

BEVERLY AND QAMANIRJUAQ CARIBOU MANAGEMENT BOARD

26 June 2007

Leslie Payette
Manager Environmental Administration
Nunavut Impact Review Board
P.O.Box 1360
Cambridge Bay, Nunavut
X0B 0C0

Dear Ms. Payette:

NIRB File No. 07EN048 – Terrane Metals-Maze Lake Project Renewal Proposal

On behalf of the Beverly and Qamanirjuaq Caribou Management Board (BQCMB), I am submitting comments on the proposal from Terrane Metals Corp. for a renewal of their permit for mineral exploration at Maze Lake, Nunavut. This is in accordance with the mandate of the BQCMB, which is to advise governments and caribou range communities on ways to protect the Beverly and Qamanirjuaq caribou herds and their ranges.

As you know from our previous submissions, the BQCMB is concerned with the amount of mineral exploration underway and proposed across the range of the Beverly and Qamanirjuaq caribou herds. The BQCMB is concerned about this particular application for mineral exploration in the Maze Lake area because the proposed activities will occur on important habitats of the Qamanirjuaq caribou herd during periods when caribou may be using those areas and also may be particularly vulnerable to disturbance. Consequently there is potential for these activities to impact caribou.

As we have recently stated repeatedly regarding numerous applications for land use permits, the BQCMB does not agree with permitting exploration activities on calving and post-calving areas. The Board has recommended establishing long-term legislated protection for calving and post-calving areas and protecting caribou and other important habitats through improved Caribou Protection Measures. These are two of the many actions the Board recommended that governments take to safeguard Beverly and Qamanirjuaq caribou and their habitats several years ago¹.

¹ Protecting Calving Grounds, Post-Calving Areas and Other Important Habitats for Beverly and Qamanirjuaq Caribou: A Position Paper (BQCMB 2004)

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Issues and Concerns

Our primary concerns with this project proposal are:

- The project is located in an area that provides very important habitat for Qamanirjuaq caribou: traditional calving ground, primary spring migration route and post-calving area.
- Caribou may use the project area during one or more of these key periods (i.e., spring migration, calving, post-calving), when they are particularly vulnerable to disturbance. The attachment provides more information about the vulnerability of caribou to disturbance at these times.
- The proposal documents do not describe specific actions that will be taken to ensure that caribou will not be negatively impacted by the proposed project activities, beyond requirements of Caribou Protection Measures.
- The proponent does not appear to be aware of the vulnerability of caribou to disturbance at water crossings. Particularly vulnerable are pregnant female caribou crossing water bodies in the spring, and cows with new calves crossing during post-calving and summer.
- In their project description, the proponent says they are requesting a one-year extension to their land use permit to cover the 2007 exploration program, but they also state that drilling may not occur until spring (April or May) or summer of 2008.

Recommendations

1. No exploration or development activities should be allowed on the traditional calving and post-calving areas of the Qamanirjuaq caribou herd, including the Maze Lake project area.

IF NIRB approves renewal of this permit:

2. Permit conditions should include all "Wildlife" terms and conditions relevant to caribou that were issued by NIRB in May 2005 in its screening decision on the Maze Lake Project (NIRB #05EN046).
3. Permit conditions should include a requirement for compliance with DIAND Caribou Protection Measures, including prohibition of project activities between May 15th and July 15th.
4. Renewal of this permit **at a minimum** should be subject to additional conditions that address the concerns outlined above and others as follows:
 - a) The proponent should be required to establish a caribou monitoring program to determine when caribou are present in or moving toward the project area, especially drilling sites and aircraft landing sites. The monitoring system

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should include hiring an independent caribou monitor (preferably from Whale Cove) to determine when caribou are moving toward the project area. The monitoring program should ensure that advance notification is received for shutting down project activities (including drilling and aircraft activity) if caribou are approaching, to ensure that potential disturbance is discontinued before caribou reach the site of the potential disturbance.

