

## Community Consultative Committee Meeting Minutes

**Bowdens Silver Pty Limited  
("Bowdens")****Exploration Community Consultative  
Committee (CCC)****Meeting Minutes** Tuesday 9<sup>th</sup> May, 2017**Independent Chairperson:** Margaret MacDonald-Hill**Minute Taker:** Sally Mayberry**Next Meeting:** Early September TBA

Meeting Commenced: 4:15 pm

Meeting Ended: 6:58pm

**Attendees:**

Margaret MacDonald-Hill (*Chairperson*)  
Jaime Flynn (*Dept. Planning- DRG*)  
Councillor John O'Neil (*MWRC*)  
Julie Robertson (*MWRC*)  
Mick Boller (*LAG Representative*)  
Sonia Christie  
Tony Sheridan  
Tom Combes  
John Lydiard  
Keith Perrett (*Chairman Silver Mines Limited*)  
Anthony McClure (*Managing Director Silver  
Mines Limited, Bowdens Silver P/L*)  
Jane Munro (*Bowdens Silver P/L*)  
Sally Mayberry (*Bowdens Silver P/L*)

**Invited Guest Speakers**

Phillipa Duncan (*Dept. Planning and  
Environment*)  
Rose-Anne Hawkeswood (*Dept. Planning and  
Environment*)

## Community Consultative Committee Meeting Minutes

Agenda Topic	Discussion
Welcome	The Chair declared the meeting open
Apologies	Brett Maker
Declaration of Interest	Margaret MacDonald-Hill (MMH) no change from previous declarations; paid position as the independent Chair; also chairs a number of CCC's and is a Member of the Mine Subsidence Board.
Business arising of previous minutes	<p>Discussion regarding Minutes and the acceptance of previous months' Minutes. Chair confirmed that this is an advisory committee, minutes have now been finalised from November and March meetings.</p> <p>Action items from previous meeting:</p> <ul style="list-style-type: none"> <li>• Peer review funding – peer reviews are to be instigated by the Government and not by the Company. Department of Planning and Environment provides further detail regarding independent reviews. Following the submission of the EIS, if issues arise that would benefit from having an expert review, the Government can request an independent review. Some community groups have funded their own studies and provided that advice to government.</li> <li>• Historical noise monitoring locations – the map shown in the last meeting was historical and not representative of current noise locations.</li> <li>• Historical groundwater data onto the website is an ongoing, long term project.</li> <li>• Dam capacities for both tailing and water capture alternatives – it has recently been confirmed that the eastern dam will be a water dam of capacity 1.2 gigitalitres. The tailings storage on the western side will have capacity for 24.6 million cubic metres storage.</li> <li>• The purpose of two small dams shown on the previous draft mine site layout – they are no longer proposed, but on current plans there are two new small dams to the southern extent of the site that are on-site water capture dams.</li> <li>• EEC offsets – the process of determining the biodiversity offsets is done by government (a complex scientific model is run). All information has been gathered to run the model by Bowdens' consultant ecologist, which will determine biodiversity offset sizes and types.</li> <li>• Community Information Day was held on Sunday 7<sup>th</sup> May at Lue Hall.</li> </ul> <p>Discussion regarding a tabled presentation regarding Lue landowners from the March meeting. Chairperson was not aware of the presentation prior to the meeting and was unable to determine the validity and privacy concerns of the document beforehand. It was noted that the document was also based on historical information from the previous owners. It was accepted for distribution to the Committee but not beyond.</p>
Correspondence	<ul style="list-style-type: none"> <li>• Chair noted there had been two further requests for observers and reminded committee they had been denied as these are not public meetings.</li> </ul>

