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May 21, 2021

File: W2018L2-0003

Denise Lockett
Nighthawk Gold Corp.
141 Adelaide St. W., Suite 301
Toronto, ON M5H 3L5

Sent by email

Dear Denise Lockett,

Re: Nighthawk Gold Corp. – Interim Closure and Reclamation Plan Version 3.3

The Wek'èezhì Land and Water Board (WLWB) met on May 6, 2021 and considered Nighthawk Gold Corp.'s (Nighthawk) interim Closure and Reclamation Plan Version 3.3, submitted in accordance with Part I, Condition 1 of Water Licence W2018L2-0003.

Overall, the Board finds the interim CRP to be an improved representation of the planned closure for the Damoti site that has resolved many outstanding closure issues. Therefore, the Board has approved Version 3.3 at this time. As detailed in the attached Reasons for Decision, the Board has identified the need for additional information, revisions, and further engagement. As a result, the Board has not approved select aspects of Version 3.3, including the proposed closure criteria.

The Board would like to take this opportunity to remind Nighthawk that in accordance with Part I, Condition 1 of Water Licence W2018L2-0002, Nighthawk must submit a CRP for activities on the federal portion of the Indin Lake Gold Property, including the Colomac Camp. This information could be added to the next version of the CRP or submitted separately.

Sincerely,

A handwritten signature in blue ink, appearing to read 'J Mackenzie'.

Joseph Mackenzie
Chair, Wek'èezhì Land and Water Board

BCC: Nighthawk Distribution List



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Reference/File Number:	W2018L2-0003 (Type "B" Water Licence)
Permittee:	Nighthawk Gold Corp. (Nighthawk)
Subject:	Interim Closure and Reclamation Plan Version 3.3

Decision from the Wek'èezhìi Land and Water Board Meeting of May 6, 2021

1.0 Decision

On May 6, 2021, the Wek'èezhìi Land and Water Board (the Board) met and considered Nighthawk Gold Corp.'s (Nighthawk) interim Closure and Reclamation Plan (CRP) Version 3.3.¹ The Board has approved Version 3.3 of the interim CRP with direction for the next version of the CRP. Nighthawk is to engage with Parties to develop the next version of the CRP and work with Board staff to set a deadline for submission that is no later than December 15, 2022. The Board's decisions and directions for future versions are found below in Decisions #3 through #23.

2.0 Background

Nighthawk is a mineral exploration company that is responsible for the management and closure of the Damoti site. Nighthawk describes the Damoti site as follows:

Gold exploration was conducted at the Site between 1993 and 1997, including an underground exploration program consisting of a decline and drift. Rock excavated from the underground was stored in piles near the entrance to the underground (the portal) ... Other features of the Site include a small settling pond near the waste rock piles, a camp area with several wood-framed tent structures, three large (empty) bulk fuel storage tanks, trails connecting different parts of the Site, and some empty fuel drums and other debris.

Nighthawk Gold Corp (Nighthawk) acquired the lease to the Damoti site in September 2008 and has been conducting progressive reclamation of the Site since that time. Nighthawk used some of the camp facilities at the Site to support exploration programs before setting

¹ See WLWB (www.wlwb.ca) Online Registry for [W2018L2-0003 - Nighthawk - ICRP Version 3.3 - Aug 28 20](#)

up an exploration camp at the Colomac Mine Site (located 27 km north of Damoti). Progressive reclamation activities have included removing fuel drums and debris from the site, emptying three bulk fuel storage tanks, cleaning up and securing structures, excavating and removing heating oil spills from previous site users, and conducting several scientific studies in support of closure and reclamation planning for the Site.

Since 2012, activity at the Damoti site has included sampling required by the Surveillance Network Program (SNP) and research to support the closure of the portal and waste rock piles. Nighthawk has drilled in the area as part of their exploration program and intends to continue drilling at the Damoti site in 2021. Nighthawk has undertaken progressive reclamation at the site but there is no set date to begin permanent closure and reclamation.

On July 3, 2020, Nighthawk submitted Version 3.3 of the interim CRP for the Damoti Lake site, as per Part I, Condition 1 of Water Licence W2018L2-0003 and as requested by the Board's Reasons for Decision for interim CRP Version 3.2.² During a preliminary review of the interim CRP Version 3.3, non-conformities were identified, and Nighthawk provided a revised interim CRP Version 3.3 on August 28, 2020. The complete interim CRP Version 3.3 was distributed for public review on August 31, 2020. Comments and recommendations were received from Environment and Climate Change Canada (ECCC), the Government of Northwest Territories – Environment and Natural Resources (GNWT-ENR), and the Tłıchǫ Government (TG); Board staff also asked questions. The Wek'èezhìi Renewable Resources Board indicated they had no comments at this time. Nighthawk responded to comments and recommendations by the deadline of December 22, 2020. Reviewer comments and recommendations, as well as proponent responses are available on the WLWB Online Registry.³

Upon review of recommendations and Nighthawk's responses, additional information was requested to assist the Board in its decision-making process; an Information Request (IR) was thus issued to Nighthawk, GNWT-ENR, ECCC, and the TG on February 26, 2021.⁴ On March 2, 2021, Nighthawk requested an extension to the IR deadline until April 2, 2021.⁵ Responses to the IR were received by the respective deadlines from GNWT-ENR,⁶ ECCC,⁷ and Nighthawk;⁸ the TG responded after the deadline on March 16, 2021.⁹

² See WLWB Online Registry for [W2018L2-0003 – Nighthawk – ICRP Version 3.2 – Reasons for Decision – Jun 25 19](#)

³ See WLWB Online Registry for [W2018L2-0003 – Nighthawk – ICRP Version 3.3 – Review Summary and Attachments – Dec 22 20](#)

⁴ See WLWB Online Registry for [W2018L2-0003 – Nighthawk – Information to Nighthawk, GNWT, ECCC and TG – Feb 26 21](#)

