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NUNAVUT WATER BOARD

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**Water Licence Application  
Supplementary Questionnaire  
for Advanced Exploration  
(Underground drilling, bulk sampling, etc.)**

**MIRAMAR HOPE BAY LTD.**

**RENEWAL OF WATER LICENCE:**

**NWB1BOS0106**

**DECEMBER 1, 2006**

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## **SECTION 1 : GENERAL**

1. Applicant: **MIRAMAR HOPE BAY LTD.**  
(Company, corporation, owner)

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Corporate Address **SAME AS ABOVE**

Project Name: HOPE BAY PROJECT

Location: BOSTON, HOPE BAY BELT, NUNAVUT

Closest Community: UMINGMATOK / CAMBRIDGE BAY

Latitude/Longitude: 67° 39' N, 106° 22' W

### **See Appendix A for General Location Map**

2. Manager, Environmental Auditing and Permitting: Terri Maloof 604-985-2572  
Exploration Manager: Darren Lindsay 604-985-2572

3. Indicate the status of the exploration activity on the date of application.  
(Check the appropriate space.)

**\*\* ADVANCED EXPLORATION:** - This application is made to allow for continued water use and waste disposal at the Boston exploration camp. No significant change in the current exploration activity is envisioned at this site. The exploration activity at the Boston site will continue to include prospecting, continued surface diamond and reverse circulation exploration drilling, on-site core-splitting and logging, operation of a bulk sampling crushing and sorting plant, operation of an exploration accommodation camp including use of domestic water, treatment and disposal of greywater and sewage and associated support activities, environmental baseline data collection, demobilization of equipment and potentially future underground bulk sampling.

Design

Under construction

In operation **X**

Suspended

Care and Maintenance

Abandoned

4. If a change in the status of the exploration activity is expected, indicate the nature and anticipated date of such change.

Advanced exploration activities at the Boston site are similar in nature to the activities permissible under the existing licence. Water use and waste disposal practices are of the same scope as permissible under the existing licence. Advanced exploration activity can be expected until a production decision is made, **see #6**.

5. Indicate the present (or purposed) schedule for the exploration activity.

Hours per week 154

Days per week 7

Weeks per year 30

Number of employees 60

Number of Inuit employees 10 - 14

6. Estimate the term (life) of the exploration activity.

Advanced exploration activity is expected to continue at this site for approximately 5 more years or until sufficient mineral resource data is obtained to support a positive production decision. The data collected during the current license term suggests that there will be sufficient mineral resource at the Boston site to support commercial gold mining in the coming future. Consequently a licence term of five years has been requested with a proposed license expiration date of December 31, 2011.

7. How will the project effect the traditional uses on Inuit Owned Lands?

No effects are anticipated beyond those already existing

8. Have the Elders been consulted on effects to the traditional use on Inuit Owned Land?  
If so, list them. If not, why not?

As this is a renewal application and the activities are seen to be the same or similar to those under the existing licence, consultation with the Elders has not been undertaken in regard to this specific application. However, consultation has been conducted with the Elders and communities on other aspects of the Hope Bay project and it is our opinion that the Elders are familiar with the operation and further consultation is not warranted at this time. See #9 and #10.

9. Has the proponent consulted Inuit Organizations in the area? If so, list them.

Yes. As part of our existing permit requirements, local Inuit Organizations are familiar with the Hope Bay Project.

Kitikmeot Inuit Association, Kitikmeot Hunters and Trappers, Local HTAs (Bathurst Inlet and Umingmaktok), Community Lands and Resources Committees, Nunavut Wildlife Management Board, Nunavut Impact Review Board, Nunavut Water Board

10. Has the proponent consulted surrounding communities on traditional water use areas?  
If so, list them. If not, why not?

Yes. Community consultation tours were conducted in 2005 and 2006, as well, the NIRB hearings for the Doris North Project in January 2006 with attendance of members from local communities, has included collection and discussion of traditional knowledge, updates on activities and future plans. Communities include: Kugluktuk, Cambridge Bay, Taloyoak and Gjoa Haven, Bathurst Inlet and Umingmaktok.

