

***Independent Environmental Monitoring Agency  
40<sup>th</sup> Meeting of the Board of Directors  
Yellowknife and Ekati  
June 4<sup>th</sup> to 7<sup>th</sup>, 2004  
Summary of Discussion***

Revised: September 17<sup>th</sup>, 2004

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Directors

Jaida Ohokannoak	Tim Byers
Bill Ross	Tony Pearse
François Messier	Dave Osmond

Staff

Carole Mills	Sean Kollee
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The meeting was called to order by the chairperson at 9:00 am on Thursday June 4<sup>th</sup>, 2004. The agenda was reviewed and accepted.

**Information Updates**

Dave was involved in a conference call of the AEMP third party review steering committee, and chaired a meeting including Barry Zajdlik, Rescan and BHPB.

François reviewed the Chris Johnson report on cumulative effects on wildlife and will deliver this to the Agency, reviewed the auditor's report and correspondence on A&R.

Jaida participated in the BHPB consultation in Kugluktuk

Tony worked on the *A&R Plan* review and participated in the *A&R* meeting hosted by the MVLWB on May 11<sup>th</sup>, 2004. He also initiated a contract with Bill Price to review the BHPB 2003 *Waste Rock Storage Area Seepage and Waste Rock Survey* Report.

Tim worked on the third party evaluation of the AEMP with Dave. He will also be attending a Bathurst Inlet Port and Road scoping session following the Agency meeting. He mentioned the Lutsel K'e 'watching the land' caribou initiative that is proposed for funding.

Bill participated in the Agency conference call, reviewed correspondence and has been in contact with Ian Goodwin regarding his successor and an update from BHPB. Ian will be leaving BHPB on a four-year secondment based in Australia. The BHPB chief environmental officer position will be filled shortly.

Carole took a course on mediation and dealing with conflict situations, hosted a booth at environment week with EMAB and received a good response from visitors, is working with a new bookkeeper and on the annual financial audit. A number of Graduate students have been visiting Yellowknife and passed through the Agency. She noted that the

Agency Aboriginal members were sent draft submissions on A&R and water licence renewal for comment.

Sean attended a daylong workshop on use of the BHPB fish habitat compensation fund at Mathews Lake (involving rehabilitation of aspects of the Tundra/Salmita mine area).

### **AEMP third party review**

At the meeting with the contractor (Barry Zajdlik) and Rescan, BHPB requested the summary be put in simple language and that Barry Zajdlik declares if the program is effective. BHPB appeared open to new types of analysis that are focused and clear. The clarity of outcome of multivariate statistics was discussed. The Directors want an analysis of the effectiveness of the program, not simply an analysis of the statistical effectiveness of the program. The final draft of the report is expected the second week of June and will be reviewed by the Steering Committee and Directors prior to circulation.

Rescan's staff and their ability to conduct the AEMP impressed Dave. Dave felt that Barry's bottom line conclusion is that the AEMP program is high quality with abundant data results but the data have not been analyzed enough to determine if there are impacts.

### **KIA consultation by BHPB in Kugluktuk**

Jaida discussed the BHPB consultation event in Kugluktuk that BHPB intended as the replacement for the annual environmental workshops that BHPB cancelled. It was a very general presentation with just a brief overview of what types of monitoring are done at the site and did not include any results of the studies. The water licence renewal was not mentioned and input into how to improve the environmental programs was not solicited from the audience. Jaida did not feel it was terribly effective as consultation. Also, the timing of hosting the meeting could have been better as there were less than 15 community people in attendance due to competition from a Hamlet meeting, bingo and spring hunting opportunities on the land. Questions were asked about caribou surveying, deaths of wildlife, and about closure of open pits. Both Charlie Evalik and Geoff Clark have requested that the Agency comes to Kugluktuk to do a consultation event similar to the Agency-hosted environmental workshop in Yellowknife in early 2004.

### **MVLWB meeting on A&R**

Tony discussed the presentation he made at the MVLWB meeting on the BHPB *A&R Plan*. He is concerned about the process used by the MVLWB to evaluate the *A&R Plan*. Rather than getting the company to fix deficiencies in the report, the MVLWB was attempting to resolve issues or fix the deficiencies through a mediation-type process. He felt that substantive issues could not be fixed in the one-week period leading up to submission deadline. The MVLWB is acting more as a clearing-house for comments rather than providing its own analysis of the reports or comments received from others and making its own decision about the acceptability of the Plan. The MVLWB did not have a consultant evident to assist in technical review.

