Board has included wording to align with defined terms in the Licence by clarifying the trigger for bi-weekly sampling to be during immediately upstream Construction activities. A footnote has been included Annex A to clarify that “biweekly” is meant to indicate once every two weeks.

5.10.3 Radiological measurements

In review of the Draft Licence, the TG commented on the radionuclide monitoring frequency and parameters within the SNP. The TG commented that weekly radionuclide sampling at SNP Station 1663-7 seems appropriate, and that radionuclide sampling frequency at other stations should be monthly, with

bi-weekly sampling for sites adjacent to tailings when work has the potential to significantly disturb/alter the upstream tailings area (TG comment 28). CIRNAC-CARD responded that sampling every two weeks is not necessary because the repairs to the TCA would not disturb the underlying tailings. The majority of the SNP Stations in the Draft Licence included monthly radionuclide sampling, with a trigger for bi-weekly sampling during immediately upstream Construction activities. In addition, weekly radionuclide sampling was included for SNP Station 1663-7. Thus, it appears that the Draft SNP addressed the TG's comment and no changes were required.

Radionuclide sampling described in the SNP includes sampling of uranium-238 (U-238). The TG recommended the inclusion of U-234 in radionuclide analysis in addition to U-238, noting that U-234 is a decay product of U-238 (TG comment 40). The TG asked if U-234 could be calculated from the total uranium concentration using natural abundance ratios. CIRNAC-CARD responded that uranium consists of 99.274% U-238, 0.72% U-235, and 0.005% U-234 when naturally occurring, which applies at all Rayrock Project sites. Based on CIRNAC-CARD's response, the Board understands that the U-234 measurement can be calculated from natural abundance ratios as described above and has decided to not include it in the radionuclide parameters analysis.

6.0 Decision – Land Use Permit W2020X0005

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

- 1) The evidence and submissions received by the Board from the Applicant; and
- 2) The comments and recommendations, evidence, and submissions received by the Board from Parties during the regulatory process.

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 W2020X0005 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.

6.1 Term of Permit

CIRNAC-CARD has applied for a term of five years for the Permit. A Land Use Permit will be required for the duration of the Rayrock Remediation Project. The term issued for the Licence is 10 years. After reviewing the submissions made during this regulatory process, the Board has determined an appropriate term for this undertaking is the maximum allowable term of five years to allow the Project to progress through the land use activities, as proposed, before needing to apply for an extension or renewal.

6.2 Part A: Scope of Permit

The scope of the Permit reflects the triggers identified in the Mackenzie Valley Land Use Regulations (MVLUR) for activities on land outside the boundaries of a local government.¹⁷⁴ It ensures the Permittee is entitled to conduct activities that 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. The scope was also developed with the understanding that all existing activities permitted onsite would be covered under this Permit. Upon issuance, CIRNAC-CARD will be able to apply for a discontinuance of existing Board-issued authorizations, which includes W2015X0006. Permit W2015X0006 was extended until August 2022 to cover work at the site until the start of the Rayrock Remediation Project.

6.3 Part B: Definitions

The Board defined terms 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. Where supported by the evidence and no concerns were raised by the reviewing parties, the definitions used wording from the Board's *Standard Land Use Permit Conditions Template* (Standard Template). Where appropriate the Board adjusted the standard wording.

The Draft Permit included a definition of "Shut Down Period" which was noted to be a period of time between May 1st and May 31st and December 1st and January 31st each year. This was based on the Permit Application which noted scheduled shut-downs anticipated between April and June and between November and February. CIRNAC-CARD recommended that the definition of "Shut Down Period" not include specific dates and noted that it anticipated work occurring between the dates included with the Draft definition (CIRNAC-CARD Permit comment 4). The Board has removed the specific dates to allow flexibility in Shut Down Period timing but reminds CIRNAC-CARD that conditions related to a Shut Down Period remain unchanged (see *Seasonal Notification – Contact Inspector; Reports Before Seasonal Removal; and Seasonal Shut Down*).

¹⁷⁴ See [Mackenzie Valley Land Use Regulations](#); subsection 4(a).