11. Attach a detailed map drawn to scale showing the relative locations (or proposed locations) of the exploration activity, Sewage and solid waste facilities, and containment areas. The plan should include the water intake and pumphouse, fuel and chemical storage facilities. Ore and waste rock storage piles, piping distribution systems, and transportation access routes around the site. The map also should include elevation contours, water bodies and an indication of drainage patterns for the area.

**SEE Attached Map - APPENDIX A**

12. If applicable, provide a brief history of property development which took place before the present company gained control of the site. Include shafts, audits, mills (give rated capacity, etc.) waste dumps, chemical storage areas, tailings disposal areas and effluent discharge locations. Make references to the detailed map.

BHP, the previous owner, performed work on the Hope Bay Belt from 1992 until late 1999 when the Hope Bay Joint Venture became owners of the project area. In 2001, Hope Bay Joint Venture became Miramar Hope Bay Ltd. All current conditions, including the underground development, bulk sampling program, waste and ore stock piles, camp layout and all other related infrastructure was inherited from the previous owner. No significant additions are planned during this advanced exploration phase under this licence renewal.

13. Give a short description of the proposed or current freshwater intake facility, the type and operating capacity of the pumps used, and the intake screen size.

Fresh water is obtained from Aimaoktatuk Lake, SNP station 1652-1a, from an insulated shed placed on a floating dock. Through a License amendment in 2000, all water that will be used at the site (either for underground drilling when applicable and for camp purposes) is pumped from this one location. The pipeline is of steel construction and is insulated and heat traced. The capacity of the pump is such that water for domestic purposes is pumped “on demand” to a large holding tank located in the main generator building. The intake itself is screened as per code to protect fish.

14. At the rate of intended water usage for the exploration activity, explain water balance inputs and outputs in terms of estimated maximum draw down and recharge capability of the water source from fresh water will be drawn.

The total amount of water expected to be used under this licence is minimal. The daily quantity of water used for all purposes will not exceed 100 cubic meters. The requested consumption is well under 0.1% of the total annual flow through this lake. Consequently there will be no measurable impact on the level of water in Aimaokatuk Lake. This is a relatively large lake with a very large watershed and the proposed usage of water at the Boston Camp will have no measurable impact on lake level or recharge rates. Aimaokatuk Lake is recharged on a year round continuous basis from the south and then in turn drains into the Koignuk River. As mentioned in #13, water for use at the Boston exploration camp is pumped from Aimaokatuk Lake on an as required basis and represents a minor proportion of the annual flow through this system.

15. Will any work be done that penetrates regions of permafrost?  
Yes.

16. If “YES”above, is the permafrost continuous or discontinuous?

The permafrost is continuous in this area and has been measured at the Boston Camp to a depth of around 600 metres.

17. Were (or will) any old workings or water bodies (be) dewatered in order to conduct the exploration activity ?

No.

18. If “YES” above, indicate the name of the water body, the total volume of water to be discharged and the chemical characteristics of the water. **N/A**

Water body (if unnamed give Latitude/Longitude)\_\_\_\_\_

Total volume \_\_\_\_\_ cubic metres

Receiving Watercourse \_\_\_\_\_

Dewatering flow rate into above \_\_\_\_\_ cubic metres / sec

Chemical characteristics of discharge:

T/Pb \_\_\_\_\_mg/L Total Ammonia \_\_\_\_\_ mg/L

T/Cu \_\_\_\_\_mg/L Suspended solids \_\_\_\_\_ mg/L

T/Al \_\_\_\_\_mg/L Specific conductivity \_\_\_\_\_ uhmo/cm

T/HCN \_\_\_\_\_mg/L pH \_\_\_\_\_

T/Hg \_\_\_\_\_mg/L

T/Zn \_\_\_\_\_mg/L

T/Cd \_\_\_\_\_mg/L

T/As \_\_\_\_\_mg/L

T/Ni mg/L

T/Mn mg/L

19. Was (or will) the above discharge (be) treated chemically ?

N/A

20. If “YES” above, describe the applied treatment.

N/A

21. Briefly describe what will be done with the camp sewage.

The existing water use license for the Boston Camp includes approval for the treatment and disposal of camp sewage and grey water through an existing “Rotating Biological Contactor” (RBC), which contains and treats all sewage and greywater wastes from the

Boston Camp. This facility will continue to be operated in a similar manner throughout the life of this requested license renewal.