### **Fish Habitat Compensation Fund (FHCF)**

Sean attended a full-day meeting hosted by the FHCF advisory committee, to review a project that aims to remediate aquatic habitat harmed by historic mining at the Tundra/Salmita site. The activity proposed includes:

- Establishment of spawning grounds upstream of a truck crossing
- Connecting gravel pits now filled with water to an adjacent lake
- Development of riparian area along a shoreline of a lake where waste rock was deposited

From a technical perspective the project appears very positive and has real potential to improve disturbed fish habitat, not attempt to improve natural habitat.

### **Seepage Report Review - Conference Call with Bill Price (NRCan)**

Bill Price gave an overview of his review so far. He felt the report was generally well organized and well written and met the stated goals of the report, but not the rationale behind the objectives. There is no mention of the overall monitoring program, chemistry, adequacy of monitoring and discharge compliance. The report should, in his view, relate changes in seepage to changes in the management of waste ore, LLCF and coarse kimberlite storage area. Future concerns were not identified. Bill Price's interim recommendation is that the terms of reference for the report should be expanded to address larger issues with regard to mine management and eventual mitigation and prevention of offsite impacts.

Bill Price noted that outstanding concerns and challenges fit in three categories, short-term water quality (depressed pH and increase in metal loadings), longer-term water quality (closure issues) and material characterization details.

The Agency decided that the final report should be provided to the MVLWB and BHPB for consideration, to improve future seepage monitoring at Ekati.

### **Meeting with DIAND (David Livingstone, David Milburn, Darnell McCurdy)**

David indicated that DIAND's ability to review documents and provide interventions has been hindered due to a lack of resources and unrealistic deadlines. The proponent is often given large amounts of time to develop complicated reports and regulators are not given enough time or resources to do a thorough job reviewing them.

#### *Water Licence Renewal*

DIAND will not be submitting a final intervention but Darnell had provided comments to MVLWB during the initial review phase. When asked, DIAND stated it would not object to an extension of the Ekati water licence until BHPB had submitted key revised management plans. DIAND supports changing from mandatory annual reviews of plans to reviews based on mine changes.

#### *Abandonment and Reclamation*

DIAND did not submit comments on the review of the plan because of the short review period, even though DIAND believes it has the responsibility to review and approve the

land-related components of the plan. DIAND is not satisfied in a number of areas with the current *A&R Plan* submitted by BHPB. BHPB and DIAND are about \$60 million apart in their security deposit estimates. A large difference is revegetation of waste rock piles. Since BHPB has proved kimberlite revegetation is possible, DIAND may support the idea of re-vegetating the waste rock piles. BHPB has not considered this option.

DIAND would like comments on its draft reclamation guidelines for NWT. Directors noted that sloped roads and road scarification are good practices and that berms should be knocked down as standard practice. They indicated a good consultation process is needed for the review of the guidelines.

#### *Agency Vacant Director Position*

A short list of three candidates with mine reclamation credentials will be discussed with BHPB, RWED and Aboriginal groups prior to making a decision. Other names have been brought forward if the top three are not available.

#### *Snap Lake Independent Monitoring Agency Update*

DIAND mentioned that the Snap Lake mine *EA* and water licence are complete. Two monitoring Agencies [a project specific agency for the Snap Lake project and a long-term multi-project agency (MPA)] will be established. The interim agency is planned to have a life of two years. Features of the Snap Lake monitoring agency include a core group, annual review of its mandate, Aboriginal membership only, one science panel and two traditional knowledge panels.

#### *DIAND Operations Update*

Darnell has had one inspection report since the last Agency meeting. The Fox toe berm is likely complete now and the pit has grown rapidly. Schist encapsulation at Misery is occurring. At the west corner of the waste rock pile the schist was free dumped as per standard procedure. With the accelerated work schedule for the summer of 2004, BHPB decided to move the schist into the centre of the pile rather than the edge. A total of 250,000 tonnes of schist were moved and the ground was then scraped down to the granite. Two additional pads have been approved for kimberlite storage on the current mine footprint.

