
RECLAMATION
PLANNING AT THE
PINCHI LAKE MINE

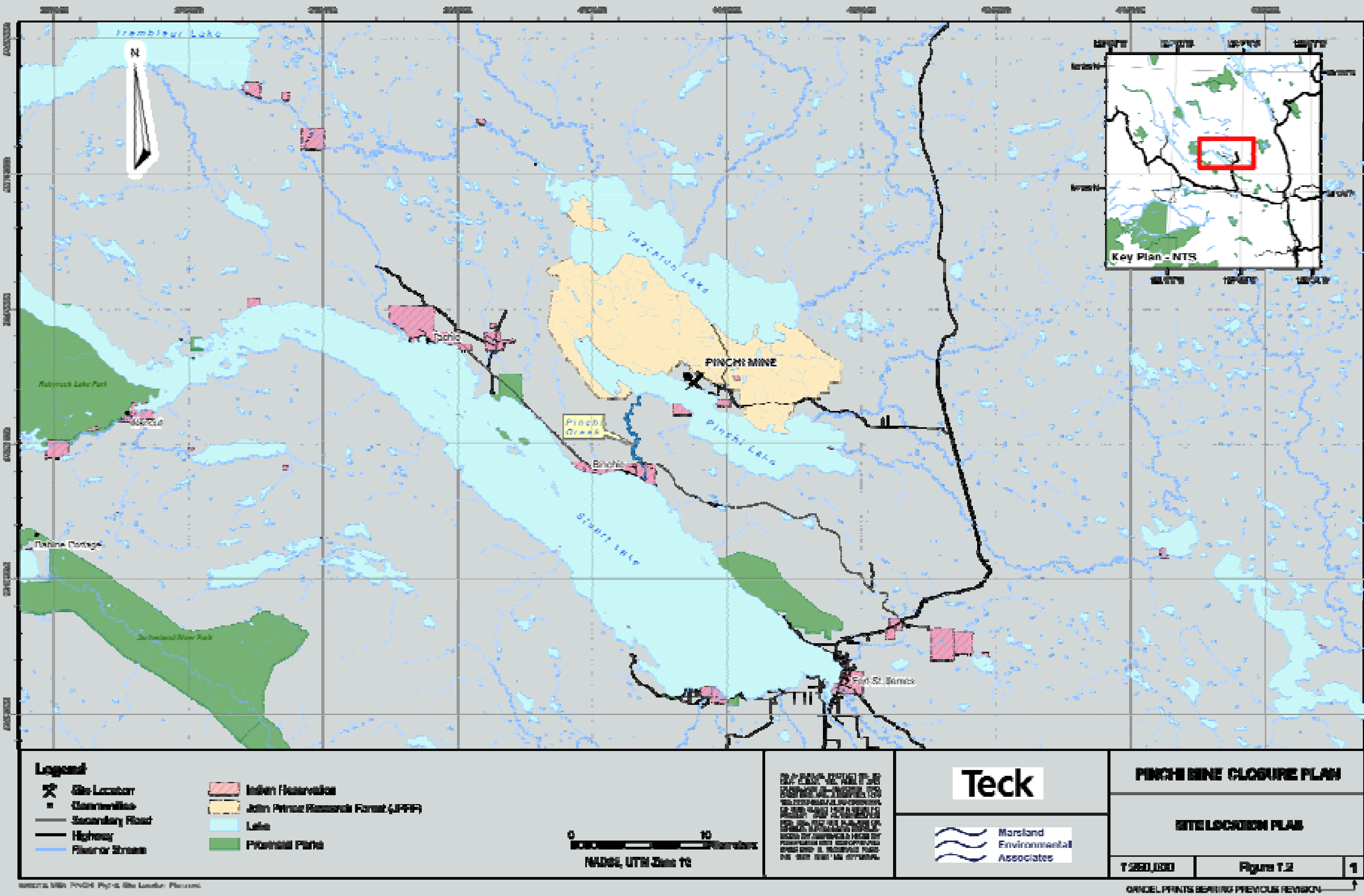
ACKNOWLEGEMENTS

- Chief T. Alexis (Tl’azt’en)
- Chief F. Sam (Nak’azdli)
- Technical Working Group Members:
  - Walter Kuit – Teck
  - Mark Edwards – Teck
  - Bruce Donald - Teck
  - Beverly Bird (Tl’azt’en/Nak’azdli Lead)
  - Jim Webb (Tl’azt’en)
  - Owen Prince (Nak’azdli)
- Key Consultants
  - Azimuth Consulting Group
  - Marsland Environmental Associates Ltd.
  - Wilson Scientific Consulting
  - URS Environmental Consultants
  - T.D. Pearse Resource Consulting
  - Dr. Marcello Veiga, Professor Mining Engineering, UBC