Under the current water license for the Boston exploration camp, discharge requirements and quality from this RBC are established along with monitoring frequency and sampling points. It is proposed that these conditions remain the same for the proposed licence renewal for this site.



## **SECTION 2 : GEOLOGY AND MINERALOGY**

22. Briefly describe the physical nature of the mineralization, including known dimensions and approximate shape.

The Boston mineral deposit is described as a broad, continuous, north-striking, shear parallel zone of significant quartz-dolomite veining with associated pyrite and mineralization. It has a length of approximately 900m and a width of 25 to 50 m. Within the zone of alteration, the mineralization of economic interest consists of a series of narrow quartz veins and pods. The economic element of interest is gold.

23. Briefly describe the host rock in the general vicinity of the mineralization (from the surface to the mineralized zone.)

The host rock in the immediate vicinity of the mineralization is a large carbonate alteration zone, which is made up of mainly of iron carbonates. It is 900 m long and 25 to 50 m wide.

Meta-basalts are found on the east side of the alteration zone and meta-sedimentary rocks are found on the west. Turbidities, ranging from massive greywackes to fine argillites, are the main sedimentary rocks. They are thought to be younger than and most likely derived from the underlying extrusive mafic volcanics.

The greywackes occur as wide, homogenous fine grained units. Only rarely are relict grains visible. Outside of the main shear zone, the greywackes are dark grey-brown and fairly easily recognizable. Within the deformed / altered zones the greywackes are subject to the same sericite / dolomite alteration as are the mafic volcanics.

Inter-layered with the greywackes are fine-grained, graphitic, pelitic, bedded argillites. Occasionally, bedding is well preserved and fining upwards can be observed in several sequences.

24. Provide a geological description of the mineralized zone. (If possible, include the percentage of metals.)

Gold mineralization is mainly associated with pyrite and usually occurs at the margins of quartz-dolomite veins in pyrite-mineralized wall rock. The pyrite typically forms in cubes and semi-massive blebs less than 1 mm to 10 mm in size, concentrated in bands along the foliation planes of the wall rock as a halo around the quartz-dolomite veins. The pyrite halo is generally less than 15 cm wide with progressively finer-grained pyrite bands radiating concentrically outwards from the vein. Gold in the veins is present in contents averaging between 10 and 30 g/t Au.

25. Describe the geochemical tests which have been (or will be) performed on the ore, host rock, and waste rock to determine their relative acid generation and contaminant leaching potential. Outline methods used (or to be used) and provide test results in an attached report (ie. Static tests, kinetic tests.)

Considerable Acid Base Accounting and geochemical characterization test work on the various rock types making up the Boston deposit was carried out by BHP in 1996, 1997, 1999, 2000 and 2001. The results from this work have been previously reported in the following reports:

- “Acid Rock Drainage Characterization Boston Property (Waste Rock) Final Report”, prepared by Rescan Environmental Services Ltd. For BHP World Minerals, dated February 1999;
- “Acid Rock Drainage Characterization – Boston and Doris Lake Properties”, prepared by Rescan Environmental Services Ltd. For BHP World Minerals, dated December 2001; and
- “Hope Bay Project - Integrated ARD Characterization Report”, prepared by Knight Piesold Limited for the Hope Bay Joint Venture, dated June 2002.

