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Government of Nunavut
Nunavut Kavamat
Gouvernement du Nunavut

May 27, 2019

Andrea Omilgoitok
Environmental Administrator
Nunavut Impact Review Board
P.O Box 1360
Cambridge Bay, NU X0B 0C0

***Sent VIA Email: info@nirb.ca***

**RE: Comment Request for Agnico Eagle Mines Ltd.'s *Meadowbank Gold Mine Project 2018 Annual Monitoring Report* (NIRB File No. 03MN107)**

Dear Andrea Omilgoitok,

On behalf of the Government of Nunavut (GN), I would like to thank the Nunavut Impact Review Board (NIRB) for the opportunity to provide comments on Agnico Eagle Mines Ltd.'s *Meadowbank Gold Mine Project 2018 Annual Monitoring Report*. Please find the enclosed comments for consideration by the Board.

Should you have any concerns, please contact me by phone at 867-975-7808 or by email at cspencer@gov.nu.ca.

Qujannamiik,

[Original Signed By]
Chris Spencer
*Avatiliriniq Coordinator*
*Government of Nunavut*

# Appendix A

| GN-01: Raptor Monitoring | |
|---|---|
| **Department** | Environment |
| **Organization** | Government of Nunavut |
| **Subject/Topic** | Raptor Monitoring Around Whale Tail Site and Haul Road |
| **Terms and Conditions** | Nos. 28, 36 (Project Certificate 008) |
| **References** | • Agnico Eagle Mines (AEM) Limited. (2019). Meadowbank Gold Project 2018 Annual Report, Appendix 45 (Meadowbank and Whale Tail 2018 Wildlife Monitoring Summary Report), section 12.4 – Methodology<br>• Agnico Eagle Mines (AEM) Limited. (2019). Meadowbank Gold Project 2018 Annual Report, section 8.18.1.6 - Raptor Nest Survey<br>• Agnico Eagle Mines (AEM) Limited. (2019). Meadowbank Gold Project 2018 Annual Report, section 8.18.1 - Wildlife Monitoring Meadowbank and Whale Tail Site<br>• Agnico Eagle Mines (AEM) Limited. (2019). Meadowbank Gold Project 2018 Annual Report, Appendix 45 (Meadowbank and Whale Tail 2018 Wildlife Monitoring Summary Report), section 12.7 Accuracy of Impact predictions<br>• Nunavut Impact Review Board (NIRB). (2017). Final Hearing Report, Agnico Eagle Mines Ltd Whale Tail Pit Project, NIRB file No. 16MN056, appendix B<br>• Terrestrial Ecosystem Management Plan, version 6, section 3.7.2.1 – Nest Monitoring<br>• Terrestrial Ecosystem Management Plan, version 6, section 3.7.3.1 – Nest Monitoring |
| **IDENTIFICATION OF ISSUE** | |
| Raptor monitoring, as reported in the 2018 Annual Report (2018 Report), is inconsistent with the objectives specified in the Terrestrial Ecosystem Management Plan (TEMP). The GN is concerned that certain raptor-related aspects of the TEMP are not being implemented as required under Terms and Conditions Nos. 28 and 36 (NIRB Project Certificate 008), and that the current monitoring does not have the power to detect and mitigate Project-related effects on raptor nesting success. | |
| **IMPORTANCE TO REVIEW AND SUPPORTING RATIONALE** | |

Nest Surveys

The 2018 Report indicates that surveys to locate active raptor nests in the vicinity of the Whale Tail Pit and Haul Road were not conducted in 2018. The report also notes that:

> "Raptor nests in the Whale Tail Pit and Haul Road study area were previously identified by researchers from the University of Alberta during the environmental assessment process (i.e., 2015 to 2017)… Nest monitoring was not conducted in the Whale Tail area in 2018 because none of the identified active nests are in close proximity to project activities and facilities." (AEM 2019, appendix 45, section 12.4)

The decision not to conduct raptor nest surveys and subsequent nest monitoring at the Whale Tail Pit and Haul Road is inconsistent with the Project's TEMP which indicates that:

> "For new development sites, suitable habitat within 1.5 km of the sites will surveyed on foot for active Raptor nests." (TEMP version 6, section 3.7.2.1).

The TEMP also indicates that there will be nest monitoring for nests located within the active footprint and within 1.5 km of Project facilities (TEMP v6 - fig 14). Nest management plans, including the application of no-work distance buffers will be applied to nests in "areas of concern" (TEMP version 6, section 3.7.3.1).

2018 was a construction year for the Whale Tail Pit and Haul Road involving road construction, development and use of quarries and the construction of mine site infrastructure. Raptor nest surveys should have been conducted at these sites to identify nests requiring subsequent nest monitoring and nest management plans. The report seems to rely on the assumption that nest surveys conducted in 2015 to 2017 were sufficient to predict the location of active nests in 2018. The GN is concerned that evidence to validate this assumption is not presented in the 2018 Report. Furthermore, it is noted that raptor monitoring in 2018 in the vicinity of other components of the Project led to the discovery of 5 previously undocumented nests (AEM 2019, section 8.18.1.6). The possibility thus exists that there were active nests in the vicinity of the Haul Road and Whale Tail pit that should have been monitored and managed in 2018.

Impact Predictions and Thresholds

The impact prediction for raptor nests was that nest failures would not be caused by mine-related activities (AEM 2019, appendix 45, section 12.7). The monitoring threshold for this prediction is one Project-related nest failure per year and the 2018 Report concludes that this threshold was not exceeded in 2018 (AEM 2019, appendix 45, table 12.3). The GN is concerned that this conclusion is not supported by evidence. The results of raptor monitoring programs, as presented in the 2018 Report, do not appear to be designed to detect Project-related nest failures. The 2018 Report indicates that:

> "Seven active Peregrine Falcon (*Falco peregrinus*) nests were observed and monitored at quarry sites along the AWAR in 2018, with successful nesting confirmed at three nests." (AEM 2019, section 8.18.1)

However, there is no evidence to determine whether the failure of 4 of the 7 nests were Project-related or not. The study design does not appear to support analysis that would allow detection of Project-related nest failures; for example, by examining nest success as a function of intensity of Project-related disturbance. The GN maintains that the 2018 Report's conclusions rapture regarding nesting success are unsubstantiated.

Nest Management Plans

The 2018 Report indicates that:

> "Raptor nest management plans were not warranted at any of the active nest sites as no project-related effects on raptor nesting success were observed." (AEM 2019, section 8.18.1)

The approach to nest management presented in the 2018 Report is contrary to the approach outlined in the TEMP. The purpose of a nest management plan is to prevent effects on nest success. To be effective, a plan should thus be in place prior to, and regardless of, effects being observed. The TEMP specifies that nest management plans, including the potential application of no-work distance buffers will be applied to nests in "areas of concern" (TEMP version 6, section 3.7.3.1). It does not specify that an effect on nesting success must be observed before a plan is developed.

The GN finds the reported approach to raptor nest management troubling and is concerned that in addition to going undetected (see section above entitled *Impact Predictions and Thresholds*), Project-related effects on raptor nesting may be going unmitigated.

**RECOMMENDATION(S)**

The GN offers the following recommendations to the Board with respect to this issue:

- That the Proponent provide evidence to support the assumption that raptor nest surveys in 2015 to 2017 were an accurate predictor of the locations of active nests in 2018 in the vicinity of the Haul Road and Whale Tail Pit.
- That the Proponent explain why raptor nest surveys were not conducted in 2018 in the vicinity of the Whale Tail Pit and Haul Road construction activities, as required by the TEMP.
- That the Proponent clarify whether raptor nest surveys will be conducted in the vicinity of all new sites of development prior to any activity occurring.
- That the Proponent clarify how the raptor nest monitoring program, as currently designed, is able to distinguish between WT Project-related and other effects on nest success in-order to reach the conclusion that in 2018 there were no WT Project-related nest failures.
- That the Proponent design and implement a raptor monitoring program that has the statistical power to monitor nest success relative to the established threshold of "one Project-related nest failure per year" or revise the threshold and study design in consultation with the Terrestrial Advisory Group.
- The GN requests that the Proponent fully implement raptor mitigation as specified in the

TEMP. This includes the development of management plans for nests in areas of concern, regardless of whether effects on the success of those nests have been observed.

- The Proponent should ensure that the next revised version of the TEMP will reflect the following commitment made during NIRB's review of the WT Project:

  "The proponent shall establish automatic minimum no-disturbance buffers around all raptor nests located in proximity to the Project. Project activities, including the operation of vehicles, heavy equipment, aircraft and blasting, shall be prohibited within these buffers unless an exception is specified within a nest-specific management plan that has been reviewed and approved by the GN, subject matter experts and other relevant parties. The size of minimum, no-disturbance buffers shall be based on the BC Guidelines for Raptor Conservation or similar guidelines as recommended by the Project's TAG." (commitment #32, NIRB 2017, appendix B)

- In the 2019 Annual Report, the Proponent should provide details of the automatic no-disturbance buffers established around each active nest and any modifications to these buffers that were applied as part of an approved nest management plan.

| GN-02: Reporting of Caribou Monitoring and Mitigation Activities | |
|---|---|
| **Department** | Environment |
| **Organization** | Government of Nunavut |
| **Subject/Topic** | Reporting of Caribou Monitoring and Mitigation Activities: Consistency with the Terrestrial Ecosystem Management Plan (TEMP) |
| **Terms and Conditions** | No. 28 (Project Certificate 008) |
| **References** | • Agnico Eagle Mines (AEM) Limited. (2019). Meadowbank Gold Project 2018 Annual Report, Appendix 45 (Meadowbank and Whale Tail 2018 Wildlife Monitoring Summary Report), section 3.2 - Objectives<br>• Agnico Eagle Mines (AEM) Limited. (2019). Meadowbank Gold Project 2018 Annual Report, Appendix 45 (Meadowbank and Whale Tail 2018 Wildlife Monitoring Summary Report), section 4.2 – Objectives<br>• Agnico Eagle Mines (AEM) Limited. (2019). Meadowbank Gold Project 2018 Annual Report, Appendix 45 (Meadowbank and Whale Tail 2018 Wildlife Monitoring Summary Report), section 6.0 – Caribou Satellite Collaring Program<br>• Agnico Eagle Mines (AEM) Limited. (2019). Meadowbank Gold Project 2018 Annual Report, Appendix 45 (Meadowbank and Whale Tail 2018 Wildlife Monitoring Summary Report), section 3.6.5 – Road Related Mitigation<br>• Terrestrial Ecosystem Management Plan (TEMP), version 6 |

**IDENTIFICATION OF ISSUE**

Some caribou monitoring and mitigation activities reported in the 2018 Annual Report (2018 Report) do not align with thresholds and seasons used in the Terrestrial Ecosystem Management Plan (TEMP). This makes it challenging for reviewers to understand how the Project's caribou protection measures are being implemented and whether the measures are likely to be, or are being, effective in minimizing Project effects on caribou.

