

BEVERLY AND QAMANIRJUAQ CARIBOU MANAGEMENT BOARD

28 April 2008

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

Dear Ms. Payette:

NIRB File No. 08EA038 – Pacific Ridge Exploration Ltd's Project Proposal

On behalf of the Beverly and Qamanirjuaq Caribou Management Board (BQCMB), I am submitting comments on the request from Pacific Ridge Exploration Ltd. (Pacific Ridge) for an extension and amendment to their land use permit for mineral exploration on their Baker Lake project near the Kazan River.

The BQCMB is generally concerned because the proposed activities will occur on important habitats used by Qamanirjuaq caribou during sensitive periods. Of particular concern is that Pacific Ridge is proposing to continue to conduct exploration activities on the calving and post-calving area of Qamanirjuaq caribou, near important water crossings used for millennia by this herd. There is clear potential for Pacific Ridge's proposed activities to impact caribou and important caribou habitat.

As you know, the BQCMB believes that mineral exploration and development should not be permitted on the Qamanirjuaq calving and post-calving areas, and therefore our position about Pacific Ridge's project has not changed since we provided comments to you on their 2006 permit application on 28 July and 4 August 2006.

Issues and Concerns:

Following is a description of the BQCMB's major concerns with this project, and recommendations to address them.

1) Importance of the area to Qamanirjuaq caribou; timing of operations

Pacific Ridge's project area lies adjacent to the Qamanirjuaq Caribou Protection Area designated by Indian and Northern Affairs Canada (INAC) based on data from the 1970s and 1980s. However, information from government surveys up to 1994 and data from the movements of collared Qamanirjuaq caribou tracked from 1993 to May 2006¹ show that the

¹ Additional data on movements of collared caribou have been collected by the GN-DOE since May 2006, however, the BQCMB does not have access to these data. The collar tracking data provide only a partial indication of use of the area by a small number of collared caribou cows, and provide no information about use of the area by other caribou (such as bulls).

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project area is used regularly by this caribou herd during the calving and post-calving seasons (late May to end of July), and in some years through August into September. Furthermore, annual reports submitted to NIRB by Pacific Ridge for 2006 and 2007 report that large numbers of caribou used the project area in early to mid-July 2006 and between late May and late July 2007.

Pacific Ridge's 2008 NIRB application states that their period of operation will run from May 15th 2008 to October 15th 2009, with camp construction to occur during May and drilling activities to begin June 1st.

Concern: Pacific Ridge is proposing to continue to operate on sensitive and very important calving and post-calving habitat for Qamanirjuaq caribou, including periods when caribou using the area are particularly vulnerable, including pregnant caribou, caribou with newborn calves, and post-calving caribou (May-late July).

The BQCMB has recommended that long-term legislated protected areas that exclude industrial development be established for calving and post-calving areas², and is very concerned that mineral exploration is being permitted in this area. At the least, the conditions outlined by the Caribou Protection Measures should apply to mineral exploration in this area.

2) Project activities

It is not clear if and when airborne geophysical surveys will be conducted as part of project work in 2008 or 2009.

Concern: Airborne geophysical surveys can potentially cause substantial disturbance impacts on caribou.

3) Effects of disturbance on 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, and while caribou are attempting to cross water bodies.

Frequent interruption of caribou feeding from spring migration through 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

² Protecting Calving Grounds, Post-Calving Areas and Other Important Habitats for Beverly and Qamanirjuaq Caribou: A Position Paper (BQCMB 2004)

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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.

Concern: Any project activities between May and September will likely cause disturbance to caribou using the area, with potential impacts as described above.

4) 2008 Qamanirjuaq calving ground survey

A survey of the Qamanirjuaq herd by the Government of Nunavut's Dept. of Environment is planned for early June 2008. Goals for this survey include obtaining a population estimate, identifying the status of the herd (i.e., increasing, decreasing or stable) and delineating the boundaries of the 2008 calving area. This will be the first population estimate obtained for this herd since 1994. Until information about the current status of the herd is available, it is essential to apply the precautionary principle and ensure that disturbance to Qamanirjuaq caribou is minimized.

Concern: Any exploration activity conducted on the traditional calving ground in May or June 2008 could compromise the success of the population survey by altering the migration patterns or locations in which Qamanirjuaq caribou calve. The large expense of these surveys may mean another survey would likely not be attempted for some time.

5) Proposed mitigation measures

In their 2008 application to NIRB, Pacific Ridge states that they will start drilling in one area (Lucky 7 Zone) by June 1st, but will not begin drilling in another area (Niner) until after July 15th. Under their description of Drilling Projects (6b) they state that this is because the Niner zone "is located just inside the BQCMB Identified Calving Area", and in the non-technical project proposal description they state this is because "the area lies within the BQCMB Caribou Post-calving Area". However, based on both survey information and data from tracking collared caribou, it is clear that all their drilling zones are in an area that caribou may use in any given year during calving, post-calving or both periods, as well as later in the summer.

Pacific Ridge states that their project activities will cease when "caribou are encountered", yet they have not described a monitoring plan by which they will identify when caribou are moving toward their area.

Concern: Pacific Ridge apparently does not recognize that their entire project area lies on important calving and post-calving habitat. They have not developed a monitoring plan to identify *in advance* when caribou are moving toward their area, so that project activities (including drilling and flights) can be suspended before disturbance is caused.

6) Regional cumulative effects

The BQCMB is concerned with the amount of mineral exploration underway and proposed across the range of the Beverly and Qamanirjuaq caribou herds, and particularly on the calving and post-calving areas of Beverly and Qamanirjuaq caribou. Potential cumulative effects are an issue at several scales, including within calving grounds and across caribou ranges, since caribou accumulate impacts as they move from one seasonal range to another.

