ᑲᑎᒪᔨ ᓄᓇᕗᑦ ᐱᖃᓐᓇᕐᓂᖅᓴᖅ
Building Nunavut Together
Nunavuliuqatigiingniq
Bâtir le Nunavut ensemble

ᓄᓇᕗᑦ ᑲᖏᖅᑲᑦ
Government of Nunavut
Nunavut Kavamat
Gouvernement du Nunavut

June 27, 2014

Kelli Gillard
Technical Advisor & Doris North Project Monitoring Officer
Nunavut Impact Review Board
P.O Box 1360
Cambridge Bay, NU X0B 0C0

Sent VIA Email: info@nirb.ca

RE: Comment Request for TMAC's *2013 Annual Report for Doris North Gold Mine Project Certificate NIRB No. 003*

Dear Ms. Hanson,

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 TMAC's 2013 Annual Report for Doris North Gold Mine Project Certificate NIRB No. 003.

The GN has reviewed TMAC's 2013 Report and provides our detailed assessment in the attached Appendix.

Should you have any concerns with our comments, please contact me by phone at 867-975-7830 or by email at asimonfalvy@gov.nu.ca.

Qujannamiik,

[Original Signed By]

Agnes Simonfalvy
Avatiliriniq Coordinator

APPENDIX

Socio-Economic Assessment Committee Comments

The GN has reviewed the 2013 Socio-Economic Monitoring Report and has no outstanding issues or comments at this time. We look forward to continued collaboration with TMAC in monitoring the socio-economic impacts and benefits from the Doris North Project.

Environment and Human Health Assessment Committee Comments

Appendix A: Doris North Project Certificate Compliance Summary for 2013

The Proponent provides the following compliance summary for Term and Condition 22:

Term and Condition 22:

> MHBL, in consultation with GN-DoE and KIA, shall immediately begin the design and implementation of baseline data collection methods to establish both the wolverine and grizzly bear population of the Hope Bay Belt region. Any baseline data results shall be reported to NIRB's Monitoring Officer

TMAC's 2013 compliance summary for Term and Condition 22:

> TMAC has submitted a design and implementation plan for baseline collection methods for wildlife populations to the GN and is in the process of finalizing an agreement with them.

The GN would like to note that no new design or implementation plan has been submitted for grizzly bear and wolverine. Discussions are underway to finalize a memorandum of understanding with TMAC for caribou monitoring; however, an agreement for grizzly bear and wolverine monitoring has not been initiated.

EHHAC Review of the 2013 Wildlife Monitoring Compliance Report

1. Introduction

1.2 Study Area

The 2013 study area was the same as in 2012, which represents a reduced size from previous years. The current study area poses limitations on the location of control sites. For example, bird surveys were completed at both treatment and control sites. Treatment sites included coastal habitat; whereas, control sites were located inland. A larger study area would allow for better selection of control sites for wildlife monitoring. The GN requests further explanation on the rationale for reducing the study area.

2. Wildlife Observations and Incident Reporting

2.2.1 Wildlife Sighting Log

The Proponent has indicated that 50 incidental observations of muskoxen were made in 2013. One of these sightings included a group of 27 muskoxen. Although the Proponent did not conduct aerial surveys from 2011 to 2013, incidental observations of muskoxen continued to be recorded in the study area. During this time, incidental observations of muskoxen were as high as those of caribou in the study area (Table 2.2-2). These findings suggest that muskoxen are found in the study area in numbers that warrant further monitoring.

2.2.2.1 Remote Camera Deployment

The Proponent has installed remote cameras for the purpose of monitoring wildlife. It was indicated that this activity constitutes wildlife monitoring surveys for caribou to comply with Project Certificate requirements (Section 1.1). As noted in the review of the 2013 Wildlife Mitigation and Monitoring Plan (WMMP), the GN has concerns with the use of remote cameras for wildlife monitoring purposes. In the context of the 2013 WMMP review, the Proponent provided the following response concerning the use of cameras in wildlife monitoring:

> "Cameras are not intended to monitor other wildlife species in the general study area, but incidental camera image captures of other species will be recorded and reported in the WMMP. Cameras will record interactions between wildlife and Project infrastructure. Clarification over targeted monitoring using cameras vs. recording incidental observations will be made in the WMMP plan. A total of 60 cameras were deployed in 2013. Camera placement design is intended to capture 1) wildlife interaction with project infrastructure. Most species within ~25-30 m of a camera's trigger range and field of view should be recorded; and 2) to record the presence of Dolphin-Union caribou and other wildlife within the WMMP study area."

The Proponent also provided the following response relating to the use of remote cameras for grizzly bear and wolverine monitoring:

> "The cameras are positioned to monitor wildlife activity around Project infrastructure (including bear and wolverine activity) and in movement corridors where bears and wolverine are likely to be seen. In addition, one camera is placed at the boulder garden at the outflow of Roberts Lake to monitor bear and wolf activity near the fish fence. It is acknowledged that these cameras are intended to provide incidental and site-monitoring data only."

As stated above, remote cameras were not intended for wildlife monitoring purposes. Instead, it was implied that cameras would be used to capture wildlife interaction with infrastructure and to record presence of wildlife in the study area. Remote cameras do not provide a suitable means for evaluating impacts on wildlife and thus should not form the basis of a monitoring program.

As described in the 2013 Wildlife Compliance Monitoring Report, remote cameras do not provide a suitable method for monitoring wildlife. At best, cameras can provide incidental observations of wildlife. The Proponent acknowledges in this report that incidental observations are not suitable for monitoring changes in population densities (Section 2.2.1). The GN requests the Proponent review its wildlife monitoring activities to reflect the above statements.

