



July 27, 2007

Sarah Baines
Wek'èzhii Land and Water Board
Box 32, Wekweeti, NT X0E 1W0

RE: BHP Billiton (BHPB) Interim Closure and Reclamation Plan

Dear Sarah:

Thank-you for providing Fisheries and Oceans Canada (DFO) the opportunity to comment on BHPB's Interim Closure and Reclamation Plan (ICRP). As specified by the WLWB, DFO's comments for this phase of the review process will focus specifically on Section 2, parts 6.1 – 6.3 and those portions of appendix D that relate to parts 6.1-6.3.

Open Pits, 6.1.2 Development Status

In this section, BHPB states that fish habitat that was lost due to the dewatering of Beartooth, Panda, Koala, Koala North, Fox and Misery lakes as well as the fish habitat that will be lost due to the Sable and Pigeon developments has been compensated for through Department of Fisheries and Oceans Authorizations and that "as a result, replacement of fish habitat in pit lakes is not a requirement for reclamation and closure of open pits and accordingly is not part of the 2007 ICRP".

It is DFO's opinion that the compensation provided under the *Fisheries Act* authorization does not preclude reclamation work being conducted in the aquatic ecosystem.

DFO agrees with BHPB that the key objectives of a closure plan should be, as described in the December 1994 *Project Description Report*, to "minimize disturbances to the environment and to attempt to restore the site and watercourses to original undisturbed conditions". *DFO's decision regarding the FA Authorization was largely based on the understanding that BHPB would follow these closure objectives and reclaim the aquatic ecosystem and restore watershed connectivity.*

In INAC's January 2006 *Mine Site Reclamation Guidelines for the Northwest Territories* under Section 2.6 Open Pit Mine Workings, one of the objectives is to "establish in-pit water habitat where feasible for flooded pits". At this point DFO believes the establishment of in-pit water habitat is feasible in the case of BHPB's mine site.

It is DFO's opinion that the creation of littoral zone areas in the end pit lakes is critical to meeting BHPB's reclamation goal of returning the Ekati minesite "to viable, and wherever practicable, self sustaining ecosystems that are compatible with a healthy environment, human activities, and the surrounding environment".

DFO realizes that outstanding issues such as water quality and nutrient sink potential need to be addressed before the decision to allow fish into these lakes is made. DFO also acknowledges BHPB's proactive approach in addressing these and other issues in the ongoing research conducted according to their reclamation research plan. If research results indicate that fish should not be allowed access, DFO would have no objection if the rationale was sound.

DFO advises the creation of a littoral zone in the end pit lakes independent of the decision to allow fish, as it will provide a diversity of aquatic habitat that would be beneficial for waterfowl, benthic invertebrates, and riparian and aquatic vegetation.

Open Pits, 6.1.3.4 Panda Open Pit

Panda pit (as well as Beartooth) may be partially backfilled with processed kimberlite prior to refilling with lake water upon mine closure. This would be beneficial as it would extend the life of the Long Lake Containment Facility (LLCF) and reduce the amount of time and water required for filling the lake. However, an end pit lake experiment should be conducted in order to ascertain whether processed kimberlite negatively affects the water quality in the pit lake. This is acknowledged by BHPB in Section 6.1.6 Engineering and Environment Work. If the results are positive this progressive reclamation method can and should be used in other pits.

Open Pits, 6.1.4 Final Landscape at Closure

BHPB states that "the pit lakes will have steep high walls remaining around some of the pit lake perimeter, which will provide raptor nesting locations, while other areas of the lake edge will be sloped back to allow wildlife access and/or egress. Beach areas that are able to support riparian habitat will be encouraged through stabilization work and some plant seeding if required. Fish passage or habitat will not be constructed in the pit lakes, and fish access will be prevented by the use of fish barriers".

DFO supports this integrated approach but is of the opinion that fish access must be considered in long-term reclamation plans. DFO supports the creation of shallow littoral areas to increase diversity and productivity of the aquatic ecosystem as well as near-shore riparian areas. To reiterate, DFO does not consider the creation of littoral areas in the end pit lakes to be fish habitat compensation but part of an overall reclamation plan that takes into account terrestrial and aquatic ecosystems. If there are certain areas of the pit lake edge that are important for raptor nesting DFO supports their protection.