**IMPORTANCE TO REVIEW AND SUPPORTING RATIONALE**

The 2018 Report and the TEMP do not align in several areas with respect to reported versus planned caribou monitoring and mitigation. This makes it hard for reviewers to understand how monitoring results compare to impact predictions and how caribou protection measures are being implemented relative to the TEMP.

Seasonal Windows

The proposed intensity of caribou monitoring and mitigation, as specified in the TEMP, varies according to defined seasonal windows (e.g. Figures 6 – 9, TEMP version 6). These windows correspond to seasons used for effects assessments in previous environmental impact statements for the Project. In several parts of the 2018 Report, results relating to caribou are reported using seasons that differ from those used in the TEMP. For example:

- Road surveys are a key component of the TEMP used for monitoring caribou and supporting mitigation, including implementation of the caribou decision trees (Figures 6 – 9, TEMP version 6). Tables 3.1, 3.2 and 3.5 of the 2018 Report (AEM 2019, appendix 45), which tables summarize the frequency and details of road surveys conducted in 2018, use seasons which differ from the seasons used in the TEMP for caribou monitoring and mitigation.
- The 2018 Report summarizes the results of the caribou satellite collaring program, including information on the seasonal movements of caribou in relation to the Project (AEM 2019, appendix 45, section 6). The seasons used to present these results differ from the seasons used in the TEMP.

Other sections of the Annual Report provide details of the individual surveys or mitigation measures for caribou but do not provide a summary according to the seasonal windows used in the TEMP for caribou monitoring and mitigation. For example:

- The 2018 Report summarizes road restrictions implemented in 2018 for mitigating Project effects on caribou (AEM 2019, appendix 45, section 3.6.5, tables 3.7 – 3.9). A useful addition to this section would be summaries according to season.
- Similar seasonal summaries would be useful for activities such as height-of-land surveys, mine site surveys, pre-blasting surveys.

Monitoring Thresholds

The 2018 Report specifies the following Project-effect thresholds for caribou monitoring:

> "Evaluate whether road-related operations preclude Caribou from using suitable habitats beyond 1,000 m. The threshold level along the roads is unnatural Caribou use patterns beyond 1,000 m". (AEM 2019, appendix 45, section 3.2)

And

> "Evaluate whether mine-related construction and operation activities preclude Caribou from using suitable habitats beyond 500 m (considered to be an average across various disturbance types) of mine buildings, facilities, and roads. Threshold level within mine facilities is unnatural Caribou use patterns beyond 500 m. The threshold level along roads is unnatural Caribou use patterns beyond 1,000 m (also see Section 3)". (AEM 2019, appendix 45, section 4.2)

And

> "Disturbance Mine-related construction and operation activities will not preclude Caribou and Muskoxen from using suitable habitats beyond 1,000 m of the AWAR." (AEM 2019, appendix 45, table 3.12)

The 2018 Report states that both of these thresholds were exceeded. The GN notes that none of these thresholds are included in the TEMP (version 6) and quantitative analyses to assess monitoring results relative to these thresholds are not presented in the 2018 Report.

**RECOMMENDATION(S)**

The GN offers the following recommendations to the Board with respect to this issue:

1) For future Annual Reports, the Proponent should develop a format for caribou-related components that is aligned with the TEMP with respect to planned monitoring and mitigation. This should include summaries, according to seasons, defined for caribou in the TEMP, for: (1) road, mine site, height-of-land and pre-blasting survey effort. Tables containing dates of individual surveys should be included as appendices; (2) mitigation measures such as road closures, mine site work stoppages, blasting delays, as specified in caribou decision trees in the TEMP (Figure 6 to 9, TEMP, version 6) and (3) monitoring of zone-of-influence, movements and caribou group size observations.

2) Currently, caribou-related are elements scattered throughout the 2018 Report, in some instances presented with results for other species. For future Annual Reports, all caribou elements should be presented in a single comprehensive section covering the implementation and effectiveness of the Project's caribou protection measures.

3) Monitoring thresholds used in the Annual Report for caribou should be the same as those established in the TEMP.

| GN-03: Road Surveys for Wildlife | |
|---|---|
| **Department** | Environment |
| **Organization** | Government of Nunavut |
| **Subject/Topic** | Road Surveys for Wildlife Along the Whale Tail Haul Road |
| **Terms and Conditions** | No. 28 (Project Certificate 008) |
| **References** | • Agnico Eagle Mines (AEM) Limited. (2019). Meadowbank Gold Project 2018 Annual Report, Appendix 45 (Meadowbank and Whale Tail 2018 Wildlife Monitoring Summary Report), section 3.2 – Objectives<br>• Agnico Eagle Mines (AEM) Limited. (2019). Meadowbank Gold Project 2018 Annual Report, Appendix 45 (Meadowbank and Whale Tail 2018 Wildlife Monitoring Summary Report), section 3.6.5 – Road Related Mitigation<br>• Agnico Eagle Mines (AEM) Limited. (2019). Meadowbank Gold Project 2018 Annual Report, Appendix 45 (Meadowbank and Whale Tail 2018 Wildlife Monitoring Summary Report), section 3.6.4 - Whale Tail Haul Road Surveys<br>• Terrestrial Ecosystem Management Plan (TEMP), version 6<br>• Terrestrial Ecosystem Management Plan (TEMP), version 6, section 3.2.1 – Road Surveys |

**IDENTIFICATION OF ISSUE**

A primary of objective of road surveys is to support adaptive management, such as road closures during peak caribou migration periods. In 2018, road survey effort along the Haul Road was limited to a single survey during the spring caribou migration. This level of effort is inconsistent with the Terrestrial Ecosystem Management Plan (TEMP) and raises concerns that caribou protection measures are not being fully implemented during a sensitive season for caribou interactions with the Project. The GN is concerned that the Proponent is non-compliant with Term and Condition No. 28 (NIRB Project Certificate 008).

**IMPORTANCE TO REVIEW AND SUPPORTING RATIONALE**

As noted in the 2018 Report (2018 Report), the primary objective of road surveys for wildlife is to:

> "Assess the need for adaptive mitigation, such as temporary road closures during peak Caribou migration periods." (AEM 2019, appendix 45, section 3.2)

The Project's TEMP, implemented in accordance with Term and Condition No. 28 (NIRB

Project Certificate 008), indicates that road surveys will be conducted at least weekly and will increase in frequency when caribou are observed in the vicinity of the Project (TEMP, version 6, Table 14).

The 2018 Report states that:

> "During Caribou peak migration, notices were sent to all road occupants (Appendix C), regulatory agencies, local groups and wildlife consultants were notified, and road survey efforts were increased to every two days." (AEM 2019, appendix 45, section 3.6.5 Road-related Mitigation)

And

> "The number of Whale Tail Haul Road surveys completed each season in 2018 is provided in Table 3.5. Surveys were conducted on average every 6.4 days from the beginning of the survey (19 April) to the end of the year). Survey frequency was highest in October (n=15) and November (n=11). The highest average numbers of Caribou were seen in April and October, which aligns with surveys results from the AWAR and the Vault Haul Road (Table 3.6)." (AEM 2019, appendix 45, section 3.6.4)

The GN notes the following concerns with respect to the information provided within the 2018 Report about road surveys conducted in 2018:

- The 2018 Report indicates that road surveys were increased to every 2 days during caribou peak migration (AEM 2019, appendix 45, section 3.6.5). Spring (April-May) is a migration period when caribou are expected to cross the Haul Road. However, table 3.5 indicates that only 1 survey was conducted along the Haul Road during this period (Appendix 45). This equates to 1 survey per 2 months, not 1 survey per 2 days. The 2018 Report does not explain or comment on this discrepancy.

- Spring (April and May) is a migration period during which caribou interactions with the Haul Road are expected to peak. Indeed, the report indicates that the highest average numbers of caribou were seen in April (AEM 2019, appendix 45, section 3.6.4). the 2018 Report does not explain or comment on why only a single survey was conducted along the Haul Road during this peak migration period. According to the TEMP, at least 8 surveys should have occurred during this period regardless of whether caribou were observed in the vicinity of the Haul Road. Comparison of data within the 2018 Report (Appendix 45, tables 3.1, 3.2 and 3.5) shows that 12.5% and 16.5% of road survey conducted along the All-Weather-Access-Road (AWAR) and Vault Road, respectively, were conducted in the spring (April-May). In comparison, 3% of surveys conducted along the Haul Road were conducted along the Haul Road were in spring.

- The TEMP indicates that the minimum level of road survey effort, regardless of whether caribou are observed, will be 1 survey per week and will increase when caribou are present (TEMP, version 5, section 3.2.1). In 2018, 41 road surveys (average of 1 per 8.7 days) were conducted along the Haul Road. This is less than the minimum the TEMP provides for.

The GN is concerned that caribou protection measures as detailed in the TEMP are not being properly applied to the Haul Road. One of the primary triggers for implementing adaptive management, such as road closures, is the detection of caribou in the vicinity of the Road during road surveys. If these surveys are not being conducted, mitigation to protect caribou is not being applied. The Haul Road will be the most intensively used WT Project road. As such, caribou protection measures along the Haul Road must be applied fully. The fact that only 1 road survey was conducted along the Haul Road in spring 2018 is particularly concerning given the 2018 Report's conclusion that Project roads are deflecting caribou and causing sensory disturbance that exceeds monitoring thresholds (AEM 2019, appendix 45, table 3.12).