6.4 Part C: Conditions Applying to All Activities

6.4.1 26(1)(c) Type and Size of Equipment

In its review of the Draft Permit, CIRNAC-CARD recommended that the *Use Approved Equipment* condition be revised to include “unless otherwise authorized in writing by an Inspector” (CIRNAC-CARD LUP comment 5). The Board notes that this is a standard condition and intended to ensure the potential impacts on the land with respect to equipment type, size, and number, as listed in the Application, are considered when selecting the Permit conditions and approving the Permit. The condition gives the Permittee the ability to use equipment of a “similar type, size, and number”, which is intended to give some flexibility to Permittees in equipment use. Authority over type, size, and number of equipment is not an express power given to Inspectors under the MVLUR. As such, the Board has not revised this condition.

6.4.2 26(1)(f) Control or Prevention of Ponding of Water, Flooding, Erosion, Slides, and Subsidence of Land

In its review of the Draft Permit, CIRNAC-CARD commented on the *Off-Road Vehicle Travel* condition that “although effort will be made to limit off-road vehicle travel, off-road vehicle travel will be required during snow-free conditions in order to access all areas requiring remediation.” CIRNAC-CARD recommended the condition be revised to require off-road vehicle travel be avoided to the extent practicable. The Board recognizes that flexibility may be required for completion of remediation activities, and the inclusion of this condition serves to mitigate potential impacts, and needs to provide authority to the Inspector to carry out enforcement if necessary. The condition has been revised to allow authorization of off-road vehicle travel by the Inspector.

In its review of the Draft Permit, the TG noted there was no reference to Air Quality Monitoring and recommended that a section on air quality, dust monitoring, and worker protection monitoring should be covered in the licence or permit (TG comment 43). CIRNAC-CARD responded that dust monitoring is described in the SECP and that worker protection would be provided in the Contractor’s site-specific Health and Safety Plan. The Board notes that the SECP schedule requirements (Schedule 4, Condition 2) include dust monitoring and that air quality and worker protection monitoring are regulated under other jurisdictions and are typically not included Licence or Permit requirements.

In review of the Draft Permit, the TG commented on the *Excavation Setback* condition, and noted that it seemed likely TCA repairs would be within 100 m of the Ordinary High-Water Mark (OHWM), and the condition required Inspector approval within 100 m (TG comment 42). CIRNAC-CARD responded that TCA repairs were intended to be to the edge of Alpha Lake, Beta Lake, and Gamma Lake. The Board has approved the work as described in the Remedial Action Plan and understands that the described TCA repair work will be within 100 m of the OHWM. Given this work has been approved, Inspector approval would not be required for TCA repair work within 100 m of the OHWM, and the condition has been revised accordingly.

CIRNAC-CARD commented on the conditions related to rutting and gouging of the ground (see *Prevention of Rutting, Suspend Overland Travel, and Vehicle Movement Freeze-Up* conditions), and recommended the clauses be modified to be specific to the “natural ground surface”, noting that there were previously disturbed site areas that could be rutted during remediation activities (CIRNAC-CARD Permit comment 7). The Board believes it is important for the Permit to provide clarity to all Parties on the conditions that serve to mitigate potential impacts. The Board wants to ensure the Inspector has the clear authority to address these activities as they deem necessary and has therefore not changed these standard conditions at this time.

6.4.3 26(1)(h) Wildlife and Fish Habitat

CIRNAC-CARD submitted a Wildlife Management and Monitoring Plan (WMMP) for the Rayrock Project with its Applications. The WRRB recommended during the Applications review (WRRB comment 3) that the WMMP be a requirement under the Licence, and that it believed the WMMP would sufficiently mitigate serious adverse impacts from the Project.¹⁷⁵ CIRNAC-CARD’s responses during the public review did not indicate any issues with a requirement for the WMMP as a condition.

