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Via Email

Re: NWB2COR0205 – Stornoway Diamond Corporation – Coronation Gulf Project – 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*.

Stornoway Diamond Corporation (Stornoway) is applying to renew their Coronation Gulf Project's water licence, with a proposed time schedule of 2006 to 2008. This is an exploratory project designed to locate diamond-bearing kimberlite deposits. Project activities proposed for upcoming field seasons comprise of till sampling, ground geophysical surveys, and diamond drilling, all of which are supported by a helicopter. Field crews will work from one of two previously established camp sites between the months of May and October. These camps are named Eureka and Jubilee, having the respective coordinates of 66°1'32"N, 113°39'8"W, and 67°31'56"N, 113°18'27"W. They are situated on porous eskers nearby fresh water bodies and are expected to accommodate between 6 and 10 people at any given time. The closest communities are Kugluktuk, 80 km northwest, and Bathurst Inlet, 180 km northeast.

Fresh water will be consumed from nearby lakes and streams for domestic and diamond drilling requirements. A daily average of 400 L will be utilized at the selected camp site and 15,000 to 20,000 L will be drawn for diamond drilling operations. Sumps will be used for the disposal of camp sewage, gray water, drill cuttings, and sludge.

When practical to do so, camp wastes will be incinerated in a modified steel barrel. Non-combustible solid wastes, bulky items, scrap metal, hazardous wastes, and empty fuel drums will be flown to Yellowknife for proper disposal.

The project's main fuel cache will be positioned at least 100 metres away from nearby water bodies and at a safe distance from camp facilities. Fuel will be stored in 205 litre drums on flat stable terrain and in a natural depression if possible. Small quantities of fuel will be temporarily stored at drill sites.

The types and quantities of fuel and other hazardous materials that will be stored at the camp fuel cache and diamond drilling sites are as follows:

Camp Fuel Cache

JET B fuel for helicopter – 10 x 205 L drums
Diesel for drill – 9 x 205 L drums
Propane for heating, etc. – 2 x 100 LB tanks
Oil – several cases of 4 cycle engine oil

Diamond Drilling Sites

JET B fuel for helicopter – 2 x 205 L drums
Diesel for drill – 2 x 205 L drums
Propane for heating, etc. – 1 x 100 LB tanks

Should a fuel spill occur, Stornoway will follow the response measures outlined in the project's spill contingency plan. This plan provides a chain of command, spill containment and clean-up procedures, spill kit content, emergency contacts, and Material Safety Data Sheets (MSDS sheets) for applicable hazardous substances. All spills are to be documented and reported to the 24 Hour Spill Line at (897) 920-8130.

The proponent has also provided an abandonment and restoration plan for the project which is effective from October 2005 to September 2008.

Environment Canada recommends that the proponent should design spill response measures which reflect the various topographic and climatic conditions characteristic of the project area (i.e., spills on land, muskeg, streams, lakes, snow, and ice). This information should be included in the Spill Response Plan

Environment Canada request's that the proponent have spill kits allocated to all fuel caches, chemical storage areas, and diamond drill units. All spill kits should have a copy of the spill contingency plan.

In addition to stating how fuels will be stored, Environment Canada recommends that the method(s) of storing chemicals and any other hazardous substances (i.e., drill additives and anti-freeze) be discussed in the spill contingency plan.

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 sediments 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 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* lists CaCl as a toxic substance. Therefore, the proponent shall 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, released return water 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 km/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.
- Environment Canada recommends the use of an approved incinerator for the disposal of combustible camp wastes.
- Any sumps, including those created for the disposal of drill cuttings, shall be located above the high water mark of any water body frequented by fish. Further, all sumps shall be backfilled upon completion of the field season and contoured to match the surrounding landscape.
- All sumps shall be back-filled upon the completion of each 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.
- The proponent shall ensure that any hazardous materials, including waste oil, receive proper treatment and disposal at an approved facility.

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).

- 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 water or any area frequented by migratory birds**. Therefore, 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.

- 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).
- Also, please note that 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.
- 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 1500 m from any observed concentrations (flocks / groups) of 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.
- 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.

- 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
Grizzly Bear	Special Concern	Pending
Wolverine (Western Population)	Special Concern	Pending
Peregrine Falcon (subspecies tundris)	Special Concern	Schedule 3
Short-eared Owl	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.Regards,

David W. Abernethy
Environmental Assessment Technician

Cc: Colette Spagnuolo (Environmental Assessment and Contaminated Sites Specialist)