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Department of Environment

Ministère de l'Environnement

August 11, 2008

Phyllis Beaulieu
Manager of Licensing
Nunavut Water Board

via Email to: licensingadmin@nunavutwaterboard.org

RE: NWB FILE # 2BE-BOR – Indicator Minerals Inc. – Borden Diamond Exploration Project

Dear Ms. Beaulieu:

The Government of Nunavut, Department of Environment (DOE) has reviewed the water license application from Indicator Minerals Inc. for the Borden Diamond Exploration project, and has the following comments and recommendations to make based on the *Environmental Protection Act* and the *Wildlife Act* regarding spill contingency, abandonment & restoration and wildlife.

1. Spill Contingency Plan

The subsequent recommendations and comments are based on the DOE *Spill Contingency Planning and Reporting Regulations*, *Contingency Planning and Spill Reporting in Nunavut: a Guide to the New Regulations*, and *Guideline for the General Management of Hazardous Waste in Nunavut*. Consequently; DOE recommends the following be included in the Spill Contingency Plan (SCP):

- A site map that is intended to illustrate the facilities relationship to other areas that may be affected by the spill. The map should be to scale and be large enough to include the location of your facility, nearby buildings or facilities, roads, culverts, drainage patterns, and any nearby bodies of water.
- A description of the type and amount of fuels and chemicals normally stored on site.
- The SCP does not outline any disposal/treatment techniques for contaminants (e.g. contaminated soils); however, states that the 24-Hour Spill Line will be contacted in order to receive instructions “regarding collection of the contaminated soil or vegetation, its removal and site cleanup/restoration.” The DOE advises the proponent that the role of the regulatory agencies is not to instruct how the disposal is done, but to ensure that clean up and disposal/treatment occurs in an approved and authorized manner. The proponent should revise the Spill Contingency Plan to outline details including: disposal/treatment techniques, location of disposal sites approved to accept wastes, and means of storage prior to disposal. For further information, the proponent is referred to DOE’s *Environmental Guideline for Site Remediation and A Guide to Spill Contingency Planning and Reporting*.
- The NWT-Nunavut spill report form has been updated, and can be obtained from DOE website (<http://www.gov.nu.ca/env/applications.shtml>). This form should be included in the spill plan, and proponents are required to use this form for reporting to the Spill Line in the case of spills. Additionally, the proponent is advised to enter spill information electronically in the form in the case of spills so the information is legible to regulators inspecting the spill.

2. Abandonment & Restoration Plan

Hazardous Material Storage

Hazardous materials stored on-site should be marked so they will be visible under all conditions, in all seasons. This recommendation is intended to help prevent possible injuries to camp personnel and/or damage to the containers. Unless otherwise specified by the land use inspector or license -issuing agency, all hazardous materials should be removed from the site upon completion of the activity. All hazardous waste should be accompanied by hazardous waste manifests with the appropriate information (Generator number, carrier number, and receiver number).

Incineration

The Government of Nunavut is a signatory to the *Canada-Wide Standards for Dioxins and Furans*, and *Canada-Wide Standards for Mercury Emissions*. For incineration of wastes, DOE therefore has the following comments to make regarding emissions from incineration.

For a camp of greater than 10 but less than 50 people, the proponent shall apply appropriate technologies to ensure complete combustion of wastes, and the use of a dual chamber, forced-air incinerator is recommended. The proponent shall make determined efforts to achieve compliance with the Canada-wide Standards for dioxins and furans and the Canada-wide Standard for Mercury. Efforts should include the implementation of a comprehensive waste management strategy (especially waste segregation) that is designed to reduce and control the volumes of wastes produced, transported, and disposed of. The Waste Management Strategy should consider and include:

- Purchasing policies that focus on reduced packaging,
- On-site diversion and segregation programs (i.e. the separation of non-food waste items suitable for storage and subsequent transport and disposal or recycling).
- If incineration is required, ensure diligent operation and maintenance of the incineration device and provide appropriate training to the personnel operating and maintaining the incinerator.

Waste wood treated with preservatives such as creosote, pentachlorophenol or heavy metal solutions should not be burned. Additionally, plastics, electrical wire, asbestos and building demolition wastes (except clean wood) are wastes likely to produce dioxins and furans when burned and should be excluded from incineration. Under no circumstance should hazardous wastes be managed through burning or incineration. The efforts made to achieve compliance shall be reported as part of the annual report.

Final Inspections

Final inspections of the entire site should be conducted by the proponent and lead agency to make sure that all areas of the site have been reclaimed as much as possible to its previous condition. Soil samples and pictures before and after the project would make this process easy on the proponent and leading agencies involved in determining areas of concern.

3. Wildlife

The project is located in an area where caribou, carnivores and raptors may be encountered. To prevent and minimize project related impacts on wildlife, it is important that the proponent is aware of the types of wildlife species, their distribution and their abundance in the project area, prior to the start of the project. DOE therefore asks the proponent records all wildlife observations in a 'wildlife log', and maps the location of any sensitive wildlife sites such as denning sites,

calving areas, caribou crossing sites, and raptor nests. The timing of critical life history events (i.e., calving, mating, denning and nesting) should also be identified. Additionally, the proponent should indicate potential impacts from the project, and ensure that operational activities are managed and modified to avoid impacts on wildlife and sensitive sites; the log and maps will be a useful tool to achieve this. Below are wildlife specific recommendations that DOE advises the proponent to implement.