All of these reports are included in Supporting Document B4 to the 2005 Doris North Final EIS filed with the Nunavut Impact Review Board in late 2005. The findings from these reports are summarized in the following:

The ARD characterization database for the Boston deposit contains information from 341 static ABA test results (58 on drill core and 283 on exploration decline muck samples) and 4 humidity cell tests on mine rock; 3 static ABA test results and 1 humidity cell test on a laboratory generated mill tailing sample. The results are summarized as follows:

- 55% of the drill core samples showed low acid generating potential ( $\text{NPR} > 3$  and  $\text{Total S} < 0.3\%$ ) These are primarily the Strongly Altered Basalt, Altered Basalt, Unaltered Basalt, Weakly Altered Basalt and the Unaltered Gabbro;
- 38% of the drill core samples had uncertain acid generating potential ( $\text{NPR} > 3$  and  $\text{Total S} > 0.3\%$ ). These were mainly samples from within the B2 and B3 mineralized zones where the degree of mineralization and sulphur content is higher than the surrounding country rock;
- 5% of the drill core samples had high acid generating potential ( $\text{NPR} < 3$  and  $\text{Total S} > 0.3\%$ ). These represented samples from the BS Alteration Halo and the B3 Mineralized Zone.
- The majority of the exploration decline material samples (72%) had total sulphur contents below 1%, NP values greater than 250 Kg  $\text{CaCO}_3/\text{t}$ , and paste pH values greater than 8.0. All of the decline samples had NPR values above 1.1, and nearly 80% had NPR values greater than 5.0. These results indicate that most of the decline material samples had a low acid generating potential;
- The majority of decline material samples have a low to uncertain acid generating potential for becoming net acid generators. With the exception of the Basalt/Sediment Transition (ore horizon) and Basalt (ore horizon) rock types, all

of the other rock types appear to have low acid generating potential. The increased sulphide content of the ore horizon material is the primary cause for uncertainty in the acid generation potential of these two rock types. These results suggest that of the samples with an uncertain or high potential for acid generation, the majority come from the Basalt/Sediment Transition (ore horizon) rock type.

The static ABA database for the Boston deposit suggests the following acid generating potential classifications:

Low Acid Generating Potential (Non Acid Generating)

- Strongly Altered Basalt
- Altered Basalt
- Unaltered Basalt
- Weakly Altered Basalt, and
- Unaltered Gabbro

High Acid Generating Potential (Potentially Acid Generating)

- B2 Alteration Halo, and
- B3 Mineralized Zone

Uncertain Acid Generating Potential

- B2 Mineralized Zone, and
- B3 Mineralized Zone.

No additional ABA geochemical characterization is currently planned at the Boston deposit. However once sufficient reserves are identified to justify a feasibility study a program of additional geochemical characterization will be planned and implemented to provide the data needed to support waste management planning for a mine development plan for the Boston mineral deposit.

MHBL continues to collect and monitor all drainage from the surface stockpiles that were placed on surface during the 1996/1997 underground decline exploration program. To date there has been no evidence of net acid generation from these materials and water quality has met license criteria for discharge.

26. Estimate the percentage of sulphide in the mineralization:

The sulphide content in the mineralization is highly variable and is typically associated with quartz veining. In the mineralized zones the total sulphide content is estimated at between 2% and 5%, primarily as pyrite with trace amounts of pyrrhotite, pyrite/pyrrhotite mixture and arsenopyrite.

### SECTION 3 : EXPLORATION OPERATION

27. Check off the type (or proposed type) of exploration operation that will be used on the property and briefly describe the method in more detail.

- a) Reverse circulation to obtain bulk sample \_\_\_\_\_
- b) Trenching \_\_\_\_\_
- c) Conventional open pit \_\_\_\_\_
- d) Decline **X**
- e) Conventional underground \_\_\_\_\_
- f) Strip mining activity \_\_\_\_\_
- g) Other Exploration activity (please explain) **X**

The current Boston Exploration license contains provisions allowing MHL to dewater the existing exploration decline and to extend the underground development drifting to allow for continued exploration drilling and for the collection of samples for further metallurgical testing. While MHL has no definitive plans to go back into the underground decline in 2007, it does however request that these provisions be retained within a renewed license thus allowing for additional underground exploration in future years should this be the most effective means of establishing and defining the mineral resource and obtaining sufficient representative volume of ore for metallurgical testing.