- b) If caribou move through a drilling site or camp, all exploration activities and movement of personnel must be stopped until animals are at least 1km away.
- c) Project activities should not be conducted between 1 April and May 15th, and between July 15th and 31st, **unless** rigorous monitoring demonstrates that caribou are not using the project area **and** are not approaching the area.
- d) Aircraft pilots should be instructed not to fly over caribou groups during spring migration, calving and post-calving (April-July) at elevations lower than 610m, or if absolutely necessary to do so for the minimum distance possible. This will likely apply each year during spring migration, and also would be particularly important in any year when the caribou calving area and/or post-calving area are between Maze Lake and Rankin Inlet or Whale Cove.
- e) Aircraft pilots should be instructed not to take off or land when groups of caribou are within 1km, and not to fly over caribou while they are crossing water bodies.
- f) Airborne geophysical surveys should be prohibited from areas within 1km of calving or post-calving caribou. If a survey is started and caribou subsequently arrive in the area, the survey must be suspended until the caribou move at least 1km away.
- g) The proponent should be required to take particular care not to disturb caribou while they are crossing water bodies (not only designated crossings), since the animals are very vulnerable at that time. They should be required not to conduct any drilling, airborne surveys, or other activities within 5km of water crossings.
- h) If hauling of freight overland is required, this activity should not occur later than March between Whale Cove and Maze Lake, to avoid disrupting spring migration of caribou. Snowmobiles or Bombardiers hauling freight should stop if they encounter migrating caribou, and avoid blocking or diverting caribou movements. A single snowmobile should be sent ahead to determine if caribou are within 5km of the freight haul, at which time movement must be suspended until caribou have moved 5km away.

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- i) Critical grade mufflers should be required to ensure the noise from drilling is minimized.
- j) NIRB should ensure that regular inspection of project operations is conducted, and that NIRB's permit terms and conditions and NPC's conformity requirements are enforced.

Please let me know if you require further information or have any questions about these comments from the BQCMB.

Sincerely,

[original signed by]

Leslie Wakelyn
BQCMB Biologist

Attachment

cc: Jerome Denechezhe, BQCMB Chairperson
Mitch Campbell, Regional Biologist, GN-DOE
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Effects of Disturbance on Barren-ground Caribou

Disturbance to caribou can result in obvious behavioural changes, such as running away from aircraft or vehicles. However, disturbance can also cause stress to caribou when behavioural changes are less obvious (e.g., walking), or when they are not apparent to an observer (e.g., when feeding stops but the animal's head remains lowered). It is generally difficult for people to recognize that caribou are undergoing stress if observations are made primarily from aircraft (at elevations above 300m in altitude), unless the animals are running away.

Disturbance during the most vulnerable parts of the caribou life cycle are of greatest concern. This includes disturbance during **spring migration, calving and post-calving periods**. Exploration project activities such as drilling and geophysical surveys could occur near caribou while they are particularly sensitive to disturbance (e.g., while caring for young calves). They may also occur while caribou are attempting to cross water bodies, during which time they are extremely vulnerable to disturbance.

Frequent interruption of caribou feeding during **spring migration through to late summer** can have a significant negative effect on the condition of individual animals. Caribou need to feed continuously through the summer (to end of August) to ensure that they are in good condition during the fall migration and rutting period and have reserves for winter. Insufficient feeding can lead to increased calf mortality rates, reduced pregnancy rates, and lower calf production the following year, and may result in a decrease in herd size.

Fixed wing aircraft and helicopters can produce disturbance to caribou, including disturbance when flying at low levels (below 300 m) while taking off and landing. This disturbance could be particularly stressful if the flight path of aircraft crosses over large groups of pregnant female caribou during spring migration, cow/calf groups during calving, post-calving and late summer, or caribou crossing water bodies. This is of particular concern when airstrips are located near calving areas or caribou water crossings.

During spring migration:

- Cows are heavily pregnant, have minimal fat reserves and are moving long distances towards their calving grounds; they need all their reserves for travel and development of their young.
- Impacts on cows and their unborn young can occur if they use more energy to avoid exploration activities.

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During calving and post-calving periods:

- Caribou cows are more likely to react to disturbance than during other seasons.
- Cows and calves are very vulnerable to disturbance and predation.
- Until about 3 weeks after birth (until end of June or early July), cows need to feed continuously without interruptions to provide milk to their calves.
- Frequent interruptions to feeding can result in loss of calves.

Undisturbed water crossings are essential because:

- Caribou sometimes gather at a crossing for hours before they cross. Once a large number of undisturbed caribou have successfully crossed, others are likely to follow.
- If caribou cannot cross at preferred sites, they must double back and cross at some other location. These caribou travel further expending more energy or they are diverted to less favourable range.