⁵ See WLWB Online Registry for [W2018L2-0003 – Nighthawk – Information Request – Nighthawk Deadline Extension – Mar 2 21](#)

⁶ See WLWB Online Registry for [W2018L2-0003 – Nighthawk – Information Request Response from GNWT-ENR -Mar 12 21](#)

⁷ See WLWB Online Registry for [W2018L2-0003 – Nighthawk – Information Request Response from ECCC – Mar 11 21](#)

⁸ See WLWB Online Registry for [W2018L2-0003 – Nighthawk – Information Request Response from Nighthawk – Mar 31 21](#)

⁹ See WLWB Online Registry for [W2018L2-0003 – Nighthawk – Information Request Response from TG – Mar 31 21](#)

3.0 Reasons for Decision

Nighthawk's responses to reviewer comments demonstrated that a significant amount of engagement has been conducted in the development of Version 3.3 of the interim CRP and throughout the proceeding. This approach is beneficial to the closure planning process and has resolved many on-going issues related to the selected closure activities.

The most significant closure issue to be addressed at the Damoti site is the rock piles that contain potentially acid generating (PAG) material. The selected closure option for the rock piles has evolved over time and has included leaving the rock piles in the current configuration, moving the rock piles to Colomac, and consolidating the rock piles with and without a cover. The Board has previously directed Nighthawk to engage with Parties to further explore closure activities for the waste rock piles. In Version 3.3 of the interim CRP, Nighthawk proposed to consolidate the waste rock pile without a cover. Many reviewers had comments and recommendations related to the selected closure activity. In response, Nighthawk has proposed consolidating the rock piles and using a low-flux cover and geosynthetic liner. This proposed change may impact other issues related to closure such as: whether a mixing zone is necessary, where proposed closure criteria can be met, and post-closure monitoring and maintenance. Nighthawk's proposed changes, the Board's decisions, and direction for future versions of the CRP are further discussed in Section 3.4 of these Reasons for Decisions.

ECCC, GNWT-ENR, and the TG have stated in various recommendations that they do not believe another interim CRP should be required and that all outstanding issues can be addressed in a final CRP. The Mackenzie Valley Land and Water Board (MVLWB; 2013) *Guidelines for Closure and Reclamation of Advanced Mineral Exploration and Mine Sites in the Northwest Territories* (Closure Guidelines) state "one of the main purposes of the interim CRP is to identify uncertainties surrounding closure options, thereby guiding corresponding areas for reclamation research during operations."¹⁰ When a proponent has identified and resolved issues related to closure of a site, an additional level of detail is required to fulfill the requirements of a final CRP. The Closure Guidelines state, "the final CRP should fully describe the level of detail and certainty surrounding post-closure monitoring and contingency planning," and lists elements a proponent should focus on for an effective final CRP.

Nighthawk has not had an approved CRP for the Damoti site since February 28, 2013 and much progress has been made to address outstanding concerns, especially in consideration of the updated closure activity of the waste rock piles proposed following discussions with other Parties. The Board believes that the many of the major issues have been addressed in Version 3.3 of the interim CRP, and outstanding elements of closure planning will be addressed through the required updates in the next version of the CRP. Therefore, the Board has approved Version 3.3 of the interim CRP with direction for the next version of the CRP.

- ***Decision #1: The Board has approved Version 3.3 of the interim CRP with direction for the next version of the CRP.***

¹⁰ See WLWB 'Policies and Guidelines' webpage for [MVLWB Guidelines for the Closure and Reclamation of Advanced Mineral Exploration and Mine Sites in the Northwest Territories \(2013\)](#)

The Board would like to explain what approval of Version 3.3 of the interim CRP means. As with all interim CRPs, Nighthawk's interim CRP by its nature will change. Version 2.0 was approved by the Board with direction for future studies to allow Nighthawk to continue the closure planning process.¹¹ Approval of Version 3.3 does not include the following:

- All closure criteria;
- The proposed consolidation of rock piles without a cover;
- Proposed mixing zone in Lardass Lake; and
- Proposed post-closure monitoring and maintenance.

The Board has identified a path forward to resolve outstanding issues and advance closure criteria. As discussed in Section 3.4.1 of these Reasons, the Board has also approved Nighthawk's most recently proposed closure activity for the waste rock piles. Although additional development of the CRP is required, approval of some elements will allow Nighthawk to continue moving forward with the closure planning process. If Nighthawk requires approval of certain aspects of the CRP to advance the closure planning process, Nighthawk should bring this to the Board's attention in the covering letter(s) of future closure-related submissions.

The next step in closure planning is to develop closure criteria for each selected closure activity. As discussed below, additional information and further revisions are required for the closure criteria. Regardless of whether the next version of the CRP is an interim CRP or a final CRP, Nighthawk should work with Board staff to select an appropriate deadline for the next version of the CRP that will allow effective engagement to take place and is no later than December 15, 2022. This will allow Nighthawk to have an additional two years of SNP sampling data to evaluate water quality trends and provide a reasonable amount of time to complete effective engagement.

- ***Decision #2: The Board directs Nighthawk to work with Board staff to set a deadline for the next version of the CRP that is no later than December 15, 2022.***

3.1 Closure Goal

In its decision on Version 3.2 of the interim CRP, the Board directed Nighthawk to update the closure goal to be consistent with the Closure Guidelines.^{12, 13} Nighthawk has updated the closure goal to read "to return the mine site and affected areas to viable and, wherever practicable, self-sustaining ecosystems that are compatible with a healthy environment and with human activities." This update reflects the Closure Guidelines and has fulfilled the Board's previous direction. The Board is therefore approving the closure goal.