INTRODUCTION

- Location / History of Site
- Current Status
- First Nations' Involvement
- Environmental Studies
- Reclamation Planning Process
- Overview of Reclamation Plans
- What Next

LOCATION



Trembleur Lake
N
Key Plan - NTS
Tezzeron Lake
PINCHI MINE
Pinchi Lake
Pinchi Creek
Stuart Lake
Babine Portage
Fort St. James
Legend
Indian Reservation
Lake
NAD83, UTM Zone 10
Teck
Marsland Environmental Associates
PINCHI MINE CLOSURE PLAN
SITE LOCATION PLAN
1

PINCHI LAKE MERCURY MINE SITE HISTORY

Historic Operations (1940-44)

Modern Operations (1968-75)

PINCHI LAKE MERCURY MINE SITE HISTORY

- Ore Body:
  - Hosted in Permian-age limestone and sediments
  - Primary mineral is Cinnabar (HgS)
  - Deposit grades 0.3% HgS
- Historic Operation
  - 50 tpd to 1100 tpd
- Modern Operation
  - 750 tpd
  - 1.6 M tonnes of ore produced

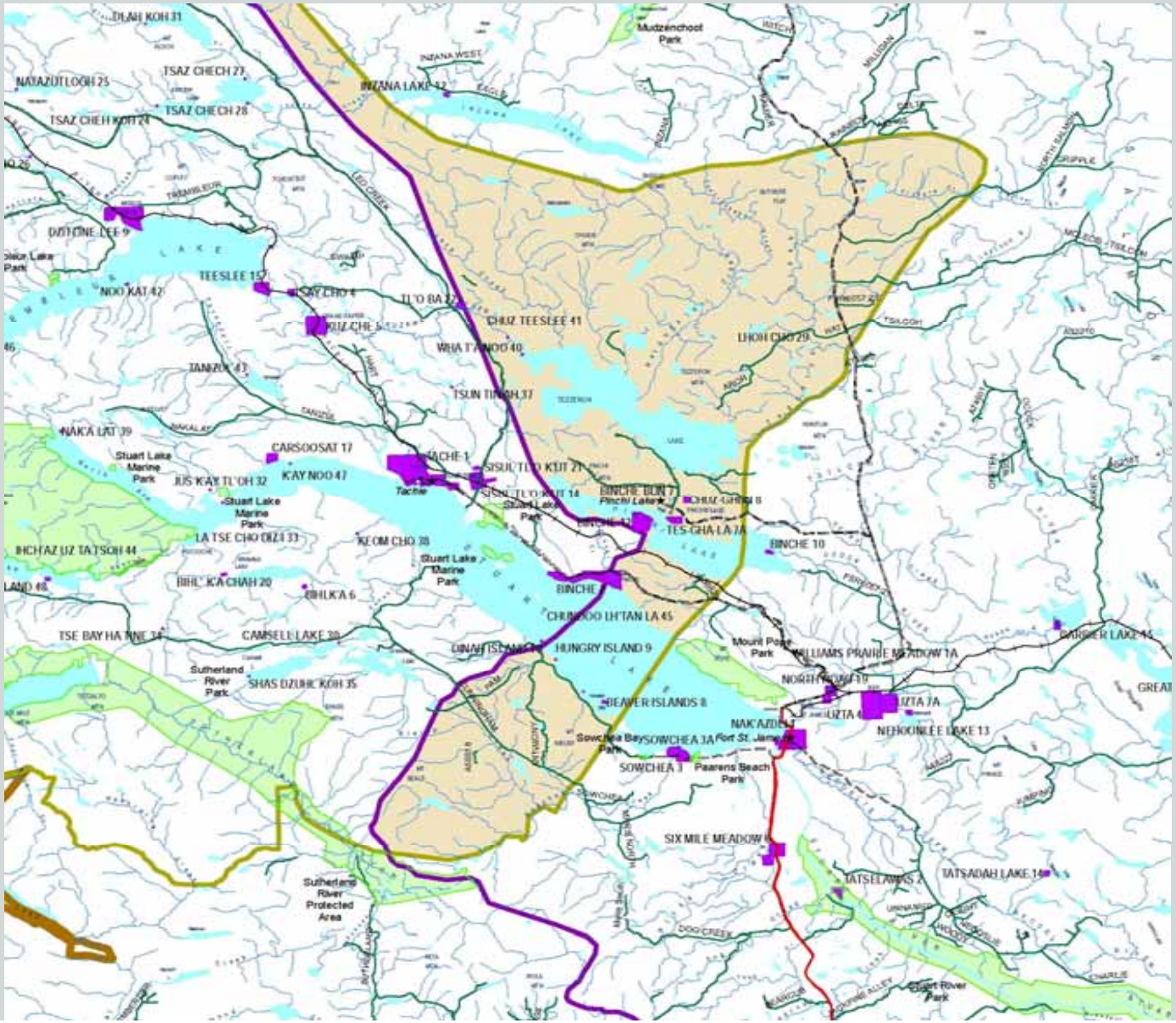

CURRENT STATUS OF SITE FACILITIES
ROCK QUARRY
WEST ZONE PIT
U/G PORTALS
MAIN ZONE PIT
NEW MILL SITE
TAILINGS IMPOUNDMENT AREA
SMS AREA
CARETAKER RESIDENCE

CURRENT STATUS RECLAIMED AREAS

FIRST NATIONS INVOLVEMENT

Triggered by December 2004 dyke failure

FIRST NATIONS INVOLVEMENT



FIRST NATIONS INVOLVEMENT

- 2005 established the Technical Working Group (TWG) – members from Teck and First Nations
- 2006 signed a formal working Agreement that frames our ongoing relationship

FIRST NATIONS INVOLVEMENT

The TWG

- Functions on a consensus basis
- Plans, directs, and reviews studies
- Directed the development of the proposed decommissioning and reclamation plan

FIRST NATIONS INVOLVEMENT

The TWG

- Has met more than 13 times
- Hosted 4 community meetings and several joint Council meetings
