

Regional Monitoring and Cumulative Effects

As more diamond mines have been developed in the Northwest Territories, independent agencies to review the environmental management of the projects have also been formed.

With the development of the Snap Lake Mine there are now three such agencies in place. The Independent Environmental Monitoring Agency has supported the creation of a single multi-project regional monitoring agency over the past five years and has taken steps to assist the formation of this organization. We think this will be a good way to make sure that the work the companies do in the field, particularly related to wildlife, will result in information that could be used together for looking into possible *cumulative effects* on caribou.

It could also help increase Aboriginal involvement in assisting to manage the environmental effects of the mines.

Recent scientific studies have pointed toward differences in caribou behaviour near the diamond mines. The caribou-monitoring program at Ekati is a good quality study but it has not reached a similar conclusion. We have also heard from our Aboriginal members who have expressed concern about the health of caribou and the plants on which the caribou feed. For us, this evidence

from the communities is a clear sign that more attention needs to be given to understanding what is happening to the Bathurst Caribou herd.

This year, together with EMAB (Environmental Monitoring Advisory Board, the Diavik monitoring agency), we sent a recommendation to the Governments of Canada, Northwest Territories and Nunavut to hold a joint workshop to discuss *cumulative effects* on caribou. This follows on a similar recommendation we made last year. We have concluded that there is a need for improved caribou monitoring that will tell us if there are cumulative or regional effects on caribou and that BHPB should be involved in this work. We believe that BHPB is required to determine if it is having effects on caribou that go beyond the immediate surroundings of its mine.



Caribou from Bathurst herd

PAGE BUNT



Closing the Mine

The Ekati Mine is about half way through its planned life and it is expected to close in 2016. The Agency believes planning to close the mine is the most important issue at Ekati.

Closure Planning

It is very important for BHPB, and regulators, to have an approved closure plan for the mine and that the plan is detailed enough to make sure it will work. The plan will also need to change as the mine grows and changes.

To help improve the closure plan, BHPB needs to set clear closure goals, objectives, and criteria that let everyone understand what the mine will look like after it is closed. All of the parts of the mine need to be included in the plan such as the pits, *tailings* pond, rock piles, roads, buildings, and airport. BHPB and the regulators will need to consult with the Aboriginal Peoples to ensure that the plan and what it says about the condition of the land and water, is acceptable.

BHPB needs to continue to carry out research and studies to help with the plan. This work includes some studies of what to do with the pits and the Panda Diversion Channel. Both of these studies (and others) will provide information

to allow BHPB to set out what the pits and channel will look like after the mine closes. BHPB has told the Agency that it will include a research plan as part of its next closure plan.

BHPB agrees with the importance of closure planning. BHPB has told us that it will put together the closure plan the same way it looked at the ideas for better managing the *tailings* (see the Mine Wastes chapter of this report). We have told the company that this should start sooner rather than later. The Mackenzie Valley Land and Water Board also agreed to help support development of a better closure plan but it has not done so to date.



Tailings in Long lake



Colomac Mine Story

The Tlicho and DIAND worked together closely to prepare a closure plan for the Colomac Mine. The Tlicho communities were involved from the beginning of the planning to clean up the site. This work included: collecting information on conditions at the site; studying contaminants around the site; water quality and water quantity studies to look at issues and solutions; the use of Traditional Knowledge (TK) in looking at potential problems, site visits for Tlicho land users and community visits by the DIAND planning team; the use of a Tlicho company to manage the site; and, most importantly, deciding on options to close different parts of the mine. Involving the Tlicho communities in the closure plan given to the Mackenzie Valley Land and Water Board allowed the project to go ahead without any further studies and without a hearing. The closure plan is now being carried out, with full involvement of the Tlicho.