Darnell mentioned an increase in issues with the Ekati landfill. Approximately every other inspection has had problems such as drums showing up in landfill rather than the landfarm and food products were evident. Directors asked if there has been a declining trend in performance, Darnell replied it is likely a function of having the landfarm gated. The Ammonium nitrate building is still posing a problem. New construction done to heighten the batter boards may not have been successful. Now that the building is reloaded with products, spillage has been observed and getting outside the structure (another 200 kg was spilled recently). Two options are under consideration by BHPB, a cement berm with catchment sumps, and destruction of the building and construction of a new one. Darnell estimated that the seeps entering Kodiak Lake in the summer would likely show signs of ammonium nitrate. Darnell has given BHPB until August 2<sup>nd</sup> to

remove the ammonia nitrate that remains stored on the Pigeon road. If the ammonia nitrate is not removed then the road cannot be used for traffic.

Darnell discussed the snowfarm and how big the sump would be where water could collect. It could collect up to the top of the liner but this is unlikely. The Directors are concerned a small lake could form and attract ducks.

### **Meeting with EMAB (John McCullum)**

John discussed a variety of topics including:

- *Caribou cumulative effects workshop* - no progress has been made.
- *EMAB TK panel on fencing* – Panel will meet with a wildlife biologist with expertise in fencing and make recommendations. There are questions of animals being trapped inside the fence and the use of the fence as a hunting tool by wolves.
- *The Diavik wildlife effects monitoring program* – The 2003 annual report needs more interpretation of data. Diavik has agreed to create a separate analysis document outlining the sufficiency of its data and data gaps.
- *Diavik water licence amendment* - mediation proved successful and the MVLWB has approved the amendment for ammonia. A Diavik limnology report will undergo a peer review.
- *Diavik aquatic effects monitoring program review by the MVLWB* – this is underway. Key review items include sampling, ability of statistics to detect change and the ability to test and confirm impact predictions.
- *TK camp* – Three proposals were submitted to Diavik; fish palatability, water quality sampling training and observation of caribou related to fencing. Fish palatability is being done annually rather than every five years.
- *Consultation activities* - When Diavik visits a community EMAB attends as well to discuss its operations and this occurs annually. This is generally an all-day event.

### **Meeting with BHPB**

#### *Wildlife Effects Monitoring Program*

Dr. Rachel Brock, a Rescan consultant, is coordinating the Ekati *wildlife effects monitoring program*. She is new at Rescan and is not making major changes this year to the WEMP. However, she has observed opportunities for improvement in the future.

She stated that there is dissatisfaction with what WEMP has been able to show, likely because the questions being asked are not specific enough. She favours an approach toward more ‘intensive monitoring’ while the animals are in the area. The Directors noted the importance of maintaining statistical relevance and expressed concerns over how these data would be collected. Rachel mentioned that collaring data may be more valuable than aerial survey data for the monitoring program. The Directors mentioned there are cultural obstacles to collaring caribou because it does not show proper respect for the caribou and suggested other ways such as microchips be considered. Rachel noted that Francois and Anne Gunn (RWED) have provided different suggested changes to the program.

Rachel requested background on the rationale for the design of the caribou monitoring program specifically aerial surveys along systematic transects. The Directors replied that the rationale is to have repeatable data set from year to year on caribou distribution and abundance in the claim block to determine if avoidance of infrastructure is evident. The program is to be more than checking whether caribou are there. The resolution, width of the transects and the questions you can answer by collecting this sort of data was discussed in detail.

Rachel was invited to contact the Agency for advice and to consult with other experts in the regulatory group. The Agency also encouraged aboriginal involvement through hiring northern aboriginal employees that have been involved in TK studies in their communities as opposed to summer students to conduct the data collection aspects of the 2004 WEMP. One of the greatest lessons gained in five years of monitoring by the Agency and BHPB is how easily wolverine are attracted to the mine site. This called for a full rethinking of mine employee behaviour and waste management.

*François Messier Meeting with Chris Hanks (BHPB) and Rachel Brock (Rescan)*  
 François noted that Rachel was well prepared to discuss the WEMP. She will look carefully at the program to determine how it can be improved. One study discussed as likely for preliminary work was the effect of wildlife browsing on newly planted vegetation. Rescan stated that it is willing to deliver the same calibre of report as Golder has in the past. BHPB appears willing to implement the wolverine hair DNA sampling program in the future.

#### *Nitrate Toxicity*

The toxicity study is in draft form and out for peer review, after which the Agency and others will be given copies. François Landry (Rescan), the lead author of the report, provided a summary of the results and discussed the difficulties in collecting eggs to use as samples from the Ekati area (in one case eggs were purchased from a hatchery in Ontario).