- ***Decision #3: The Board has approved the closure goal.***

¹¹ See WLWB Online Registry for [W2012L1-0002 - Nighthawk - Damoti Site - ICRP - Board Decision Package - Feb 28 13](#)

¹² See WLWB Online Registry for [W2018L2-0003 – Nighthawk – ICRP Version 3.2 – Reasons for Decision – Jun 25 19](#)

¹³ See WLWB 'Policies and Guidelines' webpage for [MVLWB Guidelines for the Closure and Reclamation of Advanced Mineral Exploration and Mine Sites in the Northwest Territories \(2013\)](#)

3.2 Closure Objectives

The Closure Guidelines describe closure objectives as “statements that clearly describe what the selected closure activities aim to achieve. They must be measurable, achievable, and allow for the development of closure criteria.”¹⁴ In Version 3.2, the Board directed Nighthawk to continue working towards closure objectives that can be approved.¹⁵ As a result, the closure objectives have been updated extensively in Version 3.3 of the interim CRP and are divided into site-wide and component-specific closure objectives.

Overall, the Board believes that the closure objectives in Version 3.3 of the interim CRP fulfill the requirements set out in the Closure Guidelines. In addition, no parties identified concerns or posed questions about the proposed closure objectives during the public review. In response to Board staff questions, the Board has identified several minor revisions to be made to some of the closure objectives. These revisions are outlined below and are to be included in the next version of the CRP.

- ***Decision #4: The Board has approved all closure objectives, subject to Closure Objective Revisions #1 through 4. These revisions are to be reflected in the next version of the CRP.***

Physical stability closure objectives should address the physical stability closure principle “ensuring [a project component] does not erode, subside, or move from its intended location” and does not “pose a hazard to humans, wildlife, aquatic life, or environmental health and safety.”¹⁶ Nighthawk was asked to describe how the physical stability objectives (SW1, R1, PD3, and T1) could achieve the physical stability closure goal (Board staff comment 2). Nighthawk responded that inherent in the closure goal for the site is the compatibility with human activities to ensure safety for humans and wildlife and it will update the SW1 closure objective to read “Physically stable slopes to limit risk of failure that would impact the safety of people or wildlife” in the next version of the CRP. The Board is of the opinion that this addresses the question because the updated wording allows for the closure objective to be measurable and achievable during closure and applies to all site components.

- ***Closure Objective Revision #1: Nighthawk is to update SW1 to state “Physically stable slopes to limit risk of failure that would impact the safety of people or wildlife.”***

In several closure objectives, Nighthawk used terms that were not clearly defined. Nighthawk was also asked to clarify what is meant by “ecological conditions” and “receiving environments” in the context of the closure objectives (SW2, R2; Board staff comment 3). The closure objective SW2 should address site-wide chemical stability during closure so that anything released from project components should not endanger humans, wild, or environmental health and safety. Nighthawk responded that “ecological conditions are defined as aquatic life and wildlife, as the two ecosystem components that have potential to be affected by site discharge,” and “receiving environment is defined in footnote (a) on the closure objective SW2 in Table 5 as Lardass Lake with the proposed mixing zone.” This response clarifies that SW2

¹⁴ See WLWB ‘Policies and Guidelines’ webpage for [MVLWB Guidelines for the Closure and Reclamation of Advanced Mineral Exploration and Mine Sites in the Northwest Territories \(2013\)](#)

¹⁵ See WLWB Online Registry for [W2018L2-0003 – Nighthawk – ICRP Version 3.2 – Reasons for Decision – Jun 25 19](#)

¹⁶ See WLWB ‘Policies and Guidelines’ webpage for [MVLWB Guidelines for the Closure and Reclamation of Advanced Mineral Exploration and Mine Sites in the Northwest Territories \(2013\)](#)

is referring to site runoff impacting aquatic life and wildlife in Lardass Lake. "Receiving Environment" is defined in the Licence as "the natural aquatic environment that receives any deposit or Discharge of Waste, including Seepage or Minewater, from the Project." To ensure consistency between documents related to the Licence, the Board directs Nighthawk to update SW2 to replace "ecological conditions" with "aquatic life and wildlife" to reflect the response to Board staff comment 3 and update the definition for "receiving environment" to be consistent with the Licence.

- ***Closure Objective Revision #2: Nighthawk is to update SW2 to replace "ecological conditions" with "aquatic life and wildlife" and update the definition for "receiving environment" to be consistent with the Licence in the next version of the CRP.***

Closure objective R2, for the rock piles, states "long-term potential for acid rock drainage [ARD] and metal leaching [ML] does not adversely affect the receiving environment." Nighthawk was asked to clarify what is meant by "receiving environment" and "long-term" in R2, and if additional closure objectives would be necessary to address the short-term potential for ARD and ML (Board staff comment 6). Nighthawk responded that given the new selected closure activity for the waste rock pile (see Section 3.4.1 of these Reasons for Decision) there is no need to add additional closure objectives for the rock piles. Nighthawk also proposed removing 'long-term' from R2 to remove the temporal nature of the closure objective making the closure objective address both the short- and long-term potential for ARD and ML. The Board agrees that removing 'long-term' from R2 would improve the clarity and ensure that R2 addresses the short- and long-term potential for ARD and ML and therefore directs Nighthawk to remove "long-term" from R2.

- ***Closure Objective Revision #3: Nighthawk is to remove "long-term" from R2 in the next version of the CRP.***

Closure objective S1 states "the settling pond does not retain water." In Version 3.3 of the interim CRP, this closure objective is meant to address the chemical and physical stability closure principles. Nighthawk was asked to clarify how S1 addresses chemical and physical stability closure principles (Board staff comment 9). Nighthawk responded that fine sediments from the settling pond would be removed and encapsulated in the consolidated rock pile during closure and any residual material would be tested to confirm no residual metals or hydrocarbons remained in the graded settling pond material. Additionally, the pond edges will be graded flat so there will be no physical stability concerns. Given that the site-wide closure objectives also apply to the settling pond area, and SW2 addresses runoff from the site, the Board is of the opinion that Nighthawk's response, in the combination of site-wide closure objectives and settling pond specific closure objectives, address the physical and chemical stability concerns associated with closure of the settling pond and no further revisions are required.

