



# Red Dog Closure Planning and Waste Management Permit

## Background on the Process

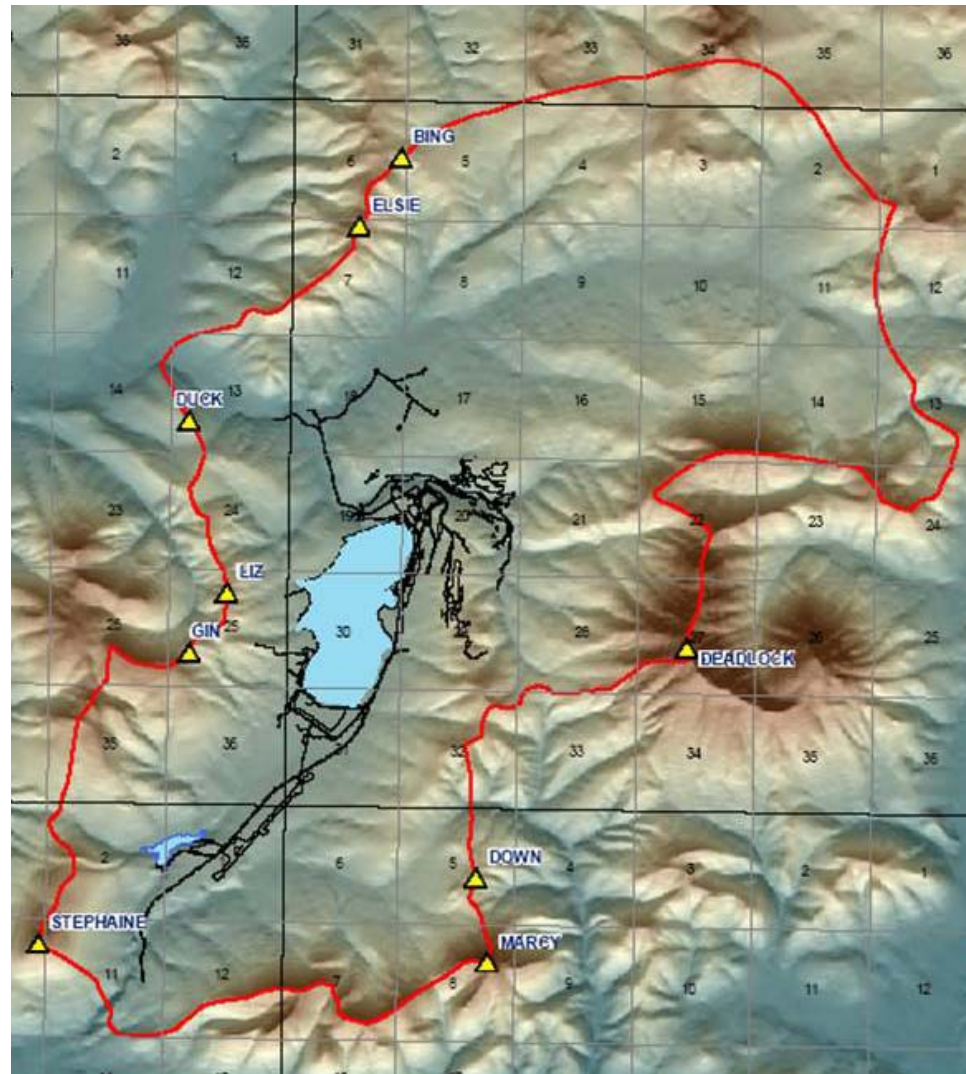
July 2009

# Background

- Closure and Reclamation Plan
  - Alaska Department of Natural Resources (ADNR)
  - Last plan was submitted in 1999
- Waste Management Permit
  - Alaska Department of Environmental Conservation (ADEC)
  - Not required when Red Dog was constructed
- Requires financial assurance
- NANA key role as land owner
- Extensive community engagement
- Permit target date – late 2009
- Must be renewed every five years



# Permit Boundary



# What's Covered by the Waste Management Permit?



# Key Meetings 2004 and 2005



**2004**

**January:** Closure Workshop at Red Dog

**May:** Kivalina and Noatak Community Meeting - General Discussion

**July:** Mine Closure Workshop for NANA Regional Representatives

**August:** Subsistence Committee Meeting on Mine Closure

**September:** Noatak and Kivalina Community Meeting - Detailed Discussion

**October:** Closure Workshop in Anchorage – Technical Presentations (42 participants including 14 from Kivalina and Noatak)