Overall, survey effort to support caribou protection measures was unacceptably low in 2018; below the minimums specified in the TEMP for each type of survey. The minimum survey effort specified in the TEMP have not been increased in accordance with commitments made by AEM during the NIRB's review of the Whale Tail Project.

**RECOMMENDATION(S)**

The GN offers the following recommendations to the Board with respect to this issue:

- That the Proponent should explain why only a single road survey was conducted along the Haul Road in April and May.
- That the Proponent should explain the apparent discrepancy in information provided in the 2018 Report indicating that roads surveys during peak migration were increased to every 2 days versus the contents of table 3.5 (Appendix 45) which indicates that a single survey was conducted along the Haul Road during the spring migration.
- That the Proponent should explain why a total of 41 road surveys were conducted along the Haul Road in 2018 in comparison to the minimum of 52 surveys (1 per week) indicated in the TEMP.
- The GN requests that the Proponent fulfill these recommendations through the production of an open letter to the GN and NIRB.

| GN-04: Adaptive Management Response | |
|---|---|
| **Department** | Environment |
| **Organization** | Government of Nunavut |
| **Subject/Topic** | Adaptive Management Response to Exceedance of Caribou Disturbance Threshold |
| **Terms and Conditions** | Nos. 28 and 29 (Project Certificate 008) |
| **References** | • Agnico Eagle Mines (AEM) Limited. (2019). Meadowbank Gold Project 2018 Annual Report, Appendix 45 (Meadowbank and Whale Tail 2018 Wildlife Monitoring Summary Report), Table 3.12 - Accuracy of Impact Predictions – Sensory Disturbance and Mortality along the AWAR, Vault Haul Road, and Whale Tail Haul Road.<br>• Agnico Eagle Mines (AEM) Limited. (2019). Meadowbank Gold Project 2018 Annual Report, Appendix 45 (Meadowbank and Whale Tail 2018 Wildlife Monitoring Summary Report), Table 6.1 - Accuracy of Impact Predictions – Satellite-collaring Data<br>• Agnico Eagle Mines (AEM) Limited. (2019). Meadowbank Gold Project 2018 Annual Report, Appendix 45 (Meadowbank and Whale Tail 2018 Wildlife Monitoring Summary Report), Section 3.8 – Management Recommendations<br>• Agnico Eagle Mines (AEM) Limited. (2019). Meadowbank Gold Project 2018 Annual Report, Appendix 45 (Meadowbank and Whale Tail 2018 Wildlife Monitoring Summary Report), Section 6.6 Results<br>• Agnico Eagle Mines (AEM) Limited. (2019). Meadowbank Gold Project 2018 Annual Report, Appendix 45 (Meadowbank and Whale Tail 2018 Wildlife Monitoring Summary Report), Section 6.7 Caribou Migration Patterns |

**IDENTIFICATION OF ISSUE**

The 2018 Annual Report (2018 Report) claims success in managing Project roads to minimize effects on the movements of migrating caribou by application of Caribou Protection Measures (CMPs) within the Terrestrial Ecosystem Management Plan (TEMP). The GN maintains that this claim is not substantiated by the information presented in the report. Contrary to this claim, the 2018 Report concludes that Project effects on caribou movements exceeded the threshold level. The GN is concerned that this exceedance has occurred and could occur in future years to a greater spatial extent and/or intensity without adaptive management being implemented. The GN notes that the 2018 Report does not include discussion of an adaptive management response to this finding. Additionally, the 2018 Report does not present quantitative analyses of this effect, which could inform adaptive management, despite data for such analyses are being

available.

**IMPORTANCE TO REVIEW AND SUPPORTING RATIONALE**

The 2018 Reports states that:

> "The AWAR, Vault Haul Road, and Whale Tail Haul Road survey data are important for documenting time periods when the area near the road is utilized by various wildlife species and for evaluating the need, if any, for implementing adaptive management (e.g., temporary road closures and radio announcements). Moreover, Caribou density can be compared graphically across years, which can be used to track changes in density and preferential migration corridors. The road sections with higher use are prioritized for temporary road closures, speed reductions or additional adaptive management strategies. The road survey data are used in conjunction with satellite-collaring and mortality data to successfully manage road operations during heavy wildlife use periods." (AEM 2019, appendix 45, section 3.8)

The GN notes that this claim of success in managing Project roads to avoid or minimize effects on caribou is not substantiated by monitoring results or other evidence presented in the 2018 Report. Contrary to this claim, the 2018 Report concludes that the Environmental Impact Statement predictions and the monitoring threshold for sensory disturbance of caribou were exceeded in 2018 (AEM 2019, appendix 45, tables 3.12 and 6.1). Migrating caribou appeared to exhibit significant deflection and delayed crossing in response to Project roads (AEM 2019, appendix 45, figures 6.7 and 6.8, sections 6.6 and 6.7).

It is also noted in the 2018 Report that the response to this exceedance was the implementation of adaptive management in the form of:

> "Multiple road closures and notices. Use of Decision Tree for Management and Monitoring. Ongoing analysis by GN (in partnership with Agnico Eagle)" (AEM 2019, appendix 45, table 6.1)

However, the GN disagrees that this constitutes an adaptive response to exceedance of the monitoring threshold. The road closures and use of decision trees were existing measures in place at the time the effects (and exceedances) occurred in 2018. The effects on caribou movement occurred despite these measures being in place. Thus, they do not represent an adaptive response to what appears to be a failure of the Project's CPMs. The 2018 Report does not discuss why the existing CPMs failed to prevent exceedance of the threshold. The 2018 Report does not assess whether the CPMs were properly implemented or whether certain aspects require improvement. Overall, the 2018 Report does not identify any new CPMs or other adaptive management measures beyond those presently specified in the TEMP. This leaves the GN concerned that similar effects on caribou movement will occur repeatedly in future years and may increase in spatial extent and intensity once the more heavily used of the Project's roads (the Whale Tail Haul Road) begins its full operation in 2019. The GN finds this lack of adaptive response unacceptable.

The 2018 Report presents a qualitative description of Project effects on caribou movements (AEM 2019, appendix 45, section 6) including maps of the movements of collared individuals. The GN is concerned that the 2018 Report does not present quantitative analyses, pursuant to

Term and Condition No. 28, when data on both caribou movements in the vicinity of roads and the monitoring and mitigation measures that were in operation over the same periods are available. This type of analysis could inform all parties regarding the magnitude of observed effects on caribou and facilitate a greater understanding of how existing CPMs are, or are not, working. This would ultimately allow for effective adaptive management.

The GN feels that it is prudent to undertake a detailed investigation on the possible reason for the observed exceedance of the caribou disturbance threshold A possible reason could be the incomplete/inconsistent application of the Project's Caribou Protection Measures along roads. Levels of caribou monitoring (i.e. road surveys and height-of-land surveys) implemented in 2018 were below the minimums specified in the TEMP. In addition, there were potentially some instances where the observation of large groups of caribou in 2018 should have triggered road closures that did not occur. The combination of insufficient levels of monitoring and a failure to trigger road closures may account, to some extent, for the observed effects on caribou.

**RECOMMENDATION(S)**

The GN offers the following recommendations to the Board with respect to this issue:

- That the Proponent should explain in detail what adaptive management measures (over and above existing caribou protection measures in the TEMP (version 6)) will be taken in 2019 and in future years in response to the 2018 Report's finding that disturbance of caribou exceeded threshold levels. In particular, please explain how this finding will influence management of the Whale Tail Haul Road and any revisions to the TEMP that are proposed by the Proponent. The Proponent's response should come in the form of an open letter to both the GN and NIRB.

- That future Annual Reports include quantitative analyses of road effects on the movement and distribution of caribou that incorporate concurrent data on recorded traffic levels, caribou monitoring activities and road management measures that are implemented.

| GN-05: Problem Carnivors | |
|---|---|
| **Department** | Environment |
| **Organization** | Government of Nunavut |
| **Subject/Topic** | Problem carnivores and project-related mortalities |
| **Terms and Conditions** | No. 28 (Project Certificate 008) |
| **References** | • Agnico Eagle Mines (AEM) Limited. (2019). Meadowbank Gold Project 2018 Annual Report, Appendix 45 (Meadowbank and Whale Tail 2018 Wildlife Monitoring Summary Report), section 4.5.5 - Predatory Mammal Deterrence and Protection<br>• Agnico Eagle Mines (AEM) Limited. (2019). Meadowbank Gold Project 2018 Annual Report, Appendix 45 (Meadowbank and Whale Tail 2018 Wildlife Monitoring Summary Report), Table 4.1 - Wildlife Presence Requiring Action (from Appendix E).<br>• Agnico Eagle Mines (AEM) Limited. (2019). Meadowbank Gold Project 2018 Annual Report, Appendix 45 (Meadowbank and Whale Tail 2018 Wildlife Monitoring Summary Report), Table 4.3 - Summary of Deterrence Activities at the Meadowbank Mine and Whale Tail Sites from 2015 to 2018.<br>• Agnico Eagle Mines (AEM) Limited. (2019). Meadowbank Gold Project 2018 Annual Report, Appendix 45 (Meadowbank and Whale Tail 2018 Wildlife Monitoring Summary Report), Table 4.5 - Summary of Mine Site Wildlife Fatality Records for Caribou and Predatory Mammals (2007 to 2018).<br>• Agnico Eagle Mines (AEM) Limited. (2019). Meadowbank Gold Project 2018 Annual Report, Appendix 45 (Meadowbank and Whale Tail 2018 Wildlife Monitoring Summary Report), Table 4.6 - Accuracy of Impact Predictions – Mine Site Wildlife Disturbances<br>• Terrestrial Ecosystem Management Plan (TEMP), version 6 |
| **IDENTIFICATION OF ISSUE** | |
| The Project has had persistent problems with predatory mammals, such as wolves and wolverines. Based on the information provided in the 2018 Annual Report (2018 Report), it is evident that the Environmental Impact Statement (EIS) predictions regarding Project-related mortality of predatory mammals has been exceeded in 9 of the last 12 years. The GN is concerned that adaptive management is not being effectively applied to bring this mortality below predicted levels. | |
| **IMPORTANCE TO REVIEW AND SUPPORTING RATIONALE** | |

