Comments on "Report on Qualitative Assessment of the Cumulative Effect from UR-Energy's Exploration Program on the Beverly Caribou Herd", by Golder Associates Ltd., February 2007

- by Leslie Wakelyn, BQCMB Biologist

General Comments *(supported by more detailed comments which follow)*

- MVEIRB's conclusions about this cumulative effects assessment are summarized in their Report of Environmental Assessment (pp. 56-57).
    - Their points outlining the "short-comings" of the assessment are all valid, as is their conclusion that "the developer has not adequately supported its conclusions that the development will have negligible impacts on caribou".
- The first recommendation made to MVEIRB in the joint BQCMB/GNWT presentation at the Ur-Energy public hearing was that "MVEIRB should not accept the statement from Ur-Energy that the residual impacts to caribou will be 'minor', or that cumulative impacts will have a 'negligible environmental consequence'." This recommendation was provided because no evidence was supplied by Ur-Energy to support the assumptions upon which their conclusions concerning impact significance were based.
    - This situation has not changed, as Golder's report does not provide appropriate evidence to support these conclusions.
    - Many of Golder's conclusions concerning the cumulative effects of the proposed project are not valid.
- Golder's February 2007 report does not provide an adequate response to the recommendations made by the BQCMB concerning cumulative effects.
    - The authors do not address many of the key issues raised by the BQCMB during its presentation to the Ur-Energy hearing or in previous submissions made to MVEIRB as part of the environmental assessment.
    - The analysis deals with only a few of the factors that need to be looked at to evaluate the potential cumulative effects of this project, in combination with other similar projects, on Beverly and Ahiak caribou and caribou habitat.
- Golder has not presented an adequate assessment of cumulative effects of the proposed project according to CEAA's guidelines, which they claim to have used as a basis for their assessment. More importantly, their assessment does not fulfill the requirements of cumulative assessment outlined by MVEIRB, under whose jurisdiction Ur-Energy's environmental assessment was conducted.
- There is an apparent disconnect in the report:
    - The analysis (Sec. 3.0) deals primarily with the direct effects of disturbance from campsites on caribou range, mitigation measures (4.0) focus on minimizing disturbance to caribou, and the conclusions about residual effects (Sec. 5.0) don't even mention disturbance to habitat.

- It appears that several different authors were responsible for different sections of the report, and no integration was conducted to support conclusions made. The conclusions concerning residual effects could have been made without any reference to the analysis.

Specific Comments on Report by Section

1.0 Introduction

- Subject of the report - Golder states that their February 2007 report is a response to a request made during the Ur-Energy public hearing by the BQCMB for "additional information on the potential cumulative effects from the proposed program on the Beverly caribou herd" and that "the objective of this response is to provide a qualitative assessment of the relative importance" of project-related activities and various other factors on the Beverly caribou herd (p. 1). There are several problems with these statements:
  - Recommendations made by the BQCMB to MVEIRB at the public hearing included cumulative effects analysis for proposed developments on the entire range of ***Beverly and Ahiak caribou***, not just for the Beverly herd.
  - The BQCMB did not only request information at the January 2007 public hearing, but previously submitted information requests to MVEIRB which included questions about mitigation and cumulative effects. MVEIRB included the questions from the BQCMB in part in their formal information requests (IR #8 and 9) to Ur-Energy in November 2006. These IRs requested answers to specific questions. However, no response to these IRs was submitted to MVEIRB or to the BQCMB by Ur-Energy, and these questions remain unanswered after submission of Golder's February 2007 report.
  - The BQCMB did not request an assessment of the "relative importance" of project-related activities. Assessing the effects of the proposed project in comparison with the effects of other natural factors on caribou in no way helps us to assess the cumulative effects of human activities on caribou. Negative impacts of human activities on caribou will add to the stresses imposed on caribou by natural factors, which is the reason they are of concern, and why they need to be assessed as part of environmental assessment processes.
  - The BQCMB requested an analysis of the cumulative effects of the proposed project's activities in combination with the effects of other similar past, ongoing and future projects, which was not provided by Golder in their February 2007 report.
- Use of CEAA Cumulative Effects Assessment Practitioners Guide
  - As described by Golder, CEAA's definition of cumulative effects is "the sum of residual effects from all past, current and reasonably foreseeable projects and/or activities on a particular component of the environment or population". Golder did not assess effects of ***all*** projects, nor did it assess effects at the ***population level*** (i.e., the Beverly and Ahiak herds)***.***

- Golder should also have used MVEIRB's EIA Guidelines, since MVEIRB, not CEAA, was conducting the environmental assessment of this project. These guidelines advise developers to follow four steps in cumulative effects assessment, which are:
    a) Identifying the valued parts of the environment that are potentially affected by the proposed development;
    b) Determining what other past, present or reasonably foreseeable future developments will affect these parts of the environment;
    c) Predicting the effects of the proposed development in combination with these other developments; and
    d) Identifying ways to manage the combined impacts.

