

BEVERLY AND QAMANIRJUAQ CARIBOU MANAGEMENT BOARD

17 March 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. 08EN015 – Cameco Corporation Project Proposal

On behalf of the Beverly and Qamanirjuaq Caribou Management Board (BQCMB), I am submitting comments on the proposal from Cameco Corporation (Cameco) for uranium exploration on their properties northwest of Baker Lake. 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.

Following is a description of the BQCMB's major concerns with this project, and recommendations to address them. This information is intended to help NIRB to identify the potential impact of the proposed project activities on caribou as well as actions that should be taken to avoid or minimize these impacts.

General concerns

The BQCMB is concerned about these proposed activities because they will occur on ranges of several caribou herds during periods when caribou may be using those areas, which means there is potential for Cameco's proposed activities to impact caribou. Of particular concern to the BQCMB is the fact that Cameco's proposed exploration activities are located on the post-calving area and along the edge of the traditional calving ground of Beverly caribou.

The issue of potential effects of exploration and development activities on caribou should be given serious consideration at all times due to the importance of caribou to Aboriginal and other people across the caribou ranges. However, evidence is mounting that barren-ground caribou herds in Canada's Arctic are declining and that increased efforts should be made to protect the herds and their habitats. Declines have been documented in five NWT caribou herds, and the Beverly and Ahiak herds are likely declining as well. In June 2007, a survey of the Beverly herd by the NWT Dept. of Environment and Natural Resources (ENR) found low numbers and densities of calving caribou on the calving grounds, raising further concerns about the health and status of the herd. The BQCMB and the GNWT believe the herd is probably decreasing.

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Until definitive studies have been conducted about the health and population status of all the caribou herds that use Cameco's project area, the precautionary principle should be followed. Great caution should be taken when considering proposals for activities that are likely to cause disturbance to caribou, particularly during the pre-calving (spring) migration, calving, and post-calving periods.

Specific Issues and Concerns:

1) Location - Cameco proposes to continue and to intensify their operations over time in a sensitive and very important area that includes the Beverly herd's post-calving area. The BQCMB has recommended that long-term legislated protected areas that exclude industrial development be established for calving and post-calving areas¹.

2) Timing - Cameco proposes to finish camp construction in March 2008, and to haul fuel overland between March and May 2008. They will then conduct exploration activities between June and September 2008, and between March and September 2009.

The available data indicate that caribou from one or more herds (not just the Beverly herd) may use the project area during the entire project period (March-September), that pregnant female caribou may be in the project area prior to May 15th, and that caribou cows with calves could use the project area between July and September. Therefore it is possible that caribou will be in the project area during most of the proposed construction, fuel haul and exploration periods from March to September.

Satellite monitoring data (for radio-collared caribou) show that Beverly and Ahiak caribou have used the project area as post-calving, summer, and fall/rutting range (between July and October) in the past two years. All available data from past surveys and satellite monitoring show that the project area can provide important habitat to caribou from up to four herds (Beverly, Ahiak, Lorillard, and Wager Bay) during spring migration, post-calving, late summer, fall migration and rut, and early winter. These periods occur between mid-March and late May, and from late June to December.

Note, however, that the satellite monitoring data only provide a partial indication of use of the area by caribou, including use by Beverly and Ahiak caribou cows and calves. Relatively few adult female caribou are tracked using satellite collars, and therefore collared animals do not represent the entire herd's distribution and movement patterns.

3) Caribou protection measures – Cameco states in the wildlife monitoring and mitigation plan that they expect to operate between May 15th and July 15th, but "If caribou cows and calves are present we will abide by the caribou protection measures everywhere on our property" (p. 6). The Caribou Protection Measures (CPM), required by the *Keewatin Regional Land Use Plan*, would require them to "suspend all operations within the area(s) occupied by cows and/or calves between May 15 and July 15". Cameco have also indicated that they will

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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comply with the CPM in their Conformity Determination report to the Nunavut Planning Commission.

However, even if Cameco complies with CPM, the BQCMB does not believe this will be sufficient to provide long-term protection for the Beverly post-calving area, as CPM do not provide protection for the important habitat provided by the area.

4) Effects of disturbance on caribou - Frequent interruption of caribou feeding during 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 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.

Disturbance during the most vulnerable parts of the caribou life cycle are of greatest concern. This includes disturbance during spring migration and post-calving periods. Exploration project activities such as drilling, geophysical surveys and other low-level flights 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.

Cameco's project activities proposed from March to October will likely cause disturbance to caribou using the area with potential impacts as described above.

Low level flights - The camp and airstrip are located on the Beverly post-calving area, and supply flights between Baker Lake and the airstrip will likely pass over groups of caribou. Helicopters travelling between the camp and drill sites will cross over the post-calving area, will land on this sensitive area, and will likely pass over groups of caribou.

Fixed wing and helicopter flights will produce disturbance to caribou in the area throughout the project, including aircraft taking off and landing. Airborne surveys, especially those conducted at low elevation and with tight transect spacing, can affect the movements and feeding patterns of caribou. This disturbance could be particularly stressful if the flight path of aircraft crosses over large groups of pregnant female caribou during spring migration, cows with newborn calves, or post-calving groups.