The 2018 Report summarizes Project interactions with predatory mammals such as wolves, bears and wolverine, including mortalities. The 2018 Report indicates that:

> "Wolverines were regularly observed around the Meadowbank and Whale Tail sites primarily during the winter months in 2018 (see Table 4.2, Figure 4.1, and Appendix E). Deterrence actions, which followed the Wildlife Protection and Response Plan (Appendix C in 2018 TEMP), were required on 17 occasions primarily in January and February (Table 4.1). One Wolverine, which was not successfully deterred from the site was dispatched on 13 January (see Section 4.5.6.2 and Table 4.3). Well-defined food-handling practices and employee awareness programs have minimized Wolverine fatalities or Wolverine-human interactions; however, an increase in deterrence efforts in 2018 (see Table 4.3) will be tracked to determine whether the trend continues in 2019.
>
> Wolves were also regularly observed around the Meadowbank and Whale Tail sites during the winter months in 2018 (see Table 4.2, Figure 1, and Appendix E). Deterrence actions were required on 14 occasions in January, February, April, and December (Table 4.1). One Wolf, which was not successfully deterred from the site, was dispatched on 25 January (see Section 4.5.6.2 and Table 4.3). Notices were sent on a weekly basis to Meadowbank employees regarding the presence of wildlife, waste management procedures, and requesting all sea cans and doorways be closed. An increase in deterrence efforts in 2018 (see Table 4.3) will be tracked to determine whether the trend continues in 2019." (AEM 2019, appendix 45, section 4.5.5)

With respect to this section of the 2018 Report, the GN notes the following concerns:

- In 2018, most of the interactions between the Project and wolves or wolverines that required actions such as use of deterrents or euthanasia occurred in winter (Dec-March) and spring (April) (AEM 2019, appendix 45, Table 4.1). The report does not explain why interactions peaked during this period, what specific attractants, if any, were present at the Project, and what adaptive management is planned to address the problem.
- The reference to Appendix E as a source of details regarding Project interactions with predatory mammals is incorrect. Appendix D appears to be the correct source.
- There are apparent inconsistencies between information provided in tables 4.1 and 4.3 versus the text in section 4.5.5 regarding the frequency of successful and unsuccessful deterrent actions and the dispatching of predatory mammals in 2018 (AEM 2019, appendix 45). For example, the unsuccessful deterrent actions for a wolverine and wolf on Jan 13 and 25, respectively, that are referred to in section 4.5.5 do not appear in table 4.1. Additionally, table 4.1 suggests that 2 wolves were not successfully deterred on February 23 and April 19. Section 4.5.5 does not mention whether these individuals were dispatched. The 2018 Report does not specify whether or not these animals were euthanized.
- Table 4.3 suggests that deterrent activities for wolf and wolverine have increased between 2015 and 2018. The report does not clarify whether this trend reflects increasing problems with these species or increasing deterrent efforts.

Table 4.6 of the 2018 Report (AEM 2019, appendix 45) indicates that Project-related mortality of predatory mammals in 2018 did not exceed the monitoring threshold. The GN notes the following with respect to this conclusion:

- The threshold presented in this table is “Destruction of two (2) problem Grizzly Bear or Wolverine per year.” This is different from the threshold specified in the Terrestrial Ecosystem Management Plan which is “Two individuals of the same species in a year” including wolverine, wolf and grizzly bear (TEMP version 6, table 18). Two wolves were dispatched in 2018 suggesting that the threshold was reached. Data presented in table 4.5 (AEM 2019, appendix 45) suggest that the Project has been at or above this threshold for wolves in 5 of last 12 years.
- The EIS predicted that "Predatory Mammals will not be killed as a result of Project activities” (TEMP version 6, table 18). Data presented in table 4.5 of the 2018 Report suggests that the Project has exceeded this prediction for 9 of the last 12 years including 2018 (AEM 2019, appendix 45).

Overall, the 2018 Report highlights that the Project has a persistent, if not increasing problem, with predatory mammals. The 2018 Report does not indicate what additional adaptive management will be taken in 2019 to address this problem.

**RECOMMENDATION(S)**

The GN offers the following recommendations to the Board with respect to this issue:

1) That the Proponent should clarify apparent discrepancies between table 4.1 and section 4.5.5 of the Annual Report (AEM 2019, appendix 45) in the reporting of predatory mammal interactions with the Project, as noted above.
2) That the Proponent should explain: (i) why interactions in 2018 with wolf and wolverine peaked from Dec to April; (ii) what attractants, if any; were present at the Project during this period; (iii) what adaptive management is planned to address the problem.
3) That the Proponent should clarify whether the trend of increasing deterrent actions against wolf and wolverine (2015-2018) reflects increasing problems with these species or increasing deterrent efforts. Please present available evidence.
4) That the Proponent should indicate what additional adaptive management will be taken in 2019 to address what appears to be a persistent, if not increasing, problem with predatory mammals.
5) That the Proponent should retain an independent specialist to conduct a site inspection and audit of the Project to recommend additional adaptive management for predatory mammals, where appropriate. That the results of this audit be submitted to NIRB.

The Proponent’s response to GN recommendation 1-4 should take the form of an open letter to both the GN and NIRB.

| GN-06: Hunter Harvest Study | |
|---|---|
| **Department** | Environment |
| **Organization** | Government of Nunavut |
| **Subject/Topic** | Hunter Harvest Study |
| **Terms and Conditions** | Nos. 28 (Project Certificate 008), and 54(e) (Project Certificate 004) |
| **References** | • Agnico Eagle Mines (AEM) Limited. (2019). Meadowbank Gold Project 2018 Annual Report, section 8.18.1.2 - Harvest Study Results<br>• Agnico Eagle Mines (AEM) Limited. (2019). Meadowbank Gold Project 2018 Annual Report, Appendix 45 (Meadowbank and Whale Tail 2018 Wildlife Monitoring Summary Report), section 10.1 – Overview<br>• Agnico Eagle Mines (AEM) Limited. (2019). Meadowbank Gold Project 2018 Annual Report, Appendix 45 (Meadowbank and Whale Tail 2018 Wildlife Monitoring Summary Report), section 10.1 – Objectives<br>• Government of Nunavut (2017). Technical review comments for the NIRB's review of the Whale Tail Pit Project. |

**IDENTIFICATION OF ISSUE**

The 2018 Annual Report (2018 report_ indicates that the Hunter Harvest Study (HHS) will be re-started in 2019. The study's design will be similar to previous years. This design will not address previous concerns with the HHS or fulfill commitments for harvest data collection made in the Project's Terrestrial Ecosystem Management Plan (TEMP). The GN suggests that failure to fully implement the TEMP will be non-compliant with Terms and Conditions Nos. 28 (NIRB Project Certificate 008) and No. 54(e) (NIRB Project Certificate 004).

**IMPORTANCE TO REVIEW AND SUPPORTING RATIONALE**

The 2018 Report discusses progress in restarting the Hunter Harvest Study noting that:

The Proponent had planned to create a Hunter Harvest Study (HHS) Committee in 2018 but did not citing:

- Third party projects in the community causing confusion;

- Limited resource availability; and
- Tight timelines for implementation of alternative data collection methods (AEM 2019, section 8.18.1.2)

The Proponent has outlined its future plans for the HHS as follows:

> "Agnico Eagle is already started planning the 2019 HHS for March 2019. The study approach will be similar to previous years but suggestions and guidance received during the consultation period will be incorporated into the study. Study results for 2019 will be presented in the 2019 annual report.
>
> This HHS approach will include:
>
> 1. Liaising with HTO members, the community liaison officer, and other stakeholders with an interest in the Baker Lake Hunter Harvest Study (Q1 2019, completed);
>
> 2. Preparing and distributing 2019 and 2020 hunter harvest calendars (Q1 2019, completed);
>
> 3. Building relationships with hunters/participants in the HHS and corresponding on a quarterly or more frequent basis (Quarterly);
>
> 4. Conducting frequent field visits in 2019 to distribute calendars, sign up hunters/participants, promote the study, and build relationships in the community (all year);
>
> 5. Conduct field visits in early 2020 to collect remaining 2019 data from participants, distribute prizes, hand out 2020 calendars, and identify other potential participants; and
>
> 6. Conduct preliminary data management, analysis, and writing for the 2019 annual report.
>
> Moving forward Agnico Eagle intends to continue working with the GN, KIA and HTO to ensure a representative number of participants and long term success of the program. The HHS, including creel surveys, is implemented in 2019 with the collaborative approach.
>
> f. Details of annual aerial surveys to be conducted" (AEM 2019, section 8.18.1.2)

The 2018 Report also indicates that

> "Following consultation with the HTO, KivIA, GN, and other agencies in November 2016 (Winnipeg) and June 2017 (Ottawa), Agnico Eagle reinitiated the HHS in March 2019. The study approach will be similar to previous years but suggestions and guidance received during the consultation period will be incorporated into the study." (AEM 2019,

appendix 45, section 10.1)

The GN notes the following concerns with respect to re-starting the Hunter Harvest Survey (HHS) in 2019, as described in the Annual Report:

- The GN was not aware that a formal consultation period had been initiated and closed by the Proponent for a renewed HHS. The GN participated in meetings of the Terrestrial Advisory Group (TAG) at which the HHS was discussed. However, it was the GN's understanding that a consultant had been hired by the Proponent to undertake a review of the study design to ensure study objectives will be achieved. As part of this review further discussion with the TAG was to occur.
- The GN is concerned that re-starting the HHS using the previous study design will not address past problems in interpreting and applying the results (e.g. GN 2017, Technical Comment 12). Notably, as stated in the 2018 Report, the objective of the HHS is to be achieved by estimating two key metrics one of which is:

  > "The total level (or an index of) Caribou, Muskox, and Wolverine harvest by residents of Baker Lake." (AEM 2019, appendix 45, section 10.2)

  It is unclear how re-starting the HHS using the previous design will allow estimation of this metric since this design, as acknowledged by the Proponent (see GN 2017, Technical Comment 12), did not previously allow estimation of this metric.
- The 2018 Report seems to suggest that development of a new strategy and study design for the HHS has been put on hold. It does not indicate how long this delay will be.

