



INDEPENDENT ENVIRONMENTAL MONITORING AGENCY

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Lionel Marcinkoski
Environmental Scientist
Department of Indian Affairs and Northern Development
Box 1500
Yellowknife NT X1A 2R3

Dear Mr. Marcinkoski

Re: BHP Billiton Environmental Impact Report (EIR) 2009

Please accept this letter as the Agency's comments on BHP Billiton's EIR 2009 as requested in your letter dated September 3, 2009. The Agency recognizes the effort of BHPB and its consultants for the technical sessions held in May 2009 and the site visit in August 2009 to complement the EIR. These sessions contributed to a better understanding the EIR and its conclusions. Notwithstanding this, the Agency has serious concerns with the EIR 2009, many of which are identical to those raised with the EIR 2006.

Most importantly, in our view BHPB has not identified the most significant effects from Ekati that have become apparent over the last three years as departures from the environmental baseline of 1995, namely the rising contaminant levels downstream of the mine and the project effects on the declining Bathurst caribou herd.

Additionally, many of the EIR impact significance ratings have little or no monitoring data to support such determinations. The resultant downplaying of impacts, coupled with the misuse of positive impacts and adaptive management, and the omission of important environmental changes as noted above, raise issues of credibility and accuracy around the EIR. This is a key document for the Aboriginal communities and the general public. For this reason, we believe that the EIR 2009 is not satisfactory and should be corrected to rectify the deficiencies raised in our letter, before it is accepted as final.

These concerns are explained more fully below. Further detailed observations from the Agency are contained in an appendix to this letter.

Procedural Concerns with the EIR 2009

While we appreciated the opportunity to meet with BHPB and others to discuss the EIR 2009, this happened only after the release of the report. The 1997 Environmental Agreement clearly specifies in Article 5.2(b):

In order to prepare each Environmental Impact Report, and with a view to both ensuring that an opportunity is provided for early disclosure and discussion of problems and that each Environmental Impact Report meets the requirements of this Agreement, **BHP shall consult with representatives of the Minister, the GNWT and the Monitoring Agency as BHP compiles the information and data to be included in such Environmental Impact Report.** [Emphasis added]

Many of our substantive concerns with both the 2006 and 2009 EIRs could have been avoided if BHPB had consulted with the Agency prior to preparation and distribution of the document. We raised this issue with BHPB this year and in the past and expect that there will be a proper consultation meeting during the preparation of the next EIR.

We indicated above that the technical and site visit meetings on the EIR 2009 were helpful. Distributing the presentation materials in advance so parties can properly review and prepare could increase the value of these meetings. We were pleased to hear BHPB respond positively to the requests at the EIR August 2009 site visit for additional community consultations on air quality monitoring (including dust and vegetation monitoring) and closure planning. We noted that there were also requests for annual meetings from some of the Aboriginal participants at the August meeting to review monitoring programs results. The Agency is on record numerous times as suggesting to BHPB that it resume this important community engagement activity. We look forward to these consultation initiatives being implemented by the company in a timely fashion.

Substantive Concerns with the EIR 2009

1. Focus of the EIR

We noted from the EIR 2009 that the only moderate effects noted were for parasites in sculpin and changes in fish biology due to the impacts from oversampling. In the Agency's view, these are not likely substantive or significant matters in terms of the overall effects of the project.

We had expected to see the rising contaminant levels downstream of the mine identified as a significant matter. In the case of nitrate and molybdenum, downstream discharges have exceeded CCME guidelines for the protection of aquatic life. Other parameters that are not regulated, such as chloride and nutrients, have dramatically increased within the LLCF and resulted in detectable changes as far downstream as Lac de Gras. Such changes were not predicted in the original Environmental Impact Statement.

The other important matter that we had expected to see with a much higher significance rating is the effect of the project on caribou. Several studies have shown that there is a zone of influence around the mine site where caribou are less likely to be found. Given that there has been no systematic monitoring of the effectiveness of caribou mitigation measures and the decline in the Bathurst herd itself, we had expected to see caribou identified in the EIR as a significant issue of concern. BHPB is of course not solely responsible for the precipitous decline in the population of the Bathurst herd, but public concern is at a high and monitoring and mitigation efforts should reflect this.