During the public review, Nighthawk also made commitments to provide updates to closure objectives (Board staff comments 7, 8, and 20). These revisions included: changing the word “reduce” to “minimize” in PD2; adding “short-term” to PD3; and limit information provided in Section 4.7.3 of the CRP to the selected closure activity. The Board directs Nighthawk to reflect commitments made in response to Board staff comments 7, 8, and 20 in the next version of the CRP.

- ***Closure Objective Revision #4: Nighthawk is to reflect commitments made in response to Board staff comments 7, 8, and 20 in the next version of CRP.***

3.3 Closure Criteria

In its decision on Version 3.2 of the interim CRP, the Board also directed Nighthawk to review and revise the closure criteria.¹⁷ Closure criteria are developed for each closure objective and are used to determine if selected closure activities have met the closure objectives for each project component.¹⁸ Several comments and questions were raised during the public review regarding closure criteria for various site components (ECCC comment 4; GNWT-ENR comments 11-13, 17, 20, and 23; Board staff comment 4). In response to comments and recommendations, Nighthawk proposed a new selected closure activity for the waste rock piles, and as a result the closure criteria have not been updated to reflect this closure activity. Additionally, it is unclear at this time when Nighthawk intends to begin closure activities, where closure criteria will be met, and if the new selected closure activity for the rock piles addresses outstanding issues related to water quality. The Board is therefore not approving the closure criteria and directing Nighthawk to engage with all Parties to update the closure criteria.

- ***Decision #5: The Board has decided to not approve the closure criteria and directs Nighthawk to engage with all Parties to update the closure criteria prior to submission of the next version of the CRP.***

3.4 Closure Options and Selected Closure Activities

3.4.1 Waste Rock Piles

Determining the selected closure activity for the waste rock piles has been under discussion for several years and is one of the most challenging closure issues at the Damoti site. In previous versions of the CRP, the Board directed Nighthawk to investigate other closure options for the rock piles (e.g., borrow material as a cover and using a low-flux cover).¹⁹ In Version 3.3 of the CRP, Nighthawk proposed to consolidate the waste rock piles using the least potentially acid generating (PAG) rock to encapsulate the rock with the greatest potential for acid generation. Many reviewers had recommendations and questions about the selected closure activity for the waste rock piles, other closure options for the rock piles presented in Version 3.3 of the CRP, and conclusions from Nighthawk’s evaluation of closure options (TG comment 6; GNWT-ENT comments 6-9; Board staff comments 5, 11-13, 15-17, 28, 40, 41). The selected closure activity

¹⁷ See WLWB Online Registry for [W2018L2-0003 – Nighthawk – ICRP Version 3.2 – Reasons for Decision – Jun 25 19](#)

¹⁸ See WLWB ‘Policies and Guidelines’ webpage for [MVLWB Guidelines for the Closure and Reclamation of Advanced Mineral Exploration and Mine Sites in the Northwest Territories \(2013\)](#)

¹⁹ See WLWB Online Registry for [W2018L2-0003 – Nighthawk – ICRP Version 3.2 – Reasons for Decision – Jun 25 19](#)

presented in version 3.3 of the interim CRP would allow surface water to contact the rock pile and PAG material. In reviewer comments, the TG stated, “it is not yet in 100% agreement with the no cover option,” and GNWT-ENR recommended the Board determine a more conservative closure option for the rock piles (GNWT-ENR comment 9; TG comment 6).

Appendix I of Version 3.3 of the CRP outlined that there is not enough borrow material to be placed under the cover to prevent damage to the geosynthetic liner. Therefore, covering the consolidated rock piles was not the selected closure activity in Version 3.3. However, in response to recommendations and questions, Nighthawk proposed selecting Option 2d in Version 3.3 as the closure activity for the rock piles. This closure activity proposes to consolidate the waste rock piles and cover the consolidated pile using a low-flux cover with a geosynthetic liner. The new selected closure activity would limit water from coming in contact with the consolidated rock pile with the intent of reducing the potential for seepage and runoff water quality to be impacted by the waste rock and is thus a more conservative closure option. During the public review, the TG and GNWT-ENR agreed that any improvements to water quality would be beneficial.

Based on the relative conservatism of the new selected closure activity, alignment with recommendations from reviewers, and information provided in Version 3.3 of the interim CRP, the Board has approved the selected closure activity of consolidating the waste rock piles with a low-flux cover and geosynthetic liner and directs Nighthawk to update the selected closure activity for the waste rock piles in the next version of the CRP.

- ***Decision #6: The Board has approved the selected closure activity of consolidating the waste rock piles with a low-flux cover and geosynthetic liner and direct Nighthawk to update the selected closure activity for the waste rock piles in the next version of the CRP.***

Contingency Options

The Closure Guidelines state that “Proponents should develop a contingency plan to outline how the selected closure activity will be modified if it is unsuccessful.”²⁰ As discussed above, Nighthawk is now proposing to consolidate the rock piles with a low-flux cover and geosynthetic liner with imperfect bedding. When addressing this selected closure activity, section 4.6.1.1 of the interim CRP states:

Without the placement of borrow material both above and below the liner, this liner would require repair and/or replacement within 10 to 20 years of installation over the stockpile and so, is not a walk away solution. Hence, Option 2d (installation of a geosynthetic liner alone) was ruled out as a suitable closure option for the rock piles.

As every closure option has a potential for failure, contingency planning is important and should be updated to reflect the new selected closure activity for the rock piles in the next version of the CRP. The Board is therefore directing Nighthawk to update the contingency options associated with the closure of

²⁰ See WLWB ‘Policies and Guidelines’ webpage for [MVLWB Guidelines for the Closure and Reclamation of Advanced Mineral Exploration and Mine Sites in the Northwest Territories \(2013\)](#)

the waste rock piles in the next version of the CRP to address the potential for the low-flux cover and geosynthetic liner to be unsuccessful.

