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NUNAVUT WATER BOARD

NUNAVUT IMALIRIYIN KATIMAYINGI

**WATER LICENCE  
APPLICATION FORM**

Application for: (check one)

☒ New ☐ Amendment ☐ Renewal ☐ Assignment

CEO
BRD
EXT.

**LICENCE NO:**

(for NWB use only)

NW32 REP

**1. NAME AND MAILING ADDRESS OF  
APPLICANT/LICENSEE**

BHP Billiton Diamonds Inc.  
1400 - 1111 West Georgia St  
Vancouver, BC V6E 4M3

Phone: 604 632-1450

Fax: 604 683-4125

e-mail: jeremy.j.howe@bhpbilliton.com

**2. ADDRESS OF CORPORATE****OFFICE IN CANADA (if applicable)**

Phone:

Fax:

e-mail:

**3. LOCATION OF UNDERTAKING (describe and attach a topographical map, indicating the main components of the Undertaking)**

Diamond drilling is proposed to the north and east of the hamlet of Repulse Bay. The nearest setup is about 7km from the village.  
66° 30' N 86° 0' W x 66° 45' N 86° 45' W

Latitude: Longitude: NTS Map No. 46L scale 1:250,000

**4. DESCRIPTION OF UNDERTAKING (attach plans and drawings)**

see attachment

**5. TYPE OF UNDERTAKING (A supplementary questionnaire must be submitted with the application for undertakings listed in "bold")**☐ Industrial☐ Remote/Tourism Camps☐ Mine Development ☐ Municipal☐ Advanced Exploration☐ Power☒ Exploratory Drilling☐ Other (describe):**6. WATER USE**☒ To obtain water☐ To divert a watercourse☐ To modify the bed or bank of a watercourse☐ Flood control☐ To alter the flow of, or store, water☐ Other (describe):☐ To cross a watercourse

**7. QUANTITY OF WATER INVOLVED** (litres per second, litres per day or cubic metres per year, including both quantity to be used and quality to be returned to source)

10000 litres per day if water is not recycled. Water settled in sump  
700 litres per day if recycled

**8. WASTE** (for each type of waste describe: composition, quantity, methods of treatment and disposal, etc.)

☐ Sewage ☒ Waste oil recovered and returned for recycling  
☐ Solid Waste ☐ Greywater  
☐ Hazardous ☒ Sludges see 'Description of Undertaking/Cuttings Removal'  
☐ Bulky Items/Scrap Metal ☐ Other (describe): \_\_\_\_\_

**9. PERSONS OR PROPERTIES AFFECTED BY THIS UNDERTAKING** (give name, mailing address and location; attach if necessary)

**Land Use Permit**

DIAND ☐ Yes ☒ No If no, date expected February 2003

Regional Inuit Association ☐ Yes ☒ No If no, date expected no IOL involved

Commissioner ☐ Yes ☐ No If no, date expected \_\_\_\_\_

**10. PREDICTED ENVIRONMENTAL IMPACTS OF UNDERTAKING AND PROPOSED MITIGATION MEASURES** (direct, indirect, cumulative impacts, etc.)

The procedures outlined in the Description of the Undertaking and Spill Plan attachments are designed to mitigate any adverse impacts from the drilling. It is also the case that the small scale of the program in itself tends to minimise the cumulative impact.

NIRB Screening ☐ Yes ☐ No If no, date expected \_\_\_\_\_

**11. INUIT WATER RIGHTS**

Will the project or activity substantially affect the quality, quantity, or flow of water flowing through Inuit Owned Lands and the rights of Inuit under Article 20 of the Nunavut Land Claims Agreement?

Notwithstanding the use of any of the materials proposed for use, no adverse affects as regards water quality or quantity are foreseen from the program. No drilling will be done nor water sourced from within the Repulse Bay hamlet watershed. Consultations are underway with the community to ensure that there are no concerns with the proposal.

**11. (Continued)**

If yes, has the applicant entered into an agreement with the Designated Inuit organization to pay compensation for any loss or damage that may be caused by the alteration. If no compensation agreement has been made, how will compensation be determined?

**12. CONTRACTORS AND SUB-CONTRACTORS** (name, address and functions)

Drill Contractor – unknown at this time  
Helicopter Contractor – unknown at this time  
Contract Geologist – unknown at this time

**13. STUDIES UNDERTAKEN TO DATE** (list and attach copies of studies, reports, research, etc.)

- Regional geochemical sampling survey – analysis in progress
- Consultation with Repulse Bay HTO regarding local sensitivities for wildlife, habitat & traditional use. – response pending

**14. THE FOLLOWING DOCUMENTS MUST BE INCLUDED WITH THE APPLICATION FOR THE REGULATORY PROCESS TO BEGIN**

Supplementary Questionnaire (where applicable: see section 5) ☒ Yes ☐ No If no, date expected \_\_\_\_\_

Inuktitut/English Summary of Project ☐ Yes ☐ No If no, date expected feb.