1. Caribou

- During the period of May 15 to July 15 when caribou are observed with calves in the project area, the proponent should suspend all operations, particularly blasting, overflights and airborne geophysics surveys, and the use of snowmobiles and ATV's (all-terrain vehicles) outside the immediate vicinity of the camp.
- Flights of less 610 m above ground should be avoided when caribou are in sight of operation.
- During caribou migration, the proponent shall not locate and operate so as to block or cause diversion to migrating caribou. The proponent shall cease activities that may interfere with migration such as airborne geophysics surveys or movement of equipment or personnel, until the caribou have passed.
- Between May 15 and Sep. 1, the proponent shall not construct any camp, cache any fuel, conduct blasting or drilling operations, operate ground, air or water based mobile equipment, including geophysics surveys, within 10 km of caribou crossings.

2. Human-carnivores conflicts

It is likely that during operations the proponent will encounter grizzly bears, polar bears, wolves, foxes and wolverines. The proponent is advised to minimize odors that potentially attract carnivores through timely camp housekeeping and bearproof storage of food and food waste. Should the proponent experiences any interaction with carnivores, they are advised to contact the local Conservation Officer. All camp members should be fully aware and trained in the human - bear/ wolf/fox/wolverine encounter avoidance plans especially in avoidance of any feeding (advertently or inadvertently by leaving food out) of these species. The proponent must discourage food conditioning of all wildlife species, negative reinforcement is encouraged.

The proponent should take all possible measures to avoid wildlife encounters, specifically bears. These measures include use of an alarmed trip wire around the site perimeter and wildlife monitors. DOE requests that wildlife monitors working for the proponent carry shot guns and have cracker shells, rubber bullets, and bean bag rounds available to use as deterrents. The proponent should follow procedures outlined in the "Safety in Bear Country Manual", and should contact the Regional Biologist or the Wildlife Manager indicated below for information and advice on measures which should be taken to minimize the possibility of bear-people conflicts.

3. Raptor Nesting Areas

Raptor nests occur throughout Nunavut, and most of the prospecting areas likely contain at least a few nest sites. The proponent should not to disturb nesting raptors from 15 April to 1 September by staying at least 1.5 km away from them when in transit by aircraft and by avoiding approaching them closely while on foot.

The following is a list of general precautions that must be considered when conducting prospecting activities near Peregrine Falcon, Gyrfalcon, and other raptor nests (most of these precautions will also apply to all nesting bird species):

- Disturbance is most harmful early in the nesting period (May and June for Peregrine Falcon and Gyrfalcon, similar for Rough-legged Hawk): raptors will attempt to maximize their chances of successfully raising young. If they decide early in the breeding period that their nest is at risk, they may abandon it. If nests are disturbed at this stage of nesting, there may not be sufficient time to renest. All disturbances to nests during the early part of the nesting cycle must be avoided (avoid nest sites from late May through to mid-July).
- Individuals show variability in their response to disturbance: Different birds will show different responses to varying levels of disturbance. This may result from the general health of the bird, weather conditions, previous life experiences, and adaptability. Therefore, treat all nest sites with equal precaution, regardless of the response of the bird. Do not disturb raptor nests during conditions of poor weather (rain, snow, high winds).

Approaching the nest site near the time of fledgling (where chicks fly away from the nest) often leads to premature nest departure: During the last few weeks of nesting, severe disturbance at the nest often causes young raptors to jump out of the nest. This can cause death from exposure, predation, starvation, or trauma from the fall itself. All activity within 100m of a nest site during the latter part of the nest stage (10-20 August for peregrine falcons in this region) must be avoided.

4. Aircraft Disturbance

Aircraft activities have been shown to affect wildlife such as caribou, muskoxen and birds in behaviour, development and reproductive success as well as subject the wildlife to adverse weather conditions and accidental damage or injury. However, by raising flight altitudes, studies have shown that it will alleviate some of the negative effects. Therefore, DOE recommends that the following protection measures are taken to reduce aircraft disturbance on wildlife.

Unless there is a specific requirement for low level flights, aircraft activities should maintain a minimum altitude of 610 meters above ground level in places where there are occurrences of wildlife. In areas where there are observed large concentrations of birds, flight level is restricted to 1,000 meters vertical distance and 1,500 meters horizontal distance from the birds. As a good practice, it is recommended to avoid critical and sensitive wildlife areas at all times by choosing alternate flight corridors.

5. Recording Wildlife Observations and Critical Habitat

DOE requests the proponent records and reports wildlife observations near the project area annually to a Regional Wildlife Biologist at the end of the operational season. This information will inform workers the kinds of wildlife present on site, prepare them for wildlife encounter, and allow them to modify activities accordingly to avoid wildlife. Additionally, this will assist the government

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and the applicant with collection of wildlife data. The reports should include location (i.e., latitude and longitude), species, number of animals, a description of the animal activity, and a description of the gender and age of animals if possible. It is important to record the presence and number of animals as well as any young observed. For example, observations of wolves and their young during the summer will be an indicator of denning in the proximity.

6. DOE Contact (Wildlife Division)

(Baffin)

Regional Manager, Wildlife

-Seeglook Akeeagok, (867) 975-7800, sakeeagok@gov.nu.ca

Biologist, Baffin Region

-Debbie Jenkins, (867) 899-8876, pondbiologist@qiniq.com

The GN thanks NWB for the opportunity to provide comments on the Indicator Minerals Inc.'s water license application. Please contact us should you have further questions.

Yours sincerely,

Original signed by

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