

Independent Environmental Monitoring Agency

Public Watchdog for Environmental
Management at the Ekati Diamond Mine



Presentation to Western Mining Action Network

October 2005

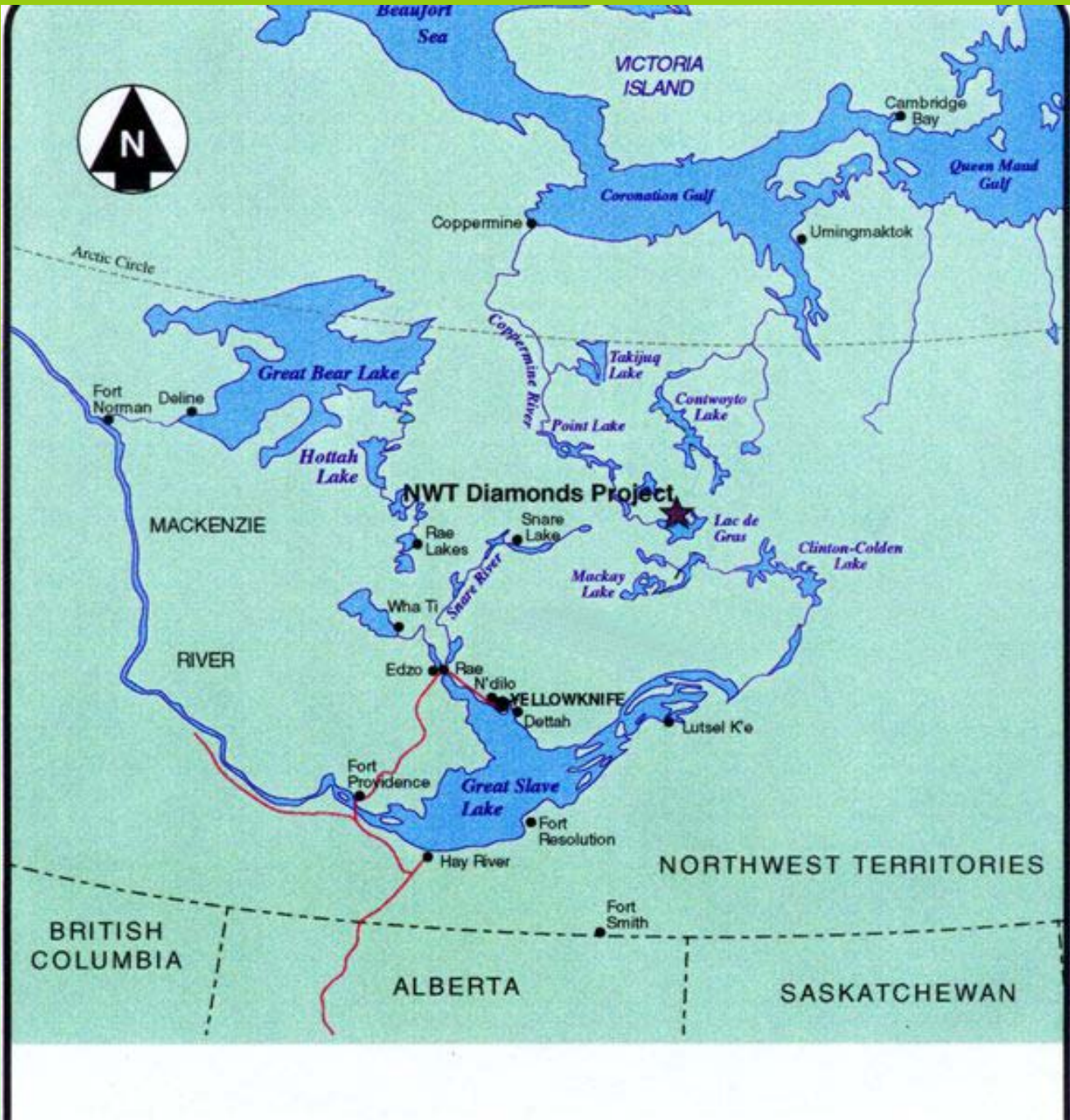
Kevin O'Reilly, Manager, IEMA

Presentation Overview

- **Background**
- **Project Description**
- **Regulatory Instruments and Agreements**
- **Environmental Agreement**
- **Independent Environmental Monitoring Agency**
- **On-going Challenges**