- ***Decision #7: Nighthawk is to update the contingency options associated with the closure of the waste rock piles in the next version of the CRP to address the potential for the low-flux cover and geosynthetic liner to be unsuccessful.***

3.4.2 Portal/Decline

In Version 3.3 of the interim CRP, Nighthawk has proposed the selected closure activity of a controlled demolition of the crown pillar and backfilling of the resulting trench for the portal/decline. During the public review, the TG recommended that Nighthawk provide more information on the stability and compaction of the portal area after the completion of the selected closure activity (TG comment 9). Nighthawk referenced Condition 19 – EXCAVATION AND EMBANKMENTS of Permit W2018X0006, which authorizes the reclamation land use activities at the Damoti Site and stated it would provide additional information in the next version of the CRP.²¹ This Permit condition requires that waste material piles have a minimum slope ratio of 2:1 to provide stability. Nighthawk was asked if it had considered backfilling the portal, decline, and trench with the existing rock piles (Board staff comment 14). In response, Nighthawk provided some information but committed to providing additional details in the next version of the CRP. The Board therefore directs Nighthawk to include the additional information referenced in response to TG comment 9 and Board staff comment 14 to address outstanding concerns about portal/decline closure in the next version of the CRP. No other recommendations were received regarding the selected closure activity for the portal/decline.

Although there are some outstanding details for the portal/decline selected closure activity, the Board is of the opinion that the proposed selected closure activity, with additional information Nighthawk has committed to providing in the next version of the CRP, is suitable for closure and reclamation of the portal/decline and has approved the controlled demolition of the crown pillar and backfilling of the trench with direction for the next version of the CRP.

- ***Decision #8: The Board has approved the controlled demolition of the crown pillar and backfilling of the trench but requires Nighthawk to include the additional information, referenced in response to TG comment 9 and Board staff comment 14, to address outstanding concerns about portal/decline closure in the next version of the CRP.***

Contingency Options

ECCC recommended that Nighthawk identify mitigation measures for potential acid rock draining (ARD) and metal leaching (ML) that may result from demolishing the crown pillar and backfilling the trench, including identifying any drainage management that may be necessary (ECCC comment 2). Nighthawk was asked about the potential for ARD and ML as a result of the demolition of the crown pillar (Board staff question 42). Nighthawk responded that the selected closure activity may result in an increase in the

²¹ See WLWB Online Registry for [W2018X0006 – Nighthawk – Land Use Permit – Feb 15 19](#)

exposed rock, but the groundwater is below the level of the newly exposed rock. Nighthawk also noted low hydraulic conductivity due to local geology, slow groundwater level rebound, little groundwater movement to Lardass Lake, and limited overland flow of water. Based on this information, Nighthawk states that it is unlikely that increased exposed rock will result in ARD and ML from the portal/decline. In its response to ECCC and Board staff, Nighthawk indicated that these comments would be considered in development of the next version of the CRP. The Board therefore directs Nighthawk to develop a contingency plan for the portal/decline by evaluating the potential for the selected closure activity to fail, including being a source of ARD and ML in the next version of the CRP.

- ***Decision 9: Nighthawk is to develop a contingency plan for the portal/decline by evaluating the potential for the selected closure activity to fail, including being a source of ARD and ML in the next version of the CRP.***

3.4.3 Settling Pond

The Damoti site has a settling pond where mine water was previously collected prior to being discharged. In review of Version 3.2 of the CRP, the Board directed Nighthawk to incorporate its commitment to test and manage settling pond materials prior to closure. In Version 3.3 of the CRP, Nighthawk updated the selected closure activity for the settling pond to test the settling pond material for ARD and ML and, if confirmed to be absent, regrade the settling pond to match surrounding topography.

During the public review, GNWT-ENR recommended that Nighthawk test settling pond materials for metals and hydrocarbons in addition to PAG material and test water draining from the settling pond to determine whether it may be a residual source of contamination (GNWT-ENR comments 20-22). Nighthawk responded that the settling pond material will be excavated and included in the consolidated rock pile. Any residual material will be sampled for metals, hydrocarbons, PAG material, and other contaminants of concern. This response is inconsistent with Section 4.7.3 of the interim CRP where it indicates that the settling pond material will only be incorporated into the consolidated rock pile if PAG material is present. Nighthawk also stated that sampling of residual sediment will be completed after settling pond material is removed to confirm there is no potential for residual contamination. The Board is of the opinion that Nighthawk's response addresses the concern raised by the GNWT-ENR. The Board has approved the selected closure activity proposed in response to GNWT-ENR's recommendations 20-22 and requires Nighthawk to reflect this change in the next version of the CRP.

- ***Decision #10: The Board has approved the selected closure activity for the settling pond as proposed by Nighthawk in response to GNWT-ENR's recommendations 20-22 and requires Nighthawk to reflect this change in the next version of the CRP.***

3.4.4 Trails, Buildings, and Equipment

The selected closure activity for buildings and equipment remaining at the Damoti site is to demolish, burn as appropriate, and remove other materials from site. For closure of the trails at the Damoti site, the selected closure activity is to conduct some regrading and allow for natural revegetation.

With respect to the trails, the TG recommended that Nighthawk have sediment and erosion control, as well as dust prevention measures in place throughout the time that the trails are being revegetated (TG comment 8). In response, Nighthawk referenced conditions 12 to 19 and 54 of Permit W2018X0006 that require Nighthawk to use erosion control methods and leave the Damoti site in a manner to allow for natural revegetation.²² Additionally, Nighthawk stated that erosion control measures and dust prevention will be discussed with the TG in the development of the next version of the CRP. The Board therefore requires Nighthawk to update sediment and erosion control and dust prevention measures through engagement with the TG in the next version of the CRP.