What the Agency Thinks

The currently approved closure plan (Interim Abandonment and *Reclamation* Plan) is now five years old, and is out of date with what is happening at the site. Efforts by BHPB to update it have not been successful. It is most important

that BHPB take the time to improve this closure plan. The Agency believes the closure plan is very much behind what it should be at this time in the life of the mine. There is a need for much more progress on closure planning at Ekati. The Agency has offered to work closely

with the company and Aboriginal communities to develop the closure plan. BHPB is looking at the long-term future of the pits and the Panda Diversion Channel and the Agency supports this work as part of getting ready to close the mine.



Cell B of Long Lake being filled by tailings

DON HALEY, EIA ENGINEERING LTD.



The Mine Reclamation and Closure Workshop

In last year's annual report, we suggested that the regulators need to provide clearer direction to develop closure plans and we recommended that BHPB, the government and other affected parties should meet to look at the closing of Ekati. The Agency was pleased to get funding by DIAND to run a workshop on mine *reclamation* in February 2005. A report of this workshop was sent to participants and is now on the Agency's web site. The workshop helped to start discussion and

to help people better understand mine *reclamation* and closure issues. The workshop brought together the diamond mine monitoring agencies along with Aboriginal organizations, mining industry staff and government officials. The main results of the workshop were:

- a better understanding of northern mines and their closure planning;
- Colomac Mine clean-up as a success story including involving Aboriginal Peoples (see sidebar);
- the need for monitoring after mine closure;
- DIAND agreed to fund other workshops on the use of Traditional Knowledge (TK) in mine closure and security deposits (setting aside money for clean-up); and
- DIAND agreed to improve the draft 'Mine Reclamation Guidelines for the NWT and Nunavut', now planned for completion in late 2005.



Participants at the reclamation and closure workshop



Recommendations from the 2004-2005 Technical Annual Report

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Reclamation and Closure

1. BHPB should develop a workable closure plan, within one year, with closure objectives and preferred options for the mine components leading to specific closure criteria.
2. Decisions should be made about closure of mine components based on information from the corresponding studies in the forthcoming Abandonment and *Reclamation* research plan.
3. BHPB should use a collaborative consultation process to assist in developing its next closure plan, similar to the process used for improving the operation of the Long Lake Containment Facility.

Traditional Knowledge

4. BHPB should enable greater participation of Aboriginal Peoples in the design and delivery of monitoring programs at Ekati.

Communications and Consultation

5. BHPB should adopt a more collaborative approach to the review and design of reports, programs, projects and risk assessments.

Regional Monitoring and Cumulative Effects

6. DIAND, GNWT, GNU and BHPB should be involved in regional caribou monitoring of the Bathurst Caribou herd.

Assessment of Regulators

7. There is a need for greater clarity on the issue of water quality and the definition of receiving environment that could take the form of guidelines from the MVLWB. Building of internal technical capacity may assist with this initiative.



Elder at Agency workshop



Glossary

Cladocera

Very small animal (Zooplankton) which lives in water; also referred to as a water flea.



Cumulative Effects

The environmental changes that occur from a project or activity combined with effects from other human activities.

Environmental Agreement

A written document where promises about monitoring management plans and similar matters are set out and agreed to.

Kimberlite

A rare rock that, can contain diamonds that comes from deep underground. Diamonds are usually found in pipes or carrot-shaped structures.

Processed Kimberlite or Tailings

The waste material and water mixture that is left over after the valuable minerals are removed (i.e. diamonds).

Progressive Reclamation

Reclamation that occurs while the mine is still operating. As mine activities are completed and no longer required, roads are reclaimed, buildings and equipment are removed, areas are revegetated and landfills and dumps are reclaimed.

Reclamation

The recovery of areas of land and water-bodies that have been disturbed during mining.

Watershed

An area of land drained by a river.

Wastewater

Water that contains wastes from the mining process including sewage and chemicals from explosives.

Zooplankton

The small, almost microscopic animals that live suspended in freshwater (and ocean) environments. Zooplankton feed on small particles in the water.



PLAIN LANGUAGE ANNUAL REPORT 2004-2005

Independent Environmental Monitoring Agency

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