Inter-Agency Coordinating Team (IACT) for the Ekati Diamond Mine
Summary of Discussion
June 6, 2011

Revised: August 8, 2011

In Attendance

Lionel Marcinkoski (INAC)	Eric Denholm (BHPB)
Marc Casas (INAC)	Keith McLean (BHPB) – by phone
Jason Brennan (INAC)	Bruce Hanna (DFO)
Kevin O'Reilly (IEMA)	Jane Fitzgerald (EC)
Monica Krieger (IEMA)	

Meeting commenced 1:30pm.

INTRODUCTIONS AND SELECTION OF CHAIRPERSON

Round-table introductions were given. Lionel Marcinkoski was selected to serve as chairperson for the meeting.

REVIEW AND APPROVAL OF PREVIOUS MINUTES

Motion to approve May 3, 2010 minutes as drafted. Moved by Lionel Marcinkoski, seconded by Eric Denholm. Carried without objection.

Jason requested clarification on the estimated time when cell B of the Long Lake Containment Facility (LLCF) will be full of processed kimberlite (PK). The March 31, 2011 draft meeting minutes suggest within a couple of years. Eric and Keith clarified that the main line of PK flow goes to cell A, with a secondary line (about 33%) going to cell B off the west road. Cell B is currently at 85-90% of its holding capacity and will be full within one year, likely by the end of 2011. No amendment to the minutes was required.

Motion to approve March 31, 2011 minutes as drafted. Moved by Bruce Hanna, seconded by Eric Denholm. Carried without objection.

BHPB UPDATE ON EKATI ENVIRONMENT AND PERMITTING PROJECTS

➢ PANDA DIVERSION CHANNEL (PDC) SLOPE ENHANCEMENT PROJECT

This project was designed to improve the stability of PDC banks and reduce ongoing risks from minor sloughing of sediment into creek water. Phase 1 (winter 2010-11) involved cutting a channel into the ice and benches on the east and west sides of the soil section. Work proceeded partly into the rock/canyon section and was completed May 10th. Several sediment mitigation measures were implemented including:

- creation of a snow and ice pad in the channel bottom (later cleaned and a notch cut to allow spring freshet flow);
- installation of geosynthetic plastic liner on berms of new benches (to prevent runoff water from going into channel);
- use of compressed air blowers to remove construction dust from edges of exposed slopes and new benches; and
- use of silt curtains.

The notch cut in the ice was about 0.5m above the highest object in the stream. The surveyors added a snow layer so that the excavator operator would know to stop and not cut right through to the channel bottom.

One location was targeted for extra mitigation work (sand bagging) as channelized water was finding its way underneath the berm and bringing sediment down into the channel. Phase 2 (winter 2011-12) will proceed north through the remainder of the rock/canyon section.

Kevin asked about the area where the ice lens was identified. Keith replied that EBA Engineering pulled back about 2-3m of the ice lens and used additional material to provide thermal protection. EBA will visit the site this summer to look for any caving or other evidence that the ice is melting, but BHPB is fairly confident they excavated enough to prevent this.

➢ 2011 PDC MONITORING

Construction Monitoring and Mitigation

Post-construction water quality monitoring in the PDC began May 13th with initial snow melt. Sampling locations are about 100m south of the Misery road culvert, above and directly downstream of the construction zone (to see effect of mitigation techniques), and at the outlet to Kodiak Lake. Total suspended solids (TSS) levels were elevated in the channel just below the construction section (250 mg/L), but with increased flow reduced to about 100 mg/L by May 28th. Sediment appears to be getting flushed out to Kodiak and not settling in the channel. The spike in TSS was anticipated as a brief residual effect that would dissipate once normal flow conditions resumed. Samples will be taken twice per week and daily inspections conducted by BHPB staff. EBA will also be on site several times through the summer, and fish crews working in the PDC will also note any unusual water quality.

Keith noted that daily weather conditions affect TSS (i.e. warmer daytime temperatures = increased rate of snow melt = increased amounts of fine sediments carried into the water from lower side slopes). A slower snow melt is desirable to allow silt curtains at the outlet to Kodiak Lake to operate at high efficiency. Kevin suggested that air temperatures could be plotted on a graph and overlaid with TSS results to show this relationship.