In such an event, MHL would extend the existing underground development to provide a location from which underground diamond drilling can properly test the ore body at depth, and perhaps also along strike from where it is currently well defined.

Throughout the proposed license renewal period, MHL plans to continue surface diamond drilling to test new areas of mineralization and to define and potentially expand the mineral resource at the Boston deposit area. This will be similar to activity previously carried out by MHL at this site.

28. Indicate the size and number of samples that will be obtained.

MHL currently has no plans to obtain a bulk sample from the Boston deposit. Typically all samples are obtained from split diamond drill core or reverse circulation drill cuttings. Typically 1 kilogram samples are taken from each drill interval of interest for off site analysis.

Please note if smaller samples are to be taken from different areas (note location) to form one large bulk sample.

29. Indicate the present or proposed average rate of exploratory production from all mineralized sources on the property:

MHBL currently has no plans for any pilot scale mining or bulk sampling. All metallurgical samples will come from spilt drill core on an as needed basis.

30. Outline the water usage (or proposed water usage) in the exploration activity, indicate the source and volume of water for each use.

**Water will be used for the following purposes at the Boston exploration camp:**

- **Camp domestic use such as potable water, showering, kitchen use, laundry, toilets and for core splitting (estimate use at a maximum of 20 m<sup>3</sup> per day when camp is at full capacity)**
- **Water extracted for diamond drilling (estimated at maximum of 80 m<sup>3</sup> per drill day)**

**MHBL requests allowable water use of 100 m<sup>3</sup> per day within the new license, which is less than the 150 m<sup>3</sup> per day contained in the existing Boston exploration license. MHBL does not see any need for increased water consumption over past usage.**

**Source Use Volume (m<sup>3</sup> / day)**

1. **\_ Aimaokatuk Lake 100 m<sup>3</sup>/day** \_\_\_\_\_
2. \_\_\_\_\_

31. If applicable, indicate or estimate the volume of natural ground water presently gaining access to the mine workings.

**NONE as the underground decline is flooded and is now frozen. There is no groundwater movement in the area due to the presence of continuous permafrost in the area.**

32. If applicable, outline methods used underground or on surface to decrease mine water flow. (For example: recycling)

The underground decline is currently filled with ice. Surface water is being directed away from the surface opening into the underground workings. If in the future MHBL dewateres the decline to resume underground exploration drilling then brine solution will be used to support drilling in the permafrost. In this situation as much drill water as practically possible will be contained, collected and recycled in a manner similar to that currently used for the diamond drilling carried out from surface.

33. List the brand names and constituents of the drill additives to be used.

Calcium Chloride in the form of a mixed brine solution will be the only additive used to prevent the drills from freezing within the permafrost.

## SECTION 4 : THE MILL OR PROCESSING PLANT

**NOT APPLICABLE – No onsite ore milling or processing is envisioned under this exploration water use license**

34. Is there (or will there be) a portable mill processing plant be operating on the property in conjunction with the exploration activity ?

\_\_\_\_\_ Yes \_\_\_\_\_ No

35. If “yes” indicate the proposed point of discharge for the mill or process plant water and the volume of the discharge.

Point of discharge \_\_\_\_\_

Volume of discharge \_\_\_\_\_ m<sup>3</sup> / day

36. Attach a copy of the portable mill or processing plant flow sheet. Indicate the points of addition of all the various reagents (chemicals) that are (or will be) used.

37. Indicate the proposed rate of milling.

\_\_\_\_\_ not applicable (check) or \_\_\_\_\_ tonnes / day

38. List the types and quantities of all reagents used in the mill or processing plant (in kg/tonne ore milled.)

Reagent: \_\_\_\_\_ Amount in kg/tonne ore milled: \_\_\_\_\_

39. If applicable, is the (proposed) milling circuit based on autogenous grinding ?

Yes \_\_\_\_\_ No \_\_\_\_\_ Partially \_\_\_\_\_

40. Based on present production or bench test results, describe the chemical and physical characteristics of liquid mill or processing plant wastes directed to the tailing deposition area.

