Environment Canada **Environnement Canada**

Environmental Protection Operations
Qimugjuka Building 969, P.O. Box 1870
Iqaluit, NU X0A 0H0
Tel: (867) 975-4631
Fax: (867) 975-4645

Our file: 4703 001

24 March 2006

Richard Dwyer
Licensing Trainee
Nunavut Water Board
P.O. Box 119
Gjoa Haven, NU X0B 1J0
Tel: (867) 360-6338 ext. 20
Fax: (867) 360-6369
Email: licensingtrainee@nwb.nunavut.ca *Via Email*

RE: 2BE-TAH0406 – Diamonds North Resources Ltd. – Exploration Activities on Victoria Island, Tahoe Lake Project – Licence Renewal – Type B

On behalf of Environment Canada (EC), I have reviewed the above mentioned application. The following specialist advice has been provided pursuant to Environment Canada's mandated responsibilities for the enforcement of the *Canadian Environmental Protection Act*, Section 36(3) of the *Fisheries Act,* the *Migratory Birds Convention Act*, and the *Species at Risk Act*.

Project Description

Diamonds North Resources is applying for a licence renewal for water use and waste disposal associated with exploration activities as part of its Tahoe Lake Project in the Kagloryuak River and Burns Lake areas of Victoria Island. A licence timeline of April 2006 to April 2011 has been requested and field seasons are planned for spring and summer months. Exploration activities are aimed at locating diamond bearing kimberlite deposits and will comprise of regional till sampling, airborne magnetic surveillance, site specific ground geophysical analysis, small scale trenching, and diamond drilling operations. The proponent will utilize two field camps within its project area, referred to as the northern and southern camps. The northern camp is situated on an esker on the western shore of Tuktu River, having a coordinate of 70˚48'30"N, 109˚10'W. This camp can accommodate up to 25 people and is serviced by Twin Otter aircraft using a landing strip located 5 km to the south of its location. The southern camp is situated on the southern shore of a large lake, having a coordinate of 70˚17'N, 109˚05'W and is capable of accommodating 15 people. The project area is approximately 250 km southeast of Cambridge Bay. A helicopter will be used to transport personnel, equipment, and supplies within this area.

The proponent anticipates that 60 L of potable water will be required on a daily basis for each person involved in its exploration activities. This water will be acquired from

nearby sources and all gray water will be directed to sumps positioned at least 30 m from the ordinary high water mark of nearby water bodies. Gray water sumps will be made inaccessible to wildlife in camp seasonal shutdown procedures and backfilled when abandoned indefinitely. Diamond drilling operations will require a maximum use of 60,000 L of freshwater per day from nearby sources. The proponent will not perform land-based drilling within 30 m of the high water mark of any water body and drill cuttings and waste water will be directed to sumps using the same distance requirement from water bodies. All drill sumps will be backfilled and contoured to resemble their surrounding landscape prior to the end of each field season.

Sewage will be confined to latrine pits that will be backfilled in the project's seasonal shutdown procedures. Combustible wastes will be burned in a vented, base-fuel fed barrel. Non-combustible wastes and any hazardous waste, including waste oil, will be delivered to an approved disposal facility. Empty fuel drums will be back-hauled to Cambridge Bay for recycling or disposal.

The proponent will establish fuel caches at each of its camp sites. Liquid fuel products will be contained in 205 L steel drums that will be placed in 'insta-berms' to prevent soil and ground water contamination from accidental spills. Project activities are abticipated to consume 20,500 L of diesel (100 drums), 25,000 of Jet-A fuel (250 drums), 820 L of gasoline (4 drums), and twelve (12) 100 lb tanks of propane. Spill response kits will be mobilized at all fuel caches, drill sites, and camps. A Spill Contingency Plan has been devised for this exploration project and all spills will be documented and reported to the 24-hour Spill Report Line at (867) 920-8130.

The proponent has a project specific Abandonment and Restoration Plan which outlines seasonal shutdown and final abandonment procedures.

Environment Canada's Comments

Environment Canada requests that the proponent provide additional information regarding its planned trenching operations. In particular, Environment Canada requests that the distance of trenching locations from nearby water bodies and natural drainage areas, their dimensions, and the method of conducting trenching operations be submitted for review. It is recommended that trenched areas be contoured to match the surrounding landscape upon completion of the field season.

Environment Canada recommends that its Environmental Enforcement Officer based in Iqaluit, Jimmie Noble, be included in the Spill Contingency Plan's contact list. Noble can be reached by office telephone (867) 975-4644, cell phone (867) 975-1925, and secure fax-line (867) 975-4594. A 24-hour emergencies pager can be called to report spills after normal office hours. This pager's number is (867) 920-5131 and calls will be received by a Yellowknife emergencies officer or enforcement officer.

Environment Canada recommends the following conditions be applied throughout all stage of the project:

GENERAL

- The proponent shall not deposit, nor permit the deposit of any fuel, drill cuttings, chemicals, wastes, or sediment 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 other deleterious substance that results from the deposit of the deleterious substance, may enter any such water, is prohibited.

DRILLING

- Environment Canada would like to inform the proponent that the *Canadian Environmental Protection Act* has listed CaCl as a toxic substance. The proponent shall therefore ensure that if CaCl is used as a drill additive, all sumps containing CaCl are properly constructed and located in such a manner as to ensure that the contents will not enter any water body.
- Drilling additives or muds shall not be used in connection with holes drilled through lake ice unless they are re-circulated or contained such that they do not enter the water, or demonstrated to be non-toxic.
- For 'on-ice' drilling, return water released must be non-toxic, and not result in an increase in total suspended solids in the immediate receiving waters above the Canadian Council of Ministers of the Environment Guidelines for the Protection of Freshwater Aquatic Life (i.e., 10 mg/L for lakes with background levels under 100 mg/L, or 10% for those above 100 mg/L).
- If an artesian flow is encountered, the drill hole shall be immediately plugged and permanently sealed.

