



Water Resources
Nunavut Regional Office
P.O. Box 100
Iqaluit, NU, X0A 0H0

NWB file - Votre référence
2BE-CHI0813

AANDC file - Notre référence
CIDM # 491408

November 17, 2011

Phyllis Beaulieu
Manager of Licensing
Nunavut Water Board
P.O. Box 119
Gjoa Haven, NU, X0A 1J0

**Re: 2BE-CHI0813 – Amendment Application – Chidliak Project – Peregrine
Diamonds Ltd. – Qikiqtani Region**

Aboriginal Affairs and Northern Development Canada (AANDC) has performed a review of the 2BE-CHI0813 Chidliak Project Amendment Application. The Nunavut Water Board (NWB) distributed the application for comment on October 18, 2011. The following comments are provided pursuant to AANDC's mandated responsibilities for the enforcement of the *Nunavut Waters and Nunavut Surface Rights Tribunal Act* (NW&NSRT) and the *Department of Indian Affairs and Northern Development Act* (DIAND Act).

In conducting this review, I have referred to all documents on the Nunavut Water Board FTP site as it relates to 2BE-CHI0813. Attached is a Technical Review Memorandum for your consideration.

Should you have any questions or comments, please do not hesitate to contact me at (867) 975-4568 or by email at Eva.Paul@aandc-aadnc.gc.ca

Sincerely,

Original Signed By

Eva Paul
Water Resources Technician



Technical Review Memorandum

To: Phyllis Beaulieu – Manager of Licensing, Nunavut Water Board

From: Eva Paul - Water Resources Technician, Aboriginal Affairs and Northern Development Canada.

Re: 2BE-CHI0813 – Amendment Application – Chidliak Project – Peregrine Diamonds Ltd. – Qikiqtani Region

Background

Peregrine Diamonds Ltd. (Peregrine) operates the Chidliak Project (Chidliak) approximately 75 km northeast of Iqaluit and approximately 133 km south of Pangnirtung. Peregrine has submitted an amendment application with the intent of expanding their operation to include winter bulk sampling in 2012. The bulk sampling is to take place between February and June 2012. Peregrine seeks an amendment to their existing water licence to allow for the following activities:

- 1) Establishment of CH-6 Camp near the CH-6 kimberlite to accommodate up to 30 persons for 35 days, to serve the bulk-sampling program.
- 2) Expansion of Discovery Camp to 40 persons for the period of March-June 2012.
- 3) Selection of 3 new water sources within the already-approved Project Scope area for:
 - a. domestic supply for CH-6 Camp; and
 - b. water supply for large-diameter reverse circulation (RC) drilling and processing.
- 4) Selection of 2-3 new sump areas for drill cuttings.
- 5) Expansion of existing winter-trail network from 3.8 km to 26.8 km to link camps to bulk-sample sites, sumps, and water sources.
- 6) Bulk sampling of up to 600 tonnes from 3-5 kimberlite bodies by method of large-diameter reverse circulation (RC) drilling.
- 7) New equipment: RC drill, water and fuel tanks, 5 pieces of heavy equipment to haul water, fuel, samples, equipment and cuttings, for crew transport, and to construct and maintain the ice strip on Sunrise Camp Lake.

Peregrine feels they can conduct these activities without surpassing their current licensed water allotment, as their current usage is well below allowable limit.

Fuel management will change significantly on-site, as the bulk-sampling program will shift away from reliance on helicopter support, to greater use of ground transport. As such, diesel stored on-site will increase from 250 to 2000 drums, while helicopter fuel will decrease from 600 to 250 drums. Peregrine intends to establish a Designated Fuel Station at Discovery Camp in order to safely and effectively manage fuel.



Recommendations/Comments

General:

AANDC found Peregrine's application to be thorough and adequate.

AANDC recommends that approval to the amended water licence application be contingent on the satisfactory conclusion of the NIRB Part 4 screening and the subsequent approval to amend Land Use Permit N2008C0005.

Activity-specific comments:

1) Establishment of CH-6 Seasonal Camp

With respect to the establishment of the new CH-6 camp, AANDC finds the application to be sufficient. Terms and conditions similar to Peregrine's other camps would be appropriate. AANDC also recommends that Peregrine review the inspection reports from their other camps, and proactively incorporate the inspectors' recommendations at the new camp. While the application is for a seasonal camp, Peregrine calls the camp 'temporary'. AANDC would request that the relevant plans be updated if the camp status changes from temporary to longer term. While the transportation of water 5 km from the water source has minimal impact during the winter while the ground is frozen, different routing may be necessary in the summer months to avoid wet/sensitive areas.