Background - Ekati

- Diamonds discovered in the NWT in 1989
- Ekati mine received a federal panel review from 1994-1996
- Ekati mine was approved in 1997, with conditions
- Approval was based on adaptive management practices
- One other diamond mine now in production (Diavik), two under construction (DeBeers Snap Lake, Tahera Jericho) and one more about ready for review (DeBeers Kennady Lake)

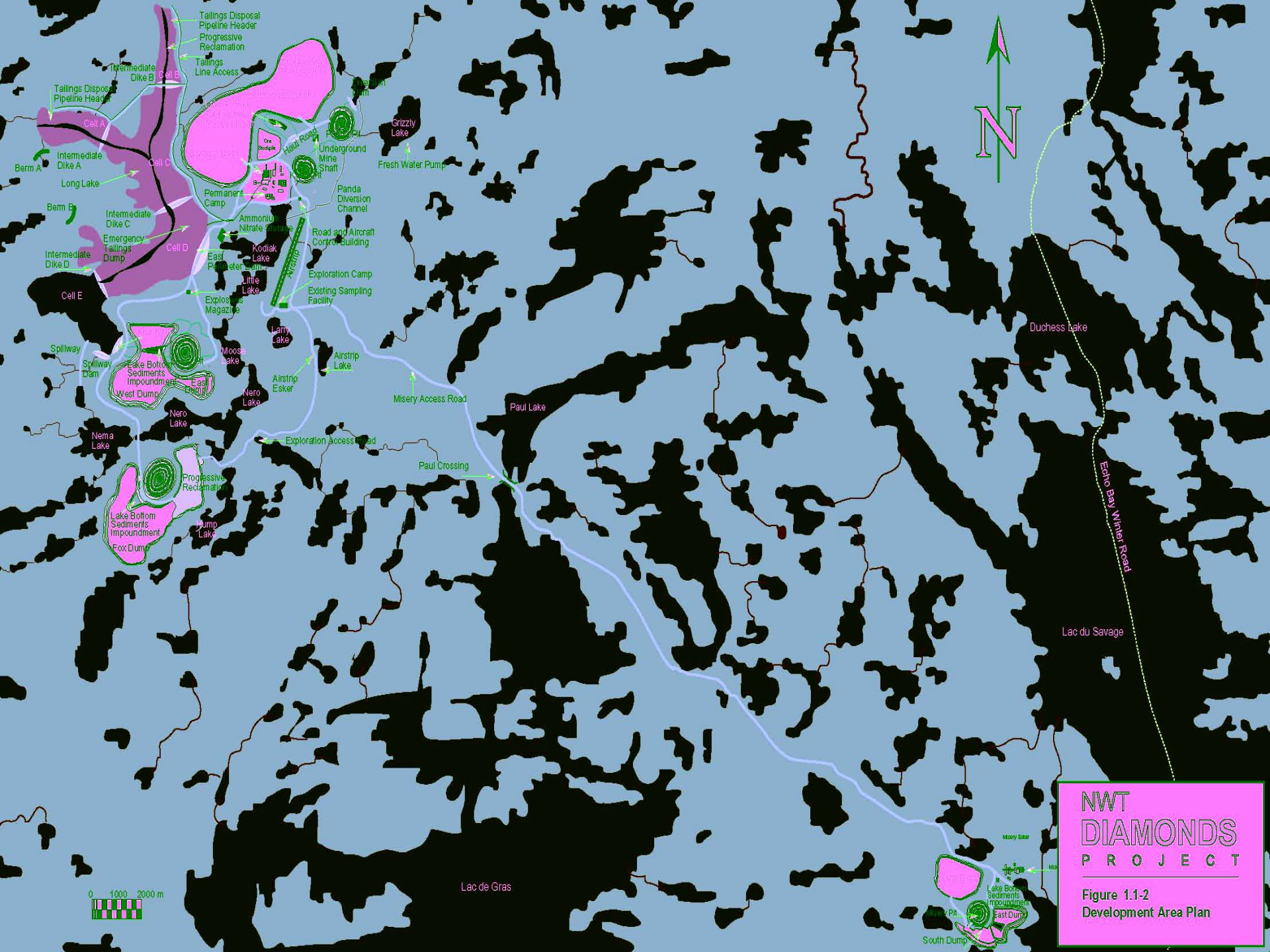






Ekati Mine Project Description

- **Dewatering lakes for access to kimberlite pipes**
- **Explosives use (introduces nitrogen, ammonia and nitrates into waste rock and air)**
- **Road construction to link pipes**
- **Waste rock sent to waste rock piles**
