

**MINUTES OF MEETING**  
**STRATHALBYN COMMUNITY CONSULTATIVE COMMITTEE**

**Thursday 6 July 2006**

**@ 7.00 pm**

**Senior Citizens Hall, 6 Parker Street, Strathalbyn**

**PRESENT:**

Dean Brown - Chair	Ben Brazzalotto	David Bruer	Dr Fred Carrangis
Julia Currie	Barry Davis	Mike Farrier	Susan Jettner
Adrian Pederick MP	Roz Twartz	Anne Woolford, Deputy Mayor	Ian Woods

**PIRSA**

Hans Bailiht	John Morton
--------------	-------------

**TERRAMIN**

John Burgess	David Gladwin
--------------	---------------

**SPECIALISTS**

Jim Hancock – SA Centre for Economic Studies
John Burgess – Mine Closure
Public Gallery 12

**APOLOGIES:**

Paul Heithersay	Kirstie Murphy	Greg Marshall	Dr Ted Tyne
-----------------	----------------	---------------	-------------

<b>1.</b>	<p><b>WELCOME BY THE CHAIRMAN</b></p> <p>Meeting commenced with a welcome from the Chairman.</p> <p>Two presentations to happen tonight:</p> <ul style="list-style-type: none"> <li>• Economic Analysis – Jim Hancock</li> <li>• Mine Closure – John Burgess</li> </ul>
<b>2.</b>	<p><b>MINUTES OF PREVIOUS MEETING</b></p> <p>The Minutes of the previous meeting were accepted as a true and correct record of proceedings after the following changes were made.</p> <ul style="list-style-type: none"> <li>• Day of meeting should reflect Wednesday 28 June</li> <li>• 4.0 – Should read Angas Mine</li> <li>• Q33 – should read Appendix 'T'</li> <li>• 7.0 - Media reports indicated that in the Mount Barker Courier, concerns were raised as to whether general consensus has been reached on blood lead issues. The Chairman clarified the concern by stating that after an hour and a half debate, on one questioned the conclusion that blood lead levels were of no great concern. The Chairman stated that the committee brief was not to monitor the media</li> </ul>

<b>3.</b>	<p><b>BUSINESS ARISING FROM MINUTES</b></p> <ul style="list-style-type: none"> <li>• Next meeting will be the 20<sup>th</sup> and not the 13<sup>th</sup> July.</li> <li>• Response from the Minister regarding the School Representative and the TOR issues, still awaiting response.</li> </ul>
<b>4.</b>	<p><b>Economic Analysis – Deputy Director of SA Centre for Economic Studies</b></p> <p>A written report was tabled. This report will be available to the CCC in the next few weeks.</p>
	<b>QUESTIONS</b>
<b>Q1</b>	<b>What is the economic downturn at the end of the mine life?</b>
	People will require employment elsewhere. The peak is expected to be 200 extra people employed in the year 07/2008.
<b>Q2</b>	<b>Money back to Government - \$2m is this all that goes back to the government?</b>
	These are indirect taxes such as royalties and payroll tax, company tax and PAYE taxes. It was stated that more detail on the Tax side of things should be in the model.
<b>Q3</b>	<b>How much profit may be available as alternative to TSF?</b>
	This is on the corporate side and is a Stock Exchange issue and not for the CCC to address.
<b>Q4</b>	<b>Economic Analysis study should look at positives and negatives of the project, and report should be more detailed. Can you expand on this?</b>
	The model will not produce this without plugging specific issues.
<b>Q5</b>	<b>What areas are included in the region, that is stated in the report?</b>
	It is the old Strathalbyn Council District. The population figures are 2732 people live in this area according to the 2001 census. 1927 live and work in the region and 789 live outside the region but work in the district.
<b>Q6</b>	<b>Where does Research and Development fit into the model?</b>
	This is not a separate item in the model
<b>Q7</b>	<b>Usage of power, water and roads, would also have a strong impact on the model.</b>
	The natures of adjustments are more likely to be expanded and improved. Terramin explained that the electricity supply to the district would be expanded at its cost.
<b>Q8</b>	<b>In the Labour costs, has Workcover and Super been included?</b>
	Yes
	<b>END OF QUESTIONS</b>
<b>7.53</b>	<b>MINE CLOSURE – Presentation by John Burgess</b>
<b>8.08</b>	<b>QUESTIONS</b>
<b>Q1</b>	<b>Process water dam is this lined?</b>
	Yes, a double lined HDPE liner.


