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Department of Environment

Ministère de l'Environnement

April 18, 2008

Richard Dwyer
Licensing Administrator
Nunavut Water Board

via Email to: licensingadmin@nunavutwaterboard.org

RE: NWB FILE # 2BE-MEP – Meliadine Resources Limited – Meliadine East Gold Exploration Project

Dear Mr. Dwyer:

The Government of Nunavut, Department of Environment (DOE) has reviewed the water license application from Meliadine Resources Ltd. for the Meliadine East Exploration Project located approximately 15 km north of Rankin Inlet. The DOE believes the project will not result in significant adverse effects although the potential for negative environmental impacts exists. The DOE therefore requests that the proponent implements the following recommendations based on the *Environmental Protection Act* and the *Wildlife Act* regarding spill contingency, hazardous materials management, abandonment & restoration, and wildlife.

A. SPILL CONTINGENCY PLAN:

Based on DOE's *Spill Contingency Planning and Reporting Regulations*, and *Contingency Planning and Spill Reporting in Nunavut: a Guide to the New Regulations*, DOE recommends the following:

- The name, job title and 24 hour telephone number for the persons responsible for activating the contingency plan should be included in the plan. This ensures the employee discovering the spill can activate a response and provides a 24 hour point of contact for the authority investigating the spill.

- The DOE contact number listed in the spill plan is inaccurate. The correct number is (867) 975-7700. Please update the list to include the Manager of Pollution Control at DOE (867) 975-7748, as well.

- A site map that is intended to illustrate the facilities relationship to other areas that may be affected by the spill should be included. The map should be to scale and be large enough to include the location of your facility, nearby buildings or facilities, roads, culverts, drainage patters, and any nearby bodies of water.

- The DOE monitors the movement of hazardous wastes, from generators, carriers to receivers of the wastes, through the use of a tracking document known as a Waste Manifest. A Waste Manifest must accompany all movements, and all parties must register with DOE by contacting Robert Eno at (867)975-7748 or reno@gov.nu.ca. This procedure should be discussed in the spill plan.

B. HAZARDOUS MATERIALS MANAGEMENT

1. Fuel Storage

To prevent spreading in the event of a spill, fuel stored in drums should be located, whenever practical, in a natural depression a minimum distance of 90 feet from all streams, preferably in an area of low permeability. All fuel storage containers should be situated in a manner that allows easy access and removal of containers in the event of leaks or spills. Large fuel caches in excess of 20 drums should be inspected daily.

2. Chemical Storage

All chemicals should be stored in a safe and chemically-compatible manner a minimum of 90 feet from all bodies of water. The applicant should be required to remove unused chemicals for reuse or disposal to an approved site using methods approved by the Land Use Inspector. Material safety data sheets (MSDS) should be provided for each chemical and be posted in a central location; accessible by all camp personnel. Camp personnel should be conversant in the handling of these chemicals as well as able to deal with any accidents or spills.

3. Location of Hazardous Materials

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. The proponent is referred to DoE's *Environmental Guideline for the General Management of Hazardous Waste.*

C. ABANDONMENT AND RESTORATION PLAN

1. *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.

2. *Drill Sumps*

The sumps should only be used for inert drilling fluids, not any other materials or substances. The sumps should be properly closed out.

3. *Incineration*

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

For a camp of 15-20 people as proposed, 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. 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.

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. Lastly, incineration of hazardous wastes is strongly discouraged.

D. 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 area, the proponent should suspend all operations, particularly blasting, overflights by aircraft of less than 610 m above ground, 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 cease activities that may interfere with, block, or divert 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 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 experience 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 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. <u>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).</u>

- 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, <u>treat all nest sites with equal precaution, regardless of the response of the bird.</u> <u>Do not disturb raptor nests during conditions of poor weather (rain, snow, high winds).</u>

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 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)

Manager, Wildlife
-Dan Shewchuck, (867) 857-2828, dshewchuk@gov.nu.ca

Biologist, Kivalliq Region
-Mitch Campbell, (867) 857-2828, mcampbell@gov.nu.ca

The DOE thanks NWB for the opportunity to provide comments on Meliadine Resources Limited water license application for the Meliadine East Exploration Project. Please contact us if you have further questions.

Yours sincerely,

Original signed by

Froeydis Reinhart
Scientist/Coordinator, Environmental Assessment
Department of Environment
Government of Nunavut
P.O. Box 1000, Stn. 1360
Iqaluit, Nu X0A 0H0
PH: (867) 975-7735
FX: (867) 975-7739
EM: freinhart@gov.nu.ca