Overall, the GN is concerned that the TEMP's provisions for a HHS are not being implemented in accordance with Terms and Conditions Nos. 28 (NIRB Project Certificate 008) and 54(e) (NIRB Project Certificate 004).

**RECOMMENDATION(S)**

The GN offers the following recommendations to the Board with respect to this issue:

- That the Proponent should explain in detail how the design of the HHS being employed in 2019 will permit estimation of the total level (or an index of) caribou, muskox, and wolverine harvest by residents of Baker Lake.
- That the Proponent should clarify whether a revised HHS strategy, including a revised study design for estimating the two key metrics specified in section 10.2 of the Annual Report (AEM 2019, appendix 45) will be developed, when this will be completed and the schedule for implementation.
- That the Proponent should clarify whether a consultant is currently retained to undertake this HHS revision.
- That the Proponent should clarify what further consultations are planned regarding revision of the HHS including consultation with the TAG.

The Proponent's response for these recommendations should be in the form of an open letter

to both the GN and NIRB.

| GN-07: Blasting Activities | |
|---|---|
| **Department** | Environment |
| **Organization** | Government of Nunavut |
| **Subject/Topic** | Wildlife Monitoring and Mitigation for Blasting Activities |
| **Terms and Conditions** | No. 28 (Project Certificate 008) |
| **References** | • Nunavut Impact Review Board (NIRB). (2017). Final Hearing Report. Agnico Eagle Mines Ltd. Whale Tail Pit Project. NIRB File No. 16MN056<br>• Terrestrial Ecosystem Management Plan (TEMP), version 6 |

## IDENTIFICATION OF ISSUE

The Project's Terrestrial Ecosystem Management Plan (TEMP) specifies that blasting for mining and construction activities will be postponed when caribou are in the vicinity of the Project. This mitigation is supported by monitoring. The 2018 Annual Report (2018 Report) does not present information on implementation of monitoring and mitigation measures for wildlife that occurred in 2018 in relation to blasting activities. It is unclear whether these measures were implemented.

## IMPORTANCE TO REVIEW AND SUPPORTING RATIONALE

The TEMP specifies that blasting will be postponed when caribou are within a certain distance of a blast site (TEMP, version 6, figure 9 and table 6). This mitigation is supported by monitoring to detect the presence of caribou.

Additionally, in accordance with commitments made by the Proponent during NIRB's review of the Whale Tail Pit Project (WT Project) (NIRB 2017, appendix B), the WT Project's TEMP was to be revised to include:

- A provision for suspension of blasting activities at the Whale Tail site when caribou above the specified seasonal group size threshold are present within 4 km of the blast site. This provision shall apply year-round except during calving season when the buffer shall be increased to 5 km when cows with calves are present (Commitment 15);
- A provision for mandatory suspension of blasting when groups of muskox above the specified group size threshold are observed within 1km of blasting activities (Commitment 29); and
- The conduct of surveys prior to <u>each</u> blast to detect caribou and other wildlife within the no-blasting buffers specified in TEMP (Commitment 17).

The 2018 Report does not provide information on monitoring or mitigation that occurred in relation to wildlife and blasting activity. It is therefore unclear whether this part of the TEMP is being applied, as required under Term and Condition No. 28 (NIRB Project Certificate 008)

**RECOMMENDATION(S)**

The GN offers the following recommendations to the Board with respect to this issue:

1) The Proponent should provide information on blasting activities that occurred along the Haul Road and at Project mine sites in 2018. This should include details (in table format, included with the Proponent's other responses to the GN and NIRB) of wildlife surveys that were conducted and mitigation measures for caribou and muskox that were applied with reference to the no-blasting buffers.

| GN-08: Terrestrial Ecosystem Management Plan | |
|---|---|
| **Department** | Environment |
| **Organization** | Government of Nunavut |
| **Subject/Topic** | Terrestrial Ecosystem Management Plan |
| **Terms and Conditions** | No. 28 (Project Certificate 008) |
| **References** | • Agnico Eagle Mines (AEM) Limited. (2019). Meadowbank Gold Project 2018 Annual Report, section 8.18 – Terrestrial Ecosystem Management Plan<br>• Government of Nunavut (2017). Final written submission for the NIRB's review of the Whale Tail Pit Project.<br>• Terrestrial Ecosystem Management Plan (TEMP), version 6<br>• Nunavut Impact Review Board (NIRB). (2017). Final Hearing Report. Agnico Eagle Mines Ltd. Whale Tail Pit Project. NIRB File No. 16MN056 |

## IDENTIFICATION OF ISSUE

Since issuance of the certificate for the Approved Project (NIRB Project Certificate 008), the Terrestrial Ecosystem Management Plan (TEMP) has not been updated to reflect some of the commitments made regarding caribou mitigation measures during the final hearing for the Whale Tail Pit project. Many of these commitments were intended to enhance the protection measures employed to mitigate Project effects on caribou. The GN is concerned that the Proponent is accordingly not compliant with Term and Condition No. 28 (NIRB Project Certificate 008).

## IMPORTANCE TO REVIEW AND SUPPORTING RATIONALE

Term and Condition No. 28 (NIRB Project Certificate 008) states that:

> "The Proponent shall maintain a Terrestrial Ecosystem Management Plan (TEMP) throughout all phases of the Project. The Plan shall include detailed monitoring, mitigation, and adaptive management measures for wildlife, with consideration for each Project activity predicted to affect wildlife, and with inclusion of specific triggers for mitigation and adaptive management intervention. The TEMP shall demonstrate consideration for all relevant commitments made by the Proponent throughout the Nunavut Impact Review Board's review of the Project."

The 2018 Annual Report (2018 Report) states that:

> "Agnico submitted the TEMP Version 5 in June 2018. This new version includes final revisions following hearings and receipt of NIRB Whale Tail Project Certificate no. 008.

> Agnico is submitting via the 2018 Annual Report an updated TEMP Version 6, December 2018 (Appendix 51) to fully comply with the Project Certificate and also to reflect discussions held at the TAG meeting." (AEM 2019, section 8.18)

The GN does not share the Proponent's view that the latest version of the TEMP is fully compliant with Term and Condition No. 28 of the NIRB Whale Tail Project Certificate no. 008. Since issuance of this certificate, in March 2018, the TEMP has been revised twice (versions 5 and 6). Despite this, the latest version (version 6) does not reflect numerous commitments for revisions during review of the Whale Tail Project; some of which were scheduled to occur within 1 year of project certification. These commitments are summarized in Table 1 attached to this submission.

Since issuance of the certificate, the GN has worked with the Proponent via the Terrestrial Advisory Group and has requested that the Proponent incorporate relevant revisions to the TEMP to reflect commitments made during the final Whale Tail Pit Project final hearing. It is the GN's view that there has been ample time to incorporate these commitments in a revised TEMP. At the present time, the GN is uncertain whether, how and/or when these commitments will be fulfilled.

**RECOMMENDATION(S)**

The GN offers the following recommendations to the Board with respect to this issue:

1) The Proponent should provide a revised version of the TEMP that reflects all commitments (#1 through 37) made during the NIRB review of the Whale Tail Pit Project, as presented in Appendix B of the final hearing report (NIRB 2017).
2) To accompany this revised TEMP, the Proponent should provide a conformity table referencing the sections of the TEMP that address each commitment.
3) The 2019 Annual Report should provide information to demonstrate how commitments made during the NIRB review of the Whale Tail Project have been implemented.

| GN-09: Height of Land Surveys | |
|---|---|
| **Department** | Environment |
| **Organization** | Government of Nunavut |
| **Subject/Topic** | Height-of-Land Surveys along the Whale Tail Haul Road |
| **Terms and Conditions** | No. 28 (Project Certificate 008) |
| **References** | • Agnico Eagle Mines (AEM) Limited. (2019). Meadowbank Gold Project 2018 Annual Report, Appendix 45 (Meadowbank and Whale Tail 2018 Wildlife Monitoring Summary Report), section 7.2 – Objectives<br>• Agnico Eagle Mines (AEM) Limited. (2019). Meadowbank Gold Project 2018 Annual Report, Appendix 45 (Meadowbank and Whale Tail 2018 Wildlife Monitoring Summary Report), section 7.3 – Duration<br>• Agnico Eagle Mines (AEM) Limited. (2019). Meadowbank Gold Project 2018 Annual Report, Appendix 45 (Meadowbank and Whale Tail 2018 Wildlife Monitoring Summary Report), table 7.1 – Height-of-Land Survey Data Along the Whale Tail Haul Road in 2018<br>• Agnico Eagle Mines (AEM) Limited. (2019). Meadowbank Gold Project 2018 Annual Report, Appendix 45 (Meadowbank and Whale Tail 2018 Wildlife Monitoring Summary Report), table 3.12 - Accuracy of Impact Predictions – Sensory Disturbance and Mortality along the AWAR, Vault Haul Road, and Whale Tail Haul Road<br>• Nunavut Impact Review Board (NIRB). (2017). Final Hearing Report. Agnico Eagle Mines Ltd. Whale Tail Pit Project. NIRB File No. 16MN056<br>• Terrestrial Ecosystem Management Plan (TEMP), version 6 |

**IDENTIFICATION OF ISSUE**

With respect to the Whale Tail Pit project, the objective of Height-of-land (HOL) surveys is to provide an early warning system for detecting the presence of caribou in proximity to the Whale Tail Pit and Haul Road. This surveillance system provides a trigger for implementing mitigation measures including road closures during caribou migratory seasons.

In 2018, HOL survey effort, as reported in the 2018 Annual Report (2018 Report), was below minimums specified in the Project's Terrestrial Ecosystem Management Plan (TEMP). The GN has previously expressed concerns that even these minimums are too low and the Proponent had committed to increase HOL survey effort. To date, the Proponent has not fulfilled this commitment. The finding that HOL survey effort in 2018 was below these already low

minimums is a significant concern.