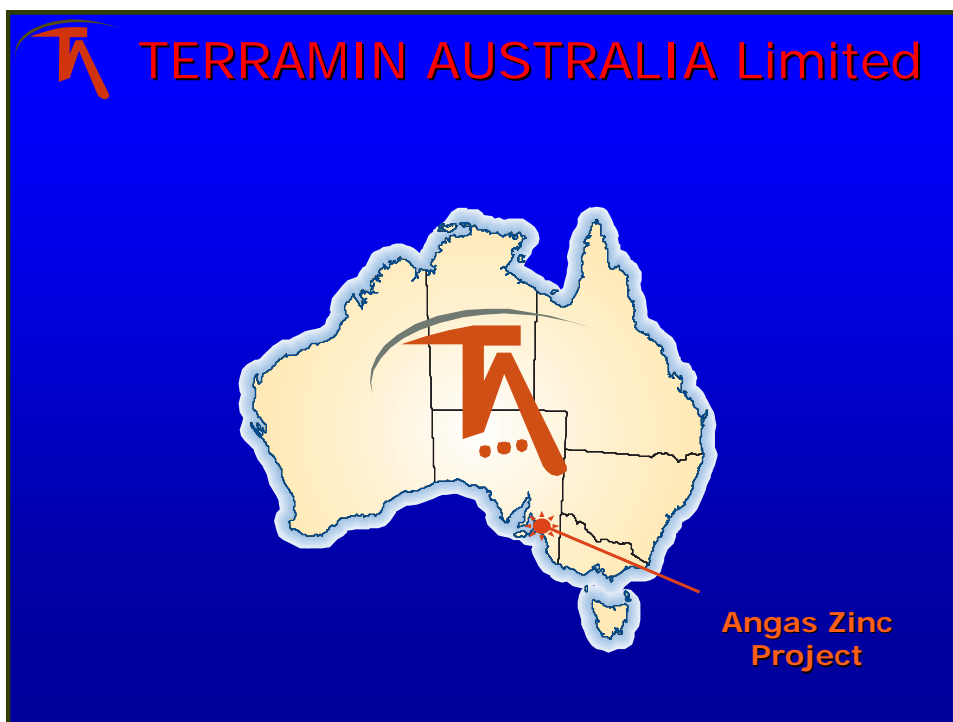
<b>Q2</b>	<b>With the closure, what toxic wastes will be washed down Callington Road?</b>
	"I don't believe there will be any toxic waste on the site. There will be natural runoff from the final rehabilitated site".
<b>Q3</b>	<b>Where will the ETSA sub station be located?</b>
	On Lot 8
<b>Q4</b>	<b>Where is the topsoil being stored?</b>
	The top soil will be saved and stored and later used for the TSF rehabilitation. This is not shown on the current layout plan, we will include this later.
<b>Q5</b>	<b>How long will Terramin own the site?</b>
	Once we purchase the land, there are no plans to sell the land at a later stage. We will monitor the site until the EPA advises that monitoring can cease.
<b>Q6</b>	<b>Should something happen in the long term, how will this be addressed?</b>
	We are genuine to hold the land for the long term.
<b>8.20</b>	<b>BREAK</b>
<b>5.</b>	<b>A BRIEF DESCRIPTION OF THE LEASE ASSESSMENT PROCESS</b>
<b>8.30</b>	<ol style="list-style-type: none"> <li>1. What are the issues to report to Minister Paul Holloway?</li> <li>2. What conditions should be on the Lease? This is a matter for the Minister to decide.</li> </ol>
	<b>TRAFFIC ISSUES</b>
<b>5.1</b>	<b>Moving the mine road entrance to the west.</b>
	<ul style="list-style-type: none"> <li>• Entrance should be where it is or further to the east.</li> <li>• 80km speed limit in front of mine site.</li> <li>• No concentrate trucks will not go though Strathalbyn</li> </ul>
<b>5.2</b>	<b>ROAD SAFETY ISSUES</b>
	<ul style="list-style-type: none"> <li>• By moving the Mine Road entrance to the west, will increase noise for nearby residences.</li> <li>• Sight distance will be improved by moving the entrance to the west</li> <li>• School Bus safety must be an issue for trucks using the Callington road.</li> </ul>
<b>5.3</b>	<b>NOISE ISSUES</b>
	<ul style="list-style-type: none"> <li>• Noise limits should be included in the MARP Document, was a point of view. Another was that as noise limits are in existing legislation, putting them into the MARP could allow the company not to comply with any improvement to the relevant legislation.</li> <li>• It is not appropriate for the mine to operate due to the noise</li> <li>• Removal of reversing beeps on the mine site – to use white noise beepers, should be enforced as a condition.</li> <li>• Crushing plant operating 7am – 7pm, approximately 320 days per year.</li> <li>• Conveyor start up sirens, how will this be resolved? Maybe with high intensity lights instead of start up sirens.</li> <li>• Noise measurement nearest non Terramin owned property</li> </ul>