The Directors mentioned that the critical aspect of the toxicity study was to apply a potentially toxic substance (nitrate) to local fish species' after their life history stage already begun. François Landry replied that varying concentrations of nitrate were applied at each stage, varying from zero to high nitrate. Water from Ekati was not used because of the vast quantities required. Vancouver city water proved similar enough in hardness and alkalinity to use as a substitute. However, the lake trout eggs sourced from Ontario would have developed in conditions of greater hardness. The BHPB experiment was also conducted over a 100-day period, with temperatures and light conditions to mimic that of the North. The results showed that effects on fish are observed only at high levels of nitrate. The exception to this is lake trout weight, which appears to be affected at a low level (lowest observed effect at 6.25 mg/L of nitrate). This is being examined further.

### *Air quality*

Mike and Dan from Rescan are leading the revision of the Ekati *Air Quality* monitoring program and identified the primary issue related to air quality is the depositional effect of particulates on caribou. The Directors agreed.

The Directors asked Rescan how deposition over the claim block is to be modeled using input from two sources; mine infrastructure and haul roads. Rescan replied that a meteorology terrain grid, a grid of receptors and a compilation of all emission sources will be developed this summer and be fed into a model. Based on the strength of the input database, Rescan will select the most reliable air quality model. The meteorological profile of the Lac de Gras area to be developed by Environment Canada will be helpful for the model. In the fall, Rescan plans to start doing model runs, with a report ready for the end of the year. Snow sampling is scheduled for the end of April 2005, with vegetation sampling to occur in summer 2005. The model will be calibrated to actual sampling at the mine.

The Directors recommended that the high volume air sampler, dismantled from the accommodations building, be placed near Cell B to monitor processed kimberlite dust over the summer. BHPB indicated it would look into it and get back to us.

The Directors requested that collaboration with the air quality specialists at RWED and EC take place. BHPB stated that it is not willing to work under RWED regulation as RWED lacks that authority over the mine. BHPB also observed that the ISC3 model is most easily compared to the EIS predictions that were based on the ISC2 model. The Agency has recommended in earlier correspondence to BHPB (along with RWED and EC) that the Calpuff model be used at Ekati.

### *Consultation*

BHPB mentioned that requests to visit the communities are sent directly to the appropriate person within the community, but that person does not always want to meet with the company. The Dogrib leadership has told BHPB that it should approach the mining committee rather than the Dogrib communities. BHPB feels that meeting only with community leaders prevents people in the community from asking questions directly to the company.

The Directors noted that although BHPB had intended for the community visits to replace the environmental workshops as a means of receiving feedback on their programs, this appears not to have happened.

### *Closure criteria*

BHPB believes that the MVLWB should provide clear guidance on Ekati specific closure criteria. However, BHPB is willing to do a first draft of site-specific Ekati closure criteria.

### **Meeting with BHPB – Abandonment and Reclamation – Ian, Chris, Jane, Helen**

The Directors stated that seven or eight years into operations, many activities are research only and it is time to focus on closure plans. As the mine plan is now becoming more certain, the closure plan should be just as certain. The water licence requires BHPB to review the *A&R Plan* annually and submit revisions if the mine plan changes. This means that mine changes should be lock step with *A&R Plan* updates. BHPB replied that it should not have to change the *A&R Plan* if it changes a pit schedule. The Directors noted that any change in pit development has repercussions on pit infilling, especially if it creates opportunities for infilling with waste rock.

Directors stated that when options in the mine plan are being considered and narrowed down, reclamation issues should be part of the decision matrix, as there could be cost implications in the long run. The Directors strongly encouraged the company to have environment and closure staff work with mine planning people.

The *A&R Plan* does not meet all the requirements of the Water Licence (e.g. there is no reclamation research plan). The *A&R Plan* needs to be clear on what will be done for each mine component, the information still required, the research being undertaken, when the research will be completed and how it will contribute to closure plans. One should be able to take the *A&R Plan* and feed the RECLAIM model. BHPB replied that there will always be the need for more research and BHPB will provide a reclamation research plan. It is the intent with latest update of liability estimate to bring together the units of estimate with reclamation units. The directors stated that they are open to BHPB changing its reclamation strategies provided it has done the proper research and consultation

It was agreed that we need a common understanding of terminologies to avoid confusion.

#### *Closure Objectives*

The Directors mentioned their view that a debate on closure objectives would be helpful and that there will be many challenges regarding options. When there are two or more well-defined options, BHPB should consider a process that allows others to help analyze them.