The GN is of the view that HOL surveys as implemented in 2018 and specified in the TEMP do not provide an effective early warning system for implementing caribou protection measures. The 2018 Report's conclusion that disturbance of migrating caribou exceeded the monitoring threshold may be explained in part by the low level of HOL survey effort combined with low levels of road survey effort in 2018 (the other key mechanism for detecting caribou near the Project).

The GN is concerned that the Proponent is non-compliant with term and condition 28 (NIRB Project Certificate 008) because HOL survey effort in 2018 was below minimums specified in the TEMP and the TEMP has not been revised to increase HOL effort, in accordance with commitments made during NIRBs review of the Whale Tail Project.

**IMPORTANCE TO REVIEW AND SUPPORTING RATIONALE**

As part of the Caribou Protection Measures in the Project's TEMP, HOL surveys are conducted along the Haul Road to:

> "[P]rovide an 'early warning' system of the presence of Caribou in proximity to the Whale Tail Pit and Haul Road." (AEM 2019, appendix 45, section 7.2)

These surveys are scheduled to:

> "[B]e conducted once per week from January to April and from July to August. From May to June and September to December, the prime migratory period for Caribou, the frequency of surveys will increase to twice per week unless triggers (see Section 9) require surveys every two days." (AEM 2019, appendix 45, section 7.3)

In 2018, 15 HOL surveys totaling only 300 minutes of observation were conducted from September to December (AEM 2019, appendix 45, table 7.1). The GN is concerned about this reported survey effort for the following reasons:

- As an 'early warning' system to trigger measures designed to reduce disturbance of migrating caribou (e.g. road closures), 300 minutes of HOL surveys over a period of 12 months is inadequate by any reasonable standard. This represents 0.05% of the time that caribou could have interacted with the Haul Road in 2018; meaning that for 99.95% of the year there was no 'early warning' system in place.

- The level of HOL survey effort in 2018 was well below the minimums specified in the TEMP. Based on the minimum frequency of survey effort specified in the TEMP, at least 80 HOL surveys should have been conducted in 2018 (TEMP version 6, section 3.5.2.6 and table 14). For the period September to December, when 14 of the 15 HOL surveys were conducted, at least 32 surveys should have been conducted. Overall, HOL survey effort in 2018 was less than 20% of the minimum that should have been conducted if the TEMP was being fully implemented. This does not account for a further increase in

survey efforts that should have been triggered when caribou were observed near the Haul Road.

- No HOL surveys were conducted during the spring migration (April-May) which is identified in the TEMP as a sensitive season for caribou when monitoring levels are supposed to increase along the Haul Road. This means that no 'early warning' system was in place during this sensitive season. As only a single road survey occurred in the spring the detection of caribou during the spring migration of 2018 relied on incidental observations by Haul Road users. The GN finds this the lack of dedicated surveillance for caribou unacceptable.

- Caribou observations and subsequent closures of the Haul Road occurred in 2018 (AEM 2019, appendix 45, table 3.9) but it appears from the 2018 Report that the frequency of HOL survey effort did not increase concurrently to every 2 days, as specified in the TEMP (TEMP version 6, section 3.5.2.6 and table 14).

- HOL surveys are supposed to occur during all phases of the Project that have potential to interact with caribou including construction and operations phases. 2018 was a construction year for the Whale Tail Project.

- The GN has repeatedly expressed concern that the minimum frequency of HOL surveys, as specified in the TEMP (versions 5 and 6), is too low and will not provide the 'early warning' system needed to protect caribou from adverse impacts of the Haul Road. The fact that survey effort in 2018 was below the levels specified in the TEMP, levels the GN already considers too low, is of great concern. Neither the TEMP in its current form nor the survey effort implemented in 2018 reflects the commitment to increase survey effort made by the Proponent during the NIRB's review of the Whale Tail Pit project.

- Given the low levels of HOL surveying and road surveying in 2018, including a near total lack of reported surveying during the spring migration, it appears that implementation of the Project's caribou protection measures was highly dependent on incidental observations of caribou made by people using the Haul Road. These observations are short range in nature resulting in a decrease in their effectiveness in use as a preventative measure for disturbance. . This lack of surveillance may have contributed to the observed deflection of caribou from the road in 2018, as reported in the 2018 Report (AEM 2019, appendix 45, table 3.12).

Overall, the GN finds that survey effort to support caribou protection measures was unacceptably low in 2018; below the minimums specified in the TEMP for each type of survey. Further the minimums specified in the TEMP are themselves too low and have not been increased in accordance with commitments made the Proponent during the NIRB's review of the Whale Tail Pit project. The GN is of the view that the Proponent is accordingly non-compliant with term and condition 28 (NIRB Project Certificate 008).

| RECOMMENDATION(S) |
| --- |
| The GN offers the following recommendations to the Board with respect to this issue:<br><br>1. That the Proponent should explain why the number of HOL Surveys conducted in 2018 was less than 20% of the minimum number specified in the Project's TEMP.<br>2. That the Proponent should explain why HOL surveys were not conducted during the spring caribou migration.<br>3. That the Proponent should explain why the frequency of HOL surveys was not increased to every 2 days in 2018 in response to observations of caribou and subsequent Haul Road closures.<br>4. The Proponent should provide a revised version of the TEMP that reflects the commitment made during the NIRB's review of the Whale Tail Pit project to increase the frequency of HOL surveys (NIRB 2017, Appendix B).<br>5. The 2019 Annual Report should provide information to demonstrate how the commitment to increase HOL survey frequency has been implemented and how this method of survey is providing an effective 'early warning' system to detect caribou approaching the Haul Road.<br><br>The Proponent's response to recommendations 1-3 should come in the form of an open letter submitted to both the GN and NIRB. |

| GN-10: Road Mitigation for Caribou | |
|---|---|
| **Department** | Environment |
| **Organization** | Government of Nunavut |
| **Subject/Topic** | Road Mitigation for Caribou |
| **Terms and Conditions** | Nos. 28, 30 (Project Certificate 008) |
| **References** | • Agnico Eagle Mines (AEM) Limited. (2019). Meadowbank Gold Project 2018 Annual Report, Appendix 45 (Meadowbank and Whale Tail 2018 Wildlife Monitoring Summary Report), Section 3.6.5 - Road-related Mitigation<br>• Agnico Eagle Mines (AEM) Limited. (2019). Meadowbank Gold Project 2018 Annual Report, Appendix 45 (Meadowbank and Whale Tail 2018 Wildlife Monitoring Summary Report), section 6.6 - Results<br>• Agnico Eagle Mines (AEM) Limited. (2019). Meadowbank Gold Project 2018 Annual Report, Appendix 45 (Meadowbank and Whale Tail 2018 Wildlife Monitoring Summary Report), section 6.7 – Caribou Migration Patterns<br>• Agnico Eagle Mines (AEM) Limited. (2019). Meadowbank Gold Project 2018 Annual Report, section 8.18.1.4 Caribou Collaring Study Meadowbank<br>• Agnico Eagle Mines (AEM) Limited. (2019). Meadowbank Gold Project 2018 Annual Report, Appendix 45 (Meadowbank and Whale Tail 2018 Wildlife Monitoring Summary Report), Appendix A - 2018 Road Survey Forms – Meadowbank AWAR and Vault Haul Road<br>• Agnico Eagle Mines (AEM) Limited. (2019). Meadowbank Gold Project 2018 Annual Report, Appendix 45 (Meadowbank and Whale Tail 2018 Wildlife Monitoring Summary Report), Appendix B - 2018 Road Survey Forms – Whale Tail Haul Road<br>• Agnico Eagle Mines (AEM) Limited. (2019). Meadowbank Gold Project 2018 Annual Report, Appendix 45 (Meadowbank and Whale Tail 2018 Wildlife Monitoring Summary Report), Appendix E – 2018 Wildlife Observations<br>• Terrestrial Ecosystem Management Plan (TEMP), version 6 |
| **IDENTIFICATION OF ISSUE** | |
| The 2018 Annual Report (2018 Report) contains several inconsistencies in the reporting of road closures for caribou and lacks clarity with respect to how reported road restrictions were implemented in-order to reduced disturbance of caribou. Of greatest concern to the GN is the apparent failure to close Project roads on numerous occasions in 2018 when groups of caribou | |

were observed. It appears that the caribou protection measures specified in the Project's Terrestrial Ecosystem Management Plan (TEMP), in the form of decision trees, are not being fully or consistently implemented. If this is the case, this would accordingly mean the Proponent is non-compliant with Terms and Conditions Nos. 28 and 30 (Project Certificate 008).

## IMPORTANCE TO REVIEW AND SUPPORTING RATIONALE

The 2018 Report provides information on the management of Project roads in response to the presence of caribou, including road closures to allow caribou to cross. The GN notes several areas where clarifications and/or additional information regarding road management are needed in-order for reviewers to determine whether the Project's caribou protection measures are being implemented properly. The GN is also concerned that the closure of roads in 2018 may not, in several instances, have been managed in accordance with the caribou protection measures specified in the Project's TEMP.

Road Closures for Caribou in 2018

The 2018 Report provides a summary of road-related mitigation in response to observations of caribou in 2018. This includes tables summarizing road closures and traffic restrictions along the All-Weather Access Road (AWAR), Vault Haul Road, and Haul Road (AEM 2019, appendix 45, table 3.7, 3.8, 3.9 respectively). The GN notes several inconsistencies between these tables and other parts of the 2018 Report, as follows:

- Information in table 3.7 does not match that appearing in table 4.1 which lists wildlife observations made in 2018 that required action. For example, table 4.1 indicates that the AWAR was closed August 12, 13 and 21. These closures are not listed in table 3.7. The 2018 Report does not explain this inconsistency.