T/Cu \_\_\_\_\_ mg/L Total Ammonia \_\_\_\_\_ mg/L

T/Pb \_\_\_\_\_ mg/L Suspended solids \_\_\_\_\_ mg/L

T/Zn \_\_\_\_\_ mg/L Specific conductivity \_\_\_\_\_ uhmo/cm

T/Ag \_\_\_\_\_ mg/L pH \_\_\_\_\_

T/Mn \_\_\_\_\_ mg/L Alkalinity \_\_\_\_\_ CaCO<sub>3</sub>/L

T/Ni \_\_\_\_\_ mg/L Hardness \_\_\_\_\_ mg/L

T/Fe \_\_\_\_\_ mg/L Total cyanide \_\_\_\_\_ mg/L

T/Hg \_\_\_\_\_ mg/L Oil and Grease \_\_\_\_\_ mg/L

T/As \_\_\_\_\_ g/L

T/Cd \_\_\_\_\_ mg/L

T/Cr \_\_\_\_\_mg/L  
T/Al \_\_\_\_\_mg/L

41. Provide a geochemical description of the solid fraction of the tailings.

Cu \_\_\_\_\_mg/g Al \_\_\_\_\_mg/g  
Pb \_\_\_\_\_mg/g Fe \_\_\_\_\_mg/g  
Zn \_\_\_\_\_mg/g Hg \_\_\_\_\_mg/g  
Ag \_\_\_\_\_mg/g Ni \_\_\_\_\_mg/g  
Mn \_\_\_\_\_mg/g As \_\_\_\_\_mg/g  
Cr \_\_\_\_\_mg/g CN \_\_\_\_\_mg/g  
Cd \_\_\_\_\_mg/g  
13



## **SECTION 5 : THE CONTAINMENT AREAS – No tailings will be generated under this requested exploration license renewal**

42. What is the (Proposed) method of disposal of the mine water, mill or process plant tailings (ie. sump, subaqueous, surface tailings pond, settling pond) ?

- No process plant tailings will be generated consequently there will be no need for any tailings containment pond.
- Surface drilling will use mixed brine solution to prevent the drills from freezing into the permafrost. This brine solution will be collected, contained and recycled to the maximum extent practically possible
- In the event that the UG decline is extended to support further exploration drilling and/or bulk sampling, the mining will be done in the dry to prevent disturbance of the permafrost. Consequently no groundwater is expected and there will be no need to discharge or contain minewater. Brine solution used to lubricate drills will be collected in underground sumps and recycled back to the drills to the maximum extent possible. No discharge of minewater is anticipated.
- Surface drainage from precipitation and snowmelt from the existing decline waste rock and ore piles is being collected now in a containment pond to allow for sampling and monitoring. Typically most of the collected water is lost through evaporation however allowance must be included within the license for discharge of this water onto the surrounding tundra provided discharge water quality requirements are being met. This has been the case under the current water license and no change is expected moving forward.
- In the event that MHBL has to dewater the existing exploration decline to allow for further exploration, then the ice in the existing adit will have to be melted and pumped into a surface containment pond for sampling prior to discharge onto the tundra or removed as ice and similarly placed into a surface containment pond for sampling prior to discharge. The existing license includes provision for this activity and MHBL requests that these provisions be carried forward in a license renewal

As indicated in the previous bullet points any potential minewater discharges will be relatively small and would be pumped from the underground decline and disposed of into existing and approved disposal areas as allowed for in the existing license. We respectfully request that the terms and conditions in the existing license carry over to the renewed license. As there are no major containment areas (tailings ponds or minewater collection ponds) at the Boston site and none are planned under the proposed license renewal, we have marked items #43 through #51 as being not applicable to this renewal application.

43. Attach detailed scale plan drawings of the proposed (or present) containment area. The drawings must include the following: **N/A**

- a) details of pond size and elevation;
- b) details of all retaining structures (length, width, height, materials of construction, etc.);
- c) details of the drainage basin;
- d) details of all decant, siphon mechanisms etc., including water treatment plant facilities;
- e) details with regard to the direction and route followed by the flow of wastes and / or waste water from the area; and
- f) indicate of the distance to nearby major watercourses.