2) Expansion of Discovery Camp to 40 persons

As identified in the July 25, 2009 Water Use Inspection Report, water use can not be readily assessed due to the lack of a meter. On August 15th 2011, it was again discussed by Inspector Kevin Robertson. The Inspector's notes also indicate that the grey-water sump may be reaching capacity. AANDC would recommend that a meter be installed to record camp water use and that accurate daily records be maintained for other water uses. In addition, the camp's grey-water sump capacity should be monitored and modified as necessary to accommodate the growing camp.

AANDC would also like to reinforce that records of water use be kept readily available.

3) Selection of 3 new water sources for the domestic supply for CH-6 Camp and the water supply for drilling and processing.

Peregrine has presented a thorough analysis of the options for water supply. AANDC recommends that standard terms and conditions for water usage be applied.



4) Selection of 2-3 new sump areas for drill cuttings

Again, Peregrine shows they have thoroughly assessed the landscape for the best available option. AANDC recommends that standard terms and conditions for this activity be applied.

5) Expansion of existing winter-trail network from 3.8 km to 26.8 km to link camps to bulk-sample sites, sumps, and water sources

The change in methodology from helicopter usage to extensive ground transportation of fuel and drill cuttings does raise some general concern for the increased likelihood of incidents. Vigilance in the daily application of safety and spill prevention protocols is imperative. AANDC would also recommend that the trails be inspected routinely for drifting or any unsafe conditions prior to the transportation of fuel or cuttings.

As discussed under point (1), overland transport of goods in winter can serve to minimize impacts. However, if the proponent wishes to continue during the summer months, trails may need to be re-routed in order to avoid wet areas and watercourses which are vulnerable to rutting, erosion, and siltation. AANDC would request that the proponent submit a map of the summer trails if such is the case.

6) Bulk sampling of up to 600 tonnes from 3-5 kimberlite bodies by method of large-diameter reverse circulation (RC) drilling

AANDC is satisfied with Peregrine's choice of equipment for this activity. AANDC recommends that the standard conditions for the deposition of drill-water in a sump, more than 30 m. from the ordinary high water mark of any water course or water body be applied.

7) Heavy equipment

AANDC recommends that the proponent provide to the Board copies of any necessary permits for the mobilization of heavy equipment to the site.

Comments Pertaining to Fuel Management:

AANDC is generally satisfied with the fuel management procedures as outlined in the Bulk Fuel Management documents, the Spill Contingency Plan, and the Abandonment and Restoration Plan. However, AANDC offers the following comments:



Transportation of fuel

A large number of drums will be delivered to, and transported around the Chidliak site. AANDC recommends that a procedure with respect to the transportation of drums be added to the Bulk Fuel Management Facility Monitoring: Standard Operating Procedures. As per direction from the Government of Nunavut's Chief Environmental Protection Officer, all transportation of a Class 3 flammable substance must be conducted in compliance with Transport Canada's Transportation of Dangerous Goods Regulations. Further, vehicles transporting fuel should carry at least 10 square meters of polyethylene material (for lining a trench or depression), a spark-proof shovel & oil absorbent blankets or squares.

The delivery of fuel with the mobile 15,000L tank is subject to the same regulations. Peregrine should be prepared with sufficient response equipment for the safe removal of fuel from an overturned tank (such as hatch cone covers, hoses etc). In general, the proponent should be fully prepared to deal with spills resulting from vehicle accidents along the trails in a timely and efficient manner. AANDC would like to request that a procedure be added to the Bulk Fuel Management Facility Monitoring: Standard Operating Procedures that details the careful inspection of the mobile tank and it's mounting upon the sleigh prior to each deployment.

Transport and crushing of empty drums

As discussed in the Remote Camp Questionnaire, Peregrine intends to crush and backhaul empty barrels. If barrels are unwashed prior to crushing, they should be stored in secondary containment and are to be transported as hazardous goods. As per the Government of Nunavut's *"Guideline for the General Management of Hazardous Wastes, 2010"* and AANDC's *"Abandoned Military Site Remediation Protocol, 2009"*, AANDC recommends that barrels be rinsed prior to crushing. Rinse water should be contained, and released only when it conforms to effluent standards prescribed in the water licence.

Cc. Ian Parsons, A/Manager of Water Resources
Kevin Robertson, A/Manager of Field Operations
Andrew Keim, Water Resources Officer

Aboriginal Affairs and Northern Development Canada, Nunavut Regional
Office