## Community Consultative Committee Meeting Minutes

	<ul style="list-style-type: none"> <li>7/5/2017 emails from J Lydiard, S Christie and M Boller setting out questions from community members.</li> </ul>
<b>Presentation on Lue village</b>	Lue village and surrounds presentation – (slides attached to the appendix). A video was shown that was taken by T Combes demonstrating the quiet and lack of light. Also shown is Rylstone Olive Press's new promotional video.
<b>Role and resources assessment process</b>	<p>Department of Planning and Environment presentation to the CCC (slides attached to the appendix). A minimum 6-week exhibition period will be held, with a public meeting and consultation with relevant landowners and special interest groups to hear their concerns.</p> <p>The Minister will refer the project to the Planning Assessment Commission under delegation if the number of submissions is greater than 25 objections, if the relevant Council objects or if the company makes a reportable political donation.</p>
<b>Project Update</b>	<p>Presentation attached to the appendix comprising an exploration update, further presenting the Company's policy development and summary details from the Community Information Day</p> <p>A McClure commented that the Lue Public School bore had been drilled and thanked the school and also thanked M Boller for recommending the Company to the school for these works.</p>
<b>General Business</b>	<p>Chair confirmed that questions tabled by CCC members for Bowdens Silver to answer and Government where relevant, will be in writing in a timely manner.</p> <p>Bowdens Silver states that relevant, valid questions will be answered. Vexatious, harassing and offensive communications will no longer be responded to.</p> <p>Comment regarding the success of the Community Information Day and request for more frequent ones, with more notice beforehand.</p> <p>Comment on possible Lue Road intersection locations- community concerns from residents on Donnelly's Hill.</p> <p>Departmental update: Department of Resources and Energy has moved from the Department of Industry to the Department of Planning and Environment and is now called Division, Resources and Geoscience. The division is responsible for, assessment of titles (exploration), NSW Geological Survey and the environmental sustainability unit which looks after rehabilitation matters and bonds.</p> <p>Chair referred to a Notice of motion by M Boller regarding community guidelines. This had already been addressed by both Government representatives. A commonsense approach would be undertaken, where applicable, relevant guidelines will be followed. It was further reiterated that the CCC is an advisory committee only.</p>

## Community Consultative Committee Meeting Minutes

**Table 1: Questions and comments arising during the meeting and additional clarification**

Question	Answer and Comments
What is the daily consumption projection for water that Bowdens will need during operation?	2ML per day of captured water and up to 2 ML of site-recycled and pit/ground water.
1.2GL – where does that water come from? Where is it stored?	The water storage dam will capture and store surface runoff in accordance with water licencing. In addition, recycled water and pit/ground water is planned to be utilised.
Who looks after the needs of the people who are most affected by any project – people who live in the towns/properties. Which department looks after their concerns and interest?	The Minister for Planning is the consent authority for the application. The Dept of Planning and Environment is obliged to consider a range of aspects in assessing the merits of the project, including the requirements under the <i>Environmental Planning and Assessment Act</i> that requires consideration of the economic, social and environmental impacts of the project. The assessment process includes consideration of advice from the relevant Government agencies responsible for implementing various other legislation and policies. The assessment process also includes a range of statutory considerations that set strict guidelines and assessment criteria. The Department also carefully considers the concerns of the community raised in submissions.
What is the exhibition period for the EIS?	The exhibition will be more than the statutory requirement of 30 days and will be a minimum of 6 weeks.
Community consultation question regarding written responses to questions.	The information has been presented at open days with experts to answer questions, and will be provided as information comes to light/decisions are made regarding the mine operation. The EIS will be thorough and cover the questions in concern. In addition to the Company's Q&A portal, the Company and consultants are compiling a list of primary concerns and comments from stakeholders generated from interviews, open day and other sources. These items will be answered and distributed to all stakeholders in further follow up.
How many people attended the Bowdens Silver open day on 7 May 2017?	Approximately 50-60.

