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4 March 2011

EC File: 4703 001 125
NIRB File: 11EN006

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Via email: info@nirb.ca

**RE: NIRB 11EN006: Notice of a Part 4 Screening for Uranium North Resources Corp.'s
"Mallery Lake" project proposal**

Environment Canada (EC) has reviewed the above-mentioned project proposal submitted to the Nunavut Impact Review Board (NIRB). The following specialist advice has been provided pursuant to the *Canadian Environmental Protection Act*, Section 36(3) of the *Fisheries Act*, the *Migratory Birds Convention Act*, and the *Species at Risk Act*.

Uranium North Resources Corp. is proposing to complete early stage exploration for gold and other base metals in the area near Mallery Lake, approximately 135 km southwest of Baker Lake. Proposed project activities include prospecting, geological mapping, sampling, aerial and ground geophysical surveys; exploration drilling; helicopter-assisted drilling, including the daily transportation of field crews to drill sites and demobilization; establishment of temporary tent camp facilities for a maximum of 20 people near Mallery Lake; transport of supplies, fuel, and personnel to the camp site from Baker Lake via Twin/single Otter aircraft; temporary storage of chemicals and hazardous materials on site; water use for drilling purposes and camp activities; disposal of sewage, greywater and waste generated from camp activities; incineration of combustible waste; and the removal of non-combustible and hazardous waste to an approved disposal facility. Project activities, and camp occupation, will occur from April through September, annually from 2011 to 2016.

Upon review of the application, EC provides the following comments and recommendations for the NIRB's consideration:

General

- The proponent shall not deposit, nor permit the deposit of chemicals, sediment, wastes, or fuels associated with the project into any water body. According to the *Fisheries Act*, Section 36 (3), the deposition of deleterious substances of any type in water frequented by fish, or in any place under any conditions where the deleterious substance, or any deleterious substance that results from the deposit of the deleterious substance, may enter any such water, is prohibited.

- All sumps, spill basins, and fuel caches should be located in such a manner as to ensure that their contents do not enter any water body, are to be backfilled, and re-contoured to match the surrounding landscape when they are no longer required.

Waste Disposal

- The proponent states that combustible solid waste will be incinerated in a vented base fuel fed burning barrel. In principle, EC does not encourage the open burning of waste as a means of disposal. However, considering the constraints at the Mallery Lake camp, EC recommends the proponent heed the following guidance:
 - Solid wastes that are conditionally suitable for open burning are paper products, paperboard packaging and untreated wood. Plywood, painted wood or other treated wood should not be disposed of in this manner.
- EC recommends the use of an approved incinerator for the disposal of combustible camp wastes. EC has developed a Technical Document for Batch Waste Incineration, and is available at the following web link:
<http://www.ec.gc.ca/gdd-mw/default.asp?lang=En&n=F53EDE13-1>
 The technical document provides information on appropriate incineration technologies, best management and operational practices, monitoring and reporting. This information should be incorporated into an incineration management plan for the camp. EC would like the opportunity to review this plan prior to implementation.
- The proponent states that non-burnable waste will be shipped off-site for disposal, EC suggests that confirmation and authorization be obtained from the intended community landfill (i.e., Baker Lake) prior to shipment.
- The proponent also states that hazardous waste will be transported from the Mallery Lake Project camp, Nunavut to Baker Lake, Churchill, Yellowknife, or Edmonton for disposal. Under the *Canadian Environmental Protection Act* (CEPA 1999) and the Interprovincial Movement of Hazardous Wastes Regulations, the transportation of hazardous waste between territories and provinces requires that the proponent complete movement documents. The Government of Nunavut only regulates waste in Nunavut and has no authority in the Northwest Territories or the provinces. An approved movement document should be completed prior to shipment (a copy of a relevant movement document is attached).