BHPB noted a recent letter from DIAND suggesting a workshop on the topic of closure criteria. The MVLWB also raised the potential to form a Working Group for the *A&R Plan* and asked the Agency if it is supportive of this initiative. The Directors replied that with the volume of questions raised at the meeting on the last *A&R Plan* there did not seem to be another option. The Agency has committed to work with BHPB and others to help get to a high quality *A&R Plan* and is open to any suggestion on how to do this.

BHPB mentioned that a terms of reference to look at pit lakes, is due in October 2004. It may be a few years before pit options are decided upon. BHPB asked the Directors if it should stay with the option approved from 1996 of pit filling and indicate that it is looking into other options. The Agency agreed that this is a feasible interim step.



Ian announced that Brent Murphy will be the new Ekati site chief environmental officer. The environment department will report to the technical services group led by David Scott. He felt that the Agency would bring value to the table and that these types of meetings show that a collaborative approach to problem solving is possible.

### **Meeting with Wayne Isaacs (BHPB)**

Wayne opened the meeting by describing his arrival to Yellowknife from a BHPB coalmine operation in New South Wales, Australia where he worked for the past seven years. Wayne discussed his commitment to the environment and the Ekati environmental monitoring programs as well as the pressure on the company from switching to lower quality ore and higher cost underground mining.

The Directors discussed the role of the Agency in promoting environmental management at Ekati and the need to work in collaboration with the company, the recent site visit being an excellent demonstration of this. The Directors also view independent assessment as an asset for the company. At a public hearing, a regulatory report card received by an independent body is perceived differently than from an interested party, especially by the affected aboriginal parties.

Wayne talked about the challenges he sees here, such as strict water licence requirements. The Directors mentioned that the north is primarily undisturbed and many people feed themselves from the land. This leads to great concern about development decisions.

On the subject of closure, the Agency is pushing for a relationship between planning for closure and the mine plan. In the past the Agency has observed that what happens is a plan comes out and then the reclamation staff develop an *A&R Plan* to fit that mine plan. When asked if the mine plan could incorporate closure options Wayne replied that this is generally an iterative loop and depends on the quality of an ore body. This is much more important with Sable than Koala or Panda. Sable may not happen if the right reclamation plan is not in place or if reclamation costs are too high. Chris noted that the company is aware of this theme and does plan to deposit certain rock types in areas to facilitate future reclamation or avoid impacts.

Wayne discussed many of the benefits that diamond mining in the north has brought such as the vast increase in post-secondary education participation by local aboriginal people. The Directors thanked Wayne for the opportunity to meet with him and offered to continue working with BHPB in a positive manner.

### **Site visit follow up**

The Directors mentioned that the discussions with BHPB at Ekati were especially helpful. Staff were instructed to draft an official thank-you letter to BHPB.

Action Item #1 - Deliver letter of thanks to BHPB for its hospitality and the candour of
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the discussions that occurred.

### **Finance and Administration**

Carole mentioned that the Auditors report has been received. The end of year balance was reduced to less than \$30k. Directors felt this to be a comfortable amount (about 5%) based on the total Agency budget. Adjustments were made to the staff contracts with regard to vacation travel allowances upon receiving a recommendation from the auditor. The auditor noted that an old overhead projector was loaned out and never returned. The item has been removed from the Agency list of assets.

Carole estimated the total cost to host the Ekati environmental workshop in 2004 was approximately \$40,000 plus staff time. The Directors noted that to conduct this meeting in future years would be a difficult financial venture to the Agency.

Action Item #2 – send message to MVLWB thanking it for paying for the audio equipment rental at the environmental workshops.

Tony discussed the escalation in contractor costs since the Agency was founded in 1997 and suggested the board consider a \$2,000 limit as a discretionary Agency Director spending allowance on a technical review item.

Action Item #3 – Carole will develop a proposal for dealing with Director discretionary spending for consideration at the next Board meeting.

The Directors approved the additional costs for the air quality contract, a total of \$1,600.

### **Schedule Planning**

The Directors discussed a potential opportunity to meet with EMAB at the next Agency board meeting. Staff were instructed to contact Chris Johnson to see if he is available to discuss his research on cumulative effects on wildlife. The staff would also invite a representative from the DIAND Board Relations Secretariat to meet with the Agency.

Next Meeting August 24<sup>th</sup> – 27<sup>th</sup>, 2004 in Kugluktuk, NU and Yellowknife, NT.

Summary approved by:

-ORIGINAL SIGNED BY-

François Messier, Treasurer.