

24 October 2008

Mr. Dave Abernethy  
Environment Superintendent - Operations  
**BHP Billiton Diamonds Inc.**  
#1102 4920-52<sup>nd</sup> STREET  
YELLOWKNIFE, NT  
X1A 3T1

Dear Mr. Abernethy:

**2007 Wildlife Effects Monitoring Program (WEMP) Report, Ekati Diamond Mine**

The Department of Environment and Natural Resources Wildlife Division (ENR) has reviewed the above noted report based on its mandated responsibilities under the *Wildlife Act* and provides the attached comments and recommendations for your consideration.

Comments and recommendations were provided by ENR technical experts in the Wildlife Division and the North Slave Region. Unfortunately, our ungulate specialist was not available to comment on the caribou sections of the report. Any comments we have on caribou monitoring as part of the WEMP can be discussed at the upcoming meeting of BHP Billiton and ENR's Wildlife staff.

Should you have any questions or concerns, please do not hesitate to contact Claudia Haas, Environmental Assessment and Monitoring Analyst, at (867) 920-6597 or by email at [claudia\\_haas@gov.nt.ca](mailto:claudia_haas@gov.nt.ca).

Sincerely,



Claudia Haas  
Environmental Assessment and Monitoring Analyst  
Environment and Natural Resources

c: Bill Ross  
Chairperson  
C/O Kevin O'Reilly, Manager  
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Environment, Industrial Technologist - Mining  
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Sarah True  
North Slave Region, Regional Environmental Assessment Coordinator  
Environment and Natural Resources

## **Attachment**

### **Introductory Comments and Context of Review**

The Department of Environment and Natural Resources (ENR) has reviewed the 2007 Wildlife Effects Monitoring Program (WEMP) Report produced by BHP Billiton (BHPB) as per Article VII of the Environmental Agreement (1997). ENR has found the 2007 WEMP Report to be thorough and comprehensive. Overall, the level of detail and analysis in the report is very good. Although there are some areas that require clarification (see following comments), this is a much improved report over previous years. ENR commends BHPB on the excellent quality of this annual report.

### **Executive Summary**

#### **Page iv:**

**Comment:** On page iv, under the sub-heading “Wolves” the WEMP states that “ENR...failed to detect dens with pups during this (2007) monitoring year...” However, ENR did locate a rendezvous site with three pups 17 km from the natal den site. ENR encourages BHPB to acknowledge that dens in the project area were productive in 2007.

### **Glossary and Abbreviations**

#### **Page xxiv:**

**Comment:** In future WEMP reports, it would be beneficial to define “occupancy” as it pertains to raptor nest sites and include it in this section of the report.

### **Section 2.1 Habitat Alteration and Loss**

#### **Sub-Section 2.1.6 Discussion**

**Comment:** It is stated that “Some of the habitat loss at Ekati will be mitigated as reclamation activities will be undertaken following mine closure.” It is our understanding that there would be progressive reclamation at the mine site during operations of the mine. At what point will reclaimed habitat be included in the discussion (and Tables) of habitat loss? I.e. what is the net loss of habitat at this point if in fact some reclamation work has been carried out?

## **Section 3.2 Wildlife Attractants and Deterrent Efforts**

### **Sub-Section 3.2.1 Landfill Monitoring**

#### **3.2.1.5 Results**

**Comment:** BHPB should be commended for its efforts to reduce attractants and misdirected waste at its landfills. Does the proponent know which group of workers is responsible for the current levels of attractants found at the landfills? If so, would it not make sense to target educational efforts at this particular group of workers (or contractors) to further reduce attractants?

**Comment:** The continued monitoring of landfill sites for signs of wildlife attractants (i.e. misdirected food waste) at Ekati and Misery indicates that there have been incremental improvements in waste management practices in recent years. Unfortunately, food waste is still finding its way to landfill sites, albeit at a reduced rate. From a wildlife perspective, however, these attractants are still available (Note 3 foxes in Plate 3.2-2b; taken March 4, 2007) and contribute to the habituation of foxes, wolverine and grizzly bear. Since 2000, this habituation has contributed to the death of one grizzly bear cub, the death/relocation of several wolverines and the destruction of numerous fox.