- **Diamonds are extracted on site and the residue (tailings) is disposed of into Long Lake tailings pond**
- **Work camp for several hundred staff (“hotel” accommodates 600 persons)**



**NWT
DIAMONDS
PROJECT**

Figure 1.1-2
Development Area Plan

Panda Pit development







Regulatory Instruments and Agreements

REGULATORY INSTRUMENTS

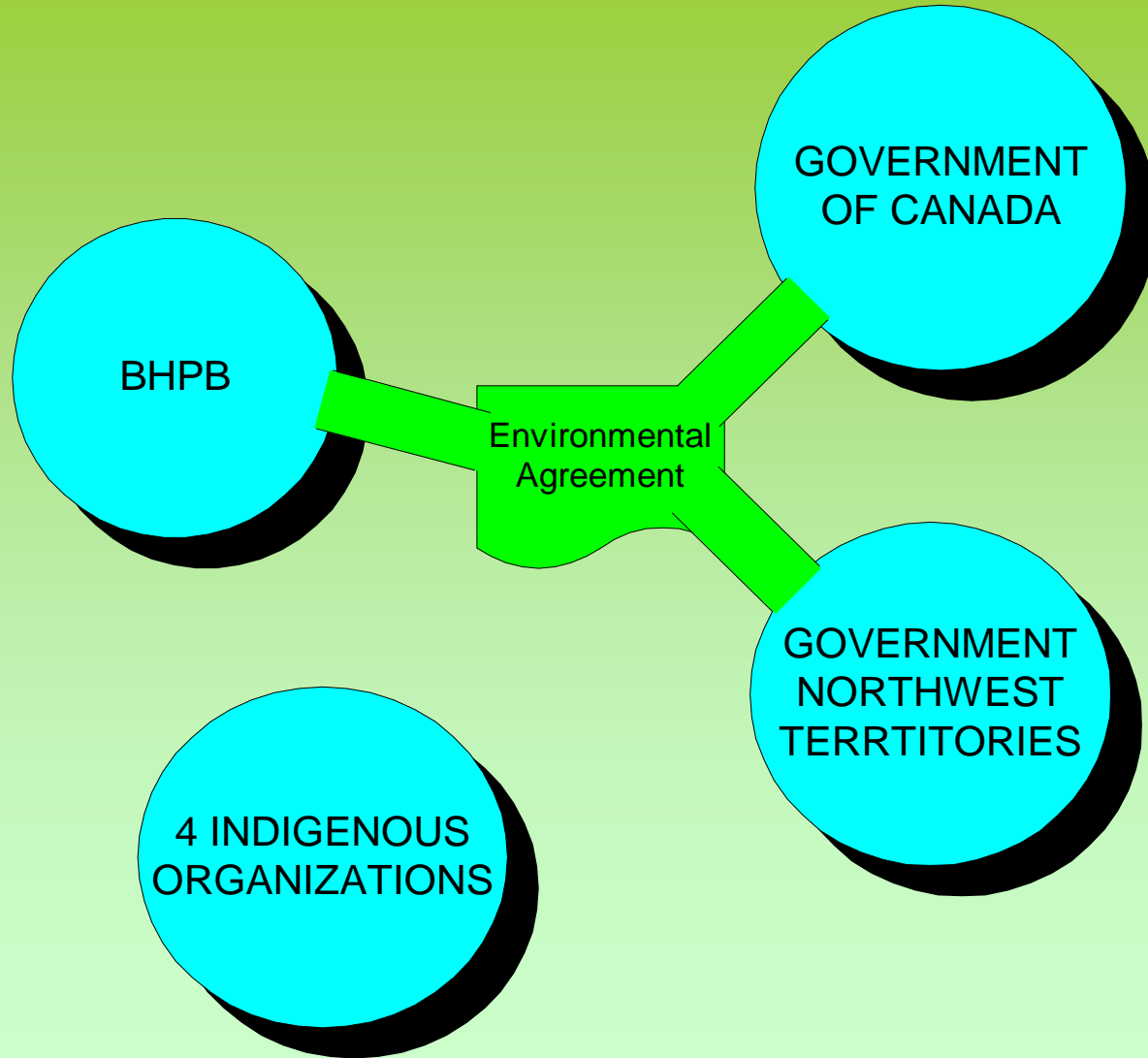
- land lease & land use permits (federal government, Mackenzie Valley Land & Water Board)
- water license (Mackenzie Valley Land & Water Board)
- Authorization to destroy fish habitat (federal)
- Approval to affect navigable waters (federal)
- Approval to manufacture explosives (federal)