  In their report, Golder incompletely addressed the second and third steps and did not conduct the last step.

2.0 Scoping of Issues

- Small correction needed in description of declining caribou herds – 5 of 8 herds that use parts of the NWT as seasonal range during parts of the year have been established to have been declining; not 5 of 8 ***arctic*** herds (there are many other "arctic caribou herds").
- Use of "direct and indirect effects" of activities on caribou is not consistent. Sometimes they refer to direct effects on caribou range, including loss or disturbance of habitat. Changes in distribution, movement, and behaviour of animals are called "indirect effects". It is unclear why a change in behaviour or movements resulting from exploration activities such as drilling would not be considered a direct effect on caribou.

Spatial and Temporal Boundaries

Spatial:

- The local study area should include the entire project area, since this is the area in which disturbance to caribou from their proposed program could occur. A circle of 1 km radius around drill rigs is not adequate as local study area; exploration activities entail larger area, including flights to and from camps, supply points, ground survey areas etc.
- The regional study area should be the annual ranges of the Beverly ***and Ahiak*** herds, and that should be based on all available data, not just the very limited data from Beverly satellite-collared caribou.
- Golder's assumption that the annual range of the Beverly herd is accurately defined by a very limited amount of collar data (movements of 6 cows, primarily in one year, plus one cow over 9 years) is ***not valid***.
    - Government survey data from 1940s-1990s show a much larger total range for the Beverly herd.
    - "Annual range" should be used to describe the area used by the herd in a single year (from the beginning of one spring migration to the next, for instance). The total area used by the herd over many years, which is what should be used for assessment of cumulative effects, should be called "year-round" range.

- What needs to be used for the assessment is an area defined by seasonal use of the caribou herds (all sex and age classes), not just movements of a few cow caribou over those years.

- The year-round range of the Ahiak herd can be approximated primarily by GNWT data from satellite-collared caribou over the past few years; few surveys of the Ahiak herd have been conducted.
- The "seasons" Golder uses are not those typically used to describe the caribou life cycle; for instance, spring migration occurs from March-May.

Temporal:

Several decisions severely limit the scope of the analysis and prevent a valid assessment of cumulative effects for *all effects* from *all projects* on the caribou herds:

- A period of 1990-2011 was chosen to represent "the known past and current active and inactive Land Use Permits" (1990-2006) and the maximum length of the Ur-Energy exploration program (2007-2011). Golder's statement that this includes all human disturbances known to occur and that may occur within the regional study area from 1990 through 2011 is ***not valid***.
    - Effects resulting from human activities before 1990 have likely occurred, and effects that occur during the project timeframe may continue past the project period.
    - In fact, in its previous report that supported Ur-Energy's land use application, Golder described a time period for cumulative effects assessment that started in the 1970s, since that was when their predecessor started mineral exploration in this area.
    - Activities permitted under land use permits are not the only exploration activities that occurring during this period.
- They state that mineral claim blocks were not included "as it is not possible to predict the potential for future activity. . ." However, it is possible to assess the past and ongoing activity in these areas, so they should be included in the analysis.
- They do not include any "reasonably foreseeable" developments in their analysis.

3.0 Analysis

- Golder did not completely address the second and third steps of cumulative effects assessment as outlined by MVEIRB.
    - For step "b", they only partially determined "what other past, present or reasonably foreseeable future developments will affect these parts of the environment", as they did not: a) include past developments whose effects continue into the present or beyond, b) identify relevant reasonably foreseeable future developments, and c) consider developments on the Saskatchewan portion of the caribou ranges.
    - For step "c", they predicted the effects of the proposed development in combination with only some (not all) other developments, and only in terms of the "footprint" of the local study area attributed to each development, defined by land use permits in the NWT and Nunavut.