2. Usage of Adaptive Management

Several good examples of adaptive management were presented in the EIR 2009 text and summarized in Tables 3.5-1 and 6.1-2. These are a considerable strength of environmental management at Ekati. There were also many examples of mitigative measures and environmental policies that are clearly not adaptive management as defined by BHPB. For example, Table 3.5-1 lists many actions, such as preventative maintenance programs for diesel generators, that are not adaptive management at all, but simply best practices or in some cases, regulatory requirements (e.g. revegetation research).

Effective management of project effects is not necessarily adaptive management if the mitigative measures simply reflect best practices. We encourage BHPB to make a clear distinction between adaptive management (monitoring programs attempting to fill information gaps and hence leading to suitable management adaptations) and implementation of best practices.

3. Significance Ranking for Residual Effects

The Agency found that the comparison of the significance of residual effects presented in the EIR to the predictions in the Environmental Impact Statement (EIS) is not accurate. In some cases, the EIR stretches the limited information from monitoring programs to improperly draw conclusions that certain residual effects are rated as negligible.

To illustrate the first point on the inaccuracy of some predictions, we offer the following examples:

- The EIR report acknowledges that caribou are more likely to be seen farther than nearer the mine, indicating that the mine may be having an effect (pg. 5-129). The report also states that this was predicted in the 1995 EIS (pg. 5-129). We reviewed the EIS and could not find such a prediction. We did locate the following:
“With appropriate mitigative measures in place, caribou will be largely unaffected by the NWT Diamonds Project. Based on caribou response to development elsewhere, the overall impact on caribou of the NWT Diamonds Project is expected to be minor.” [Vol. IV, pg.31]
One would have to conclude that the observed effect of caribou avoiding the mine site was NOT predicted, and should not be construed as a predicted effect by BHPB.

To illustrate the second point on stretching results, we offer the following:

- Even though ambient air quality modeling, and more importantly monitoring, has not taken place to help determine compliance with standards and guidelines and any residual effects, BHPB concludes that there are negligible residual effects. This conclusion cannot be soundly drawn since we are still waiting for the results of the 2008 air quality monitoring program including the dust fall work, vegetation and snow sampling.

The Agency questioned the EIR 2009 presentations at site where it was stated that there had been no exceedances of CCME guidelines for water discharges from the LLCF. We have checked the data and had discussions with DIAND personnel who found many such exceedances for nitrate and molybdenum based on the SNP data over the period 2006-2008. There has not yet been a detailed explanation from BHPB as to this discrepancy.

- On page 5-140 it states, “*Grizzly bears continue to use habitat near the mine and their movements and life histories do not appear to be significantly affected by mine activities*”. Both the 2008 WEMP and the EIR (page 5-136) note that there are poor data to support the second half of this statement, and that changes in bear presence or habitat use from mining activity may not be detectable from the current study design. Thus, the claim of insignificance is not supported by the monitoring programs.

The Agency noted that there are differences between the significance criteria presented in the EIR (Table 6.1-1) and those used during the environmental assessment (as submitted by BHP as part of the “Additional Information to the Panel”). Specifically, the geographical extent (“ecozone”, “ecoregion” and “ecosection”) have been removed from the table used during the panel review.

It would be far more appropriate to indicate that the residual effects are uncertain or unknown until appropriate studies and research are concluded.

4. Flawed Example of Positive Residual Effects

The EIR concluded that four project residual effects are positive. It is important to note that the project effect is what is measured compared to what would have been had there been no project. Thus, the claim that the development of permafrost in the waste rock piles is a positive effect means that BHPB views the permafrost in the rock piles as being better than the undisturbed tundra. We cannot understand why such a position has been taken. We further note that the removal of Leslie Lake from the mine plan (as presented in Table 6.2-1) as an example of a mitigative measure for land disturbance is questionable. We have always understood that Leslie Lake pipe was removed from the mine plan as a result of its poor economic potential rather than a conscious effort by the company to limit its footprint.