Community Consultative Committee Meeting Minutes

## **Attachment 1**

Lue village and surrounds presentation

Community Consultative Committee Meeting Minutes

## **Attachment 2**

Department of Planning and Environment presentation

Community Consultative Committee Meeting Minutes

## **Attachment 3**

Bowdens Silver Project Update presentation



LUE PUBLIC SCHOOL

ESTABLISHED LOOWEE 1871

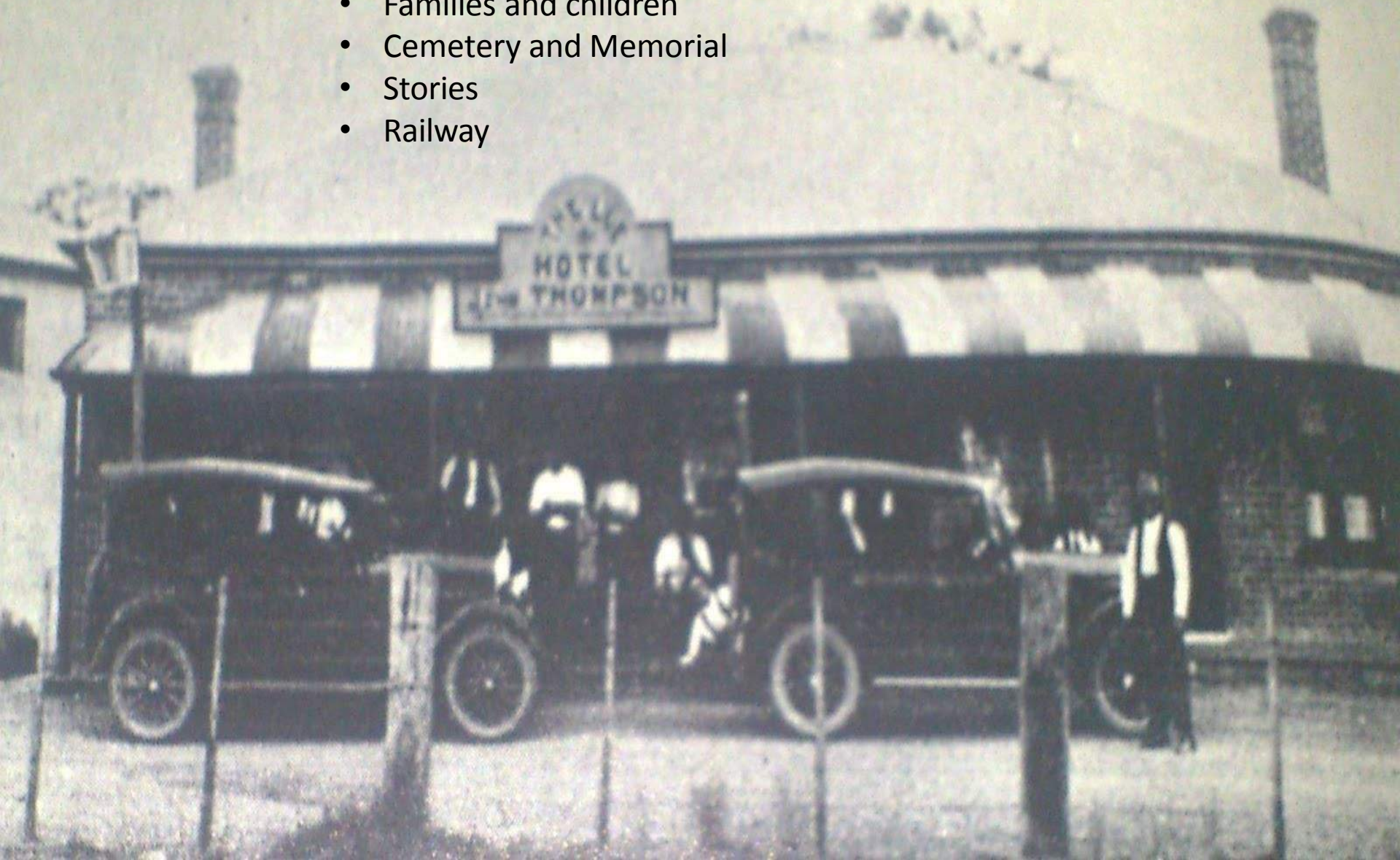
THIS SITE 1912

## **LUE VILLAGE AND SURROUNDS FROM A LOCAL PERSPECTIVE**

- **A Vibrant Community Worth Keeping**

## HISTORY

- Settlement
- Original Homesteads
- Residences
- Families and children
- Cemetery and Memorial
- Stories
- Railway





## **A Conversation with Lue - 30 April 2013**

**A community consultation evening by Mid Western Regional Council**  
...to inform Council how they would want to shape the future of Lue in light of the possible changes that may occur should the Kingsgate Bowden Project proceed.

### ***Lifestyle***

*“keep change to a minimum”, “keep community spirit”, and “pride in where we live”.*

..significant emphasis on maintaining the current safety of the area both in terms of potential social impacts as well as environmental threats such pollution of both the air and water.



For more information  
contact Mid-Western  
Regional Council

PO Box 156  
Mudgee NSW 2850  
86 Market Street MUDGEY  
109 Herbert Street GULGONG  
77 Louisa Street RYLSTONE  
Ph: 1300 765 002 or (02) 6378 2850  
Fax: (02) 6378 2815  
email: council@midwestern.nsw.gov.au

# *A Conversation with Lue*

**Tuesday 30 April 2013 6.30pm – 7.30pm Lue Hall**

There is potential for significant change for the village of Lue. Mid-Western Regional Council understands the importance of managing this change to ensure the sustainable future of Lue, and the satisfaction of the Lue community.

What's on your wish list? Council invites all residents and community members to share your vision. How would you like Lue to look and feel?