The Draft Permit included conditions requiring the submission and compliance with a Wildlife and Wildlife Habitat Management and Monitoring Plan (WMMP) (*Wildlife Habitat Management and Monitoring and Submit Revised Plan* conditions). CIRNAC-CARD requested clarification on expectations for deadlines and the reporting structure of the WMMP (CIRNAC-CARD Permit comment 9). The Board recognizes that the WMMP is required for winter road Construction at the beginning of the Project and has approved the WMMP and requires the submission of Version 2.0 of the WMMP 90 days prior to the commencement of Construction activities (with the exception of winter road Construction). The submission of Version 2.0 of the WMMP needs to reflect commitments made during the Proceeding including the following comments from the initial review of the Applications: ECCC comments 12, 13, and 14, GNWT-ENR comments 43 and 52, TG comments 76, 77, 78, 81, 82, 84, 86, 90, 97, and 100, and WRRB comments 2, 4, 5, 6, 7, 8, 9, and 10.

¹⁷⁵ See WLWB Online Registry for [Rayrock – Review Summary and Attachments – Nov 17 20](#)

6.4.4 26(1)(i) Storage, Handling, and Disposal of Refuse or Sewage

The Draft Permit included a condition requiring a Waste Management Plan. In review of the Draft Permit, CIRNAC-CARD recommended that the condition be reworded so it was clear that the Waste Management Plan “is not also submitted under the LUP.” The Board would like to clarify that any plan referred to in both Licence and Permit conditions are considered the same plan, and do not require separate submissions.

6.4.5 26(1)(j) Protection of Historical, Archaeological, and Burial Sites

In its comments on the Draft Permit, the TG noted that the conditions related to historical and archaeological sites did not include a reference to bringing Tłı̨ch̓ monitors in the event of a find. The TG recommended there be a requirement to notify the TG if there was a find (TG comment 44). CIRNAC-CARD responded that it understood either CIRNAC-CARD Inspectors or the PWNHC had jurisdiction for archaeological matters. CIRNAC-CARD noted that it would contact these Parties, and they would make appropriate contacts, but that CIRNAC-CARD would not be responsible for contacting the TG. The Board notes that an Archaeological Impact Assessment was still planned for the Rayrock Remediation Project in the summer of 2021 as per the response to IR #11.¹⁷⁶ The Board believes that the burden of notification by CIRNAC-CARD to the TG in the event of an archaeological find is not unduly onerous and has included a requirement for inclusion of this notification in the Licence Schedule 2, Condition 1 (g).

6.4.6 26(1)(m) Fuel Storage

In its comments on the draft Permit, CIRNAC-CARD asked if the volume being stored at site as per Condition 70 could be adjusted by approval of the Inspector rather than the Board (CIRNAC-CARD Permit comment 12). The CIRNAC-CARD Inspector also commented on this Condition during their review (CIRNAC-CARD-Inspector comment 4) and recommended that the Permittee review these quantities to ensure the needs of the project would be met. In its response, CIRNAC-CARD noted that it would confirm fuel quantities after the Contractor is selected and describe their fuel requirements in the Spill Contingency Plan. The Board notes that anticipated maximum volumes of fuel are required as part of the Permit Application as this information relates to potential impacts from spills and worst-case scenarios. As per the Standard Land Use Permit Conditions, Board approval would be required for changes to the maximum fuel storage, i.e. any change greater than 10%. As such, the Board has not revised the standard condition.

In its review of the draft Permit, CIRNAC-CARD asked if Condition 71, with respect to establishment of fuel caches, applied only to fuel caches established at Rayrock, and if there is a threshold volume below which a cache didn’t need to be reported. CIRNAC-CARD also asked if a third party established a fuel cache for use at the Rayrock Project but placed it outside of the sites identified in the Project, if the cache would have to conform to the Permit (CIRNAC-CARD Permit comment 13). The MVLUR section 7 outlines fuel

¹⁷⁶ See WLWB Online Registry for [Rayrock – Technical Session – CIRNAC IR Response – Feb 10 21](#)

cache volume requirements. The Board notes that CIRNAC-CARD is only allowed to manage fuel for the Rayrock Remediation Project as approved by the Board. If fuel is being used for any activities associated with the Rayrock Project, it needs to comply with the relevant conditions of the Permit and Licence.