BHPB has obviously taken a series of constructive steps to decrease the amount of attractants reaching their landfill sites. Since there may be limits to what can be accomplished with the current waste management system, perhaps it would be useful for BHPB to conduct an independent review of their current practices. A fresh review of the situation might provide new and innovative approaches. For example, strategies to increase the amount of recycling (i.e. cans, juice containers, milk jugs), or by purchasing food in bulk may, by default, reduce the amount of packaging that shows up at the landfill site. Dedicating more staff time to correctly sorting waste may also help. Installing an incinerator directly beside the Misery camp kitchen would minimize the chance of human error associated with extra handling, transportation and storage. ENR has already promoted the use of a permanent electric fence around the Misery camp in order to provide a barrier and limit direct access by wildlife.

**Comment:** The results section states the following on page 3-7: “Only 18.4% of the Misery landfill surveys identified attractants or misdirected waste, which is a decrease from 20% in 2006, and 32% in 2005.” Page 3-8 states: “In 2007, only 29.4% of EKATI landfill surveys found food packaging...”, “In 2007, only 5.7% of EKATI landfill surveys found oil products and containers...”, and “Aerosol cans were present in 30% and 19% of EKATI landfill surveys in 2005 and 2006, respectively, but were only observed in 9.4% of surveys in 2007”.

As stated earlier, the improvement in reduction of attractants in the landfill is recognized and BHPB is to be commended for their work in this area. However, the use of the term “only” serves to minimize the seriousness of the amount of waste that

still finds its way into the landfill. Unless this is an accurate reflection of how BHP Billiton views this issue, the term should be removed from the report.

### **3.2.3 Pit Wall Nest Monitoring**

**Comment:** ENR is pleased to see that BHPB has included a section of the 2007 WEMP on pit wall nest monitoring. Given this unanticipated effect of the project on raptors and their nesting habitat, it is important that a discussion of this aspect of the wildlife monitoring program is included in the annual WEMP report. Not only does this monitoring provide an early indication of where nesting raptors may be in conflict with mining activities, but it also shows how raptor productivity is being enhanced through nesting activities of a variety of species using the pit walls.

## **Section 3.3 Wildlife Mortalities, Incidents, and Mitigation Efforts**

### **Sub-Section 3.3.1 Wildlife Mortalities**

#### **3.3.1.4 Results**

**Comment:** In the discussion on caribou mortalities on Page 3-26, the cause of death for “Caribou Mortality #2” is reported to have been from natural causes. Presumably, BHPB would be contacting ENR’s North Slave office when dead or dying wildlife is encountered, and typically trained personnel (Dr. Brett Elkin or the CCWHC in Saskatoon) would be asked to make a determination on probable cause of death.

**Comment:** Page 3-28 states that in six of the cases where foxes were dispatched, they were found to have rabies. The Summary states that five foxes were found to be rabid. Please clarify how many foxes were found to have rabies.

**Comment:** Table 3.3-3 indicates that Fox #1 died of a large puncture wound; it was not mentioned whether the fox tested positive for rabies. The corresponding text indicates that the fox was found to be rabid. Please clarify whether or not this fox did test positive for rabies.

### **Sub-Section 3.3.2 Wildlife Incidents**

#### **3.3.2.5 Results**

**Comment:** Page 3-33 states “The bear repeatedly came into close proximity of BHP Billiton staff and/or the mine infrastructure and so the fourth incident on August 24, 2007 involved darting and relocating the bear to a point away from the mine site (Appendix 3-16, Plates 3.3-4a to d).”

The wording of this paragraph and the comments in Table 3.3-4 lead the reader to believe that BHPB carried out the capture and relocation of a grizzly bear. Is this accurate? If it is not, then it should be clarified who was involved in this procedure.

**Comment:** Incident No. 3 indicates that a helicopter was used to gently move a female bear and her 2 cubs across cell B road and cell B tailings and off to the west. Does BHPB provide their helicopter pilots with specific guidelines or a protocol on how grizzly bears should be moved? ENR would be willing to work with BHPB to provide specific guidelines in terms of recommending a suitable helicopter altitude, speed, maximum distances to move bears, and options when water bodies are encountered. While the objective is to deter bears, ENR is interested in minimizing injury or undue stress on the bears during this procedure.

**Comment:** “Twelve fox incidents were reported from October 31, 2006 to October 1, 2007 (Table 3.3-5). Three of these incidents (Fox Incident #1, 7, and 12) required deterrence from the EKATI Landfill, six incidents (Fox Incident #2 though 5, 8, and 9) required deterrence from the EKATI mine site, and three incidents (Fox Incident #6, 10 and 11) involved foxes in close proximity to roads.” (Page 3-35)

Please clarify whether the foxes referred to include the 5 foxes destroyed by mine personnel.