- ***Decision #11: Nighthawk is to update sediment and erosion control, and dust prevention measures through engagement with the TG in the next version of the CRP.***

Nighthawk was asked to provide more information regarding the methodology used to measure and mitigate any soils with hydrocarbon contamination (Board staff comment 21). Nighthawk indicated that this information will be provided in the next version of the CRP and referenced the GNWT Environmental Guideline for Contaminated Site Remediation as a general guide for procedures that will be followed.²³ The Board therefore directs Nighthawk to engage with Parties to identify appropriate standards for the remediation of hydrocarbon impacted soils and include this information in the next version of the CRP.

- ***Decision #12: Nighthawk is to engage with Parties to identify appropriate standards for the remediation of hydrocarbon impacted soils and include this information in the next version of the CRP.***

GNWT-ENR recommended that Nighthawk include reference to surveys for nesting birds and unoccupied raptors nests during demolition or deconstruction of camp structures (GNWT-ENR comment 30). Additionally, GNWT-ENR recommended that the regional ENR office be contacted if disturbance or destruction of the nests can not be avoided to determine if a permit to disturb or destroy the nest/eggs can be obtained (GNWT-ENR comment 31). Nighthawk responded that Nighthawk's Wildlife Mitigation and Management Plan (WMMP) applies to activities at the Damoti site, and all procedures outlined in the WMMP will be followed.²⁴ Additionally, Permit W2018X0006, Condition 24 – HABITAT DAMAGE requires Nighthawk to prevent damage to wildlife and fish habitat. The Board is of the opinion that Nighthawk has addressed GNWT-ENR's recommendation; for clarity, the Board requires Nighthawk to include reference to its requirement for following procedures outlined in the WMMP in the next version CRP.

- ***Decision #13: The Board has decided to direct Nighthawk to include reference to its requirement for following procedures outlined in the WMMP in the next version CRP.***

Although some revisions are required to improve the methods and details associated with the closure activities, no objections were received regarding the selected closure activities for the buildings, equipment, and trails. The Board is thus of the opinion that the selected closure activities for the buildings,

²² See WLWB Online Registry for [W2018X0006 – Nighthawk – Land Use Permit – Feb 15 19](#)

²³ See GNWT 'Guidelines' webpage for [Guidelines for Contaminated Site Remediation](#)

²⁴ See WLWB Online Registry for [W2018L2-0003 – Nighthawk – Wildlife Mitigation and Monitoring Plan – Version 3.1 – Feb 28 19](#)

equipment, and trails are acceptable and that the required updates (as described in Decisions #11 to 13) will address any outstanding concerns.

- ***Decision #14: The Board has approved the selected closure activities for the trails, buildings, and equipment.***

3.5 Water Quality Model

Version 3.3 of the interim CRP presented water quality modelling results for the consolidated waste rock piles without a cover. The modelling results indicated a need for a mixing zone in Lardass Lake to allow Nighthawk to meet proposed closure criteria at the edge of the proposed mixing zone. Questions were asked about the water quality model assumptions and results (Board staff comments 22-25, 27, 34, 35, 37, 49, and 50). Nighthawk responded by either addressing the question or stating that the low-flux cover will mitigate the potential issue.

The MVLWB/GNWT *Guidelines for Effluent Mixing Zones* (Mixing Zone Guidelines) state “that the size of the mixing zone should be minimized to the extent practical.”²⁵ The Board will only consider a mixing zone if there is adequate evidence demonstrating that it is required. During the public review, many comments and recommendations were received regarding the proposed mixing zone (ECCC comment 5; GNWT-ENR comments 14, 15, 28, and 29; Board staff comments 30-33, 36, and 48). Reviewers recommended that Nighthawk conduct additional sampling around the proposed mixing zone boundary, complete a plume delineation study, and update the associated closure criteria. Given the new selected closure activity where the waste rock piles will be consolidated and a low-flux cover and geosynthetic liner installed, it is unclear how the modelling results apply and whether a mixing zone is still necessary. The Board has therefore decided not to approve the proposed mixing zone.

- ***Decision #15: The Board has not approved the proposed mixing zone.***

The purpose of the water quality model is to predict water quality following completion of the selected closure activity for the rock piles. This allows Nighthawk to determine where closure criteria can be met and if a mixing zone would be necessary. Given that the water quality model in Version 3.3 of the interim CRP has not yet been updated to reflect the selected closure activity for the waste rock piles, some uncertainty remains about the water quality at closure, ability to meet proposed closure criteria, and need for a mixing zone. This information will inform other changes in the CRP and allow the Board to decide on the potential need for a mixing zone. To allow Nighthawk to move forward with the closure planning process, the Board requires Nighthawk to submit a supplementary report within six months of the Board’s decision. This supplementary report must include updated water quality modelling that incorporates the selected closure activity for the rock pile, and either: rationale for why a mixing zone is not needed or the information required by the Mixing Zone Guidelines if a mixing zone is being proposed.

- ***Decision #16: Nighthawk is to submit a supplementary report within six months of the Board’s decision. The supplementary report must include updated water quality modelling that***

²⁵ See WLWB ‘Policies and Guidelines’ webpage for [MVLWB/GNWT Guidelines for Effluent Mixing Zones \(2017\)](#)

incorporates the selected closure activity for the rock pile, and either: rationale for why a mixing zone is not needed or the information required by the Mixing Zone Guidelines if a mixing zone is being proposed.

3.6 Post-Closure Monitoring and Maintenance

At the Damoti site, the rock piles are the most significant concern for environmental impacts. Nighthawk was required to update Version 3.3 of the interim CRP to provide a detailed explanation for why each mine component would not require long-term maintenance and to determine how long post-closure monitoring will continue to ensure closure criteria have been met.²⁶ During the review of Version 3.3 of the interim CRP, several reviewers recommended additional monitoring beyond that proposed by Nighthawk to ensure there were early warning systems and mitigations in place to prevent impacts to the receiving environment.