Jason asked whether there have been any visible indications of turbidity or TSS in Kodiak Lake so far. Keith replied that most of the snow and ice has melted but there is still little open water. There have been some reports of tea-coloured water right around the outlet, but silt curtains extend 40-50m out in that area and there are no plumes. Eric added that tinting of water can be just a natural springtime occurrence.

Jason noted that the current water licence limit for TSS is maximum 25 mg/L for an individual grab sample. For the Sable, Pigeon and Beartooth construction phase 100 mg/L was specified, and that figure was used as an estimate for what to expect at the PDC post-construction. He said that the spike in TSS was anticipated but duration is the key. If the spike does not dissipate, BHPB will need to implement additional mitigation measures (e.g. silt curtains in the channel). Keith and Eric noted that the silt curtains installed last summer were removed as part of construction work. It was unlikely they would have lasted through the creation of the ice pad, blasting and mucking activity. Eric said that if additional silt curtains are necessary, they would likely be installed at target locations with problematic inflows rather than throughout the channel (which could impede grayling passage). Lessons learned from Phase 1 will be useful for Phase 2, which was part of the reason for dividing the project over two seasons. Jason said that this project was necessary, and so far BHPB has used due diligence to prevent sedimentation.

Jason and Bruce requested that summaries of monitoring results with graphs be distributed every 2 to 3 weeks, as well as an immediate notification if there are any unexpected or unusual results.

Keith replied that Erin Forster (BHPB) is responsible for the sampling plan with assistance from EBA. BHPB attempted to do in-house sampling for daily TSS, but were getting conflicting results so will continue using ALS Laboratories.

Fisheries Performance Monitoring

Monitoring continues to fill information gaps for the PDC Compensation Monitoring Program. As well, information is being collected for a DFO-sponsored publication on arctic stream construction. Bruce said the original design group from the University of Alberta, including Bill Tonn, will be returning to Ekati this summer to assess the effectiveness of the PDC channel as stream habitat. Several meetings have been held in preparation for this work, and Tim Byers has attended on behalf of the Agency.

Keith mentioned that a couple of fish have been seen in the fish box so far. Rescan is watching the daily ambient temperature and expect fish to start using the channel more in the next few weeks.

➢ 2010 AQUATIC EFFECTS MONITORING PROGRAM (AEMP)

In the Koala watershed, changes in key water quality parameters show results similar to previous years. 15 of 23 variables increased from baseline downstream of the LLCF. Some small changes were observed in Lac de Gras near the Slipper Lake inflow, and some variables exceeded Canadian Council of Ministers of the Environment (CCME) guidelines. These were aluminum, copper and iron in the lower PDC and Kodiak Lake. The highlight continues to be elevated nitrate in Leslie and Moose lakes, which are the direct receivers for effluent. Late winter under-ice samples from April are typically more concentrated. Nitrate and chloride concentrations in these two lakes have declined slightly since last year, and BHPB hopes this indicates a changing trend now that underground minewater is being diverted away from the LLCF and into Beartooth Pit. Kevin asked why pH exceeded CCME guidelines in Grizzly Lake. Eric replied that this is a natural water quality condition in the lake, not unusual in the area.

Biological changes include increased phytoplankton density in Leslie and Moose lakes, but decreased species diversity downstream of the LLCF, likely related to nitrate levels. Zooplankton also show decreased diversity and changes to community composition in Leslie, Moose and Nema lakes. This is possibly related to increases in conductivity, water hardness, and/or pH. Bruce suggested focusing on plankton as a food source for fish to guide future monitoring and analysis.

In the King-Cujo watershed, 10 of 24 water quality variables increased from baseline downstream of the King Pond Settling Facility. Some changes were observed in Christine-Lac du Sauvage stream. In Cujo Lake, there was a decreased density of phytoplankton but increased zooplankton biomass. Dissolved oxygen profiles were monitored through the winter, and on Rescan's advice the surface was cleared off to allow light penetration. No aerators were used this year.