5. Use of Traditional Knowledge (TK) in Mine Management

The Agency is pleased to see that BHPB has made a more serious effort in documenting the use of TK in managing the environmental effects of the Ekati mine. The Agency has previously complimented BHPB on its Caribou and Roads project. However, the other initiatives cited in the EIR 2009 require better documentation to explain how the TK of

Aboriginal employees, the Naonaiyaotit Traditional Knowledge Project, and the Aboriginal elder visits have improved environmental management. There is little information in the EIR about the effectiveness of any measures implemented based on TK input and what role Aboriginal people played in monitoring such measures. In our view, there should be.

We would be pleased to discuss these concerns with BHPB and others, should such an opportunity present itself. Also, as noted above, we truly hope for an opportunity to discuss these matters during the preparation of the next EIR, as is required by the Environmental Agreement.

Sincerely,

A handwritten signature in black ink, appearing to read "W. Ross". The signature is fluid and cursive, with the first letter of the first name being a large, stylized 'W'.

Bill Ross
Chairperson

cc. Society Members

Appendix—Detailed Agency Comments on the EIR 2009

- 4.2.4.2 Wildlife Effects Monitoring Program (WEMP)

Referring to the aerial caribou survey, on page 4-32 it states, “*It covers a total area of 6,300 km² and is conducted in collaboration with Diavik Diamond Mines Inc.*”.

Between 2006 and 2008 the aerial caribou surveys were not been conducted in collaboration with Diavik. This statement needs to be corrected.

- 5.5.3.1 Caribou/Habitat

The EIR states that caribou avoid the mine infrastructure (page 5-129), but provides no data on the degree of avoidance, and still concludes “*overall minor effects of EKATI on caribou are consistent with the predictions of the 1995 EIS*”. There are no data presented to conclude that the mine site has overall minor effects on caribou.

On page 5-129 it states, “*In 2008, the probability of observing a caribou in a transect cell during an aerial survey increased at distances farther from the mine. This is consistent with findings from previous years (1997 to 2007). The probability of observing calves with a group of caribou was not related to distance from the mine during the post-calving migration period in 2008. This result is consistent with analyses conducted by Boulanger et al. (2004), suggesting...*”.

Boulanger et al. (2004) did not address differences in distribution between nursery and non-nursery groups, thus the “*this result*” relates to the first part of this section, not the calves section. This should be corrected.

- Wolverine/Habitat

Also on page 5-140 it states, “*The snow track survey resumed in 2008, however the survey was conducted by helicopter. On the day of the survey the conditions were optimal (i.e., recent snowfall, a calm day, and excellent visibility) however no tracks were observed (Report 51)*”. The DNA study was conducted in 2005-06, with no follow-up DNA monitoring to date. No track counts were conducted in 2007. As detailed in the 2008 WEMP, the 2008 track counts were of a single 100 km loop spaced roughly 7-8 km out from the main Ekati footprint (excluding Misery pit). This 100-km loop transect is problematic because, a) it provides poor statistical power to detect change over time, and no power to determine zone of influence; b) it does not provide high levels of sightability of tracks, and removes the opportunity for use of Traditional Knowledge in wildlife monitoring; and c) conducting track counts 12 hours after snowfall (as occurred in 2008), prevents adequate time for track deposition. Given the above describes monitoring since 2006, there are insufficient data to conclude, (page 5-141) “*the results of monitoring wolverine between 2006 and 2008 suggest there is no evidence that wolverine movements and abundance have been affected by EKATI activities*”. This statement should be revised.

- Waterfowl

Page 5-152 “*In 2008 a red-throated loon became tangled and drowned in a net at Kodiak Lake*”. According to the 2007 and 2008 WEMPs, this incident actually occurred in August 2007.

- 6. Highlighted Effects and Trends: 2006 to 2008

- 6.5.1 Caribou/Habitat

In reference to the prediction of altered movement patterns by caribou, the EIR states, (page 6-4) “*The current finding has resulted in a negligible to minor residual effects rating, a change from the moderate effect rating provided in the 2006 version of this report. The reason for the change was that **the avoided mine habitat is very small in comparison to the available forage habitat** [emphasis ours] and the avoided mine area does not represent any unique characteristics. Thus it was concluded that not the same portion of the caribou population would be influenced over one or more generations”.*

This statement is not supported by the data. Both the 2008 WEMP and the EIR (page 5-129) state that the probability of observing a caribou increased at distances farther from the mine, but neither provide a determination of the zone of influence, the area within which the probability of caribou occurrence is decreased. Recent analyses (Boulanger et al. 2009, draft manuscript) using a smaller determined zone of influence (14 km) around the combined Ekati-Diavik infrastructure than estimated in previous years (~20-25 km) suggests that caribou occurrence is about 25% of normal levels within the zone of influence, which equates to ~4% of the high use area of summer range used by the Bathurst herd. We cannot conclude that the avoided mine habitat is “*very small*”, and suggest there is no support for downgrading the significance finding from moderate (as provided in 2006) to negligible/minor.