**2005**

**January:** Regional Village Meetings – General Discussion

**January:** Kivalina and Noatak Community Meeting – Closure Options

**April:** Tailings Multiple Accounts Analysis (23 participants including 6 from Noatak and Kivalina)

**August:** Subsistence Committee Meeting – Update on SWP Process

**December:** NANA Regional Board

# Key Meetings 2006

2006

**January:** Subsistence Committee Meeting on Closure Options and Feedback

**January:** Kivalina & Noatak Community Mtg – Closure Options & Feedback

**March:** Video on Red Dog Closure Planning sent to all households in Noatak and Kivalina

**April:** **Red Dog Closure Planning Workshop in Anchorage**

**June:** **Red Dog Closure Planning Workshop in Anchorage**

**July:** Presentation to the NANA Board in Kivalina

**September:** Presentation to all eleven Villages during Red Dog Update Mtgs

**September:** Presentation to NANA Lands and Resources Committee

**September:** Presentation to the NANA Board in Kobuk

**October:** Subsistence Committee Meeting on Closure Planning

**December:** Noatak and Kivalina Community Meeting – Closure Planning Update



# Meetings and Milestones 2007, 2008, and 2009



**2007**

**January – September:** NANA, Red Dog Meetings

**August:** Subsistence Committee tour of reclaimed Canadian mines

**September:** Approval of Closure Plan by the NANA Board and the Red Dog Management Committee

**December:** Large Mine Permitting Review of Closure Plan

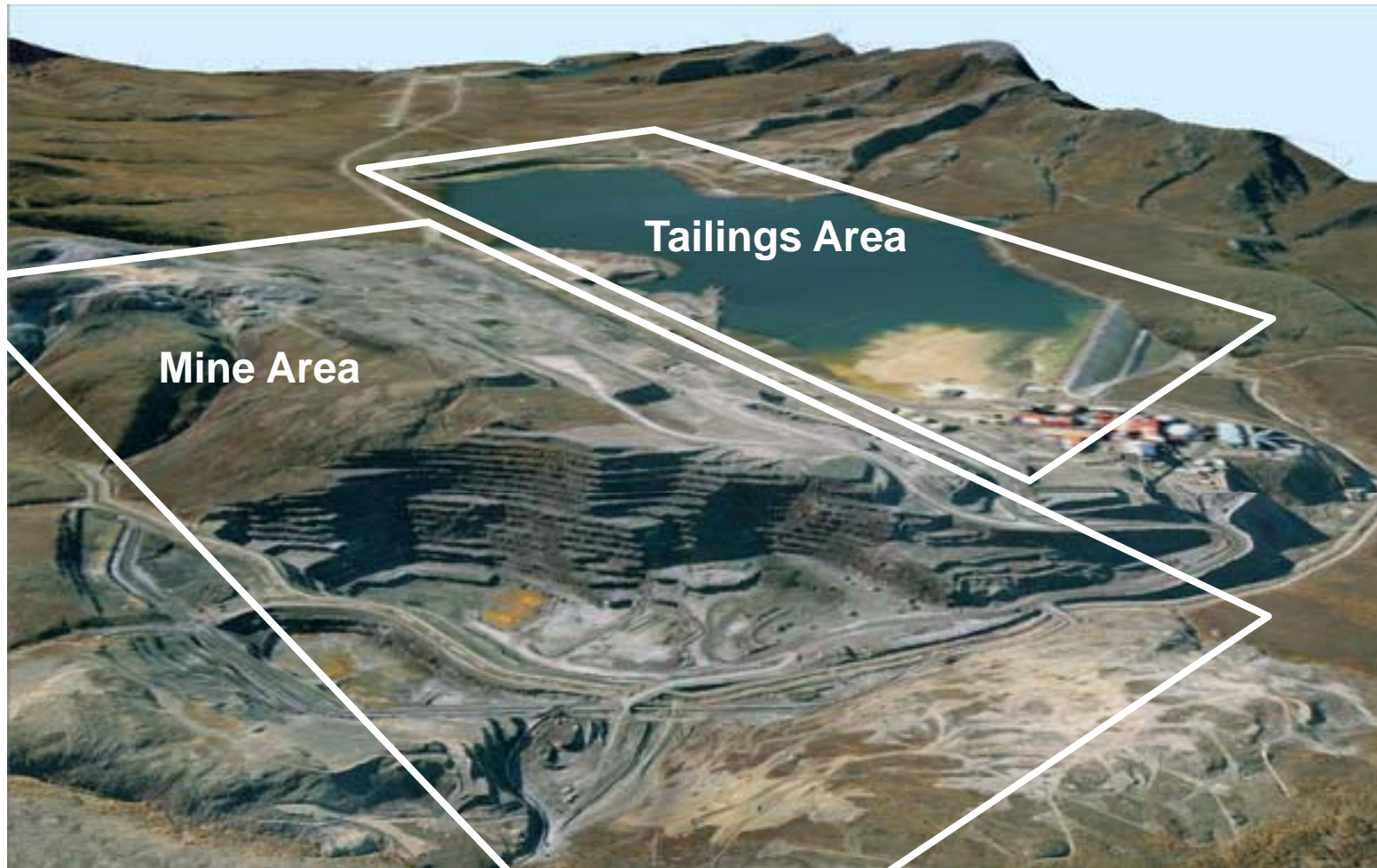