Keith said that no water is being pumped or discharged yet as most lakes still have ice. Ideally BHPB will try to get some water out of Misery pit this year in preparation for the pushback. Eric added it is not critical to do this, there will just be more water to pump out if they wait a few years until the pushback gets closer to that level. The dewatering crew will look at ways to safely and logistically pump water out of the pit. Marc asked if it would be preferable to pump before the blasting and pushback work begins, in terms of water quality. Eric replied that BHPB's preference is to move water out this summer as there will be issues of ammonia and nitrate from blasting. Keith added that blasted rock will be moved quite rapidly to the waste rock pile, and risk assessments have shown that water quality in the bottom of the pit should not be a concern.

➢ 2011 AEMP

Sediment sampling is conducted every three years under the AEMP, and 2011 is a sampling year. The new coring methodology will be incorporated as per the 2010 Special Study, although both corers and Ekman dredges (previous method) will be used this summer to provide some data overlap. The Ekman dredges will still be used for larger samples and those targeting benthic invertebrates. Jane asked how thick the core samples will be, and Keith replied the goal is between 0.5 and 1cm. Bruce added that Diavik is also aiming for 0.5cm cores, and that finer is better. Kevin asked whether any comparisons would be done between top and bottom layers of cores, related to Environment Canada's 2008 study showing dioxins and furans in Kodiak Lake sediment. Keith said that analyses will only be done on topmost layers as 0.5cm slices are difficult to obtain with low density material. Eric added that additional samples can be taken to archive for future analyses.

BHPB is finalizing the plan for 2012 AEMP fish monitoring, to be submitted to the Wek'èezhìı Land and Water Board (WLWB) by December 2011. The intent is a non-lethal sampling method to eliminate trout and whitefish mortality. Bruce stated that tissue plug sampling is a preferred method, and studies in Manitoba showed that fish do heal and are not subject to later infections. Eric noted that changes in the age structure of fish communities in the Ekati area have been observed, so if sampling is taking mature lake trout out of these smaller lakes it must be for essential information. At this stage in mine life, information already collected can be used and the monitoring program refined.

Jason asked about the trace hydrocarbons found in fish from cell E of the LLCF. The 2010 BHPB Annual Report suggested that the possible source might be diesel from haul trucks. Jason said that on his last site visit the winds were blowing significantly from the east (in a westerly direction), and that road dust stirred up by haul trucks could be blowing directly into cell E. Since the DL10 dust suppressant applied seasonally to the roads is hydrocarbon-based, perhaps this is the source. Eric replied it is possible that airborne dust or particulates are the source of hydrocarbons, since additional deeper core samples taken in lakes did not show any hydrocarbons. Jason suggested that snow samples could be analyzed for remnant DL10. If this was determined to be the source, BHPB could go back to road watering or look for a more environmentally friendly dust suppressant. Eric and Keith said there are some dustfall canisters and snow sampling in that area, but samples would not have been tested for hydrocarbons as this is a very sensitive analysis.

Eric clarified that hydrocarbons themselves were not found in fish, but rather the results of being exposed to hydrocarbons. Certain metabolites are produced in fish liver bile as a natural reaction to rid the body of hydrocarbons, and these metabolites are what were detected. No other signs of poor health or contamination were noted in fish, and if not for the 2007 bile analysis there would have been no indication of the issue. As well, BHPB is conducting more advanced analyses now with lower detection limits.

➢ KIMBERLITE (PK) DEPOSITION PLAN

Cells A, B and C of the LLCF were never intended to hold all PK generated during the mine life. Other options have been investigated following the 5-year review, with the goal of maximizing the use of cells A, B and C and deferring the use of cell D. For example, Beartooth pit has been identified for PK deposition in combination with further optimization of cells A and C. This is not a new concept so should be well-received. The original environmental assessment noted possible use of open pits for PK deposition, and the 2000 environmental assessment for Sable, Pigeon and Beartooth expansion also specifically noted the use of Beartooth pit for this purpose. The volume of PK generated over the mine life could change from current estimates, so plans may also change over time. Some deposition into cell D may be required after 2014.