NEGOTIATED AGREEMENTS

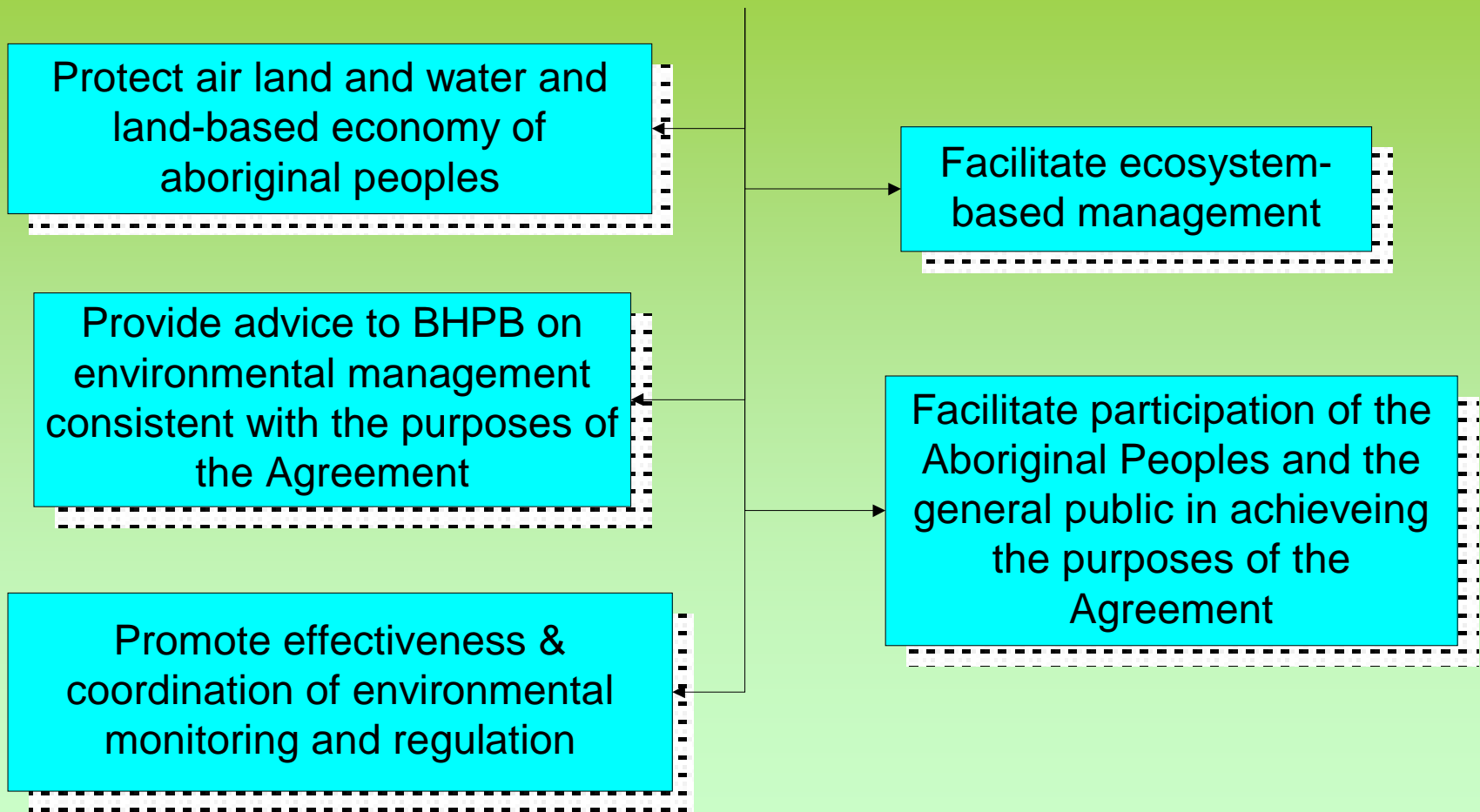
- [Environmental Agreement](#)
- Socio-Economic Agreement with GNWT
- Impact and Benefit Agreements with Aboriginal Governments