<b>5.4</b>	<b>SURFACE WATER ISSUES</b>
	Water balance of the mine site was discussed. Water use from SA Water supply is not great.
<b>5.5</b>	<b>GROUND WATER ISSUES</b>
	<ul style="list-style-type: none"> <li>• 7 Year modelling - Information to be available by next meeting</li> </ul>
	<ul style="list-style-type: none"> <li>• No additional ore to be processed beyond the site that has currently been applied for.</li> </ul>
	<ul style="list-style-type: none"> <li>• ASX 9 May 2005. 14 year mine life.</li> <li>• The CCC strongly would not wish to see any additional ore processed from off the site.</li> <li>• The mine design has been based on an ore body of 2.2 million tonnes and therefore the minister should give the approval as the submitted proposal.</li> </ul>
	<ul style="list-style-type: none"> <li>• Groundwater monitoring – Should be measured regularly at least in quarterly intervals.</li> </ul>
	<ul style="list-style-type: none"> <li>• Maximum tailings should be placed underground. <b>Terramin to provide a presentation to the Committee.</b></li> </ul>
	<ul style="list-style-type: none"> <li>• There may be an issue with backfilling of tailings underground creating AMD within underground mine site once groundwater infiltrates the completed mine sits contaminating the local water. <b>Professor Jewell will be asked for an opinion.</b></li> </ul>
	<ul style="list-style-type: none"> <li>• A request to go to the Minister to extend the period of monitoring of groundwater, as two years is considered not to be long enough. Perhaps there should be some monitoring for up to 20 years.</li> </ul>
<b>5.6</b>	<b>VISUAL IMPACT</b>
	<ul style="list-style-type: none"> <li>• Site needs to be cleaned up. Terramin should maintain the property, once purchased, in a clean, neat and tidy state.</li> </ul>
	<ul style="list-style-type: none"> <li>• Light spillages from the processing plant are considered to be an issue. These need to be minimised.</li> </ul>
<b>5.7</b>	<b>NATIVE VEGETATION</b>
	<ul style="list-style-type: none"> <li>• Terramin must have a policy in place for the management of the weeds.</li> <li>• Terramin should have commenced on the quality of the proposed native planting program</li> </ul>
<b>10.00</b>	<b>NEW BUSINESS</b>
	<p><b>The following information was given as feed back information to the Committee regarding Explosives.</b></p> <p><b>1. Type and quantity of explosives</b></p> <p>At a peak production rate of say 1,500t/day, we can expect to use 750Kg/day. On top of this, we can assume 500kg/day for development headings (2x250kg). Total is 1,250kg/day or up to 1.5 tonnes per day</p>

	<p><b>2. How are we going to store the product (size of magazine).</b></p> <p>Initially we will use the surface magazine, which is limited to 10 tonne maximum capacity by the SA explosives offset regulation.</p> <p>Our underground magazine has been sized to have a 15 tonnes maximum capacity.</p> <p><b>3. Frequency of Deliveries</b></p> <ul style="list-style-type: none"> <li>• For surface magazine - once a week</li> <li>• For underground magazine - once a fortnight.</li> </ul>
<b>7.00</b>	<b>NEXT MEETING</b>
	<p>Issues to be discussed will be:</p> <ul style="list-style-type: none"> <li>• Greenhouse gas issue</li> <li>• Additional Tailings storage underground</li> <li>• Box-cut, can tailings be located here on completion of mining?</li> <li>• Emergency responses</li> <li>• 7 year groundwater conde modelling</li> <li>• Complete discussion on issues and assurance requested for operation of the mine.</li> </ul>
	<p><b>Next Meeting Date:</b></p> <ul style="list-style-type: none"> <li>• Thursday 20 July 2006 – 7pm</li> </ul>
<b>8.</b>	<b>MEETING CLOSED – 10.05 pm</b>