With a clear understanding of how the local community would like Lue to change, Council can represent Lue and negotiate on your behalf.

The input of the local community is invaluable in shaping the future of the village in the face of potential change.

Please come along to share your wishes and ideals for the future of your community. The focus of the conversation will be on the positive future of Lue.

To discuss Kingsgate Bowden's silver mine project, please attend the project open day from 10am to 3pm on Saturday 27 April at Lue Hall.

## ***Growth***

Whilst the community clearly identified the desire to retain a strong and sustainable school the general indication was that growth should be kept to a minimum with any growth to be well planned and have a minimal impact on the character of the area.

## ***Infrastructure***

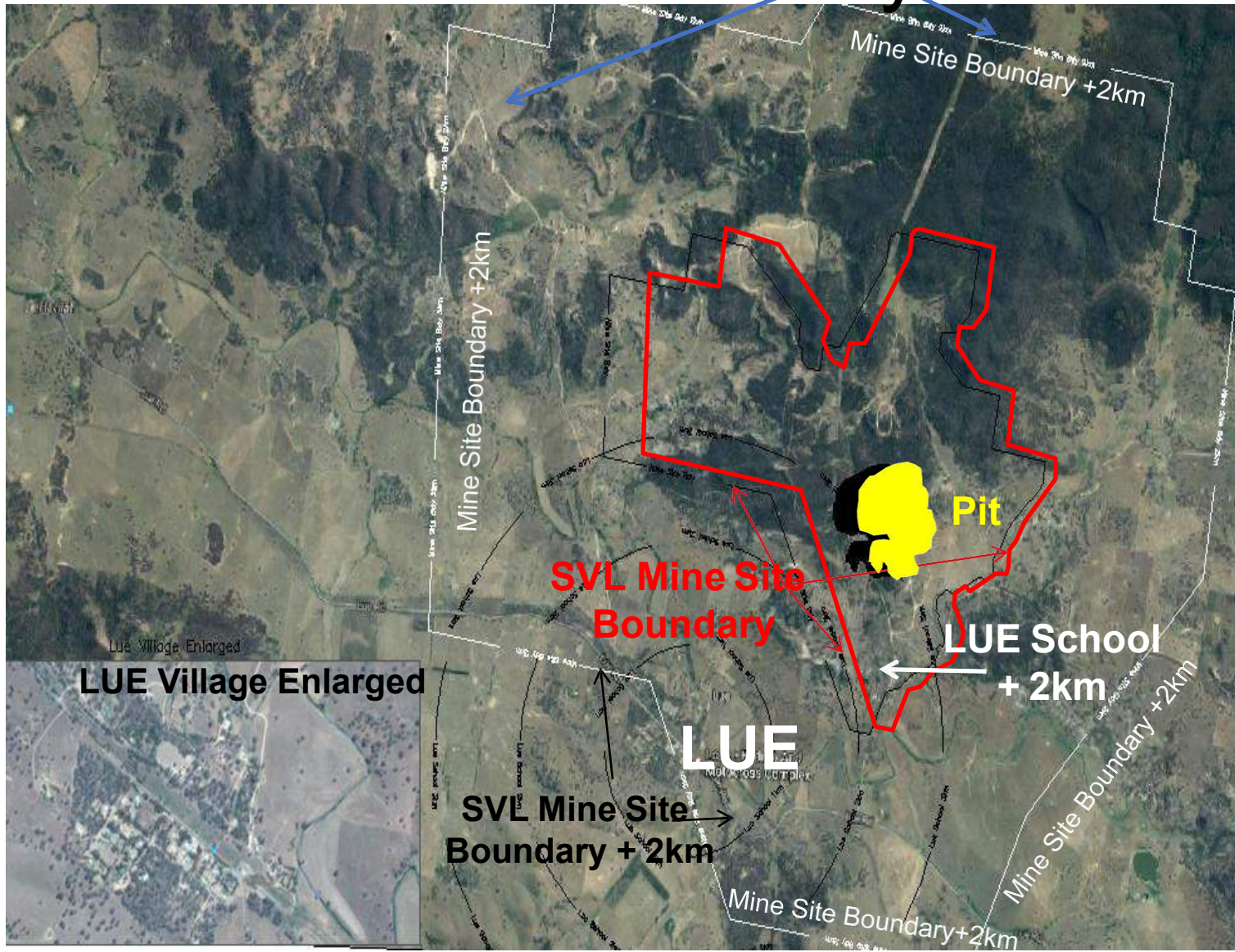
The group identified a number of facilities that they wish to retain such as the waste transfer station. A number of areas for potential infrastructure improvement related to upgrade of Lue Road, sealing of village roads and security of a clean water supply.