Environmental Agreement



Purposes of Environmental Agreement

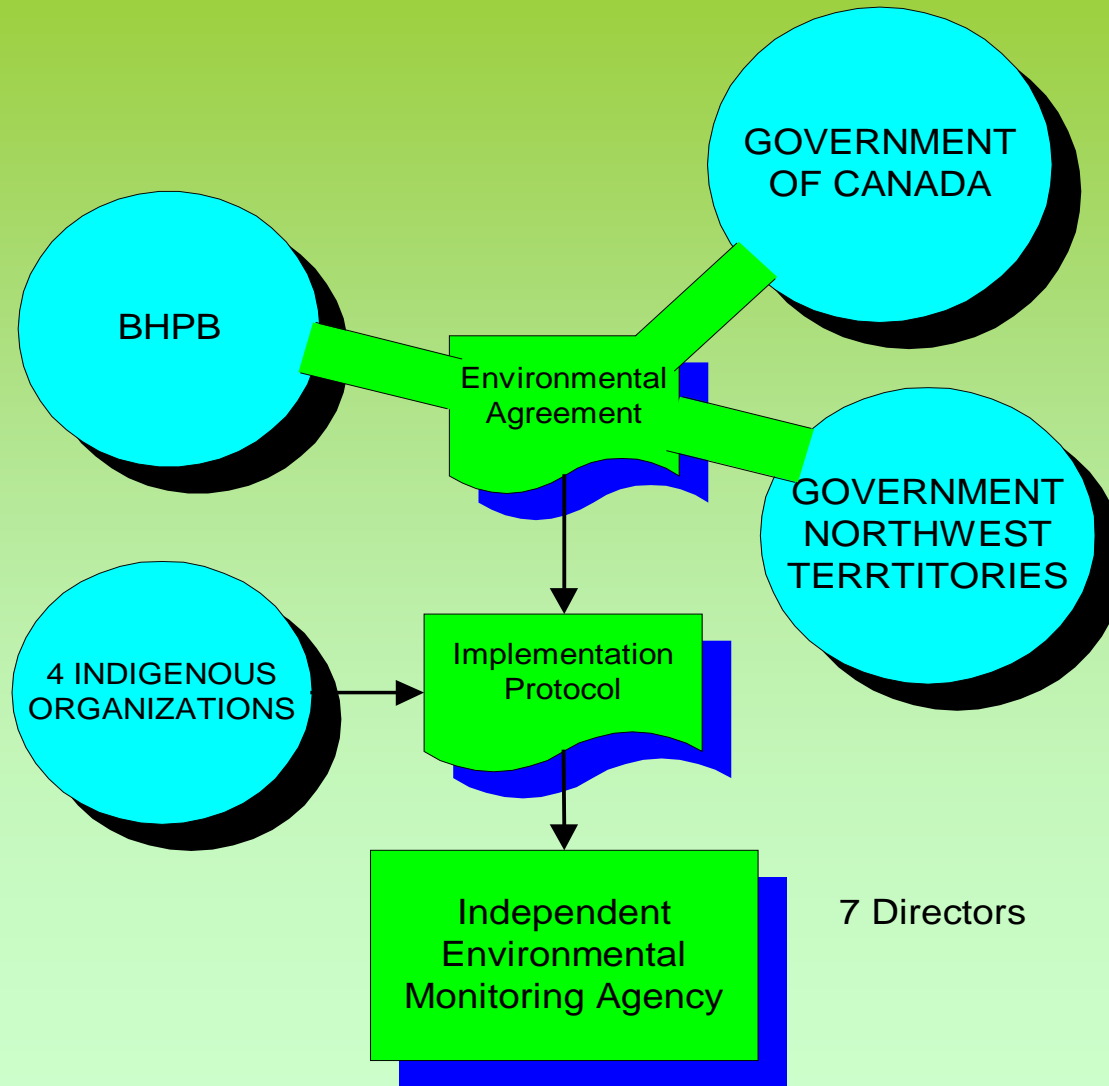


Highlights of the Agreement

- Annual environmental report from company (BHP Billiton)
- Environmental Impact Report (every 3 years)
- Environmental Management Plans
- Environmental monitoring programs (Wildlife & Aquatic Effects)
- Closure and Reclamation Plan
- Traditional Knowledge (TK) Studies
- Reclamation research, ore toxicity, other studies as required
- Security deposit
- Independent Environmental Monitoring Agency



Monitoring Agency



Independent Environmental Monitoring Agency

- **Seven members: BHPB, GNWT, Canada, and four Aboriginal governments**
- **Seven board members appointed by seven members of the society**
- **No “representation” - all board members have the same common mandate**
- **Budget about Can \$600k/yr. provided by Mine operator - initially some funds came from federal and territorial governments**

Mandate of the Agency

- To provide an **integrated approach** to achieving the purpose of the Agreement
- To be a **public watchdog** of the regulatory process and the implementation of this Agreement
- To review relevant environmental quality data in order to **report and make recommendations** concerning:
 - environmental effects monitoring & management
 - government and BHPB reports & activities on compliance
 - effectiveness of using of Traditional Knowledge and experience of indigenous peoples



Mandate of the Agency (cont'd)

- an **intervenor** in regulatory processes respecting environmental matters
- to establish a **public repository of environmental data, studies and reports relevant to the project**
- programs for the effective **dissemination of information** to the indigenous peoples and the general public about the project



Agency Successes

- **Early detection of several problems in affected lakes**
- **Early alert about possible acid mine drainage from waste rock**
- **Detection of inadequacy of air monitoring program**
- **Identification of regulatory process irregularities**
- **Greater public awareness of how BHPB is doing at the mine site**