- Organized 3 site tours for community
- Held Site additional tours and meetings with Keyoh holders and Elders
- Issued newsletters (hand delivered to ensure coverage)

FIRST NATIONS INVOLVEMENT

First Nations are directly involved with the collecting samples for the environmental studies

FIRST NATIONS INVOLVEMENT

- Reviewed each others' studies (such as First Nations' study on consumption of country foods)
- Sampled locations and country food types identified by First Nations
- Used country food consumption rates provided by First Nations in the Human Health Risk Assessment
- Discussing ways to provide employment/contract opportunities for First Nations during reclamation work

FIRST NATIONS INVOLVEMENT

First Nations' youth constructed a trail which is a replacement for a traditional trail displaced by the mine

ENVIRONMENTAL STUDIES

Conducted a series of comprehensive environmental studies to:

- To gain a fuller understanding of mercury impacts at the site and surrounding area
- Studied air, surface waters, ground waters, sediments, soils, vegetation, large and small mammals, benthic invertebrates, insects, reptiles, plankton

April 2001

[redacted]

REGIONAL SURVEY OF FISH MERCURY CONCENTRATIONS

Pinchi Lake, BC

PREPARED FOR:

Cominco Ltd.
Vancouver, BC

PREPARED BY:

EVS Environmental Consultants
North Vancouver, BC

URS

Environmental Site Assessment

Pinchi Lake Mine Site
Pinchi Lake, British Columbia

for ***Teck Cominco Metals Ltd.***

ASSESSMENT OF SEDIMENT MERCURY CONTAMINATION PINCHI LAKE, BC

FINAL

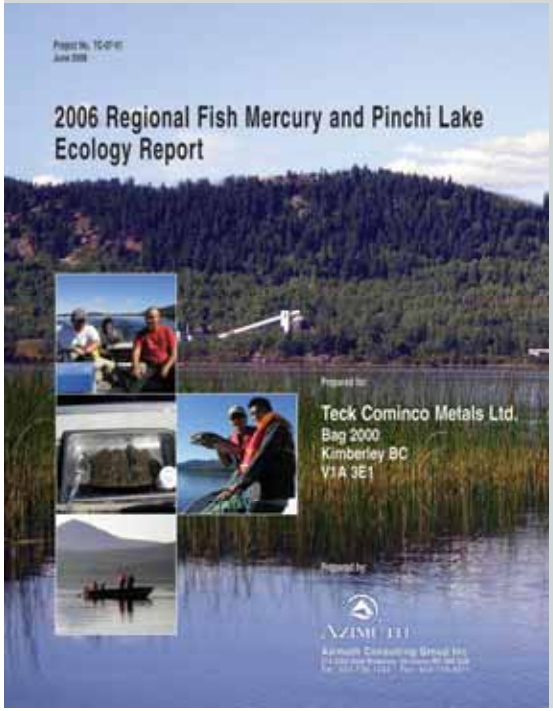
Prepared for
Teck Cominco Metals Ltd.
Bag 2000
Kimberley, BC
V1A 3E1