It is crucial that:

- aircraft fly at low levels (below 300 m agl) only when necessary for safety reasons
- the amount of time aircraft spend at low levels is minimized and carefully monitored
- airborne surveys not be conducted from 15 April to 31 July if caribou cows and calves are located in the area.

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5) Wildlife monitoring and mitigation plan

(p. 6) *Migrating Herds* - Cameco proposes to stop “all activities” if a migrating caribou herd comes within 2 km of a drilling site. But they continue by saying that drilling will only be stopped under certain conditions. They also say that a low-level geophysical survey will not be stopped until they finish the line they are on when they detect the nearby caribou herd. So clearly “all activities” will not be stopped when caribou herds are approaching, and the disturbance will not be mitigated.

Cameco also proposes to use the satellite collar data to help their mitigation efforts. This is not an effective monitoring strategy. Satellite monitoring data should not be used as the only source of information for determining caribou distribution or movements or for planning exploration activities or mitigation measures.

(p. 7) *Management Plan and Monitoring*

- Cameco says their monitoring program will provide data on caribou health - it's not clear how they will obtain these data.
- Cameco says their monitoring program “will aid in the current understanding of Beverly caribou with regard to calving and migration paths”. There could be up to four caribou herds using the project area while Cameco is working there, and animals from more than one herd may be in the vicinity at a given time. It will be very difficult for them to identify which animals are Beverly caribou with limited, irregular and relatively small-scale monitoring.

6) Potential for cumulative effects

As we have stated repeatedly in our comments submitted to NIRB earlier this and last year on mineral exploration proposals, the BQCMB is concerned with the amount of mineral exploration underway and proposed across the ranges of the Beverly, Ahlak and Qamanirjuaq caribou herds. This includes exploration activities in the Kivalliq region of Nunavut, where numerous companies have been issued mineral tenure and land use permits on caribou calving and post-calving areas over the past few years. Two maps available on the BQCMB website (www.arctic-caribou.com/mining.html) show land uses permitted across the caribou ranges and mineral rights on the calving grounds (as of October 2007) for these two herds.

Potential cumulative effects are an issue at several scales because caribou accumulate impacts as they move from one seasonal range to another. 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. While the BQCMB's mandate provides a focus on caribou and caribou range, board members are concerned with 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.

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

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the status and vulnerability of the Beverly, Qamanirjuaq, Ahiak, 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.

Recommendations:

1. No exploration or development activities should be permitted on the post-calving area of the Beverly caribou herd. The Board does not agree with permitting exploration activities on calving and post-calving areas, and recommends that Cameco's application 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 individual project areas).
3. If, contrary to the BQCMB's first recommendation, the proposed activities are permitted:
 - a) More information should be obtained from Cameco concerning:
 - Location and timing of ground gravity surveying to follow-up on 2007 surveys.
 - Transect spacing and flight elevation for ground or airborne electromagnetic surveys conducted for delineation of drill targets.
 - Methods to be used for airborne "prescreening" surveys.
 - What is meant under Mitigation of Impacts from drilling by a) "the drill will be shut down if possible", and b) "the area is cleaned up accordingly".
 - b) Permit conditions should address potential disturbance effects of these activities on caribou, and should include the following.

All project activities

- All project activities must be prohibited between May 15th and July 15th if caribou cows and/or calves are in the project area, as per NPC's conformity requirements regarding INAC's Caribou Protection Measures.
- All activities, including drilling, must be temporarily suspended if caribou approach the area during pre-calving (spring) migration prior to May 15th.
- Drilling or survey activities should not be resumed unless caribou are at least 5 km away from the drill sites or survey areas.

Winter fuel haul

- A monitoring system should ensure that advance notification is received for stopping haul activities when caribou approach the haul routes, to ensure that potential disturbance is discontinued before caribou reach the Snow Cats.
- A local hunter on snowmobile should scout ahead of the Snow Cats to determine when caribou are approaching the haul route.

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- The Snow Cats and snowmobiles should be required to stop immediately when approaching migrating caribou are detected.

Airborne surveys, low-level flights

- Low-level (below 300m agl) surveys should not be conducted from 15 April to end of August if caribou cows and calves are in the area.
- No airborne geophysical surveys should be conducted during July or August if any caribou cow/calf groups are in the survey area.
- Minimum flight altitudes of 610m should be maintained at all times except when taking off and landing and when required for safety reasons.

Monitoring

- A more detailed monitoring program and shut-down plan approved by NIRB and GN-DOE should be in place before Cameco is allowed to begin operating.
 - The caribou monitoring program should be established with the intent of determining *in advance* when caribou are moving toward drill rigs and survey areas, to ensure that adequate notification is received for shutting down drilling or airborne survey operations if caribou are approaching. This will be necessary to ensure that potential disturbance is discontinued before caribou reach the project area.
 - To determine if caribou are in the area, the area should be flown at high elevation (750-1000 ft. agl) to assess presence/absence of cow/calf groups; these monitoring flights should not be flown at low altitudes.
 - An independent caribou monitor should be hired (preferably from Baker Lake) specifically to conduct the monitoring work.
- c) NIRB should ensure that regular inspection of project operations is conducted, and that NIRB's permit terms and conditions, NPC's conformity requirements and INAC's caribou protection measures 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

cc: Jerome Denechezhe, BQCMB Chairperson
Baker Lake HTO