CAMPS

- The proponent shall not store materials on the surface ice of lakes or streams, except that which is for immediate use.
- Environment Canada recommends the use of an approved incinerator for the disposal of combustible wastes.

FUEL STORAGE / SPILL CONTINGENCY / HAZARDOUS MATERIALS

- All fuel caches shall be located above the high water mark of any water body. Further, EC recommends the use of secondary containment, such as self-supporting insta-berms, when storing barreled fuel on location rather than relying on natural depressions. This applies to the main fuel caches and temporary fuel caches used to support exploration activities.

The Canadian Wildlife Service (CWS) of Environment Canada has reviewed the above-mentioned submission and makes the following comments and recommendations pursuant to the *Migratory Birds Convention Act* (the *Act*) and *Migratory Birds Regulations* (the *Regulations)*, and the *Species at Risk Act* (SARA).

- The proposed project area is proposed to occur within the Kagloryuak River Valley on Victoria Island. This area has recently been identified as a key terrestrial habitat site for migratory birds (*Latour, P.B., Leger, J., Hines, J.E., Mallory, M.L., Gilchrist, H.G., Smith, P.A., and Dickson, D.L. 2006. Key migratory bird terrestrial habitat sites in the Northwest Territories and Nunavut (3rd edition). Canadian Wildlife Service Occasional Paper. In press*). The area provides nesting densities for over 30 species. An estimated 6000 – 8500 King Eiders and 22,500 Cackling Canada Geese nest in the Kagloryuak River Valley. These are the highest nesting densities of King Eiders and Cackling Geese in the Western Canadian Arctic. Approximately 800 Sabine's Gulls nest in the area, possibly 3% of the Canadian population. Nesting birds generally occur in greatest densities in lowland areas where there are continuous vegetation cover and numerous ponds. The birds are sensitive to disturbance during breeding season (May through July), such as disturbance from low-level aircraft traffic.

- Section 6 (a) of the Migratory Birds Regulations states that no one shall disturb or destroy the nests or eggs of migratory birds. Therefore, CWS recommends that all activities be conducted outside the migratory bird breeding season, which extends from approximately May 15 to July 31. These dates are approximate, and if active nests (i.e., nests containing eggs or young) are encountered outside of these dates the proponent should avoid the area until nesting is complete (i.e., the young have left the vicinity of the nest).

- If activities are permitted to occur during the breeding season, CWS recommends that the proponent confirm there are no active nests (i.e., nests containing eggs or young) in the vicinity of their operations before activities commence. If active nests of migratory birds are discovered, the proponent should halt all activities until nesting is completed (i.e., the young have left the vicinity of the nest).

- The proponent has indicated that they will adhere to the recommended environmentally acceptable minimum flight altitudes and avoid low level flights over areas known for waterfowl nesting, although no specific flight altitudes were indicated. In order to reduce disturbance to nesting birds, CWS recommends that aircraft used in conducting project activities maintain a flight altitude of at least 610 m during horizontal (point to point) flight.

- In order to reduce disturbance to resting, feeding, or moulting birds, CWS recommends that aircraft used in conducting project activities maintain a vertical distance of 1000 m and minimum horizontal distance of 1,500 m from any observed concentrations (flocks / groups) of birds.

- CWS recommends that camp waste be made inaccessible to wildlife at all times. Camp waste can attract predators of migratory birds (e.g., foxes and ravens) to an area if not disposed of properly. Incineration of camp waste is a recommended option.

- Section 35 of the *Migratory Birds Regulations* states that no person shall deposit or permit to be deposited, oil, oil wastes or any other substance harmful to migratory birds in any waters or any area frequented by migratory birds.

- 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, but will not necessarily ensure that the proponent remains in compliance with the *Migratory Birds Convention Act* (the *Act*) and *Migratory Birds Regulations (*the *Regulations)*. The proponent must ensure they remain in compliance with the *Act* and *Regulations* during all phases and in all undertakings related to the project.

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, EC asks that species listed on other Schedules of SARA and under consideration for listing also be included in this type of assessment.

Species at Risk	Category of Concern	Schedule of SARA
Barren-ground Caribou (Dolphin and Union Population)	Special Concern	Pending
Wolverine (Western Population)	Special Concern	Pending
Peregrine Falcon (subspecies tundrius)	Special Concern	Schedule 3

Impacts to these species could be disturbance and attraction to operations.

Environment Canada recommends:

- The primary mitigation measure for each species should be avoidance. The proponent should avoid contact with or disturbance to each species.
- The proponent should consult with the Government of the Nunavut and appropriate status reports, recovery strategies, action plans, and management plans to identify other appropriate mitigation measures to minimize effects to these species from the project.
- The proponents should develop monitoring plans for each species in accordance with any applicable status reports, recovery strategies, action plans, and management plans and in consultation with Government of Nunavut and Environment Canada.

If there are any changes in the proposed project, EC should be notified, as further review may be necessary. Please do not hesitate to contact me if you have any questions or comments with regards to the foregoing at (867) 975-4631 or by email via david.abernethy@ec.gc.ca.

Sincerely,

David W. Abernethy
Environmental Assessment Technician

cc. Colette Spagnuolo – Environmental Assessment / Contaminated Sites Specialist, Environment Canada, Iqaluit
Myra Robertson – Environmental Assessment Coordinator, Canadian Wildlife Service of Environment Canada, Yellowknife