## ACTION LIST

Date of Meeting	Item no:	Issue	Action Required	By Whom
28 June	3.	<ul style="list-style-type: none"> <li>• I. Woods questions submitted, requires answers</li> <li>• School Nominations &amp; TOR – Question sent to Minister</li> </ul>	Still awaiting response from the Minister .	Chair
28 June	Q2	No <sub>2</sub> , how does this effect greenhouse load	Terramin report with this information	
28 June	Q5	Does the same blasting standard apply here as at the Stawell Mine?	Terramin to report to the Committee on this.	
28 June	Q16	If required PIRSA can discuss the issues of exempt land at a later date		
28 June	Q21	What are the greenhouse gas effects from blasting?	Terramin don't know at this stage and will have to report to the committee with this information.	
28 June	Q33	In MARP document, has Appendix 'T' been upgraded from the April 2006 version?	Terramin will table answer at the next meeting.	
6 July	5.5	Maximum tailings should be placed underground.	Terramin to provide a presentation to the Committee.	
6 July	5.5	There may be an issue with backfilling of tailings underground creating AMD within underground mine site once groundwater infiltrates the completed mine sits contaminating the local water.	Professor Jewell will be asked for an opinion.	Hans Bailiht
6 July	5.5	A request to go to the Minister to extend the period of monitoring of groundwater, as two years is considered not to be long enough. Perhaps there should be some monitoring for up to 20 years.	A request to go to the Minister to extend the period of monitoring of groundwater	Chair



## **The Angas Zinc Project: Closure Plan**

**The aim of this presentation is to provide stakeholders with a clear image of the process and outcomes of the Angas Zinc Project with respect to closure related issues**

- Overall closure plan using Risk based approach
- Based on discrete Domains each with specific closure plans
- This is a work in progress and will involve the CCC over the coming years.



## **The Angas Zinc Project: Closure Objectives**

- **Development of beneficial landscapes.**
- **Protection of the environment and public health and safety by using safe and responsible closure practices.**
- **Reduce or eliminate adverse environmental effects once the mine ceases operations.**
- **Establish conditions which are consistent with predetermined end land use objectives**
- **Reduce the need for long-term monitoring (i.e. constructed landforms made safe and stable in both a geotechnical and geochemical areas).**



## **The Angas Zinc Project: Closure Objectives**

- **Ensure the process of mine closure and lease relinquishment occurs in an orderly, cost-effective and timely manner.**
- **Ensure that future risks and liability issues with the site have been eliminated or are controlled to an acceptable level.**
- **Development of an integrated, holistic and fundamentally risk based closure plan, provide opportunities, anticipate threats and provide a structured framework for closure.**





## Closure Methodology

- **Adopted Minerals Council of Australia Strategic Framework for Mine Closure**
  - Stakeholder involvement, planning, financial provision, implementation, standards and relinquishment
- **Each domain was assessed with respect to;**
  - Rehabilitation, decommissioning, re-mediations, geotechnical assessment, landform establishment, re-vegetation, aesthetics, heritage, health and safety and post closure maintenance



## Domains





## Northern Domain (Effluent ponds)

- **No operational impact on this Domain**
  - Effluent ponds/Tuckers Swamp
  - Significant remnant habitat: River Red Gums, Lignum shrub
- **To be preserved in current condition**

### Proposed End Use

- To remain unaltered



## Buffer Domain

- **Only operational impact on this Domain**
  - Establishment of ETSA sub station
- **To be preserved in current condition**
  - ETSA sub station is likely to remain for future nearby land subdivision.

### Proposed End Use

- To remain unaltered



## End Use Possibilities

- **Southern Domain - TSF**
  - Rangeland/grazing
  - Parkland (showpiece for environmental rehabilitation)
  - Relocate Model Aeroplane club
  - Sewage Effluent Ponds (close existing ponds)
  - Car Park to support Central Domain
- **Central Domain - Boxcut**
  - Parkland (showpiece for environmental rehabilitation)
  - Return to a Quarry Operation
  - Return to a Landfill area
  - Amphitheater for musical functions
  - Industrial Park
  - Water park recreation area



## Central Domain (Boxcut & Plant)

- The implementation of the re-vegetation plan will ensure that the area will be restored to a level significantly better than the pre-mining condition
- Rehabilitation will encompass
  - Removal of infrastructure
  - Fill portal access under Callington Road
  - Cap Portal & Vent Rise
  - Rehabilitate roadways
  - Removal of water dams

### Proposed End Use

- Parkland (showpiece for environmental rehabilitation)



## **Southern Domain (Tailings Storage Facility)**

- The implementation of the re-vegetation plan will ensure that the area will be restored to a level significantly better than the pre-mining condition
- Rehabilitation will encompass
  - Removal of infrastructure
  - Installation of impervious cover liner
  - Earthworks – reshaping, topsoil, sowing
  - Capping of decant tower

### **Proposed End Use**

- Parkland (showpiece for environmental rehabilitation)



## **Closure Criteria**

A bond will be lodged at the commencement of mining based on rehabilitation needs for the site. Main areas for remediation up will be as follows:

- Tailings storage facility
- Infrastructure on site
- Decline portal
- Process water dam
- Site roads/tracks

The bond is to be set by PIRSA once Mining Lease granted.