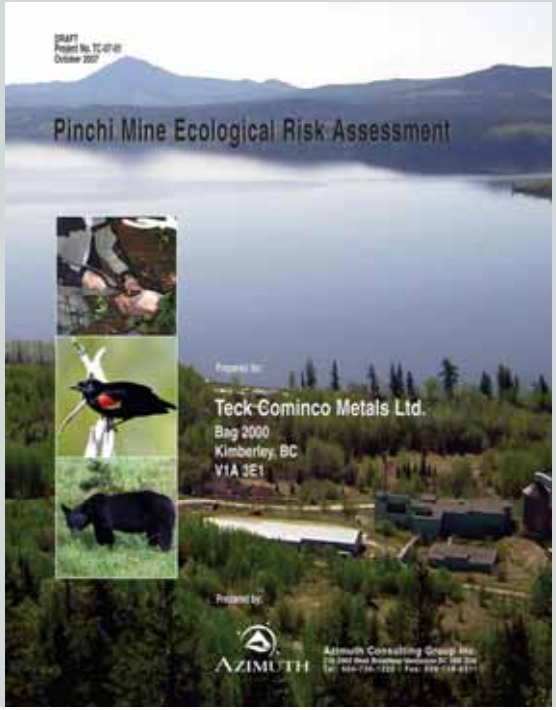
Prepared by
EVS Environment Consultants Ltd.
195 Pemberton Avenue
North Vancouver, BC
Canada V7P 2R4

Azimuth Consulting Group Inc.
210 – 2902 W. Broadway
Vancouver BC
Canada V6K 2G8

EVS Project No.	Azimuth Project No.
03-0502-48	E3-02-03

November 2002





Human Health Risk Assessment of the Pinchi Mine and Pinchi Lake Area

DRAFT FOR DISCUSSION

Prepared for:

Teck
Bag 2000
Kimberley, BC V1A 3E1

Prepared by:

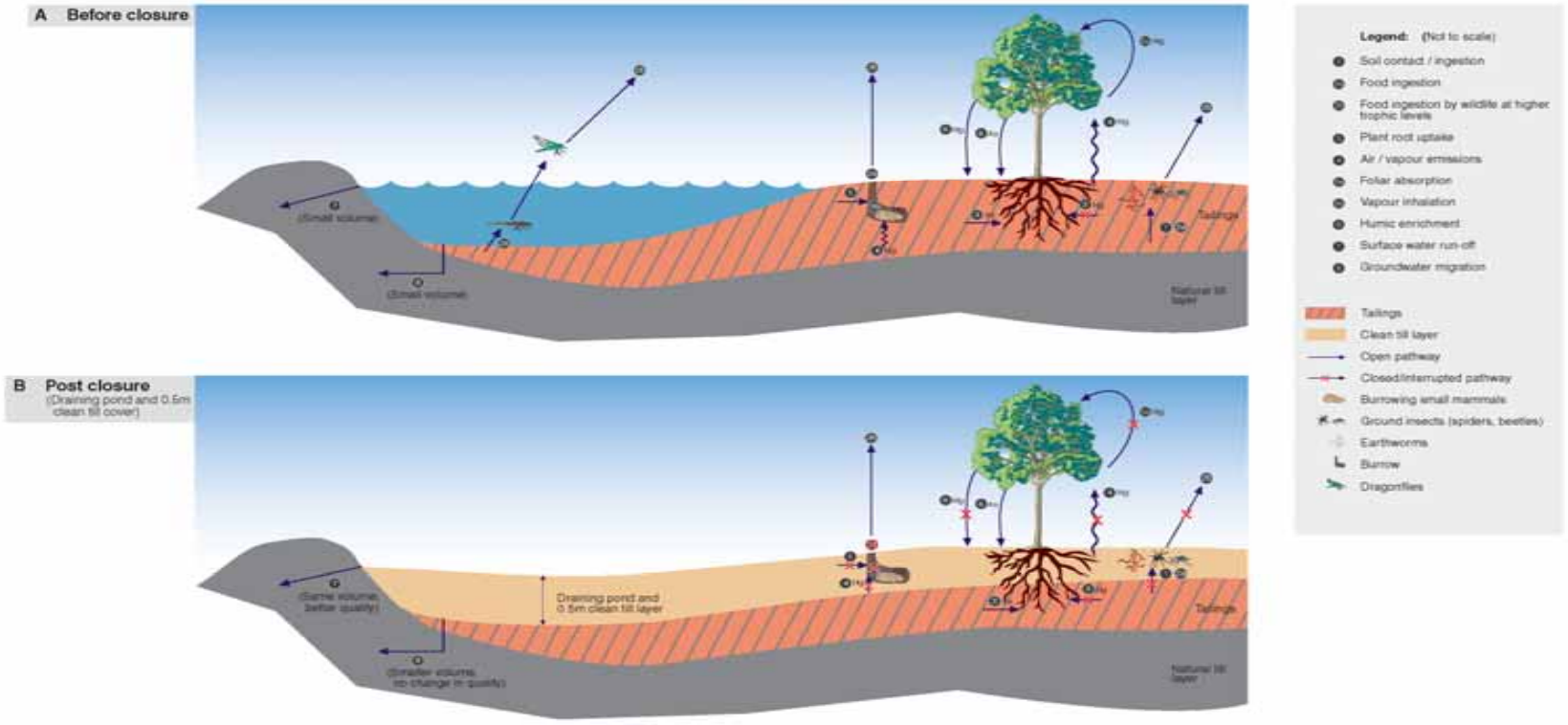
Wilson Scientific Consulting Inc.
91 West 28th Avenue
Vancouver, BC V5Y 2K7