Studies referenced in this report present the usefulness of remote cameras in estimating species richness (Rowcliffe and Carbone 2008, Silveira et al. 2003). Although results from remote cameras may be useful in determining which species are found in the study area, cameras do not provide adequate information on the abundance of species (Cutler and Swan 1999, Rowcliffe and Carbone 2008, Tobler et al. 2008). The Proponent's assumption that capture rates from remote cameras are proportional to species abundance is unfounded. Capture rates are influenced by many confounding variables including patterns of habitat use, animal movement rates, and body size. This technique also struggles to differentiate whether photographs represent repeated observations of one individual or single observations of multiple individuals. The GN requests the Proponent adopt more appropriate measures to evaluate species abundance.

In the 2013 Wildlife Compliance Monitoring Report, remote cameras are identified as either treatment (within 1 km of project activities) or control (greater than 1 km from project activities). The Proponent compares results from these two groups to examine the impacts of project activities on wildlife. The GN has concerns that this arbitrary 1 km limit does not appropriately reflect the extent of Project activity impacts on wildlife.

The rationale for the location of remote cameras within the study area remains unclear. It is not evident how the camera placement described in this report provides a statistically robust comparison of treatment and control groups. The Proponent indicates that some cameras were placed in strategic locations where wildlife may be found. This creates a bias in sampling, which confounds potential impacts observed. Additionally, some cameras were repositioned following the first phase of this study (September 2012 to June 2013). The Proponent has not provided criteria used in determining the need to relocate cameras or factors assessed in establishing new positions.

The Proponent has noted that for the period of September 2012 to June 2013, 31 treatment cameras and 13 control cameras were deployed. This introduced a sampling bias from the onset, which limits the comparison of treatment and control cameras. Additionally, the majority of control cameras were positioned in the northern part of the study area. This camera placement provides a poor representation of caribou habitat use in the study area and restricts the comparison of treatment and control cameras.

From June to September 2013, 25 treatment cameras recorded 1,993 camera days; whereas, 33 control cameras recorded 3,510 camera days. In comparing control and treatment data, the Proponent has adjusted camera data for sampling effort. It was noted that some cameras were non-operational during this study for various reasons. It is unclear when cameras were non-operational and where these were located. The GN requests further clarification on the data used in comparing control and treatment cameras.

2.2.2.4 Wildlife Sightings by Remote Camera

The Proponent states that the frequency of wildlife sightings was similar between control and treatment sites. The remote cameras returned on average 5 wildlife events per camera for the treatment sites and

6 events per camera for the control sites. These represent small sample sizes from which no conclusion of treatment effect can be drawn. The Proponent suggests that population abundance for many species was too low to permit comparison of control and treatment cameras. These results do not indicate that populations are low. Instead, this confirms that remote cameras constitute a poor method for detecting wildlife and providing an estimate of species abundance.

4. Caribou

4.1 Introduction

The Proponent states that the Beverly barren-ground caribou herd has joined the Ahiak herd to form a combined herd which the GN refers to as the Beverly herd. The Beverly herd has undergone a shift in calving distribution over many years; however, the GN recognizes the Beverly and Ahiak as separate herds.

4.4.1.2 Remote Camera Monitoring

The Proponent has indicated that some remote cameras were excluded from the comparison of treatment and control capture rates. Eight control cameras, located at the far south end of the study area, were omitted from this analysis. It was indicated that these cameras had no corresponding treatment equivalents in the general area. The rationale for this decision is unclear and warrants further detail.

Comparisons of treatment and control camera results were made for three groups based on their location in the study area: north, middle, and south. These groupings seem arbitrary and do not reflect important factors such as habitat type. The GN requests further clarification on the rationale for these groupings.

4.5 Discussion

The GN acknowledges discussions are underway with the Proponent to develop a MOU for caribou monitoring. However, the GN does not consider appropriate the Proponent's adopted intermediary means of wildlife monitoring through remote camera surveys.

5. Grizzly Bear

5.4 Results

The Proponent has indicated that sampling effort greatly differed between control and treatment cameras. It is unclear why such a difference would exist for grizzly bear data, and the same issue was not noted for caribou data. The data for these two species was collected from the same remote cameras. The Proponent noted that only one camera was excluded from the grizzly bear data analysis. The GN requests further clarification on this discrepancy.

As discussed in the above sections, the GN considers remote camera surveys inappropriate for conducting wildlife monitoring. The GN requests the Proponent reconsider its grizzly bear monitoring program to better evaluate Project related impacts on this species.

6. Wolverine

6.5 Discussion

The Proponent has noted that remote camera surveys for wolverines have not produced sufficient data to compare treatment and control sites. Given this poor success and the GN's concerns with the use of remote cameras for wildlife monitoring, the GN requests alternate plans be made for wolverine monitoring.

References

Cutler, T.L. and Swann, D.E. 1999. Using remote photography in wildlife ecology: a review. *Wildlife Society Bulletin*. 27(3): 571-581.

Rowcliffe, J.M. and Carbone, C. 2008. Surveys using camera traps: are we looking to a brighter future? *Animal Conservation*. 11: 185-186.

Silveira, L., Jácomo, A.T.A., and Diniz-Filho, J.A.F. 2003. Camera trap, line transect census and track surveys: a comparative evaluation. *Biological Conservation* 114: 351-355.

Tobler, M.W., Carrillo-Percastegui, S.E., Pitman, R.L., Mares, R., and Powell, G. 2008. An evaluation of camera traps for inventorying large- and medium-sized terrestrial rainforest mammals. *Animal Conservation*. 11: 169-178.