6.4.7 26(1)(q) Biological and Physical Protection of the Land

In review of the Draft Permit, CIRNAC-CARD commented that only migratory birds were identified in the Permit with respect to the *Migratory Bird Nest Disturbance* condition, but that other concerns related to raptor nests, hibernacula, etc. were also identified by the WRRB in review of the WMMP (CIRNAC-CARD Permit comment 15). The Board notes that this is a standard condition and that other requirements outside of migratory birds are being dealt with through the requirements of the WMMP, as per the *Wildlife and Wildlife Habitat Management and Monitoring* condition.

7.0 Other

The Board notes that CIRNAC-CARD has not yet provided the geospatial data for the proposed project footprint, as committed to in response to GNWT-ENR comment 45 on the Applications.¹⁷⁷ In accordance with Rule #61 of the Board's Rules of Procedure, the Board directs CIRNAC-CARD to provide this GIS data for the Rayrock Remediation Project by October 30, 2021.

8.0 Crown Consultation Matters

In its Closing Arguments, the TG raised the Crown's duty of Consultation and requested the WLWB advise the Minister of important commitments made by CIRNAC-CARD during its engagement with TG officials and leaders. These commitments recognize the importance to the Tłı̨ch̨ Government and people of the remediation of Beta Lake and Gamma Lake areas. CIRNAC-CARD made these commitments with the understanding that this work could require either a licence amendment, or a new Type B Water Licence to allow this remediation work to occur. CIRNAC-CARD also promised to consider remedial options for Beta Lake and Gamma Lake in its work with the Tłı̨ch̨ and committed to address the need for Tłı̨ch̨ capacity funding in relation to this and other work.¹⁷⁸

In its Closing Arguments, the TG indicated that CIRNAC-CARD has provided assurances to the TG about taking actions to remediate Beta Lake and Gamma Lake, and to continue to work in good faith with the TG to identify solutions for this remediation work. TG also noted that CIRNAC-CARD has acknowledged to the TG that a licence amendment or Type B water licence application would be required for this remediation work, and that dialogue about additional licencing requirements would continue.¹⁷⁹ In its Closing Arguments, CIRNAC-CARD confirmed its commitments to explore options for making

¹⁷⁷ See WLWB Online Registry for [Rayrock – Review Summary and Attachments – Nov 17 20](#)

¹⁷⁸ See WLWB Online Registry for [Rayrock – Public Hearing – Closing Arguments – TG – Jul 2 21](#)

¹⁷⁹ *Ibid.*

improvements to the lands and waters in the areas of concern identified by the TG, and that this commitment had been provided in the Public Hearings.¹⁸⁰

The Board acknowledges the commitment from CIRNAC to identify solutions for remediation activities at Beta Lake and Gamma Lake. This commitment was a factor in the Board's decision to approve this Type A Water Licence. The Board notes that a number of documents required by the Type A Licence will require revision and/or submission, including the AEMP and Remedial Action Plan after Licence issuance. The Board suggests that if CIRNAC-CARD makes a water licence application to satisfy its commitments that this application should be advanced as soon as possible so that the various plans required by the Licence and submitted by CIRNAC-CARD in the coming months can be informed by that process. Such coordination should avoid delays in the consideration of those submissions.

The Board therefore acknowledges the TG Crown Consultation issues set out in Closing Argument and urges the Minister to accord them serious consideration in any final decision made on the Licence. The Board is confident that the Government of Canada and the TG will work through these issues together.

9.0 Conclusion

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

Water Licence W2020L8-0003 and Land Use Permit W2020X0005 contain provisions that the Board deems necessary to ensure and monitor compliance with the *MVRMA* the Regulations made thereunder, and to provide appropriate safeguards in respect of CIRNAC-CARD's use of the land and water affected by the Licence and Permit.

Signed this 30th day of September, 2021 on behalf of the Wek'èezhii Land and Water Board.



Joseph Mackenzie,
Acting Chair, Wek'èezhii Land and Water
Board

September 30th, 2021

Date

¹⁸⁰ See WLWB Online Registry for [Rayrock – Public Hearing – Closing Arguments – CIRNAC – Jul 15 21](#)