- The basic assumption underlying this analysis is ***not valid*** – that is, that only activities conducted under land use permits active during a limited time period have the potential to cause direct or indirect cumulative effects on caribou. Many exploration activities have occurred, are occurring, and will continue to be conducted across the caribou ranges that fall below the LUP threshold (i.e., they do not require a land use permit), and effects from past human activities may continue past the project period.
- Analysis is limited to a subset of Land Use Permits in NWT and NU primarily, yet Golder's conclusions are made in terms of "human activities" on Beverly herd's entire "annual range", which are ***not valid***.
- The second paragraph, which explains what LUPs are used in the analysis, is confusing:
    - Unclear what is meant by "there are 37 active past, current, or future human-related LUPs within the annual range of the Beverly herd", followed by "Twenty-four of these LUPs are currently no longer active".
    - Do they mean only 13 LUPs are currently active in this area?
    - Do they mean of all past LUPs, they only included those that are currently active – if so, why? All activities conducted under LUPs since 1990 (by their definition) should be included, since this is what they defined as their temporal scope.
    - What do they mean by "human-related LUPs"? All LUPs are "human-related", since they are issued for human activities.
    - Is the LUP applied for by Ur-Energy the only potential future LUP included? It should have been fairly evident that other LUPs were going to be applied for in the near future – including the four LUP applications submitted by Uravan and Bayswater in 2007, only months after this report was written.
- As described above, it is inadequate that they do not include any indication of activities (past, current, or future) occurring on mineral claims other than those for which a LUP has been issued. Certain activities are required to maintain mineral claims, so companies with this type of mineral tenure do conduct activities on their claim blocks.
- They do not adequately address the direct and indirect effects of disturbance on caribou, at the individual or herd levels:
    - No clear description is provided about how they estimate direct and indirect effects of disturbance.
    - They only consider disturbance to caribou range, not to caribou on p.6.
    - The only discussion of the direct effects on caribou occurs on p. 7 and concerns mine-related mortality; they do not discuss direct or indirect disturbance from exploration activities on caribou or the potential impacts of that disturbance. This is not consistent with their proposed mitigation measures, which presumably attempt to reduce the effects of disturbance to caribou from their proposed exploration activities (see below).
    - They have restricted their analysis to a set "footprint" to describe the area of habitat potentially affected, but have not addressed the issue of the value of that habitat. They have not adequately recognized the importance of the project area to caribou as key migration habitat.

4.0 Mitigation

- Their time periods are too rigid, such as shutting down for the month of May. The northward spring migration of some animals may occur during UR-Energy's proposed operating period in April, or some animals may be delayed and still be moving through the project area in early June.
- Timing of project activities should be determined by the migratory behaviour of the caribou that move through the project area, not by the calendar. Since the timing of migratory movements varies, a monitoring program is required to determine the timing of project activities.
- A distance of 5 km has been recommended as desirable to avoid disturbance of caribou from drilling near water crossing sites, and 10 km as the distance from camps, fuel caches, and blasting – see INAC Caribou Protection Measures. Recent information at NWT diamond mines shows these distances may not be sufficient to avoid disturbance to caribou while crossing water bodies, but it is the currently the accepted best practice that should be followed *at a minimum* by Ur-Energy. Their commitment to not operate within 3 km of water crossings, especially on key migration range, is not adequate.
- Developers should be attempting to fly all aircraft at a minimum of 610 m above ground level for longer flights (e.g., when flying supplies from outside project area) and above 300 m for flights within the project area whenever possible. Similar recommendations are being made by NIRB for similar exploration programs in Nunavut, based on recommendations provided by Nunavut's Department of Environment, Environment Canada, and the BQCMB.

5.0 Predicted Residual Effects

- This section appears to have been written separately from the rest of this report, as the assumptions are not supported by the previous text, and the conclusions repeat those made in previous submissions, with the same lack of supporting evidence.
    - The conclusions do not appear to have any relation to the analysis or figures presented earlier in the report.
    - The claim that "the residual effects from the Program on the health and movement of individuals and the herd should be negligible" is not supported by the previous analysis. In fact, the analysis didn't even discuss the disturbance that the mitigation measures presumably intend to reduce.
- The claim that a distance of 500m to 1 km is the "zone of influence" in which caribou would be influenced by human activities is not supported. Recent studies at NWT diamond mines show this is likely much less than the distance at which disturbance to caribou can be expected to occur.
- The statement that the residual cumulative effects of the proposed project "should have a negligible influence on the Beverly caribou herd and the associated traditional and non-traditional use of caribou" because larger scale natural factors will have a larger influence on caribou does not make sense ecologically. It also is irrelevant to the main issue, which is an

assessment of the accumulating effects of human activities over time and space on migratory caribou that may be exposed to varied human influences from season to season and year to year, ***in addition*** to the effects from natural factors.

6.0 Monitoring and Follow-Up

- A monitor should be hired to watch for approaching caribou and track caribou movements throughout the project's operating period; this should not occur only as proposed in the report, ***if and when*** "caribou nursery groups are regularly observed near the exploration program" (p. 12). If a monitoring program is initiated only after cows and calves are observed in the project area, disturbance will have already occurred. The main purpose of monitoring should be to prevent project effects on caribou, not to document disturbance as it occurs.