Fisheries and Oceans Canada
Pêches et Océans Canada

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NWB File :2EB-CHI0813

Phyllis Beaulieu
Manager of Licensing
Nunavut Water Board
P.O. Box 119
Gjoa Haven, NU X0B 1J0

via email: licensing@nunavutwaterboard.org

Dear Ms. Beaulieu:

Subject: Peregrine Diamonds Ltd – Chidliak Project - Amendment request for a Type "B" water license

Fisheries and Oceans Canada (DFO) has reviewed the Type "B" water license amendment request and supporting documents for the Chidliak Project, proposed by Peregrine Diamonds Ltd. (the "Proponent"). On November 21, 2008, the Proponent submitted the amendment request to the Nunavut Water Board (NWB). The NWB requested interested parties to comment on or before February 9, 2009 which DFO now presents in the following document.

DFO's comments are based upon our departmental mandate under the *Fisheries Act*; specifically the management and protection of fish and their habitat. DFO's primary focus in reviewing proposed developments in and around fishery water is to ensure that the works and undertakings are conducted in such a way that the proponents are in compliance with the applicable provisions of the *Fisheries Act*.

Impacts to fish and fish habitat can occur during mineral exploration activities through loss of riparian habitat during site clearing, erosion and sedimentation, release of drilling fluids and cuttings into aquatic environments, disturbance to fish and fish habitat during sensitive life stages, and water withdrawals, particularly during low water periods, associated with drilling, surface stripping and camp operations. Direct fish mortality can occur as a result of the use of explosives in or near water and during pumping activities either through dewatering or entrainment/impingement.

Chidliak Project Amendment Request – DFO Recommendations and Advice

The Chidliak Project is a Kimberlite and potentially a metal exploration program located on Baffin Island approximately 75 kilometers east of Iqaluit, Nunavut. The total Chidliak project area is approximately 980 000 ha.

To reduce potential impacts to fish and fish habitat we recommend the following mitigation measures be incorporated into the proponent's plan:

Site Access and Preparation

- *Use existing trails, roads, or cut lines wherever possible to avoid disturbance to the riparian vegetation. Vegetation removal is to be minimal and when practicable, prune or top the vegetation instead of uprooting.*

Temporary Work Camps/Docks

- *Utilize previously cleared areas or natural openings for temporary work camps or otherwise limit the amount of vegetation that is disturbed.*

- *Locate work camps, including storage areas, fuel caches, and helicopter landing pads, on dry stable ground, above the High Water Mark (HWM), and employ measures to prevent the release of sediment or deleterious substances into any water body.*

- *Ensure that any temporary dock remains secure and in good repair, and is fully removed from below the HWM immediately following exploration activities at the site.*

Exploratory Drilling

- *Contain all drill cuttings, fluids or sludge in closed systems for reuse, off-site disposal, or otherwise contain and stabilize to prevent their entry into any water body.*

- *Where sumps are utilized they are located above the HWM of any water body and are able to contain all drilling waste.*

- *Use only non-toxic drilling additives and muds.*

- *Plug and permanently seal any artesian flow that is encountered and any holes drilled in wet areas (e.g., lake or wetland) upon completion of the project.*

- *Small diameter (<100 mm diameter)/low density on-ice drilling may be undertaken, except in known fish spawning habitat, in which case further review under the Fisheries Act is required. Avoid drilling in gravel or rock rubble substrates in water depths less than four (4) metres within water bodies where fall-spawning fish species (e.g., lake trout, whitefish) are likely to be present.*

- *Remove all project materials from the ice prior to spring break-up.*

Trenching

- *All Blasting should follow the Use of Explosives in or Near Canadian Fisheries Waters. DFO recommends that blasting near fish habitat should be done when the water course is frozen to the bottom.*

- *Undertake trenching in a manner that ensures sediment-laden run-off does not enter any water body by using appropriate set-backs from the HWM and other effective sediment control measures (e.g., direct run-off to vegetated areas away from a water body or to an appropriately located sump, and stabilize any stockpiled material to prevent sediment from entering any water body).*

Water Withdrawal

- *In order to avoid negative impacts to fish and fish habitat caused by flow alterations, reduction in water levels, or entrainment/impingement at water pump intakes, the following measures are to be incorporated for any water-taking activities:*

- *Whenever feasible, withdraw water from non-fish bearing water bodies only.*

- *If fish-bearing water bodies cannot be avoided, use only larger streams or lakes and avoid small water bodies.*

- *Ensure water withdrawal volumes do not impact fish or fish habitat. Withdrawals from fish-bearing waters should not result in any noticeable change in water level or downstream flows, particularly during sensitive life stages (e.g., by dewatering spawning or egg incubation areas).*

- *Ensure water pump intakes are designed and operated in a manner that prevents streambed disturbance and fish mortality. Guidelines to determine the appropriate design for intake screens may be obtained from DFO (e.g., Freshwater Intake End-of-Pipe Fish Screen Guideline (1995), available at www.dfo-mpo.gc.ca/Library/223669.pdf).*

General Measures

- *Maintain a 30 metre undisturbed natural buffer zone between areas of on-land exploration (drill set-up, pitting, trenching, or surface stripping) and the HWM of any water body.*

- *Time any in-water mineral exploration activities to prevent disruption to sensitive fish life stages by adhering to appropriate fisheries timing windows (see the DFO fish timing window operational statement, Nunavut Edition), with the exception of on-ice drilling, or any water withdrawal activities.*

- *Operate machinery in a manner that minimizes disturbance to the water body bed and banks and prevents entry of deleterious substances into any water body.*

- *Machinery is to arrive on site in a clean condition and is to be maintained free of fluid leaks.*

- *Wash, refuel and service machinery and store fuel and other materials for the machinery away from the water, except for projects involving on-ice drilling where appropriate precautions are taken to prevent spills.*

- *Keep an emergency spill kit on site in case of fluid leaks or spills from machinery.*

- *Apply appropriate measures, including an emergency contingency plan for inadvertent spills, to ensure that deleterious substances such as drill cuttings, acidic or metal leaching water, petroleum products, sediment, and debris do not enter any water body.*

- *Install effective sediment and erosion control measures, where appropriate, before starting work to prevent entry of sediment into any water body. Inspect them regularly during the course of the work and make all necessary repairs if any damage or malfunction occurs.*

- *Ensure that the discharge of any water into or near a water body is done in a manner that prevents sedimentation or erosion (e.g., by stabilizing the discharge site).*

- *Stabilize and reclaim all disturbed areas upon completion of work. Immediately remove all debris or waste produced or associated with the work.*

- *Stabilize any waste materials removed from the work site to prevent them from entering any water body. This could include covering spoil piles with biodegradable mats or tarps or planting them with, preferably native, grass or shrubs.*

- *Vegetate any disturbed areas by planting and seeding with native shrubs or grasses and cover such areas with mulch to prevent erosion and to help seeds germinate. If there is insufficient time remaining in the growing season, the site should be stabilized (e.g., cover exposed areas with biodegradable erosion control*

blankets to keep the soil in place and prevent erosion) until naturally re-vegetated the following spring.

If you have any questions concerning the above, please contact me directly by telephone at (867) 979-8011 or by fax at (867) 979-8039.

Yours sincerely,

Gary Cooper
Habitat Management Biologist
Fisheries and Oceans Canada – Eastern Arctic Area

Copy: Eric Kan – Fisheries and Oceans Canada
Shirley Standafer-Pfister – Peregrine Diamonds Ltd.