Improvements to wildlife effects monitoring and management

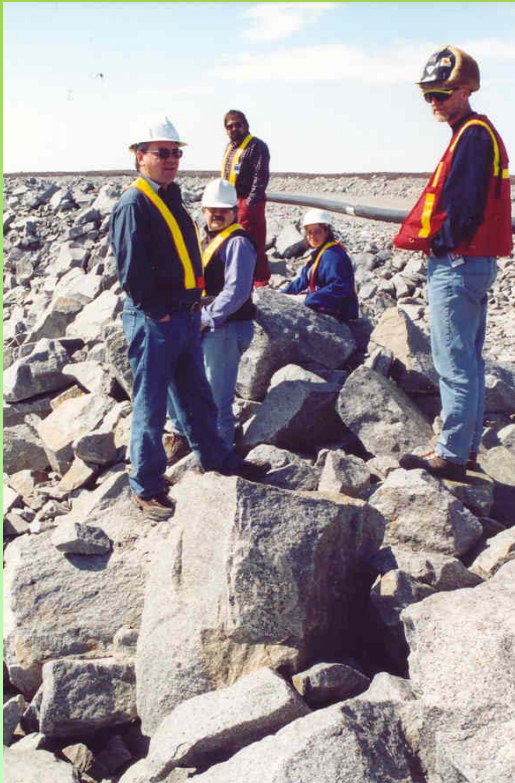


Reduction in traffic during caribou migration

Improved dust monitoring



Improved road design for caribou crossing



Standard roadside



Caribou friendly roadside

Improvements to Aquatic Effects Monitoring



Better waste management practices



- Landfarms are now covered to deter migrating birds from landing

Hosted Annual Environmental Workshops



- Presentation on monitoring program results were understandable and relevant
- Well attended by communities and regulators
- Supportive comments received
- BHPB should host workshops

Visited Communities



- Kugluktuk – August 2004



Visited Communities

- Dettah –
September 2005



On-going Challenges

- **Downstream aquatic impacts**
- **Minimizing impacts**
- **Closure and Reclamation**
- **Water Licence Renewal**
- **Cumulative Effects**
- **Incorporating Traditional Knowledge**

Changes in downstream zooplankton



- Changes in zooplankton abundance and composition downstream of the mine caused shift in fish diet
- BHPB has increased its zooplankton sampling

Nitrate Toxicity to Northern Fish

- IEMA recommended studies be done on nitrate toxicity to fish eggs
- BHPB has conducted extensive studies
- Report is presently being peer-reviewed



1 tonne bag of explosive ammonium nitrate



Minimizing impacts to terrestrial and aquatic environments



- A culvert was built in such a way as to avoid a Fisheries authorization but leading to greater impacts on the land and maybe caribou

Closure and Reclamation

- We promote 'design for closure'
- We promote progressive reclamation
Closure plan is deficient, too conceptual
- Requires closure objectives and criteria
- Insufficient guidance from regulators
- Lack of clarity of what security should be for the project
- Commitment from BHPB to better involve regulators and communities

Revegetation on Kimberlite



- contaminants in tailings may enter plants and the animals who eat the plants

- Should BHPB revegetate the tailings?



Water Licence Renewal

- BHBP operates under two licences
- Agency suggested discharge criteria be based on protecting the receiving environment
- BHPB applied in December 2003, hearing held in July 2004, licence issued in September 2005
- Two extensions given due to procedural difficulties
- New licence signed but terms and conditions not known at this point

Cumulative Effects



- In 2003, community members noticed a great decrease in caribou
- Most recent census of Bathurst caribou herd shows decline from 350,000 (1996) to 186,000 (2003), still within natural range
- Two recent studies show statistically significant avoidance of mine sites by caribou

Contacting the Agency

Independent Environmental Monitoring Agency

Office: Suite 203, 5006 Franklin Avenue,
Yellowknife NT

Mail: P.O. Box 1192
Yellowknife NT X1A 2N8
Canada

Phone: 867-669-9141 **Fax:** 867-669-9141

e-mail: monitor1@yk.com

website: www.monitoringagency.net