The monitoring program proposed in Version 3.3 is based on consolidation of the rock piles without a cover. Nighthawk has now proposed a new selected closure activity that includes a low-flux cover and geosynthetic liner on the consolidated rock pile. It is unclear at this time how the new selected closure activity will change water quality predictions as presented in Version 3.3 of the interim CRP and the associated need for long-term monitoring. During the public review, many comments were received on the proposed monitoring plan for drainage from the Damoti site (TG comment 7; ECCC comment 3; GNWT-ENR comments 24, 25, 26; Board staff comments 38 and 39). ECCC recommended Nighthawk develop a robust monitoring and adaptive management plan to mitigate ARD and ML (ECCC comment 1). Nighthawk responded that the recommendations or questions would be considered as part of the development of the post-closure monitoring program in the next version of the CRP to include the new selected closure activity for the rock piles. Given the change in selected closure activity for the waste rock piles and reviewer comments, the Board has not approved the post-closure monitoring and maintenance plan proposed in Version 3.3 of the interim CRP. The Board directs Nighthawk to address outstanding post-closure monitoring and maintenance issues, by revising details through engagement with Parties and providing updates, with consideration of these recommendations made during review of Version 3.3 of the interim CRP, in the next version of the CRP.

- ***Decision #17: The Board has not approved the post-closure monitoring and maintenance proposed in Version 3.3 of the interim CRP.***
- ***Decision #18: Nighthawk is to update post-closure monitoring and maintenance by refining details through engagement with Parties and providing updates, with consideration of the recommendations made during review of Version 3.3 of the interim CRP, in the next version of the CRP.***

²⁶ See WLWB Online Registry for [W2018L2-0003 – Nighthawk – ICRP Version 3.2 – Reasons for Decision – Jun 25 19](#)

3.7 Integrated Schedule of Activities

The Closure Guidelines describe permanent closure as “the final closure of a mine site with no foreseeable intent by the existing proponent to return to either active exploration or mining.”²⁷ Nighthawk has indicated that permanent closure of the Damoti site will not take place until a decision is made about whether Colomac will become operational. A timeline was not provided for when closure activities would begin, independent of Nighthawk’s decision on operations at Colomac.

Nighthawk was asked to describe the environmental trigger(s) to begin reclamation of the rock piles independent of the decision regarding operations at Colomac (Board staff comment 43). Nighthawk did not address this question in its response and an IR was issued to gather additional information regarding environmental triggers for closure.²⁸ In response to the IR, Nighthawk indicated it will continue with the monitoring requirements outlined in the Licence and interim CRP (e.g., sampling at proposed SNP station 5-15) to monitor for changes in the receiving environment and proposed enhanced monitoring requirements prior to closure and reclamation, beginning with thresholds that would require Nighthawk to begin permanent closure and reclamation.²⁹ The Board notes that recent SNP Reports have shown SNP exceedances at various SNP stations and there have been CCME Chronic Guidelines for the Protection of Aquatic Life Guideline exceedances in Lardass Lake.^{30,31,32,33} GNWT Inspectors have been in contact with Nighthawk to address the on-going exceedances at the Damoti site.³⁴

At this time, reviewers have not had an opportunity to provide comments and recommendations on the triggers Nighthawk proposed in response to the IR. The Board thus directs Nighthawk to engage with Parties to revise and refine the proposed triggers for beginning permanent reclamation and incorporate its proposed triggers in the next version of the CRP.

- ***Decision #19: Nighthawk is to engage with Parties to revise and refine the proposed triggers for beginning permanent reclamation and incorporate its proposed triggers in the next version of the CRP.***

The Board notes that according to the MVLWB (2011) Water and Effluent Quality Management Policy “the proponent must ensure that the waste discharged meets the EQC in order to remain in compliance with

²⁷ See WLWB ‘Policies and Guidelines’ webpage for [MVLWB Guidelines for the Closure and Reclamation of Advanced Mineral Exploration and Mine Sites in the Northwest Territories \(2013\)](#)

²⁸ See WLWB Online Registry for [W2018L2-0003 – Nighthawk – Information Request to Nighthawk, GNWT, ECCC, and TG – Feb 26 21](#)

²⁹ See WLWB Online Registry for [W2018L2-0003 – Nighthawk – Information Request Response from Nighthawk – Mar 31 21](#)

³⁰ See WLWB Online Registry for [W2018L2-0003 – Nighthawk – SNP Report – September 2020 – Oct 30 20](#)

³¹ See WLWB Online Registry for [W2018L2-0003 – Nighthawk – SNP Report – June 2020 – Aug 12 20](#)

³² See WLWB Online Registry for [W2018L2-0003 – Nighthawk – SNP Report – September 2019 – Aug 27 20](#)

³³ See WLWB Online Registry for [W2018L2-0003 – Nighthawk – SNP Report – June 2019 – Aug 27 20](#)

³⁴ See WLWB Online Registry for [W2018L2-0003 – Nighthawk – Correspondence with Inspectors Re SNP Exceedances – Mar 17 21](#)

the Water Licence.”³⁵ The Board recognizes that further actions may need to be taken based on recent water quality results from the SNP.

3.8 Security Deposit

The Board has the responsibility to set the financial security amount for proponents to cover the cost of closure and reclamation. Under Nighthawk’s authorizations for the Damoti site, Nighthawk has posted a total security deposit for \$420,178 under Land Use Permit W2018C0007 and \$110,078 under Water Licence W2018L2-0003. During the issuance of Nighthawk’s Land Use Permit and Water Licence, the Board stated that it recognized the need for Nighthawk to assess and potentially refine its security estimate during the interim CRP review.³⁶ During the review of Version 3.2 of the interim CRP, ENR recommended the security estimate be revised when an interim CRP has been approved. Nighthawk agreed with this recommendation and the Board stated that once the interim CRP has been approved, Nighthawk should engage on the closure cost estimate and submit an updated RECLAIM estimate.³⁷ The Board understands the intent of this review to be a holistic review of security under the following authorizations: W2018L2-0002, W2018L2-0003, W2018C0007, and W2018X0006. The MVLWB/GNWT/INAC (2017) Guidelines for Closure and Reclamation Cost Estimates for Mines (Closure Cost Guidelines) addresses the need for engagement with the landowner (page 3-4):³⁸

When preparing closure cost estimates, proponents are strongly encouraged to collaborate closely with the GNWT, INAC, or other landowners. This collaboration should occur prior to and during the Boards’ public process, with the goal of building consensus and enabling the proponent and the appropriate authority (e.g., the GNWT, INAC, etc.) to provide a thorough rationale for any differences in their cost estimates.