- Review of the 2018 Report's appendices shows that there were numerous days during the spring and fall caribou migrations when caribou, in groups greater than the Group Size Thresholds (GST) specified in the TEMP and under Term and Condition No. 30 (NIRB Project Certificate 008), were observed within 1.5 km of the AWAR or Haul Road; typically within a range of 500m. Examples of days when these observations were recorded are listed in table 1 below. In accordance with the caribou protection measures specified in the TEMP, these observations should have triggered a road closure to non-essential vehicles (TEMP version 6, Figures 7 and 8). However, these closures are not reported in tables 3.7 to 3.9, table 4.1 or in other parts of the 2018 Report. It is unclear why road closures were not implemented on these days. The GN is concerned that the Project's caribou protection measures are not being properly implemented.

Table 1. Days in 2018 when caribou, in groups exceeding GSTs, were observed near Project roads but road closures were not implemented.

| Source | Days Observations Made | Road |
|---|---|---|
| Appendix A (AEM 2019) | April 4, 24. May 8, 11, 18, 25. Sept 25, 28. Oct 1. Nov 15 | AWAR |

| | | |
|---|---|---|
| Appendix B (AEM 2019) | April 19. Oct 17, 24, 25. | Haul Road |
| Appendix E (AEM 2019) | April 2, 7, 8, 9, 10, 24, 25. May 24. Oct 22, 28, 31. Nov 8, 9, 15, 16 | AWAR |
| Appendix E (AEM 2019) | Sept 22, 26, 27 | Haul Road |

For the Whale Tail Pit Haul Road, road restrictions related to ungulate activity caribou are summarized in table 3.9 (AEM 2019, appendix 45). The table provides that traffic was "restricted" on difference occasions but does not define what the term "restricted" means. Additionally, there is no additional information regarding decisions to allow partial travel or partial activity when the Haul Road was otherwise closed. This lack of information hinders reviewers' ability to meaningfully analyze the effectiveness of all road mitigation measure.

The 2018 Report indicates that during the period September 16 to October 14:

> **"**Some of the Lorillard and Wager Bay animals that did not cross the Meadowbank Road during late summer crossed successfully during the fall season, particularly those animals north of Whitehills Lake (see Figures 6.2, 6.5 and 6.8). Others, primarily along the Whale Tail Haul Road north of the Vault and south of Whitehills Lake appeared to move away from the road in a northeastern direction, remaining east of the road during the fall rut (see Figures 6.2 and 6.8). Mine records indicate that small to moderate groups of Caribou were seen within the mine LSAs during the fall period (see Table 4.2 and Appendix E). Only one road closure on 27 September along the Meadowbank AWAR was required during this period (see Table 3.4 and Table 4.1)." (AEM 2019, appendix 45, section 6.6)

With respect to this statement the GN notes the following:

- Contrary to suggestions in the 2018 Report, the Meadowbank AWAR road closure on September 27 does not appear to be a response to the observation of caribou near the road; a response specified in the Project's TEMP. Neither Appendix E nor table 4.2 of the 2018 Report lists any caribou observations along the AWAR from September 22 to 30. It appears the timing and duration of this road closure was not based on caribou monitoring information.

- As noted above, in table 1 of this GN comment, observations of caribou above the GSTs were made on several days in September and October. These should have triggered closure of the AWAR but according to the 2018 Report did not.

- The GN provided maps of the locations of collared caribou to the Proponent on a daily basis during spring and fall migration periods. As is discussed in the 2018 Report and also evident from these maps, the September 27 road closure occurred after the bulk of collared animals had been deflected several times in their attempts to cross the road. The GN is concerned that this one-day road closure occurred too late, after adverse effects on migrating caribou, spanning a period of several weeks, had already occurred. It is unclear why the AWAR was not closed earlier and for longer during the fall

migration in response to the collar information provided to road managers and the ground-based observations of Project personnel. The Project's caribou protection measures are meant to be applied proactively to prevent adverse effects rather than being applied after these effects have occurred.

Deflection of Caribou and Available Collar Data

The 2018 Report acknowledges that a significant deflection of caribou from Project roads occurred in 2018, stating that:

> "Collared animals are observed throughout the RSA (typically around spring and fall migratory periods). A pattern of animals being deflected from the AWAR is evident based on an analysis of data from 2011 to 2018 (Figures 6.7 and 6.8)." (AEM 2019, appendix 45, section 6.7)

With respect to the report's findings the GN notes that

inspection of figures 6.7 and 6.8 suggests that caribou were also deflected by the Haul Road during their spring migration in 2018. The GN is concerned that once more collared animals are observed interacting with the Haul Road and once haul truck traffic begins to use the Haul Road, this observed pattern of deflection will worsen.

As required under Term and Condition No. 57 (NIRB Project Certificate 004) and Term and Condition No. 29 (NIRB Project Certificate 008), the Proponent participates in a caribou collaring program in collaboration with the GN. The 2018 Report states that:

> "The satellite-collaring program was developed to provide information on the distribution of Caribou occurring within the Meadowbank RSA and contribute data to ongoing satellite-collaring programs for the Ahiak, Qamanirjuaq, and other herds. The satellite-collaring program, along with GN DoE regional data, is an important monitoring and management tool that provides a regional perspective on Caribou activity near mine operations. Another key objective of the program is to provide timely information for the Caribou management and monitoring strategy at the Meadowbank and Whale Tail sites (i.e., Decision Tree approach; see 2018 TEMP)." (AEM 2019, section 8.18.1.4)

The 2018 Report does not indicate what investment was made by the Proponent in 2018 to deploy collars on caribou that are likely to interact with the Haul Road. It is thus unclear how the Proponent has attempted to fulfill the collaring program's objective of obtaining timely information to support implementation of the 'Decision Tree Approach'; an approach that requires near real-time information on the locations of caribou in-order to manage Project roads on a daily basis.

**RECOMMENDATION(S)**

The GN offers the following recommendations to the Board with respect to this issue:

1. That the Proponent should clarify the inconsistencies between tables 3.7 and 4.1 in the Annual Report with respect to road closures for caribou.
2. That the Proponent should explain why road closures were not implemented in response to observations of caribou made on the days listed in table 1 (above).
3. With respect to the reported closure of the AWAR on September 27, 2018, the Proponent should explain what information from caribou monitoring, on or around September 27, prompted the road closure. The Proponent should clarify where this information can be found in the 2018Report. The Proponent should advise what monitoring information formed the basis for reopening the road after September 27.
4. That the Proponent should explain why the AWAR was not closed earlier during fall migration in response to collar maps provided to road managers.
5. That the Proponent should outline what specific efforts and investment it made in 2018 to collect data on the movements of collared animals in proximity to the Haul Road in-order to support day-to-day road management and monitor Project effects.
6. That the Proponent should retain the services of a consultant to conduct an independent audit of the implementation of caribou protection measures for the Project. This audit should assess how the caribou decision trees within the TEMP are being implemented in each case when caribou are observed near the Project in 2019. Results of this audit should be appended to the 2019 Annual Report.
7. The Proponent should ensure that the caribou decision trees specified in the TEMP (TEMP version 6, figures 7 and 8) will be implemented in a consistent manner on every occasion caribou are observed.

The GN seeks the following clarifications with respect to Table 3.9 of the 2018 Report:

- For April 22, please explain what is meant by “restricted”. Does this mean the amount of traffic using this portion of the road was decreased? If so, how. If not, what restrictions were implemented. How does escorting of traffic reduce disturbance of caribou?
- For April 27, 28 and May 14, 15, 27, please explain what is meant by “restricted” in each of these cases.
- For May 4 the table indicates that the Haul Road was “Closed to all traffic; construction work allowed to continue between Vault Laydown and km 20”. Please explain what caribou monitoring (i.e. height-of-land surveys, road surveys etc) was being conducted on May 4 that supported the decision to continue construction. What information was obtained from this monitoring that led to the decision to continue construction? Where in the Annual Report is this monitoring information reported?
- For May 8 and 11, please explain whether the closures on these days are reported as caribou-related, or were the result of weather closures.
- For May 22 why was the road only closed for northbound traffic? What is different about southbound traffic that made it acceptable to continue while caribou were

crossing the road?

The Proponent's written deliverables to the GN's requests and recommendations should be presented in the form of an open letter to the both the GN and NIRB.

**Table 1.** Status of Proponent commitments from the Whale Tail Pit Project final hearing, with regard to revision of the Terrestrial Ecosystem Management Plan. (Commitments as submitted by the Proponent to final hearing and listed in the NIRB Final Hearing Report on the Whale Tail Project – Appendix B [NIRB 2017])

| No. | Subject | Commitment by AEM | Incorporated in TEMP (version 6.0)? | Notes |
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| 1 | Evaluation of Caribou Protection Measures | The Proponent shall conduct an evaluation of caribou protection measures employed by the Project. The components of this evaluation shall include the following: (a) Tests of the monitoring methods that are used to detect caribou near the Project in order to quantify: (i) the probability of detecting groups; (ii) the effective range of detection; and (iii) the spatial extent of detection capacity relative to the mitigation distance buffers; (b) The collection of additional data on caribou group sizes to confirm the relevance of group size thresholds used in mitigation; (c) Collection and analyses of collar data to quantify the Zone-of-Influence (ZOI) associated with the Whale Tail Project, its haul road and the existing Meadowbank mine (and all-weather-access-road [AWAR]); (d) Collection and analyses of collar data to quantify the effects of the Whale Tail Project, its haul road and the existing Meadowbank mine (and AWAR) on the movements of caribou, in particular during migratory periods; (e) Collection of accurate records documenting the detection of caribou and the subsequent implementation of mitigation measures; and (f) Analyses of collar data comparing the movements of individuals that were and were not subject to the implementation of mitigation measures. The scope of this evaluation shall include the following: (a) A study area or areas that encompass the Whale Tail mine site, haul road, Meadowbank mine and all-weather-access-road (including all activities utilizing this infrastructure including on-going exploration), all of which are integral components of the Project; (b) The use of accepted scientific methods and experimental designs to provide quantitative information; (c) The engagement of recognized subject matter experts in each area of the evaluation; (d) Collection of data with sufficient statistical power to detect potential impacts; (e) Guidance on study designs, analyses and interpretation from the Project's Terrestrial Advisory Group (TAG); (f) The collection of data during both the construction and active mining phases of the Project; | Partially | This commitment is included in table 4 but plans for its implementation are not discussed, referenced or otherwise reflected in any other sections of the TEMP. |