February 2009

ENVIRONMENTAL STUDIES

Used the information to develop a comprehensive ERA that guided the reclamation planning

Figure 2. Exposure pathways of mercury (Hg) and arsenic (As) to ROCs at the Tailing Pond. Remediation focuses on interrupting pathways that mobilize As and Hg into the food chain. Pathways apply to both As and Hg, unless otherwise specified.



ENVIRONMENTAL STUDIES

ERA concludes:

- The aquatic environment of the tailings pond is the most significant source of methyl mercury on-site
- Concentrations of MHg in Pinchi Lake fish are gradually declining

HHRA concludes:

- Large lake trout and burbot in Pinchi Lake are the only two country food sources where some restrictions on consumption are recommended

DECOMMISSIONING AND RECLAMATION PLANNING

Conventional decommissioning includes:

- Seal mine portals
- Demolish buildings
- Disposal of debris (West Zone pit)
- Removal of hazardous materials (asbestos, lab chemicals, metallic mercury)
- Re-vegetation of disturbed areas

DECOMMISSIONING AND RECLAMATION PLANNING

Risk Based Decommissioning

- Identified exposure pathways and loading of methyl mercury to environment using risk based assessment
- Risk based controls are proposed (i.e. capping with low permeability till to break exposure pathways to receptors).

DECOMMISSIONING AND RECLAMATION PLANNING

Teck has received a joint letter of support of the Closure Plan from Chiefs and Councils of the Tl’azt’en and the Nak'azdli.

LONG TERM SITE MANAGEMENT

Includes:

- Maintaining controlled access to the site

LONG TERM SITE MANAGEMENT

Includes:

- Maintaining controlled access to the site
- Regular monitoring of environmental conditions

LONG TERM SITE MANAGEMENT

Includes:

- Maintaining controlled access to the site
- Regular monitoring of environmental conditions
- Conducting periodic mini ERA studies

LONG TERM SITE MANAGEMENT

Includes:

- Maintaining controlled access to the site
- Regular monitoring of environmental conditions
- Conducting periodic mini ERA studies
- Continued First Nations involvement with the monitoring

WHAT NEXT?

- Initiate process to amend existing mine reclamation permit to include the work in the Decommissioning / Reclamation Plan

WHAT NEXT?

- Initiate process to amend existing mine reclamation permit to include the work in the Decommissioning / Reclamation Plan
- This process will include communication & discussions with local community (especially the nearest neighbours to the mine site).

WHAT NEXT?

- Initiate process to amend existing mine reclamation permit to include the work in the Decommissioning / Reclamation Plan
- This process will include communication & discussions with local community (especially the nearest neighbours to the mine site).
- Initiate some of the decommissioning work this year.

THANK YOU!