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There is a need for a regional assessment of the cumulative impacts of mineral exploration and other land use activities, including activities in the Kivalliq region of Nunavut.

From the BQCMB's perspective it is clear that continued assessment of individual projects on a case-by-case basis will not be adequate to ensure that significant adverse eco-systemic and socio-economic effects will be prevented. Furthermore, because so little is known about the status and vulnerability of the Qamanirjuaq and other barren-ground caribou herds that use seasonal ranges in the Kivalliq region, the potential adverse effects and their accumulating impacts on caribou are not highly predictable.

7) Additional mitigation measures required

The terms and conditions recommended by NIRB in their August 2006 screening report for protecting wildlife in general, and caribou in particular, were quite comprehensive. However, it is difficult to determine whether additional mitigation measures are required for several reasons:

- The conditions that NIRB recommended to help protect caribou were listed by INAC in the covering letter to the permit, but were not included as permit conditions.
- We do not know if Pacific Ridge followed NIRB's recommendations. They only report on their compliance with Caribou Protection Measures in their annual reports for 2006 (p. 14-15) and 2007 (p. 18-19), and do not refer to any of NIRB's more restrictive recommendations for protecting caribou.
- There were apparently no effective enforcement efforts made during the 2006 and 2007 seasons. According to the annual reports submitted by Pacific Ridge, there was no site inspection made in 2006, and the only inspection for the land use permit in 2007 occurred while drilling was shut down for a field break.

Therefore we do not know if repeating the same terms and conditions would provide adequate protection to caribou from exploration, or if additional conditions would provide increased protection.

The main changes to NIRB's recommendations that the BQCMB would suggest are provided below. Effective inspection and enforcement programs are essential to ensure the measures are implemented and to allow us to learn if the conditions produce the intended results.

Recommendations:

1. No exploration or development activities should be permitted on the calving and post-calving areas of the Qamanirjuaq caribou herd. The BQCMB does not agree with permitting exploration activities on calving and post-calving areas, and recommends that Pacific Ridge's application for a permit extension and amendment not be approved.
2. Regulatory and other territorial and federal government agencies (i.e., in Nunavut NIRB, GN, INAC) should be taking action to identify and mitigate potential cumulative effects of human land use activities, including mineral exploration, on barren-ground caribou. This assessment of cumulative effects should occur at a regional scale (i.e., larger than

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individual project areas), and should include all activities occurring on calving and post-calving areas.

3. If NIRB recommends to INAC that a land use permit be issued, permit conditions should address the following requirements.
 - a) At the least, Pacific Ridge should acknowledge that their entire project area lies on important calving and post-calving habitat for Qamanirjuaq caribou, and that they should follow the conditions set out in the Caribou Protection Measures throughout this area.
 - b) No activities should be permitted, or subsequently approved by a Land Use Inspector, in the project area between May 15th and July 15th. If caribou move into the area before May 15th or after July 15th, activities (including flights for transporting personnel or supplies, diamond drilling and geophysical surveys) must be suspended immediately. Specifically:
 - Project activities must be prohibited between May 15th and July 15th, as per NPC's conformity requirements regarding INAC's Caribou Protection Measures. No releases should be issued.
 - All activities must be suspended if caribou approach the area during spring migration prior to May 15th.
 - Activities should be allowed to resume after July 15th **only** if it is demonstrated by a monitoring program approved by GN-DOE and NIRB that post-calving caribou are not in the area. Diamond drilling should not be initiated unless caribou are at least 5 km away from the drill sites.
 - c) Caribou water crossings must be protected from disturbance. Between May 15th and September 1st:
 - camps, fuel caching and blasting within 10 km of designated water crossings must be prohibited.
 - drilling within 5 km of a designated water crossing should not occur.
 - d) A detailed caribou mitigation and monitoring program and shut-down plan approved by NIRB and GN-DOE should be in place before Pacific Ridge is allowed to begin operating.
 - The Plan should include a rigorous caribou monitoring program that includes regular flights at altitudes above 610m agl.
 - An independent caribou monitor should be hired (preferably from Baker Lake) to conduct ground-based surveys to help assess when caribou are moving toward the project area.
 - The monitoring system should ensure that advance notification is received for shutting down project activities (including drilling and airborne surveys) if caribou are approaching. This will be necessary to ensure that potential disturbance is discontinued before caribou reach the project area.

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- e) If airborne geophysical surveys are to be conducted as part of this proposed project, they should be described in the application and dealt with adequately in the mitigation and monitoring plan.
- f) It is crucial that project aircraft fly at low levels (below 300 m agl) **only** when necessary for safety reasons, and that the amount of time aircraft spend at low levels over the calving and post-calving areas is minimized and carefully monitored. When caribou are in sight, anywhere in the project area or during transit elsewhere, project aircraft should fly at altitudes above 610m agl whenever possible.
- g) NIRB and INAC should ensure that regular inspection of project operations is conducted, and that INAC's permit terms and conditions, NPC's conformity requirements, and NIRB's recommendations are enforced. At a minimum, NIRB and INAC should ensure that the existing Caribou Protection Measures are enforced.

These comments are provided 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. While the BQCMB's mandate provides a focus on caribou and caribou range, board members are also concerned about the broader ecological effects of human land use activities and the long-term impacts these activities will have on the sustainability of traditional lifestyles and livelihoods for northern communities.

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

cc: Jerome Denechezhe, BQCMB Chairperson
Baker Lake HTO