



INDEPENDENT ENVIRONMENTAL MONITORING AGENCY

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March 5, 2014

Brett Wheler
Executive Director
Wek'eezhii Land and Water Board
P.O. Box 32
Wekweti NT X0E 1W0

Eric Denholm
Superintendent-Traditional Knowledge and Permitting
1102, 4920-52nd Street
Yellowknife NT X1A 3T1

Dear Mr. Wheler and Mr. Denholm

**Re: Ekati Diamond Mine 2013 Annual Interim Closure and Reclamation Plan
Progress Report**

The Agency has reviewed the 2013 Annual Interim Closure and Reclamation Plan (ICRP) Progress Report prepared by Dominion Diamond Ekati Corp. (DDEC) for the Ekati Diamond Mine. We found the report to be quite comprehensive but we have a number of concerns as found below (lack of progressive reclamation, lack of progress on reclamation research plans, and proposed changes to the ICRP and financial security). Other issues are detailed in the attached appendix.

Progressive Reclamation

We commend DDEC for undertaking the completion of the Panda Diversion Channel widening which is now taking place after the reporting period for the 2013 ICRP Progress Report. We have also had a very preliminary look at the Old Camp Closure and Reclamation Plan and are generally pleased with the approach for this long overdue work.

Very little progressive reclamation work appears to have been undertaken again at the site in 2013. We noted that previously reclaimed sites continue to be monitored (e.g., Fred's Channel) and some underground work at Koala in areas where mining is complete, but not much else seems to be happening on other areas no longer used or needed for mining. We note that progressive reclamation is an explicit requirement of DDEC in the water licence and the Environmental Agreement.



Slippage in the Reclamation Research Plan Tasks

In reading the 2013 Progress Report we found it difficult to compare it with the approved ICRP and the 2012 Progress Report. We request that future versions of the schedule, as shown in Table B-1, include two other columns; one that shows the original target date from the ICRP where applicable, and another that shows the predicted target from the previous Annual Report. This will allow improved tracking and a better understanding of slippage over time.

There is serious slippage throughout many of the tasks under the Reclamation Research Plans, as detailed in the appendix and shown in Table B-1. Of the 112 tasks shown, 32 or 29% are delayed. We are increasingly concerned that this work will not be done in time for the anticipated closure of Ekati in 2019, just five years away.

Changes to the ICRP and Financial Security

We note that DDEC has suggested several significant changes to the ICRP and consequential changes in the financial security in the 2013 Progress Report as follows:

5. Security and Relinquishment

- DDEC wants a reduction in security of about \$2.7 million related to some double-counting of pit flooding labour; and
- It is not clear why the proposed changes to financial security that flow from the proposed changes to the ICRP, are not dealt here in this section.

7. Updates to the ICRP

- further design of the LLCF covers has been done and would result in a increase in security of around \$93,000;
- the landfarm surface area was overestimated by 9 times when the RECLAIM model was run in 2013 and actual field surveys would change the amount of cover needed and the security would be reduced by \$1.75 million (it is unclear how this reduction affects other parts of the waste rock pile and any cover that may be required there);
- pit flooding volumes can be set more accurately now that the final elevations of the pit lakes have been estimated and this would increase security by \$736,000;
- DDEC wants to reduce the capping on the operations landfill and the landfill that will be used for demolition of buildings at the site; this reduction from 5 m to 1 m would decrease security by \$6.35 million; and
- pit flooding sources proposed to be changed from Lac de Gras to Cell D of the LLCF for Fox pit would reduce security by \$23.5 million (savings from no pipeline and reduced pumping costs from Lac de Gras).

The Agency has some question and concerns around these changes as noted in the attached Comment Table. Many of the changes being proposed by DDEC will result in cost savings and may not provide the level of environmental protection we have come to expect at Ekati.

We also note that DDEC has committed to providing an “updated RECLAIM model to the WLWB shortly after receipt of the WLWB’s decision on the proposed changes to security” (2013 Progress Report, pg. 19). It is the position of the Agency that **DDEC should submit an updated output from the RECLAIM model to support the proposed changes to financial security as requested.**

However, we are urging that no further consideration be given to changes in the financial security until there is some evidence that the company has complied with W2009L2-0001, Part C (Conditions Applying to Security Deposits), item 1. This section of the current water licence for Ekati reads as follows:

The Licensee shall post and maintain a security deposit in accordance with Schedule 2, Item 1.