44. Justify your choice of location for the containment area design by rationalising rejection of other options. Consider the following criteria in your comparisons: subsurface strata permeability, abandonment, recycling/reclaiming waters, and assessment of runoff into basins. Attach a brief summation. **N/A**

45. The average depth of the existing or proposed containment area is dependent on the volume of water encountered metres. **N/A**

46. Indicate the total capacity for the existing or proposed containment area by using water balance and stage volume calculations and curves. (Attach a description of inputs and outputs along with volume calculations.) **N/A**

47. Has any evaporation and/or precipitation data been collected at the site ? \_\_\_\_\_ if so, please include the data. **N/A**

48. Will the present or proposed containment area contain the entire production from the mill or processing plant complex for the life of the project ? **N/A**

49. Will the proposed tailings deposition area engulf or otherwise disturb any existing watercourse? **N/A**

50. If “Yes”, attach all pertinent details (Name of watercourse, present average flow, direction of flow, proposed diversions, etc.) **N/A**

51. Describe the proposed or present operation, maintenance and monitoring of the containment area. **N/A**

## **SECTION 6 : WATER TREATMENT**

52. If applicable, will the minewater, mill or process plant water be chemically treated before being discharged to the containment area ? If so, explain the treatment process (Attach flow sheet if available.) **N/A**

53. Will (treated) effluent be discharged directly to a natural water body or will polishing or settling ponds be employed ? Describe location, control structures, and process of water retention and transfer. Attach any relevant design drawings.

No. The only treated discharge will be from the RBC which is discharge onto a point on the tundra so that the treated water has to travel a distance greater than 400 metres prior to entering the nearest water body (Aimaokatuk Lake). Over the past license term this discharge has been monitored under the required SNP program with the analytical results having shown no observable impact on the receiving waters within Aimaokatuk Lake.

54. Name the first major watercourse the discharge flow enters after it leaves the area of company operations.

Aimaokatuk Lake

## SECTION 7 : ENVIRONMENTAL MONITORING PROGRAM

55. Has Traditional Knowledge in the area been considered? If so, how? If not, why not?

Yes, through two studies:

1. The West Kitikmeot Slave Study (WKSS) carried out by Natasha Thorpe under the direction of a committee based in Bay Chimo (Umingmaktok)
2. The “NTK” (Naogaiyaotit Traditional Knowledge) funded by Industry through the KHTA / Kugluktuk Naogaiyaotit Association

56. Has any baseline data been collected for the main water bodies in the area prior to development ?

Yes.

57. If “Yes”, include all data gathered on the physical, biotic and chemical characteristics at each sampling location. Identify sampling locations on a map.

The previous owner provided numerous reports on baseline data as a component of the original application for this water license. The data has not been included with this questionnaire as this application is a renewal of the current license, and there is no change to the operation and all relevant water quality data is provided monthly as part of the existing terms and conditions of the existing license.

58. Provide an inventory of hazardous materials on the property and storage locations.

Diesel fuel for power generation and mobile equipment: ~ 400,000 liters

Jet B fuel for helicopters: ~ 100,000 liters

Hydraulic Fluid and Lubricants: ~ 5,000 liters

Glycol Antifreeze: ~ 1,000 liters

59. Provide a conceptual abandonment and restoration plan for the site, detailing the costs to carry out the plan, and a proposal for a financial assurance which covers the costs to carry out the plan.

An updated Closure and Reclamation Plan for the Boston site is attached to this application. MHBL currently has security bonding in place for its activity at the Boston Camp. MHBL believes that the current bonding levels continue to be adequate to cover the existing reclamation liability at this exploration site.

## **SECTION 8 : ENVIRONMENTAL ASSESSMENT AND SCREENING**

60. Has this project ever undergone an initial environmental review? If yes, by whom and when.

The exploration activity at the Boston Camp underwent environmental screening by the Nunavut Water Board at the time of the initial water license application process in 1996 ?? BHP provided support data to the Water Board for this screening as part of its water license application. Over the current water license term, SNP sampling has been conducted with the results submitted on a regular basis to the Water Board allowing impacts to water to be monitored by water Resources and Board staff.