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| | | (g) Completion of the evaluation within 5 years of Project commencement (beginning with construction) to ensure that any adverse effects or deficiencies in caribou protection measures are revealed prior to potential extensions in the use of Project infrastructure; (h) A technical report, as noted above in (g), for the evaluation to be submitted to NIRB; and If the Project's active mining life span is extended beyond that currently proposed (i.e. 2022), including extended use of the haul road to support other projects, the evaluation should be updated every 5 years. | | |
| 5 | Monitoring for CPM - Frequencies | Within 1 year of Project certification, the Proponent shall revise the TEMP to increase the frequencies of height-of-land, road and ground surveys for caribou compared to the current levels in the TEMP (v.4.0). Thereafter, further revisions may be made annually within the TEMP, taking into account ongoing project monitoring. The revisions shall adhere to advice provided by the TAG, as per the terms of reference. | No | Frequency of caribou monitoring listed in TEMP version 6 (Figures 6 to 9) is unchanged from version 4.0 |
| 6 | Monitoring for CPM – Height of Land and Road Surveys coverage | Within 1 year of Project certification, the Proponent shall revise the number of proposed height-of-land and road-side survey points to provide sufficient line-of-sight coverage to detect caribou within 4 km of the Project (including haul road and pit) with greatest coverage at known road crossing points (as determined from IQ, collar data and other observations, and reviewed by the TAG). Thereafter, further revisions may be made annually within the TEMP, taking into account ongoing project monitoring. The revisions shall adhere to advice provided by the TAG, as per the terms of reference. | No | |
| 7 | Monitoring for CPM – Caribou GST | Within 1 year of Project certification, the Proponent shall revise caribou group-size thresholds for adaptive management, taking into account the frequency of monitoring effort, spatial coverage of monitoring and likelihood of detecting groups of caribou, in order to ensure a majority (70%) of caribou are subject to enhanced mitigation (i.e. levels 1 through 3 of mitigation and monitoring as illustrated in figures 6 through 9 of the Terrestrial Ecosystem Monitoring Plan (TEMP), v4.0). Thereafter, further revisions may be made annually within the TEMP, taking into account ongoing project monitoring. The revisions shall adhere to advice provided by the TAG, as per the terms of reference. | No | |
| 10 & 13 | Caribou Monitor – Level 2 | Within 1 year of Project certification, the Project's TEMP shall be revised to reduce reliance on the use of discretionary mitigation measures at level 2 of caribou adaptive management, and shall include the addition of specific automatic measures intended to | No | No changes made to level 2 monitoring and mitigation in TEMP to reflect these commitments |

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| | | prepare for an operational shutdown if caribou move closer to mine operations or roads. Thereafter, further revisions may be made annually within the TEMP, taking into account ongoing project monitoring. The revisions shall be consistent with advice provided by the TAG, as per the terms of reference. | | |
| 13 | Caribou Monitor – Level 2 | Within 1 year of Project certification (and again thereafter whenever relevant information becomes available), the Project's TEMP shall be revised to reduce reliance on the use of discretionary mitigation measures at level 2 of caribou adaptive management and shall include the addition of specific automatic measures intended to prepare for an operational shutdown if caribou move closer to mine operations or roads. Thereafter, further revisions may be made annually within the TEMP, taking into account ongoing project monitoring. The revisions shall be consistent with advice provided by the TAG, as per the terms of reference. | No | No changes made to level 2 monitoring and mitigation in TEMP |
| 14 | Caribou Monitor – Level 3 | Within 1 year of Project certification, the Project's TEMP shall be revised to further specify the provision for limitation of nonessential vehicles on the Whale tail haul and Meadowbank all weather access roads when caribou are in proximity to these roads (i.e. level 3 responses, Figs. 7 & 8, TEMP v4.0) outside sensitive seasons. Thereafter, further revisions may be made annually within the TEMP, taking into account ongoing project monitoring. The revisions shall be consistent with advice provided by the TAG, as per the terms of reference. | No | No changes to level 3 (figures 7 and 8) monitoring and mitigation in TEMP |
| 15 | 4km and 5km - Blasting Buffer | The TEMP shall be revised such that blasting activities at the Whale Tail site are suspended when caribou above the specified seasonal group size threshold are present within 4 km of the blast site. This provision shall apply year-round except during calving season when the buffer shall be increased to 5 km when cows with calves are present. These buffer thresholds are preliminary pending the results of further studies. These no-blasting buffers may be reviewed periodically throughout the life of the Project whenever relevant information becomes available taking into account ongoing project monitoring. Any revisions shall adhere to advice provided by the TAG, as per the terms of reference. | No | Blasting buffer outside calving season has not been revised accordingly in TEMP (figure 9) |
| 16 | Blasting - Study | A noise, vibration and visual cues study shall be conducted that: (1) will validate blasting noise and vibration predictions in the Project's EIS; (2) will document the scale and range of visual cues generated by blasting activities (i.e. the distance and duration over which dust plumes can be observed by the naked eye); and (3) may be used to | Partially | A study is described in the TEMP v5.0 but details are incomplete so unclear if it will fulfill the commitment in terms of scope and technical rigor. |

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| | | revise the Project's no-blasting buffers for caribou. Notwithstanding the no blasting buffers, Agnico Eagle may conduct studies on caribou within the buffer distance for the purposes of determining whether the buffer distance can be modified. The design and conduct of the study shall be consistent with advice provided by the TAG, as per the terms of reference. | | Also the TAG has not provided advice on this study yet it seems to be in progress. |
| 17 | Blasting Surveys | Prior to each blast, surveys shall be conducted to detect caribou and other wildlife within the no-blasting buffers specified in the Terrestrial Ecosystem Monitoring Plan (TEMP). | No | Not referenced in TEMP. These surveys should be conducted within the 4 and 5km buffer committed to (see commitment 15) |
| 18 | Helicopter – Distance buffers for caribou | The Proponent shall apply mandatory, minimum distance buffers of 300m vertically and 1000m horizontally for the operation of all helicopters and fixed winged aircraft in proximity to caribou, subject to exception for safety considerations or the fulfillment of regulatory compliance activities only. | No | Table 7 of TEMP states these are recommended buffers not mandatory. (subject to safety or regulatory) |
| 19 | Helicopter – Distance buffers for landing and take-offs | The Proponent shall apply the mandatory, minimum distance buffers to landings and take-offs of helicopters, such that engine starts and takeoffs are suspended when caribou are observed within the buffer distance. | No | |
| 20 | Helicopter – Monitor Traffic | The Proponent shall revise the Project's TEMP to include a program to monitor and report helicopter traffic associated with the Whale Tail project (including existing Meadowbank infrastructure) and all associated exploration activities so that the spatial scale and intensity of this activity can be documented. This should include the collection and analysis of GPS track logs for all helicopter flights contracted by the Proponent. | No | |
| 21 | Traffic Monitoring – Program through TAG | Prior to Project commencement, the Proponent shall develop a traffic-monitoring program. This program shall be designed to collect data on vehicle type, time, date, location (i.e. specific road segment utilized), point of origin and destination for all vehicles (Proponent-owned or contracted) using the Project's roads including the Whale Tail haul road and Meadowbank all-weather-access road. The design of this program shall be consistent with advice provided by the TAG, as per the terms of reference. | Partially | The TEMP references traffic monitoring but does not provide program design details as per commitment. |
| 22 | Traffic Monitoring – Traffic Data Accuracy | The Proponent shall verify annually traffic data to ensure its accuracy and shall summarize traffic data for each road segment including the Whale Tail haul road and Meadowbank all-weather-access road. In addition to daily rates, any seasonal or monthly variation in traffic | No | |

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| | | shall be reported. The observed rates and composition of traffic shall be compared to predictions in the EIS. | | |
| 23 | Traffic Monitoring – Exceed traffic predictions | Where traffic rates or composition exceed predictions in the EIS, based on a 3-year average, the Proponent shall produce a revised assessment to examine the potential impacts of this excess traffic on wildlife. This revised assessment shall be submitted to NIRB for consideration. | No | No reference to this threshold or the exceedance response in the TEMP. |
| 28 | Muskox - Group size thresholds | Within 1 year of Project certification, the Project's TEMP shall be revised to specify and justify the group-size threshold for triggering adaptive management for muskox. Justification of the group-size threshold should be based on available muskox group size data. Thereafter, further revisions may be made annually within the TEMP, taking into account ongoing project monitoring. The revisions shall be consistent with advice provided by the TAG, as per the terms of reference. | No | No revision to TEMP on this matter |
| 29 | Muskox - Blasting Suspension | The Project's TEMP shall be revised to include a provision for mandatory suspension of blasting when groups of muskox above the specified group size threshold are observed within 1km of blasting activities. The suspension of blasting shall be maintained until the animals have moved away. The no-blasting buffer may be reviewed periodically throughout the life of the Project whenever relevant information becomes available. The revisions shall be completed annually within the TEMP, taking into account ongoing project monitoring, and will be consistent with advice provided by the TAG, as per the term of reference. | No | No revision to TEMP on this matter |
| 30 | Muskox - Roads, vehicle speeds | The Project's TEMP shall be revised to include a requirement for vehicles to slow to 30 km/hr when passing within 500m of a group of muskox above a specified group size threshold. This mitigation measure may be reviewed periodically throughout the life of the Project taking into account ongoing project monitoring. The revisions shall be consistent with advice provided by the TAG, as per the terms of reference. | No | No revision to TEMP on this matter |
| 31 | Muskox - Aircraft Buffers | The Project's TEMP shall be revised to include a mandatory requirement for aircraft to maintain distances of at least 300m vertically and 1000m horizontally from groups of muskox; subject to exception for flight safety purposes. This mitigation measure may be reviewed periodically throughout the life of the Project taking into account ongoing project monitoring. The revisions shall be consistent with advice provided by the TAG, as per the terms of reference. | No | No revision to TEMP on this matter |