Managing Legacy Mines in the Northern Territory

Presentation for Artisanal Mining Delegation
27 October 2015

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Turning Legacies & Liabilities into Opportunities & Assets
Overview

- Mining Rehabilitation Levy
- Legacy Mines Unit
- Inventory
- Remote Monitoring
- Tennant Creek
- Redbank

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Background

What do we mean by legacy mines or legacy aspects of mine sites?
Why is this an issue for the Northern Territory?

- Mining has occurred in the Northern Territory since the 1800’s. This has a number of significant legacy aspects on mine sites which can pose a risk to the natural environment and human safety. Most of these legacy sites were created before 2005 and pre-dated the Northern Territory Government’s policy of requiring operators to lodge a 100% rehabilitation security bond.

- Currently the estimated level of legacy mining liabilities for the Northern Territory is in excess of $1 billion.

What has the Northern Territory done about this?

- In 2013 the Mining Management Act was revised to require all operators to pay a 1% levy on their security. The objective of the levy is to generate the necessary funds to begin addressing historical mining impacts.
Who undertakes this work?

• This is the primary responsibility of the Legacy Mines Unit (LMU). Support is provided by other teams within the directorate including Technical Support, Environmental Monitoring Unit and Compliance.

Who is the Legacy Mines Unit?

• Four dedicated team members:
• Evan Tyrrell – Manager Legacy Mines Unit
• Joni Woolard – Senior Environmental Advisor
• Scott Downs – Environmental Engineer
• Dan McIntyre – Support Officer
# Strategic Direction 2015 - 2017

## Our Vision
To be recognised as a global leader in addressing issues and impacts arising from legacy mines.

## Our Mission
Create opportunities to build collaborative partnerships to generate and deliver projects to minimise the risks and impacts of legacy mines.

## Our Service Commitment
We aim to be seen by our partners and colleagues as committed, credible and creative.

## Legacy Mine Unit Strategic Direction 2015–2017

### Strategic Themes

<table>
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<tr>
<th>Strategic Objectives</th>
<th>Knowledge</th>
<th>Partnerships</th>
<th>Capacity</th>
<th>Projects</th>
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<tbody>
<tr>
<td>1A Establish and maintain an inventory of Northern Territory legacy mine sites</td>
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<td>3A Identify, monitor and maintain internal and external access to core capabilities required by the LMU</td>
<td>4A Prepare, maintain and update rolling forward project plans</td>
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<td>1B Undertake appropriate studies to obtain the required knowledge to inform decision making</td>
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<td>2A Identify and establish linkages with relevant groups, forums, agencies and businesses with an interest in legacy mine sites</td>
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<td>4B Ensure that the project planning process reflects the use of rigorous and transparent criteria in determining prioritisation and implementation</td>
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<td>1C Develop a library of world leading technologies, practices and case studies</td>
<td>2B Facilitate the establishment of, or link with, existing appropriate working groups in order to support regional and indigenous training, employment and enterprise development opportunities</td>
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<td>3B Implement an annual plan to ensure growth in staff capabilities including technical, project management and leadership skills</td>
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<td></td>
<td>2C Seek active membership of national and international forums focused on legacy mine issues</td>
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<td>3C Prepare contingency options for the future of the Ram Jangle Unit</td>
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### Outcomes

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<td>A register with required data, information and risk assessments for legacy mine sites in the Northern Territory</td>
<td>Constructive engagement with all potential project stakeholders with an interest in managing legacy mine sites</td>
<td>Internal and external access to all the skills and capabilities required to manage legacy mine sites</td>
<td>Competent delivery of effective legacy mine site projects</td>
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<td>Awareness of, and ready access to, current information on leading practice for legacy mine management</td>
<td>Demonstrate commitment to generating opportunities for economic participation by regional and indigenous communities</td>
<td>A staff team committed to continual growth and development</td>
<td>Highly developed and documented procedures and standards for project planning and implementation</td>
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Our Vision
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Our Mission
Create opportunities to build collaborative partnerships to generate and deliver projects to minimise the risks and impacts of legacy mines.