Open Pits, 6.1.4.1 Surface Drainage

This section outlines how the re-connection of the pit lakes with the local hydrological regime will be required to allow drainage. DFO supports re-connection of the various waterbodies within the BHPB mine site as an important part of the overall reclamation plan, but does not support the creation of fish barriers as part of the long term reclamation strategy. It is DFO's opinion that fish access must be considered as part of the long term reclamation plan if the water quality meets the necessary criteria to be discharged downstream into other fish bearing waters. Again, DFO is recommending that a littoral zone be created to diversify the depth found in the pit lakes to provide habitat for a number of aquatic organisms and plants.

Open Pits, 6.1.4.1 Panda/ Koala/ Kodiak Channels

BHPB is proposing the construction of a channel between Panda Pit Lake and Koala Pit Lake (including Koala North) to reconnect surface drainage, and once water quality criteria are met flow will be reconnected from Koala Pit Lake to Kodiak Lake. Again, if water quality criteria is met and a shallow zone is created in the pit lakes to promote colonization by benthic invertebrates and plants, DFO is of the opinion that efforts should be directed to enhancing fish passage between the lakes rather than constructing fish barriers.

Open Pits, 6.1.6.4 Effects on Source Lakes

DFO recognizes that BHPB has committed to conduct baseline monitoring prior to pumping water from Ursula and Upper Exeter lakes as well as monitoring of lake levels during pumping to ensure that no negative impacts to fish habitat from the source lakes will occur. A detailed bathymetric survey should be conducted on these source lakes to provide an accurate estimate of total volume and basin shape. Once this is complete, DFO would be able to provide advice to the WLWB and BHPB on what the maximum extraction amount should be to ensure no negative impacts occur to fish and/or fish habitat. DFO has concerns regarding the allowable annual extraction volumes listed in Appendix D, Table 28 (Ursula 2,500,000 m³, Upper Exeter 5,000,000 m³). An accurate volume estimate is required to ensure that downstream flow from the source lakes is not reduced to a level that would impede fish passage.

DFO appreciates the fact that BHPB has committed to construct intake screens that follow the 1995 DFO Freshwater Intake End-of Pipe Fish Screen Guideline.

Open Pits, 6.1.7.2 Pit Water Quality

BHPB states that “lake productivity is expected to be low because only limited littoral development will be possible on the steep pit slopes, and the large depths of the pit lakes will result in lost nutrients from the water column”. If an effort is put forth to create littoral zone areas, lake productivity should increase which will also be beneficial to downstream aquatic habitat.

A pit lake pilot study should be conducted as soon as a pit becomes available, to determine if there are any issues with water quality and other parameters that need to be addressed prior to pump flooding any other pits. A contingency plan should be developed that describes what BHPB proposes to do if water quality criteria designed to protect aquatic life cannot be met for the pit lakes. This should be included as part of the Adaptive Management Plan that is yet to be completed.

Waste Rock Storage Area (WRSA), 6.3.2.1 Design Criteria

In order to minimize the footprint of future and if possible current waste rock storage areas, BHPB should consider placing waste rock in pits as they become available due to the cessation of mining activity. This would not only reduce the footprint on the terrestrial landscape but reduce the amount of water and time required to fill the end pit lakes. It would also provide an opportunity for waste rock storage areas to be closed as envisioned in the 1995 EIS where they were to have sloped sides with vegetation communities established on the side slopes.

WRSA, 6.3.3.3 Misery WRSA

BHPB states that the location of the permitted extension to the existing WRSA includes the requirement to de-water Desperation Pond but the design for the WRSA extension will be reviewed prior to mining re-commencing at Misery Pit. All alternatives should be closely examined to see if it is possible to accommodate the additional waste rock without de-watering Desperation Pond.

General Comments

DFO agrees with the IEMA that it would be more effective to have a separate table containing closure objectives and criteria, options, research, and monitoring for each mine component.

DFO realizes this is an interim closure and reclamation plan that will change over time since the mine plan is dynamic. However, it is DFO's opinion that all parties represented in the working group should work together to form an overall vision of what the mine site should look like when BHPB is gone that is as close as possible to what was there before mining operations began. Closure objectives and criteria should be geared towards this outcome. If studies undertaken in the reclamation research plan provide data that demonstrate that objectives are unattainable we can adjust them, but at the outset we should aim to meet the BHPB reclamation goal:

Return the Ekati minesite to viable, and wherever practicable, self sustaining ecosystems that are compatible with a healthy environment, human activities, and the surrounding environment.

If you have any questions, please contact me at (867) 669-4931.

Original signed by:

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