**2008**

- State Review and Revisions to Closure and Reclamation Plan
- Preparation and Review of the Cost Estimate

**2009**

- Finalize Cost Estimate
- Draft Permits and Approvals issued for Public Notice

# Mine Area, Tailings Area





# April 2006 Closure Planning Workshop



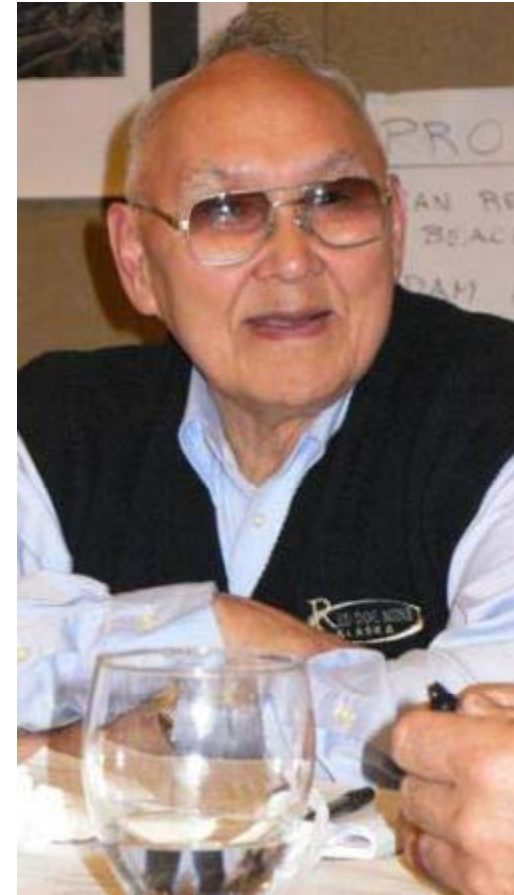
- 60 Participants
  - NANA Board and Staff
  - Subsistence Committee
  - Teck Cominco
  - Communities and Region
    - Noatak
    - Kivalina
    - NAB
    - Maniilaq
  - State
  - Non-governmental Organizations (NGO's)
  - Technical Consultants



# April 2006 Workshop Format



- Evaluated 5 Mine Area Options
  - Base Case
  - Simple Covers
  - **Complex Covers**
  - Geosynthetic Covers
  - Waste Rock Relocation
- Evaluated 4 Tailings Area Options
  - Water Cover
  - **Clean Pond**
  - Dry Cover
  - Wet Cover
- Detailed presentation
- Question and answer
- Listing of Pros and Cons
- Group Breakout and Feedback
- Individual Ranking



# June 2006 Closure Planning Workshop



- 45 Participants
  - NANA Board and Staff
  - Subsistence Committee
  - Teck Cominco
  - Communities and Region
    - Noatak
    - Kivalina
    - NAB
    - Maniilaq
- Same format as April workshop
- Eliminated non-starters (such as Mine Area Base Case)