Our Challenge
To optimise the use of a limited resource base to address the real and potential impacts of legacy mine sites.

Our Opportunity
To maximise sustainable economic development for regional and Indigenous communities.

www.nt.gov.au/d/minerals_energy
What key projects are we working on?

- Inventory
- Remote Monitoring
- Tennant Creek region
- Redbank
The first key project for the LMU is to compile an inventory of legacy sites across the Northern Territory.

This information, along with a review of existing documentation, will be used to develop a legacy sites inventory.

When the inventory is completed, a risk based approach will be adopted to identify high risk sites.

The inventory and associated risk based assessment will be used to prioritise future activities.
The LMU operates on all legacy sites across the Northern Territory.

It can take one and a half days to travel to some sites by road, with large sections of the road unsealed and poorly maintained.

During the Wet Season the roads are closed due to high river flows at crossings making the site inaccessible for up to 5 months at a time.

This can mean that there is no visibility of what is occurring on the site during the critical wet-season period. As water management is usually the greatest issue for legacy sites in the tropics this is major shortcoming.
Remote Localities
To overcome these challenges associated with remote and often inaccessible locations, the LMU has launched a program of installing remote environmental monitoring infrastructure at a number of sites.

Commencing in 2014, monitoring equipment has now been installed at four sites across the Northern Territory, with plans for further sites over the next 12 months.
Works consisted of establishing pit water level monitoring station and small weather station, to gain better understanding of the site water balance.

At site B the pit water level had risen nearly 20 metres in 18 months – an explanation was required.
Monitoring Data

Note these two pits are only 8.3 km apart, yet are responding completely differently to rainfall and evaporations influences.
Public Safety

• Majority of the historical workings in the Tennant Creek area are within 15km of the town centre and can be accessed by existing tracks. Many of the sites can be found within 50 metres of these tracks.

• DME Officers have seen evidence of the public visiting many of these sites.

• The main risk posed is falling into workings, many of which are in excess of 30 meters deep and have loose rock/soil collars.
Public Safety

Kimberly Kids shaft 1998 & 2015

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Fossicking Area 4

- Works at Fossicking Area 4 (FA4) to remove public safety hazards were completed recently.
- 5 shafts backfilled and 1 new cover.
- Installation of new signage leading to and at FA4.
Many of the mining tenements in the Tennant Creek region are heavily infested with weeds. DME staff have been liaising with Weeds Branch to develop scopes of works to undertake the following:

- Detailed surveys and mapping of weeds occurrences on mining tenements.
- Preparation of weed management plans based on survey results.
- Implementation of weed control measures.
- Ongoing monitoring and follow-up works as required after initial weed control works.
• Scope of Works prepared for the investigation of possible human health impacts resulting from windborne dust originating from the Peko tailings.

• Study is expected to take 2 years and cost approx. $200K to complete.

• Outcome will be to determine with confidence whether dust originating from Peko tailings is, or has the potential to impact on human health.

• DME does not have any evidence of health impacts.
Open pit mining and copper ore processing was commenced at the site in 1994. Mining ceased in 1996 and the site is now under care and maintenance.

Activities at the site have resulted in water contamination issues in surface water and groundwater downstream of the site.

Water discharging from the Redbank has been observed in Hanrahan’s Creek since 1995 with recorded concentrations of heavy metals significantly above ANZECC guidelines.

Elevated contaminants (mainly Cu) have been measured in Settlement Creek at the Queensland border, approximately 40km downstream.
Redbank Mine Site
Environmental Impacts

Where 12 Mile Creek and Echo Creek meet

Echo Creek and Hanrahan’s Creek
Environmental Impacts
Environmental Impacts

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2002

2012
Groundwater Study:

- Electromagnetic Survey.
- Drilling program.
- Water monitoring and associated telemetry
Redbank Monitoring Equipment Locations

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Reducing Impacts:
- Solar Pumps.
- Groundwater interception trench
Thank You

Any Questions?