Regarding behavioural studies, the EIR states, “*Behaviour studies show no significant effects of the mine on caribou activity patterns. The residual effect of the mine on caribou activity budgets is considered negligible*”.

A total of 27 scans were conducted between 2006 and 2008 (10 on nursery groups, 17 on non-nursery groups). Even combining data since 1998 suggests, (page 5-129) “*...caribou feeding behaviour was affected by distance to mine, with feeding increasing with increasing distance from the mine for both nursery and non- nursery groups*”. Given the weak sample sizes from the recent EIR reporting period, and the affects on feeding behaviour determined from the combined data, the conclusion of no significant effects is not justified.

- 6.4.2 Water Quality and Aquatic Life Other than Fish

On page 6-3, it is noted that “one residual effect was assessed as minor – loss of habitat for aquatic life other than fish as a result of the complete dewatering of six lakes prior to 2006.” Even as a residual effect, this appears to be more than “minor” as it will probably take at least 10 years to assure stakeholders that water quality after pit flooding is safe for aquatic life. Similarly, on page 7-3 loss of fish habitat because of lake dewatering is categorized as minor, even though the loss is for >10 or 20 years (or forever?), based on the current position of BHPB not to allow fish back into the pit lakes).

- 6.4.3 Fish
A “palatability study” is mentioned in a couple of places (pg.6-3). We are not aware of any taste-testing. The “palatability” studies refers only to chemical assessments (Phenols, hydrocarbons in bile), not taste-testing as at Diavik.

- 6.5.2 Carnivores/Habitat
The EIR states, (page 6-4) “*Observations of carnivore habitat use and movement between 2006 and 2008 showed no avoidance effect from mine operations and personnel. Grizzly bear, wolverine, wolf, and fox continue to use the habitat in the EKATI study area*”.

We suggest there are insufficient data to support the first statement. There are no robust studies examining carnivore habitat use. The grizzly bear sign plots are admittedly a weak technique to assess grizzly bear distribution (see 5.5.3.2 above). The single wolverine track count conducted since 2006 in 2008 does not provide even remote support for this statement. In fact, the statement in Table 6.1-2 “*Track surveys indicated continued wolverine presence*” is totally incorrect, as no track counts were conducted in 2007, and no tracks were observed in 2008. Observation of one or several animals near the mine cannot be used for assessment of avoidance or attraction by a population. With regards to the second statement, a single animal could fulfill the conclusion that a species continues to use the habitat in the Ekati study area, which is essentially meaningless.

We therefore suggest that the conclusion of negligible residual effect on the habitat disruption prediction for carnivores is not supported by the data. In reality, this prediction should relate more to population level effects, rather than habitat disruption as detailed in Table 6.1-2.

- 7.1 Number and Magnitude of Residual Effects
On page 7-3, the EIR categorized “loss of vegetation cover” (as a result of land disturbance) as negligible to minor (a local area impacted for less than a decade or one generation). How do we know it will take < 10 years to recolonize with similar plant communities, especially since lichens can take decades to grow?
- Appendix B. Environmental Agreement Water Licences Annual Report 2008
BHPB makes the following statement on page B-38, “BHP Billiton was in compliance throughout 2008 with the Land Use Permits and Surface Leases it operates under. Any minor issues identified in INAC Inspections of BHP Billiton’s activities conducted under the Land Use Permits or Leases were rectified immediately. The INAC inspection reports are a matter of public record.”

The only reference to the Fay Lake processed kimberlite spill we could locate in the EIR 2009 is a short description in Table B.3-13. As this was a major environmental issue during 2006-08, we had expected to see more details on the mitigation and remedial measures undertaken by BHPB (see Article 5.2(c) of the Environmental Agreement) and the lessons learned from the spill.