BHPB may hold a technical workshop in June or July to discuss options, the results of which would be incorporated into an updated Wastewater and Processed Kimberlite Management Plan. This is planned for submission to the WLWB in July as the Board's review process will likely extend into the fall, and planning needs to occur for materials coming up on the winter road if the changes are approved.

Advanced construction of the cell C west road (no pipelines) has been initiated to make direct use of granite being mined for underground development, specifically from Koala pit. Limited granite waste rock is produced at Ekati, and it is far superior to use it while mining instead of digging it out of the waste rock pile later.

➢ COMMUNITY ENGAGEMENT AND TRADITIONAL KNOWLEDGE (TK) PROJECTS

BHPB hosted a successful joint communities site visit May 4-5 focused on the Air Quality Monitoring Program, and a summary report was produced and distributed. Only Łutsel K'e was unable to participate. Individual communities are now being scheduled for site visits related to engagement on the Wildlife Effects Monitoring Program. One elder and one youth from each community will stay at Ekati for one week, observing and assisting the Environment department (Kugluktuk visitors are on site this week). These programs are more community participation and engagement rather than "official" TK projects, but do bring people together to talk about issues and share knowledge. Keith said the Kugluktuk visitors saw 20-30 caribou on the Misery road, gave input on the grizzly bear hair snagging program such as good locations to set up posts, and have worked with Charles Klengenberg (Environment Advisor-TK). Summary reports from these visits will also be produced. Bruce noted a recent report of Arctic char in the Coppermine River which might be of interest.

Discussions on other TK projects are also underway with Łutsel K'e Dene First Nation, Tłı̨chǫ Government, North Slave Métis Alliance, and Kitikmeot Inuit Association. BHPB is currently supporting Łutsel K'e and Tłı̨chǫ projects focused on translation, transcription, and digitizing archives of taped TK interviews. It is important to preserve this information and reduce risk of loss by fire or other means. Once digitized, work can evolve to making it more useable in a GIS/database format.

➢ MISERY PUSHBACK PROJECT

No additional project permitting is necessary for this project so there are no formal reports, but a general communication and information article is being prepared. The project is currently in "Execution Phase", which is the final level of BHPB corporate approval. Hiring and camp refurbishment have been initiated. Equipment such as haul trucks that were brought up on the winter road are being erected, and minor road expansions have begun to create separate lanes designated for light vehicles and haul trucks.

Investigations were conducted between Misery pit and Lac de Gras, and there are no known connecting hydraulic structures. The primary mitigation for connections is that Misery pit stays in permafrost.

Kevin suggested that pit design should be considered from the standpoint of fish habitat reclamation as well as engineering. Since equipment is already on site and blasting occurring, it would likely save time and money to design the pushback work in conjunction with creation of littoral zones and other fish habitat requirements. Eric responded that BHPB prefers to wait until the revised Interim Closure and Reclamation Plan (ICRP) is approved by the WLWB. This will provide certainty on what reclamation work is required, and then reclamation designs will be developed for the open pits.

➢ PIGEON PROJECT

The Pigeon project is currently in "Selection Phase". Feasibility design optimizations and financial analyses are being reviewed. Possible modifications to waste rock management are also being considered, as the distinction between granite and metasediment will not be as obvious as at Misery. Most recent geology models show there will not be as much clearly identifiable clean granite as anticipated, and the rest of the waste rock will have to be treated as metasediment.

Construction of the Pigeon Stream Diversion may begin as early as January 2012, and will be conducted over two winters. The waste rock pile will be built over Reynolds Pond which will be fished out as part of the fisheries compensation package. Pigeon pit on its own may not produce enough granite to encapsulate the pile, so the rest will have to be obtained from elsewhere. An extension to the Panda/Koala waste rock pile could be done and granite mined from the pile to build the base, but this would be an expensive endeavour.

➢ INTERIM CLOSURE AND RECLAMATION PLAN (ICRP)

Revisions to the ICRP are on track, and the amended version is scheduled to be submitted to the WLWB in August 2011.

