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November 7, 2008

Ms. Laura Tyler BHP Billiton Diamonds Inc. #1102, 4920-52<sup>nd</sup> Street Yellowknife, NT X1A 3T1

Dear Ms. Tyler:

### Re: Sable, Pigeon, Beartooth Amalgamation Process - Information Request

The Wek'eezhii Land and Water Board hosted a technical session on November 4 and 5<sup>th</sup> to review the terms and conditions of the Sable, Pigeon and Beartooth development for the Amendment of Water Licence MV2003L2-0013.

During the discussion, reviewers identified several areas where additional information from BHP Billiton was necessary to inform the requested re-examination of BHPB's proposed Effluent Quality Criteria and other changes which the company has proposed. All parties present agreed that BHPB would gather the following information, to help reviewers prepare more thorough interventions for the public hearing:

### 1. Merits of the Two-Rock Sedimentation Pond Water Quality Predictions

- a. Effect of filter dikes on removing particulate metals in the water;
  - i. Examine the efficiency of other working filter dykes (at Ekati) at removing particulate-associated metals like Aluminum and use this information to predict the amount of total metals that the Two Rock filter dyke will remove;
  - ii. Examine Beartooth or other data to see what other metals (particularly Ni, Cu, Zn) may be associated with particulates and therefore partially removable by the filter dyke.
- Elaboration of BHPB's Best Management Practices/SOPs for Ammonia management – is there anything to learn from DDMI review, also what is the certainty of Ammonia predictions;
- c. Evidence for the stability of Nitrite in Two-Rock pond and its relationship to oxygen levels will it be as high as predicted?
- d. Documentation of Two-Rock Pond Water Quality Model assumptions, how it works and variance of estimates;
  - i. Include effect of dewatering on Two-Rock Pond water quality;
  - EC brought up old results from drilling at Sable which indicated a high level of phosphorous and very fine non-settling clay particles – both of which will affect the model;

- e. Identify if there is a trend for Ammonia (IEMA thought they saw that it was decreasing over time) within the Beartooth pit, and if so evaluate;
- f. Document rationale/history of how levels of Mo/NO<sub>3</sub>/Se in the LLCF have increased to guide whether or not there should be EQC's for these at Two Rock or managed via the WAMP;
  - i. Use Chloride at Beartooth pit as a surrogate for Sable pit to rationalise why there is no need for an EQC to be developed for Sable;
- g. Kinetic test results for a comparison of ore characteristics;

## 2. Actual EQC Values

a. An updated list of proposed EQCs will be submitted by BHP Billiton within their January 16<sup>th</sup> submission of a DRAFT amalgamated Water Licence.

# 3. Effects on Horseshoe Lake

- a. Compare proposed EQCs to Horseshoe Lake baseline values;
- b. Define water budget (e.g., inflows, flushing rates, etc) for Horseshoe Lake to support impact predictions;
- c. Describe the water quality predictions/impacts in Horseshoe Lake as a result of the proposed EQC:
  - i. Describe how the water quality will change from the time the effluent (both from dewatering and operations) enters Horseshoe to the point where it is fully mixed and water quality meets the receiving water quality objectives;
  - ii. Delineate the size, location and impacts of the "mixing zone" in Horseshoe Lake as well as whole lake predictions as part of the impact assessment;
  - iii. Can use chloride model to predict the fate of other parameters;
- d. Provide analysis of Two Rock Lake discharge to document ;
  - i. Flow path of effluent to Horseshoe Lake
    - ii. Mixing zone where effluent meets Horseshoe Lake
    - iii. Descriptions of fish habitat in outflow streams receiving Two Rock Lake discharge and effect of discharge on aquatic resources and habitat.
    - iv. Any mitigation options (i.e. flow direction or piped discharge)
- e. A model of long-term response (i.e., assimilative capacity) of Horseshoe Lake - will the concentration of any parameters gradually increase year after year;
- f. Compile the baseline water quality data for Horseshoe Lake;
- g. Document reserve capacity of the Two-Rock Pond for contingency if effluent concentrations exceed EQC limits and no discharge can occur for one year;

# 4. Mitigation for Discharge Conditions

- a. The WLWB will investigate derivation of peak dewatering/drawdown rates from original EIS and confer with Environment Canada then inform BHPB so it can be included in their information package;
- b. The WLWB will also investigate the prohibition on under-ice discharges that appears in the SPB licence;

#### **Additional Information Requests:**

- BHP Billiton will provide an updated figure showing Sable waste rock storage area boundaries with respect to Horseshoe Lake watershed;
- BHP Billiton will clarify that there will be a 100m buffer between the waste rock storage areas and all water bodies (i.e. stream from Ulu to Horseshoe);
- BHP Billiton will verify water levels for Exeter and Ursula and average pH of horseshoe watershed;

The Wek'eezhii Land and Water Board would like to thank all parties for their input and the respectful and productive nature in which they participated in the technical discussions. If you have any further questions, please feel free to contact Kathleen Racher at <u>racherk@wlwb.ca</u> or Ryan Fequet at <u>rfequet@wlwb.ca</u>.

Sincerely,

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Kathleen Racher, PhD. Regulatory Director

cc BHPB Distribution List