Environment Canada **Environnement Canada**

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Via Email

Re: NWB2HEE0507 – Diamondex Resources Inc. – Heequo Project – Amendment 1 – Type B

On behalf of Environment Canada (EC), I have reviewed the information submitted with 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*.

Diamondex Resources Inc. (Diamondex) is applying for a water licence amendment to allow water use and waste disposal associated with exploratory operations on land it has recently staked. The proponent is searching for diamond-bearing kimberlite in its Heequo Property. This property is within latitudes 65° 54' to 66° 12'N and longitudes 112° 26' to 113° 0'W. It is located near Takiyuak Lake, approximately 220 km southeast of Kugluktuk and 420 km northeast of Yellowknife. The new claims are within latitudes 65° 57' 37.80" to 66° 7'37.92"N and longitudes 111° 59'35.96" to 112° 28' 9.48"W. Diamondex intends to conduct airborne geophysical surveys throughout its entire project area. It will then carry-out ground investigations where warranted by means of till sampling and diamond drilling. There is a possibility that diamond drilling will occur in late 2005 and/or early 2006.

The project camp can accommodate 15 people and is located on a peninsula that extends into the middle of Kirwan Lake, having coordinates of 65° 98' N, 112° 74' W. No more than 5 m^3 of fresh water is consumed for domestic purposes on a daily basis from this lake. Camp sewage is placed in a latrine and gray water is directed to a sump the kitchen facility. Whenever possible, combustible material is incinerated in a modified 45 gallon drum. Hazardous wastes are contained and removed from site for proper disposal along with bulky items, scrap metal, and empty barrels/fuel drums. No waste products are to be deposited in a waste treatment facility without necessary authorizations and approvals.

It is anticipated that diamond drilling will occur on both land and lake ice. Drill cuttings and drill water will be disposed of in sumps positioned at least 31 m above the high water marks of nearby water bodies, including streams. The proponent will consume no more than 25 m^3 of freshwater from lakes or streams for drilling purposes each day that the diamond drill rigs are utilized.

A fuel cache has been established at the project's camp site. The fuel types and their corresponding volumes are as follows:

DIESEL	25 x 206 L drums
GASOLINE	3 x 206 L drums
AVIATION FUEL	30 x 206 L drums
PROPANE	20 x 100 LB tanks

Diamondex has submitted a Spill Contingency (SC) Plan which provides a chain of command, fuel spill response procedures on a variety of environmental media (land, muskeg, water, rivers, streams, snow, and ice), basic guidelines for the storage, transfer, and disposal of contaminated materials, and the Material Safety Data Sheets (MSDS) of applicable hazardous materials. The proponent states that its employees are trained in spill response protocol and the proper operation of machinery and equipment. Should a fuel spill occur the proponent will contact the NWT 24-Hour Spill Report Line at (867) 920-8130. A spill kit will be kept at the project's camp and all fuel caches throughout active exploration periods. A detailed list of spill kit contents has been included in the SC Plan.

Environment Canada recommends that the Nunavut Water Board (NWB) request the proponent to submit an Abandonment and Restoration Plan for its Heequo Project.

Environment Canada requests that the Heequo Project SC Plan clearly indicate an individual that will be on site, prepared to lead fuel and chemical spill response measures should such events occur.

In general, the proponent has demonstrated a poor effort in its preparation of an SC Plan because it is not project specific. The proponent should revise its SC Plan keeping in mind that if a fuel or chemical spill were to occur, the SC Plan would be used as an emergency reference tool by project personnel. Environment Canada recommends that a revised SC Plan include a map which outlines the project camp area and fuel and chemical management facilities (i.e., main fuel cache, chemical storage areas, contaminated material storage area, and emergency response equipment storage area) and information concerning the use of temporary fuel caches (i.e., the types of fuel and their corresponding volumes made available, fuel storage methods, and site selection criteria).

Furthermore, Environment Canada requests that additional spill-kits be placed alongside all diamond drill rigs and at any chemical storage areas. All spill kits should contain MSDS sheets.

Environment Canada recommends that the following conditions be applied throughout all stages 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**.
- 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.** Therefore, the Environment Canada recommends that sumps be backfilled or made otherwise inaccessible to migratory birds prior to their arrival in spring and that the proponent ensure all spills are thoroughly cleaned up.

SPECIES AT RISK ACT (SARA)

- 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 that may be encountered during the proposed projects are:

Species	**Level of Risk**	**Schedule in SARA**
Peregrine Falcons (tundrius)	Special Concern	Schedule 3
Short-eared Owl	Special Concern	Schedule 3
Dolphin and Union Caribou	Considered by COSEWIC* to be Special Concern	under consideration for listing on Schedule 1
Grizzly Bear	Considered by COSEWIC to be Special Concern	under consideration for listing on Schedule 1
Wolverine	Considered by COSEWIC to be Special Concern	under consideration for listing on Schedule 1

*Committee on the Status of Endangered Wildlife in Canada

Environment Canada asks the following:

- Section 79 (2) requirements be fulfilled for the five species at risk noted in the table above. Specifically, the proponent should identify effects to each species, provide mitigation measures to avoid or lessen each effect and commit to monitoring each species if the project goes ahead.
- The primary mitigation measure for each species should be avoidance. The proponent should avoid contact with or disturbance to each species.
- The proponent should develop other mitigation measures for each species in accordance with any applicable management plans and in consultation with Government of Nunavut (GN) experts.
- The proponents should develop monitoring plans for each species in accordance with any applicable management plans and in consultation with GN experts.

DRILLING

- EC 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 are 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 for 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).
- Land based drilling should not occur within 30 m of the high water mark of any water body.
- 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.
- EC recommends the use of an approved incinerator for the disposal of combustible camp wastes.
- All sumps shall be backfilled upon completion of the field season and contoured to match the surrounding landscape.

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.
- Drip pans, or other similar preventative measures shall be used when refueling equipment on site.

MIGRATORY BIRDS

- EC recommends that all activities be conducted outside the migratory bird breeding season, which extends from approximately 15 May to 1 August. 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 nest). Paragraph 6(a) of the *Migratory Birds Regulations* states that no one shall disturb or destroy the nests or eggs of migratory birds.
- In order to mitigate potential effects and minimize disturbance, any aircraft used in conducting project activities should maintain a horizontal distance of 2 km and a vertical distance of 610 m from any observed groups (colonies) of migratory birds.

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.

Regards,

David W. Abernethy
Environmental Assessment Technician

Cc: Colette Spagnuolo (Environmental Assessment and Contaminated Sites Specialist, Environment Canada - Iqaluit, NU)