## Closure Monitoring

- Disturbed areas to be restored to or better than pre-mining levels – visual amenity
- Soil productivity restored
- Ground water levels will equilibrate to pre-mining levels in terms of both metal ions and water table level
- Dust deposition in terms of both mass & lead levels will remain at pre-mining levels



## Closure Outcome

- **Outcome**
  - Upon mine closure, the site, including the Tailings Storage Facility is to be left in a stable, non-polluting state. The site will be returned to a land use, consistent with the Strathalbyn development plan and determined in conjunction with the Community Consultative Committee.
- **Criteria**
  - include no change to surface or groundwater physico-chemical properties beyond background levels, replanted vegetation to be self sustaining, and the Tailings Storage Facility to be geochemically and hydrologically stable, as agreed to quantifiable standards determined in consultation with PIRSA and the EPA.



## Stakeholder Involvement

Community involvement in the development of a closure strategy which minimises impact on the local community while fulfilling obligations to stakeholders.

– Involvement via CCC



## Revegetation program

Highlighted areas are the domain based plans for the revegetation plan



# Economic Impact of the Angus Zinc Mine

Jim Hancock  
Deputy Director  
South Australian Centre for Economic Studies

6 July 2006  
Strathalbyn

## Direct economic impacts of AZM

### Yearly averages to 2013-14:

- Production - \$44m
- Direct employment – 63 fulltime equivalent employees (53 in mine and processing, 11 in construction)
- Capital investment - \$ 9 m

## Residence patterns of local employees

### Proportion of Strathalbyn workers who:

- Live in region – 71 %
- Live outside region – 29%

(2001 census)

SA Centre for Economic Studies  
Adelaide and Flinders Universities

## Cost structure of production (\$m p.a.)

Local goods and services	2.0
“Imported” goods and services	23.9
Labour residing locally	3.2
Labour residing out of the region	1.4
Depreciation, interest costs and equity returns	19.8
Taxes	2.0

SA Centre for Economic Studies  
Adelaide and Flinders Universities



## Flow on effects

- Spending on local goods and services induces incomes and jobs in local suppliers
- Local jobs give rise to household incomes, part of which are spent locally
- Local jobs mean that government provides services which are purchased locally
- These influences are subject to 2<sup>nd</sup>, 3<sup>rd</sup>, 4<sup>th</sup> round effects and so on (getting smaller and smaller)
- The economic impact analysis adds up all of these indirect impacts on activity

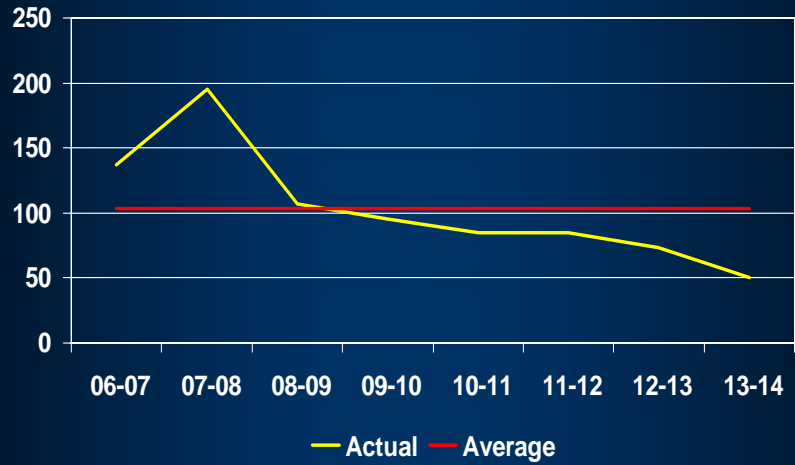
SA Centre for Economic Studies  
Adelaide and Flinders Universities

## Average annual employment demand

Direct effect	Effect via AZM local goods and services purchases	Effect via AZM local goods and services purchases plus labour inputs
63	87	103

SA Centre for Economic Studies  
Adelaide and Flinders Universities

## Total employment demand by year



SA Centre for Economic Studies  
Adelaide and Flinders Universities