The Agency wrote to Ministers Valcourt and Miltenberger on January 21, 2014 regarding the existing large gap in financial security for the Ekati Mine and the delays in posting of security. We have not yet had a reply and firmly believe that **DDEC needs to comply with the water licence as issued on July 30, 2013 before any further consideration of a reduction in financial security is entertained.**

Other Matters

As was done last year, we encourage the company to meet with the Agency and our Society member staff to discuss the 2013 Progress Report. **We suggest a meeting hosted by DDEC on the ICRP Progress Report become an annual event.**

The Agency appreciates receiving the seven supplementary reports that DDEC submitted with the 2013 Progress Report. It would be more helpful if these supplementary reports were properly referenced in Progress Report, particularly in Appendix B (Reclamation Research Plans Update). The Agency requested several of these reports over a year ago and some of the reports are now almost two years old. It would also be more helpful if these supplementary reports were distributed on a more timely basis.

We have requested the LLCF Reclamation Pilot Study several times and note that this work is already underway without an opportunity to review the design. The study is referenced in the Progress Report (page 9) and noted as submitted to the WLWB but it is still not publicly available.

As the WLWB has only asked for a review of sections 5 and 7 of the Progress Report, relevant comments from this letter have been put into the Comment Table submitted via the on-line review system. We would still appreciate a written response from DDEC to the other concerns and issues raised in this letter and look forward to a discussion with company on timely implementation of the ICRP.

Should you require any clarification, feel free to contact our Executive Director.

Sincerely,

A handwritten signature in black ink, appearing to read "W. Ross". The signature is fluid and cursive, with the first name "W." and the last name "Ross" clearly distinguishable.

Bill Ross
Chairperson

cc. Society Members
Lukas Novy, DDEC
Veroniques D'Amour-Gauthier, Fisheries and Oceans
Sarah-Lacey McMillan, Environment Canada
Marty Sanderson, AANDC Inspector

Appendix: Detailed Comments on the 2013 Annual ICRP Progress Report and Supplementary Reports

General Comments

The report appears to meet the general requirements of the Annotated Outline for BHPB's Annual ICRP Progress Report as issued by the WLWB in its November 2011 Directive, except for the following:

2. Community Engagement—there is no evidence that Appendix A was circulated to the appropriate communities and whether there was any feedback (this process of community verification has been referred to as 'best practice' by the WLWB).
3. Reclamation Research Update—it is unclear whether there are any new research tasks that are "within 3 years of implementation" and thus require detailed scopes of work.
7. Schedule—while Figure B-1 provides an updated Reclamation Research Schedule, it is not clear "whether the current closure planning schedule is on track", as required by the WLWB. DDEC should add the original completion date from the ICRP as a separate column and the most recent predicted completion date from the previous Progress Report.
8. Security Update--There is no "updated estimate of the current mine reclamation liability". DDEC should prepared and append an updated RECLAIM model, especially if there is a request for changes to financial security as in this year's Progress Report.

Specific Comments

- Page 3 (2. Community Engagement), the Agency is pleased that DDEC conducted the vegetation workshops in 2013. It is not clear from Appendix A, the report on the workshops, whether information was collected about which plants re-colonize disturbed areas (including those affected by fire or erosion), plant associations, species names in Aboriginal languages, potential grazing of plants by animals, or other information that would prove useful in identifying species suitable for revegetation and how to measure success. It would also be helpful if the company would indicate what use it intends to make of the information gathered during the workshop and how it has improved reclamation planning at Ekati. We wish to encourage the company to continue this important work and to use additional means to explain what is in the ICRP and to seek meaningful input.
- Page 8 (3.2 Research Plan Summary), two additional studies are referenced here on permafrost growth in the LLCF and stabilization of EFPK in the LLCF. These reports were to be "issued in January 2014" but have not been received to date. On the following page, another report "The Pilot Study Strategy Plan" is referenced as having been submitted to the WLWB in December 2013 but we have not yet received it. The Agency requests copies of all of these reports.