➢ 2010 ENVIRONMENTAL AGREEMENT AND WATER LICENCE ANNUAL REPORT

Lionel stated that the 2010 report (technical version) was received on April 29, 2011. The 45-day review period timeline under the Environmental Agreement does not start until submission of the plain language summary, which is expected in early July. However, Lionel encouraged parties to begin their review and preparation of any comments immediately.

Jason commented that he liked the line graphs this year showing thresholds, spikes, and peaks in parameters instead of using a table format. It is a better visual way to show the information. Eric responded that Jamie Steele (BHPB) is responsible for much of the work and improvements for this report.

Lionel noted that the Irrevocable Letters of Credit (ILOCs) for the 2009 water licence were finally signed on June 2, 2011. The security deposit for Pigeon was reduced and other deposits were consolidated, so that current security for Ekati now stands at about $130 million. This amount will be revised following submission and approval of the revised ICRP in August. Eric and Lionel agreed this was a very long process, with most of the time involving paperwork and no real disagreement on the dollar amounts.

ROUND TABLE UPDATES AND DISCUSSION

- ***Indian and Northern Affairs Canada (INAC):*** Lionel noted that Marie Adams is the new head of the Water Resources group. INAC is dealing with four simultaneous environmental assessments: Fortune Minerals, Avalon, Tyhee, and De Beers Gahcho Kue. Developer's Assessment Reports have been submitted for all of these projects, and the Mackenzie Valley Environmental Impact Review Board (MVEIRB) is now conducting conformity checks. Lionel will be on holidays until September, and Lorraine Seale will be the main contact. Marc added that Water Resources has no current issues with Ekati and are putting priority on other projects, but will do their best to provide comments on reports. The Snap Lake water license renewal is also upcoming next year.

Jason hopes to complete one more inspection before going on holidays for July. The department is short-staffed right now so he is also responsible for Diavik inspections and as a backup for

Snap Lake. Darnell McCurdy is returning as district manager in July. He is familiar with the Ekati file and will likely deal with approvals for effluent discharge while Jason is away.

- ***Environment Canada (EC):*** Jane stated that Anne Wilson is officially leaving to the EC office in Edmonton at the end of June. Anne may remain the lead on the Ekati file or it may transfer to Jane. EC is dealing with all the same environmental assessments as INAC and trying to distribute the work within the department.

- ***Department of Fisheries and Oceans (DFO):*** Bruce discussed DFO's work on the Nero-Nema fish habitat compensation (gravel spawning beds). DFO is also completing a slimy sculpin collection protocol and an NWT/Nunavut protocol on how to conduct fish-outs. Toxicity testing results for northern fish species were presented at a conference in Italy. There was difficulty collecting round whitefish for these tests so they will be reared in the lab. It is hoped that the full results will be published this fall.

- ***Independent Environmental Monitoring Agency (IEMA):*** Kevin discussed the Agency's recent activities including a letter to GNWT offering support for the new *Wildlife Act*, especially initiatives to regulate wildlife management and monitoring plans. The Agency sent BHPB a letter regarding wildlife monitoring following the research permit application. A good initial meeting was held with Charles Klengenberg (Environment Advisor, TK) on April 15th. The Agency held its annual report writing session in May, and the first draft of the technical report is expected soon. The three recommendations this year include the need for a proper grizzly bear monitoring program, a regular 3-year review of the Wildlife Effects Monitoring Program, and the urgent need to get the new incinerator operational. These have been circulated for feedback so responses can be printed in the report. Kevin gave an update to the Snap Lake Environmental Monitoring Agency (SLEMA) on May 18th. Kevin and Director Tony Pearse participated in BHPB's human rights impact assessment June 3rd, and the consultants identified that a summary of the report will be released in a few months. Director Tim Byers was involved in recent discussions with DFO and others regarding the PDC. The regular financial audit is underway, and a site visit is scheduled for June 15th-16th. Monica stated she has resigned her position at the Agency. Her last day will be June 24th, after which she will be working at Ekati as a Wildlife Technician.

DISCUSSION

Kevin asked when the new incinerator will be operational. Eric replied it is on a schedule and will hopefully be running by the end of 2011.

NEXT MEETING

Next meeting to be scheduled for September 2011, possibly September 7th-8th including a site visit.

Meeting concluded 4:00 pm.