Spill Contingency Planning

- A spill kit, including shovels, barrels, absorbents, etc. should be readily available at all locations where fuel is being stored or transferred in order to provide immediate response in the event of a spill.
- EC recommends the use of secondary containment, such as self-supporting insta-berms, for storage of all barrelled fuel rather than relying on natural depressions to contain spills.
- Refueling shall not take place below the high water mark of any water body and shall be done in such a manner as to prevent any hydrocarbons from entering any water body frequented by fish.
- Spills are to be documented and reported to the NWT/NU 24 hour Spill Line at (867)920-8130. EC recommends that all releases of harmful substances, regardless of quantity, are immediately reported where the release:
 - is near or into a water body;
 - is near or into a designated sensitive environment or sensitive wildlife habitat;
 - poses an imminent threat to human health or safety; or,
 - poses an imminent threat to a listed species at risk or its critical habitat.
- The EC contact information Page 6 of the Plan should be updated and consolidated to read: Environment Canada, Iqaluit (867)975-4644. The listings for the 24 Hour Pager and for the Emergency Pager should be removed as they are no longer in service.
- EC recommends that the proponent include a provision that drip pans be used when refueling

equipment on site in order to help prevent spills from occurring.

- EC recommends that a map of the camp with marked locations of fuel storage sites and spill kits should be attached to the Plan and be posted in an area visible and accessible to camp occupants.

Drilling

- The proponent shall not erect camps or store materials on the surface ice of lakes or streams, except that which is for immediate use.
- Regardless of the type of drilling conducted, the following conditions will apply:
 - Drilling wastes from land-based drilling should be disposed of in a sump such that they do not enter any body of water.
 - For lake-based winter drilling the proponent may refer to the Interim Guidelines for On-Ice drilling. Return water released to the lake must be non-toxic. Return water release must not result in an increase in total suspended solids (TSS) in the waters of the lake that exceeds Canadian Council of Ministers of the Environment (CCME) Guidelines for the Protection of Freshwater Aquatic Life (i.e. 10 mg/L for lakes with background levels under 100 mg/L, or 10% above background for those lakes with TSS background levels above 100 mg/L).
 - Drilling additives or mud shall not be used in connection with holes drilled through lake ice unless they are re-circulated, contained such that they do not enter the water, or are demonstrated to be non-toxic.
 - If artesian flow is encountered, core-drill holes shall be plugged and permanently sealed upon project termination.
- EC assessed inorganic chloride salts and concluded that these salts in high concentrations are harmful to the environment. As a result, the proponent should ensure that when using calcium chloride (CaCl_2) for drilling purposes that return water is contained in a properly constructed sump and located in such a manner as to ensure that the contents do not migrate out from the sump. Please note that the proponent should not rely on permafrost integrity to contain and isolate drilling wastes.

Wildlife and Species at Risk

- Section 6 (a) of the *Migratory Birds Regulations* states that no one shall disturb or destroy the nests or eggs of migratory birds. If active nests are encountered during project activities, the nesting area should be avoided until nesting is complete (i.e., the young have left the vicinity of the nest).
- EC recommends that food, domestic wastes, and petroleum-based chemicals (e.g., greases, gasoline, and glycol-based antifreeze) be made inaccessible to wildlife at all times. Such items can attract predators of migratory birds such as foxes, ravens, gulls, and bears. Although these animals may initially be attracted to the novel food sources, they often will also eat eggs and young birds in the area. These predators can have significant negative effects on the local bird populations.
- Section 5.1 of the *Migratory Birds Convention Act* prohibits persons from depositing substances harmful to migratory birds in waters or areas frequented by migratory birds or in a place from which the substance may enter such waters or such an area.
- The following comments are pursuant to the *Species at Risk Act* (SARA), which came into full effect on June 1, 2004. Section 79 (2) of SARA, states that during an assessment of effects of a project, the adverse effects of the project on listed wildlife species and its critical habitat must be identified, that measures are taken to avoid or lessen those effects, and that the effects need to be monitored. This section applies to all species listed on Schedule 1 of SARA. However, as a matter of best practice, Environment Canada suggests that species on other Schedules of SARA and under consideration for listing on SARA, including those

designated as at risk by the Committee on the Status of Endangered Wildlife in Canada (COSEWIC), be considered during an environmental assessment in a similar manner. The Table below lists species that may be encountered in the project area that have been assessed by COSEWIC as well as their current listing on Schedules 1-3 of SARA (and designation if different from that of COSEWIC). Project impacts could include species disturbance, attraction to operations, and destruction of habitat.