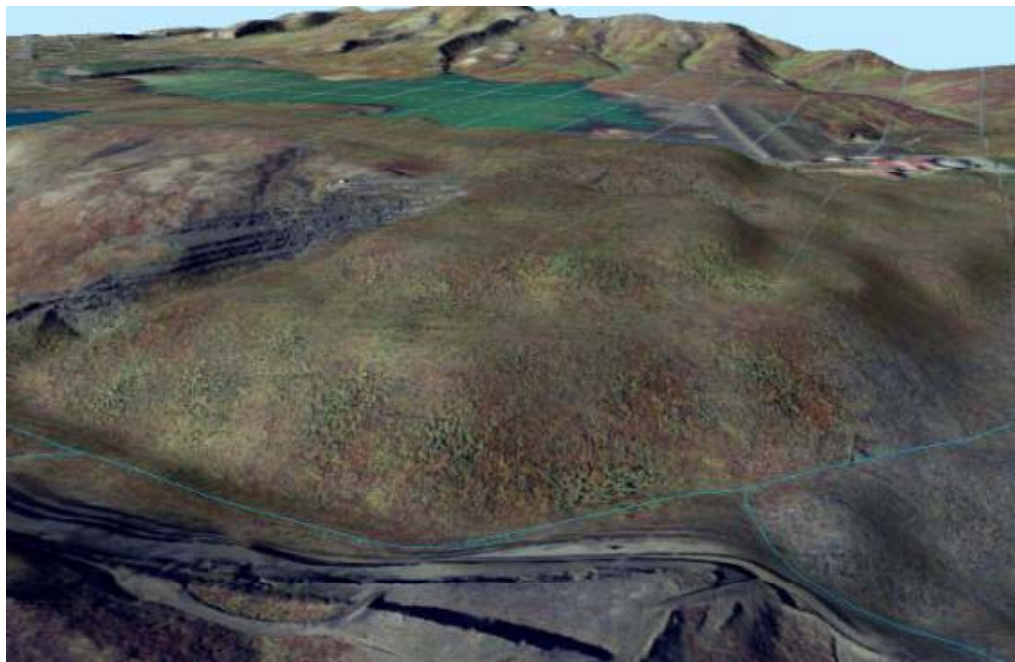
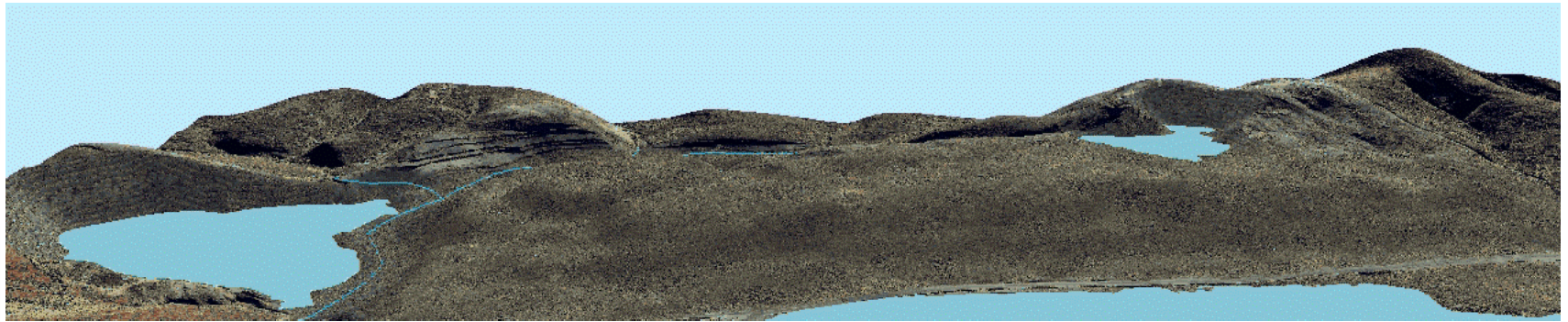
# June 2006 Workshop Format



- Evaluated 3 Mine Area Options
  - Base Case
  - Simple Covers
  - **Complex Covers**
  - Geosynthetic Covers
  - Waste Rock Relocation
- Evaluated 2 Tailings Area Options
  - Water Cover
  - **Clean Pond**
  - Dry Cover
  - Wet Cover
- Detailed presentation
- Question and answer
- Listing of Pros and Cons
- Group Breakout and Feedback
- Individual Ranking