As the Board has approved Version 3.3 of the interim CRP, the Board now requires Nighthawk to collaborate with the land managers (i.e., the GNWT and CIRNAC) and to submit updated RECLAIM estimate(s) within 120 days of the Board’s decision on Version 3.3 of the interim CRP to reflect the cost to carry out closure and reclamation under the W2018L2-0002, W2018L2-0003, W2018C0007, W2018X0006 authorizations. The Board reminds Nighthawk that a written request³⁹ for any changes to Permit condition(s) should accompany the new cost estimates if changes to land-based security are proposed.

- ***Decision #20: Nighthawk is to submit updated RECLAIM estimate(s) to reflect the approved CRP Version 3.3 and propose any associated changes to security for W2018L2-0002, W2018L2-0003, W2018C0007, and W2018X0006 within 120 days of the Board’s decision on Version 3.3 of the interim CRP. Nighthawk is to engage and collaborate with the GNWT and INAC when preparing updated closure cost estimates.***

³⁵ See WLWB “Policies and Guidelines” webpage for MVLWB (2011) [Water and Effluent Quality Management Policy](#)

³⁶ See WLWB Online Registry for [W2018L2-0003 – Nighthawk – LUP and WL Applications – Reasons for Decision – Jan 24 19](#)

³⁷ See WLWB Online Registry for [W2018L2-0003 – Nighthawk – ICRP Version 3.2 – Reasons for Decision – Jun 25 19](#)

³⁸ See WLWB “Policies and Guidelines” webpage for MVLWB/GNWT/INAC (2017) [Guidelines for Closure and Reclamation Cost Estimates for Mines](#)

³⁹ 26(2) of the Mackenzie Valley Land Use Regulations

Section 2.4 of the Closure Cost Guidelines states that “a document that describes the assumptions and inputs used to develop a closure cost estimate must accompany the estimate when submitted to the Board.”⁴⁰ When Nighthawk submits an updated cost closure estimate, it will be distributed for public review allowing Parties to provide comments and recommendations. The Board recognizes that most of the supplementary information can be found in Version 3.3 of the interim CRP but to assist Parties in the review of the closure cost estimate, specific references to relevant sections or pages should be provided.

3.9 Engagement

It is clear that Nighthawk has conducted significant engagement with various Parties in the development of Version 3.3 of the interim CRP. As per the Board’s Closure Guidelines “effective communication, along with thorough and frequency engagement, needs to occur on various levels when developing CRPs.” The TG recommended that Nighthawk plan and carry out an update of the Engagement Plan to reflect the TG’s Engagement Guidelines, provide an opportunity for site visits before and after closure, and continue to engage with the TG in the development of future versions of the CRP (TG comment 10). Nighthawk responded indicating that it will update the Engagement Plan to reflect requests from the TG and include specific engagement triggers for the development of the final CRP and incorporation of the TG Engagement Guidelines. The Board directs Nighthawk to engage with the TG, the WRRB, and the NSMA, as outlined in the approved Engagement Plan,⁴¹ to revise the Engagement Plan to address the TG’s recommendations and submit Version 4.0 of the Engagement Plan within ninety (90) days of the Board’s decision on interim CRP Version 3.3. The Board directs Nighthawk to reference the “currently approved Engagement Plan” in the next version of the CRP.

- ***Decision #21: Nighthawk is to engage with the TG, the WRRB, and the NSMA when revising the Engagement Plan to address the TG’s recommendations and submit Version 4.0 of the Engagement Plan within ninety (90) days of the Board’s decision on interim CRP Version 3.3.***
- ***Decision #22: The Board directs Nighthawk to reference the “currently approved Engagement Plan” in the next version of the CRP.***

3.10 Other Revisions

There were several recommendations and questions to which Nighthawk responded with commitments for the next version of the CRP.

- ***Decision #23: Nighthawk is to incorporate the following Revisions A through E in the next version of the CRP:***
 - A. Include details about analytical detections limits used to ensure results can be compared to CCME chronic water quality criteria (GNWT-ENR comment 19);***

⁴⁰ See WLWB “Policies and Guidelines” webpage for MVLWB/INAC/GNWT (2017) [Guidelines for Closure and Reclamation Cost Estimates for Mines](#)

⁴¹ See WLWB Online Registry for [W2018L2-0003 – Nighthawk – Engagement Plan – Version 3.2 – Jul 4 19](#)

- B. Ensure SNP stations in the CRP are consistent with the Surveillance Network Program annexed to the Licence (Board staff comment 1);**
- C. Update section reference in Section 4.7.3 of the CRP (Board staff comment 19);**
- D. Include a final version of Appendix J – Consolidated Rock Pile Stability Assessment stamped by a Professional Engineer, as defined in Water Licence W2018L2-0003 (Board staff comment 51); and**
- E. Include a final version of Appendix K stamped by a Professional Engineer, as defined in Water Licence W2018L2-0003 (Board staff comment 52).**

3.11 Other Reviewer Comments

There are recommendations from the public review that have not been specifically addressed in this Reasons for Decision. The Board is of the opinion that all issues raised in the public review were adequately addressed by the proponent or can be addressed in future versions of the CRP.

Signed the 6th Day of May, 2021, on behalf of the Wek'èezhìi Land and Water Board



Witness



Joe Mackenzie
Chair, Wek'èezhìi Land and Water Board