## **Section 5. Grizzly Bear**

### **Sub-section 5.2 Grizzly Bear Movements and Occurrence Relative to EKATI**

#### **5.2.2.5 Results**

**Comment:** Figure 5.2-2 (Page 5-8) shows the distribution of wetland and riparian plots within the BHPB regional study area. Since the Misery camp is located within only 5 km of the study area’s southern boundary, and mines may influence grizzly bear use of habitat within a distance of 23 km (Johnson *et al.* 2005), is the lack of sampling plots to the east and south of Misery an issue that needs to be addressed? In order to consider the potential impact of the activity at Misery camp (and along the Misery road), relative bear sign across a broader area may need to be considered. With Diavik conducting similar types of mining activity (and monitoring bear sample plots as well), there would be mutual benefit in BHPB and Diavik collaborating and conducting some of their “Zone of Influence” analysis jointly.

**Comment:** Figure 5.2-3 (Page 5-9) shows that there is some annual variability in bear sign in these two figures. In particular, there appears to be a significant decline in activity in the riparian plots in 2001 and 2005, relative to 2000 and 2004 respectively. One explanation is that some bears may have either died or left the study area. In order to obtain a better understanding of what factors may be accounting for this annual variability, additional information is required. An estimate of the number of individual bears using this habitat would be useful and help to account for some of the annual variation. By trying new techniques such as deploying a series of hair snagging stations, it may be possible to obtain this type of information. Since the current sampling effort and strategy are providing results that

are inconclusive, perhaps new approaches that complement the current protocol are worth considering.

**Comment:** In their 2007-08 Technical Annual Report, the Independent Environmental Monitoring Agency raised a similar concern about the grizzly bear sign survey plots and their ability to address research objectives. Since the current methodology has its limitations, BHPB may need to consider more robust techniques to address what impacts mining is having on grizzly bears.

## **Section 7. Wolverines**

### **Sub-section 7.2.1.6 Discussion**

**Comment:** The discussion points out that there has been a significant reduction in the number of wolverine sightings, from 128 in 2005 to 9 in 2007. The report states that this large reduction in observations can be attributed to proactive changes BHPB made in their waste management program, increased educational awareness, and improvements to inhibit access to buildings by wolverines.

This brief explanation is somewhat simplistic and does not entirely describe the wolverine situation. In January 2005, BHPB was encountering significant wolverine problems. From ENR's perspective, there were significant ongoing problems with waste management at the Misery camp, and the lack of skirting around buildings was allowing wolverines to seek shelter. Given concerns over human safety and property damage, BHPB requested assistance from ENR personnel to help deal with the situation. As outlined in BHPB's 2005 WEMP report, 5 wolverines were subsequently removed from the BHPB regional study area (1 killed, 4 relocated) in January 2005. Since this was the 2<sup>nd</sup> wolverine crisis situation for BHPB since January 2000, constructive steps were finally taken to deal with the waste management problems at Misery Camp and to install skirting around key buildings. To the credit of BHPB, positive steps were taken to deal this problem situation. The reduction in wolverine sightings (from 128 in 2005 to 9 in 2007) may well be a direct result of removing 5 wolverines from the regional study area in 2005. By creating a vacuum in the population, it's reasonable to expect that fewer wolverines would be subsequently sighted. Therefore, this discussion should acknowledge the possibility that the observed decline in wolverine sightings could also be a direct consequence of removing 5 wolverines from the population.

### **Sub-section 7.2.2 Wolverine DNA Study**

**Comment:** ENR agrees with the comments in this section and hopes to work more closely with BHPB and other mining companies to incorporate hair-snagging as standard sampling protocol for monitoring wolverine populations on the central barrens.

In their 2007-08 Technical Annual Report, the Independent Environmental Monitoring Agency also recommends that BHPB commence with DNA monitoring in 2009 (since

2008 was missed) and continue every second year. ENR fully supports IEMA's recommendation.

## **Section 10. Falcons**

### **Sub-Section 10.5 Falcon Results**

#### **10.5.3 Productivity**

**Comment:** Perhaps the most interesting and unexplained result in this section on productivity is the reduced occupancy and productivity of gyrfalcons in the study area. It would be interesting to compare this result to that of the Daring Lake area or other tundra regions where monitoring gyrfalcon populations is ongoing. Monitoring annual populations of ptarmigan and other prey species may shed some light on this apparent decline.

## **Conclusion**

Overall, ENR's review comments for the 2007 WEMP are very positive. We found the 2007 WEMP Report to be comprehensive in scope, and provided good analysis and discussion of the data collected for the various components of the monitoring program.