Application fee \$30.00 (c/o of Receiver General for Canada) ☒ Yes ☐ No If no, date expected \_\_\_\_\_

**15. PROPOSED TIME SCHEDULE**

☒ Annual (or) ☐ Multi Year

Start Date: April 15, 2003

Completion Date: April, 15, 2004

Jeremy Howl  
Name (Print)

Logistics Co-ordinator  
Title (Print)

[Signature]  
Signature

Jan. 15/2003  
Date

**For Nunavut Water Board use only**  
**APPLICATION FEE**

Amount: \$ 30.00

Receipt No.: C137290

**WATER USE DEPOSIT**

Amount: \$ \_\_\_\_\_

Receipt No.: \_\_\_\_\_

## **ATTACHMENTS**

### **DESCRIPTION OF THE UNDERTAKING**

Note: The information presented here is the most current to date although it cannot claim to represent final drill positions nor the precise type of equipment to be used since not all of the necessary data has been processed nor the priorities established at this time. Nonetheless, the general character of the proposal and positioning of drill setups are sufficient to encompass the possibilities we foresee. Exact drill locations and equipment details will be forwarded as soon as they're available.

In order to allow NWB sufficient time to process proposals of this type, we have found it necessary to submit them as early as possible and this does not always permit a precise description.

#### Summary

Following earlier regional mineral reconnaissance and claim staking in 2001 and 2002, a programme of diamond drilling is proposed to the north and east of Repulse Bay hamlet. The object is to test for the presence of the kimberlite rocks associated with diamond formation. Perhaps up to 20 holes would be drilled but most would be short since the local overburden is quite shallow. For that reason and to assist moves by helicopter, the drill rig would probably be quite small. The programme is expected to take up to 40 days, with the crew of 6-9 people staying in Repulse Bay and flying out daily to the rig by helicopter. Ideally this work should be performed in the early spring as a few of the targets are beneath lakes and better approached from setups on the lake ice.

If interesting rocks are encountered, it is likely that a second phase of drilling would be initiated in mid summer to obtain a larger and more reliable sample. The work would be identical to that outlined above except that the drill would be slightly larger and the depth of holes increased.

A geophysical ground survey (mag & EM) would be required 1 to 2 months prior to any drilling. Crews would be based in Repulse. This aspect of the work is not of a type that needs water licencing.

No IOLs are involved in the project region. e

#### Timing

Drilling to begin not later than mid April 2003 to ensure competent ice conditions. The programme would then finish about May10th. Should a second phase be recommended, it probably could not begin until late July 2003.

#### Support Equipment

- 1 – Hughes 500D or similarly sized small helicopter
- 1 – JKS 300 diamond drilling rig (first phase)
- 1 – Longyear 38 or Boyles 25A diamond drill (second phase, if warranted)
- Drill rods, 1-2 piston pumps, waterline heaters and other typical drill support equipment
- 2 snowmobiles

#### Personnel

- Up to 9 people
- 4 –5 drillers
- 1 – 2 pilots
- 1 – 2 geologists

#### Mobilisation

Drill equipment and supplies would be mobilized on a charter Calm Air 748 and flown from the airport to the first drill setup by a contracted helicopter.

### Fuel

BHPB has 100 drums of Jet B fuel for the helicopter currently stored at the airport. These would be sufficient for the programme.

About 30 diesel drums and 20/100lb propane cylinders for the drill would be flown in on a Calm Air charter.

### Cuttings Removal

For those setups on lake ice, the "Polydrill" cuttings removal system would be used to extract fines from the drill fluids and permit their recirculation. The system uses an environmentally benign flocculant (see MSDS). The resulting mud is collected in bags and flown by helicopter to an upland depression where it cannot return to source. The bags are reused.

Cuttings from land-based drill sites are collected passively in an adjacent sump and, if necessary removed to a site where they cannot enter local waterways.

The above methods have been successfully used by BHPB for a number of years in kimberlite exploration near the Ekati diamond mine.

### Drill Additives

Drilling in permafrost typically requires the addition of salt (CaCl or NaCl) to suppress the freezing temperature of the water used to flush cuttings. It is also sometimes added if water must be pumped on surface over a distance that might risk freezing en route to the rig. This is not generally required when drilling from lake ice setups (due to a thaw halo beneath the lake bottom) nor when holes are of short length. The initial phase of the work is unlikely to require salt although it will be available if required. If a second phase is warranted, the use of salt may be more necessary due to greater hole depths.

Bentonite clay is sometimes used to stabilize drill holes and prevent water loss in fractured ground conditions. It would be supplied but is unlikely to be used on the first phase drilling.

### Hamlet Watershed

A few proposed drill sites are as close as 7 km from the hamlet but all are outside the town watershed.

### Socioeconomic Benefits & Community Consultation

Brian McQuarrie, senior administrative officer for Repulse Bay, was consulted to see if the drill proposal presented problems for the hamlet but he reported that none were apparent.

Louise Siusangnark, head of the Repulse Bay HTO, was also consulted to get input on concerns about hunting, fishing, spawning, calving, migrations, and areas of historic use within the proposed area of use. (A copy of an information fax sent to the HTO is attached). A response is pending by mid January.

This early, small scale, stage of exploration does not usually give a lot of economic boost to the community, except from the purchase of meals and accommodation at the local inn. There are also few immediate opportunities for local employment since the positions are limited to certified drillers, pilots and geologists. If the work leads to a discovery however, then job positions and training possibilities for local people increase as the work expands. The HTO was informed of these constraints.

## **OTHER ATTACHMENTS**

- 1:250,000 NTS map 46L extraction showing areas of interest
- Fax to Repulse Bay HTO
- Supplementary Questionnaire
- MSDS & toxicology test