Terrestrial Species at Risk potentially within project area ¹	COSEWIC Designation	Schedule of SARA	Government Organization with Primary Management Responsibility ²
Peregrine Falcon	Special Concern (<i>anatum-tundrius</i> complex ³)	Schedule 3 – Special Concern (<i>tundrius</i>)	Government of Nunavut
Short-eared Owl	Special Concern	Schedule 3	Government of Nunavut
Grizzly Bear	Special Concern	Pending	Government of Nunavut
Wolverine (Western population)	Special Concern	Pending	Government of Nunavut

¹ The Department of Fisheries and Oceans has responsibility for aquatic species.

² Environment Canada (EC) has a national role to play in the conservation and recovery of Species at Risk in Canada, as well as responsibility for management of birds described in the Migratory Birds Convention Act (MBCA). Day-to-day management of terrestrial species not covered in the MBCA is the responsibility of the Territorial Government. Populations that exist in National Parks are also managed under the authority of the Parks Canada Agency.

³ The *anatum* subspecies of Peregrine Falcon is listed on Schedule 1 of SARA as threatened. The *anatum* and *tundrius* subspecies of Peregrine Falcon were reassessed by COSEWIC in 2007 and combined into one subpopulation complex. This subpopulation complex was listed by COSEWIC as Special Concern.

- For any Species at Risk that could be encountered or affected by the project, the proponent should note any potential adverse effects of the project to the species, its habitat, and/or its residence. All direct, indirect, and cumulative effects should be considered. Refer to species status reports and other information on the Species at Risk registry at www.sararegistry.gc.ca for information on specific species
- If Species at Risk are encountered or affected, the primary mitigation measure should be avoidance. The proponent should avoid contact with or disturbance to each species, its habitat and/or its residence.
- Monitoring should be undertaken by the proponent to determine the effectiveness of mitigation and/or identify where further mitigation is required. As a minimum, this monitoring should include recording the locations and dates of any observations of Species at Risk, behaviour or actions taken by the animals when project activities were encountered, and any actions taken by the proponent to avoid contact or disturbance to the species, its habitat, and/or its residence. This information should be submitted to the appropriate regulators and organizations with management responsibility for that species, as requested.
- For species primarily managed by the Territorial Government, the Territorial Government should be consulted to identify other appropriate mitigation and/or monitoring measures to minimize effects to these species from the project.
- Mitigation and monitoring measures must be taken in a way that is consistent with applicable recovery strategies and action/management plans.
- All mitigation measures identified by the proponent, and the additional measures suggested herein, should be strictly adhered to in conducting project activities. This will require awareness on the part of the proponents' representatives (including contractors) conducting operations in the field. Environment Canada recommends that all field operations staff be made aware of the proponents' commitments to these mitigation measures and provided with appropriate advice / training on how to implement these measures.

- Implementation of these measures may help to reduce or eliminate some effects of the project on migratory birds and Species at Risk, but will not necessarily ensure that the proponent remains in compliance with the *Migratory Birds Convention Act*, *Migratory Birds Regulations*, and the *Species at Risk Act*. The proponent must ensure they remain in compliance during all phases and in all undertakings related to the project.

If there are any changes in the project EC should be notified as further review may be necessary. Please do not hesitate to contact the undersigned with any questions or comments with regards to the foregoing at (867) 975-4631 or by email at Paula.C.Smith@ec.gc.ca

Yours truly,



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cc: Carey Ogilvie (Head, Environmental Assessment-North, EPO, EC, Yellowknife, NT)
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