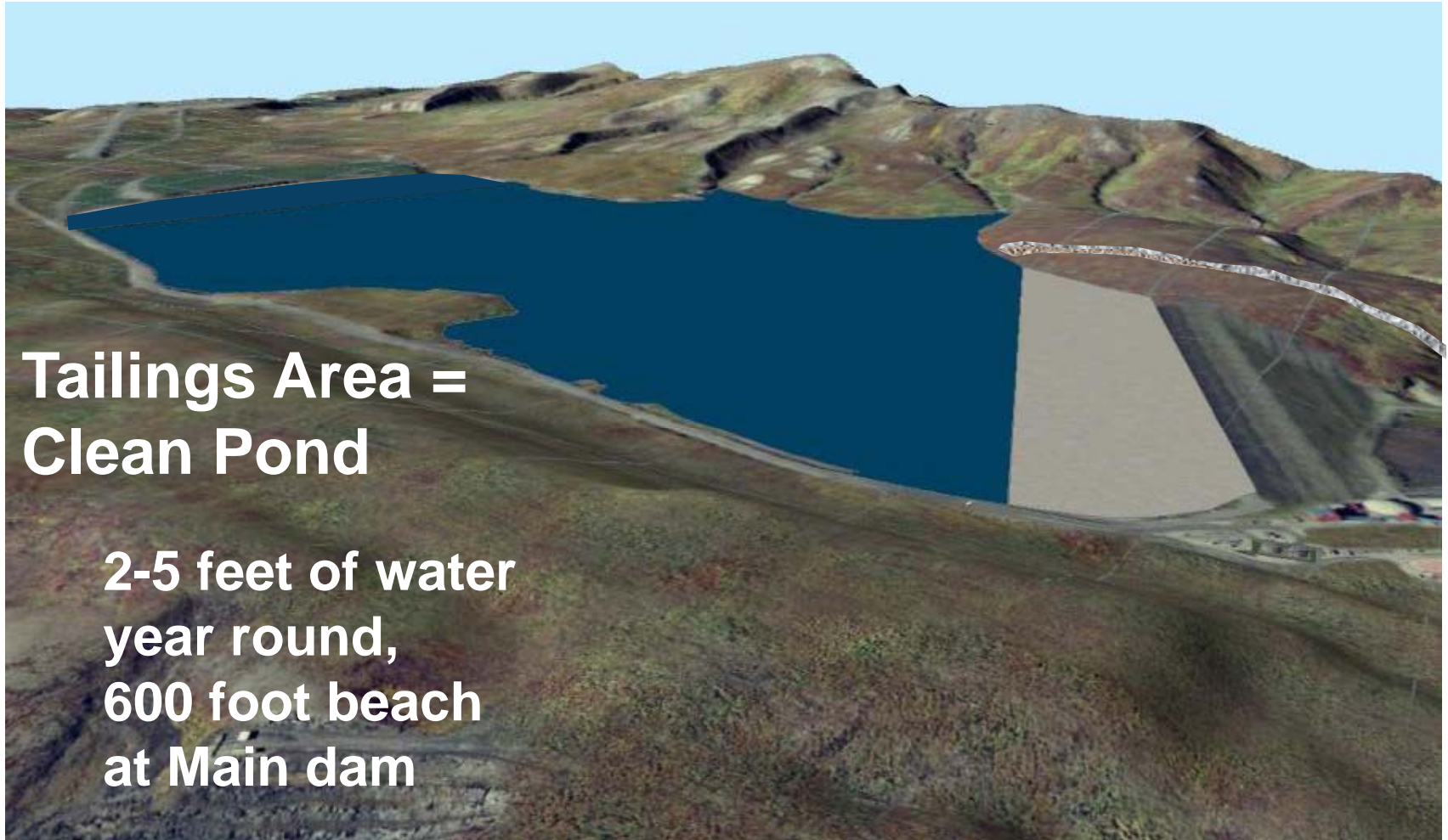
# Workshop Results: Mine Area



**Mine Area =  
Complex Cover**

**All reactive waste  
rock covered  
with 2 layers of  
clean rock and  
revegetated**

# Workshop Results: Tailings Area



**Tailings Area =  
Clean Pond**

**2-5 feet of water  
year round,  
600 foot beach  
at Main dam**