- Page 15 (5.1 Security Update), the company did not provide an updated RECLAIM model calculation to support the security reduction it seeks here and in section 7. DDEC should provide an updated RECLAIM model calculation in each Progress Report as an appendix. It is not clear why DDEC placed the proposed changes to financial security in section 7 rather than section 5.
- Page 17 (6.1 Current Schedule), we note that DDEC released a new mine plan on February 3, 2014 (see <http://www.ddcorp.ca/investors/news-single?id=189639>) that may have implications for closure planning.
- Page 20 (7.1.3 Landfarm Surface Area), DDEC overestimated the size of the landfarm by almost 9 times but provides no explanation as to how this happened. By implication, if the size of the landfarm is reduced, the size of the other portions of the waste rock pile would likely increase and still require capping, but this is not explained or accounted for with increased capping costs for the other portions.
- Page 21 (7.1.5 Landfills Capping Depth), the Agency cannot support the reduction in landfill capping without additional information. It is not clear whether a 1 m cap will provide long-term protection and a barrier to prevent wildlife from accessing landfill materials or to protect against erosion, settling, frost heave and ice jacking. There is no information provided on the potential for leachate from the landfill areas if the cap is reduced to 1 m and this area becomes part of the active layer.

DDEC states "Rather than full permafrost encapsulation DDEC considers stabilization of inert landfill materials to prevent wind and water erosion and to promote wildlife and human safety as a more appropriate cover objective. The planning estimate for a physical stabilization cover is 1 m of granite rock" [emphasis added]. It is not explained why a 1 m cover depth is more effective at achieving physical stability than the original, collaboratively agreed-upon 5 m depth.

- Page 23 (7.1.6 Pit Flooding Plan), it is not clear to the Agency whether and how DDEC will place a clean water cap on the Fox pit lake, assuming that it is filled with LLCF Cell D water.

We have no scientific basis for suggesting that use of Cell D water for Fox pit refilling is inherently a bad idea. Any problems would most likely arise during the actual flooding so we would advocate having a good Adaptive Management Plan in place for any contingencies or unpredicted events including poor water quality.

The Agency would like to know whether the decrease in water depth (up to 0.10 m) in the channels downstream of the LLCF may be significant to fish or other aquatic species. We wonder how much spawning and nursery habitat for stream spawners (e.g., grayling) will be reduced or eliminated during the 15 years of Fox pit filling. It is

not clear how a potential blocking of fish migration between lakes may impact fish populations downstream of the LLCF.

- Page 59 (RRP 1.6 Pit Lake Water Cap Over Processed Kimberlite), the Agency understands that water quality sampling and assessment of PK settlement behaviour in Beartooth Pit is delayed because of the method of PK discharge. We wonder whether it is possible to extend the pipeline into the pit and/or submerge it in the pit water or some other method of PK discharge to allow earlier and continued access to the pit.

Literature Review-Exclusion Barriers and Wildlife (BHPB, November 2012)

- The Agency was impressed with this review; it is unfortunate this was not made available earlier.
- Gunn (2002) used some vertical fencing at Lupin (during WKSS studies) which proved an effective exclusion barrier in the short term. DDEC should consider this design when temporary exclusion is required.
- We note the following quote: “The WEMP has monitored the influence of roadways on caribou migration since 1997. Monitoring data has indicated that caribou were deflected at the Misery Road in approximately 58% of the observed events from 2002 to 2009. This suggests that Misery Road may act as a barrier to caribou movement during winter. The effect of roads on wildlife varies with road characteristics, such as width, surfacing, curvature, and traffic volume (Brock and Kelt 2004).” This reaffirms our call for enhanced and clear mitigation to reduce the impacts of roads and traffic on caribou movement.

Wildlife Closure Objectives and Criteria (Rescan, August 2013)

- Again, this was a fairly comprehensive review, although it does not make site-specific recommendations for Ekati or its mine components.
- Overall, it can be summarized as “a concept common to the majority of closure plans for mines in northern Canada is the idea that the post-closure landscape should not be an ‘ecological trap’ to wildlife. Thus, reclamation actions are focused on ensuring that wildlife not only use the post-closure landscape, but that they do not become harmed from toxins or physical structures within it.” The Agency agrees with this end goal.
- DDEC still needs to develop component-specific closure objectives and criteria for wildlife.

Pit Lake and Channel Elevations (EBA, August 2013)

- Page 9 (4.6 Misery Pit) states that the final pit lake will be “consistent with the preconstruction pit lake elevation”. Misery will have the largest area of exposed pit wall above the lake surface (pg. 3-1, Table 3-1, Modelling Predictions of Water Quality for Pit Lakes). The Agency understands that the Misery pit has the most reactive of all the pit walls on site. We question why Misery pit is not going to be filled to a higher elevation of water to reduce the wall surface area, thereby further limiting a source of ARD from runoff down the pit face, especially given its proximity to Lac de Gras to which it will drain.