Additional environmental screening of the exploration activity at the Boston site has taken place as part of recent applications for various Land use Permit renewals and Water License amendments. Under these renewal and amendment processes, all of the applications and supporting documentation were reviewed by NIRB as required under the Nunavut Land Claims Agreement and environmental screening decisions were issued to the various regulatory agencies allowing for the issue of these land use permits and water license amendments. To date, all of these applications have received positive screening decisions. This application is for renewal of an existing water license. No change in the site activity that is covered under the existing water license is being proposed consequently environmental screening should be similar in outcome to past screenings.

61. Has any baseline data collection and evaluation been undertaken with respect to the various biophysical components of the environment potentially affected by the project (eg. Wildlife, soils, air quality), ie. In addition to water treated information requested in this questionnaire ?

Yes **X** No \_\_\_\_\_ Unknown \_\_\_\_\_

62. If “Yes” please attach copies of reports or cite titles, authors and dates.

There has been considerable baseline data collection work completed on the Hope Bay Belt since the BHP’s initial activities in 1992. This baseline data has been submitted to the NWB on a regular basis in the form of consultant field reports, specifically annual reporting on aquatic and wildlife studies. The most recent submissions are as follows:

- Golder, 2005 – Aquatic Studies
- Golder, 2005 – Wildlife Studies

63. If no, are such studies being planned? Briefly describe the proposals. **N/A**

64. Has authorization been obtained or sought from the Department of Fisheries and Oceans for dewatering or using any water bodies for containment of waste? **N/A**

65. Has a socio-economic impact assessment or evaluation of this project been undertaken ? (this would include a review of any public concerns, land, water and cultural uses of the area, implications of land claims, compensation, local employment opportunities, etc.)

Yes    No \_\_\_\_\_ Unknown \_\_\_\_\_

No specific socio-economic studies have been completed for this water license renewal. (see item 66 below for added information)

66. If “Yes” please describe the proposal briefly.

No specific socio-economic studies have been completed for the renewal of the Boston exploration water use license. This project has been a positive source of local employment during the existing water license term and no significant change is expected during the proposed five year license renewal period given that the proposed exploration activity at this site is not expected to be materially different from that experienced over the existing water license period.

MHBL completed a socio-economic assessment of its proposed Doris North Project as part of the recently completed NIRB assessment process. These studies included collection of data on community demographics, education levels, public concerns, etc.

MHBL has conducted community tours in 2005 and 2006 to follow up on community concerns and to inform the local communities about its activities on the Hope Bay Belt.

In 2006 MHBL signed an Inuit Impact Benefits Agreement with the Kitikmeot Inuit Association covering development of the Doris North Project.

67. If “No” is such a study being planned ? Yes \_\_\_\_\_ No \_\_\_\_\_ N/A

MHBL does not believe that further socio-economic studies are needed for renewal of the Boston exploration water license. The studies conducted for the Doris North Project have provided site specific data sufficient to assess potential socio-economic impacts and benefits for it activity on the Hope Bay Belt in a regional context and to allow MHBL to implement policies and procedures to mitigate adverse effects and increase positive effects.

68. Describe any cumulative impacts the project may create?

The Boston exploration activity is not expected to change from that experienced over the current license term, consequently the cumulative impacts from this continued activity are not expected to be any different from those experienced over the life of the past license. To date there have been no observed adverse cumulative impacts from this exploration activity at the Boston exploration camp.

In the future development of the Doris North Mine will increase human activity in the region. Cumulative impacts from this development were assessed under the Part 5 review completed by NIRB in 2006. No significant adverse cumulative environmental impacts were predicted assuming that mitigation is implemented as planned.

69. Does the project alter the quantity or quality or flow of waters through Inuit Owned Lands?

No, the Boston exploration camp will have no measurable impact on the quantity or quality of flow through Inuit Owned Lands

70. 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.

NA

71. If no compensation arrangement has been made, how will compensation be determined?

NA