## ***Planning Process/ Mine Impacts***

These issues related to the processes for the mine application and other planning process. Requests included consultation with the historical society, noise monitors, lead testing, pollution control, and buffer zones. There was also a concern that protection should be afforded to other existing industries in the area including tourism and agriculture.

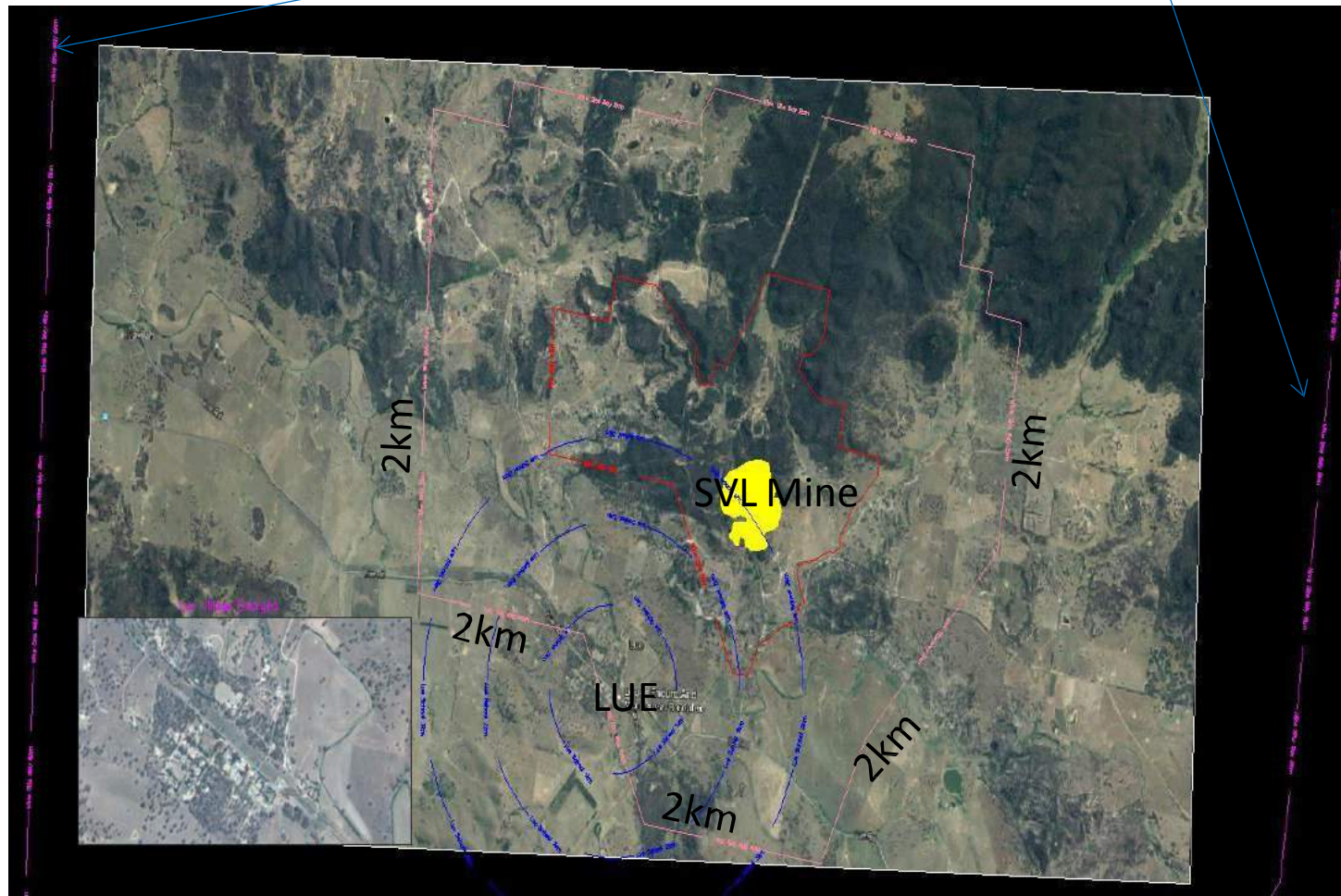
# SVL IMPACT on Lue Village & Surrounds

## Mine Site Boundary +2km

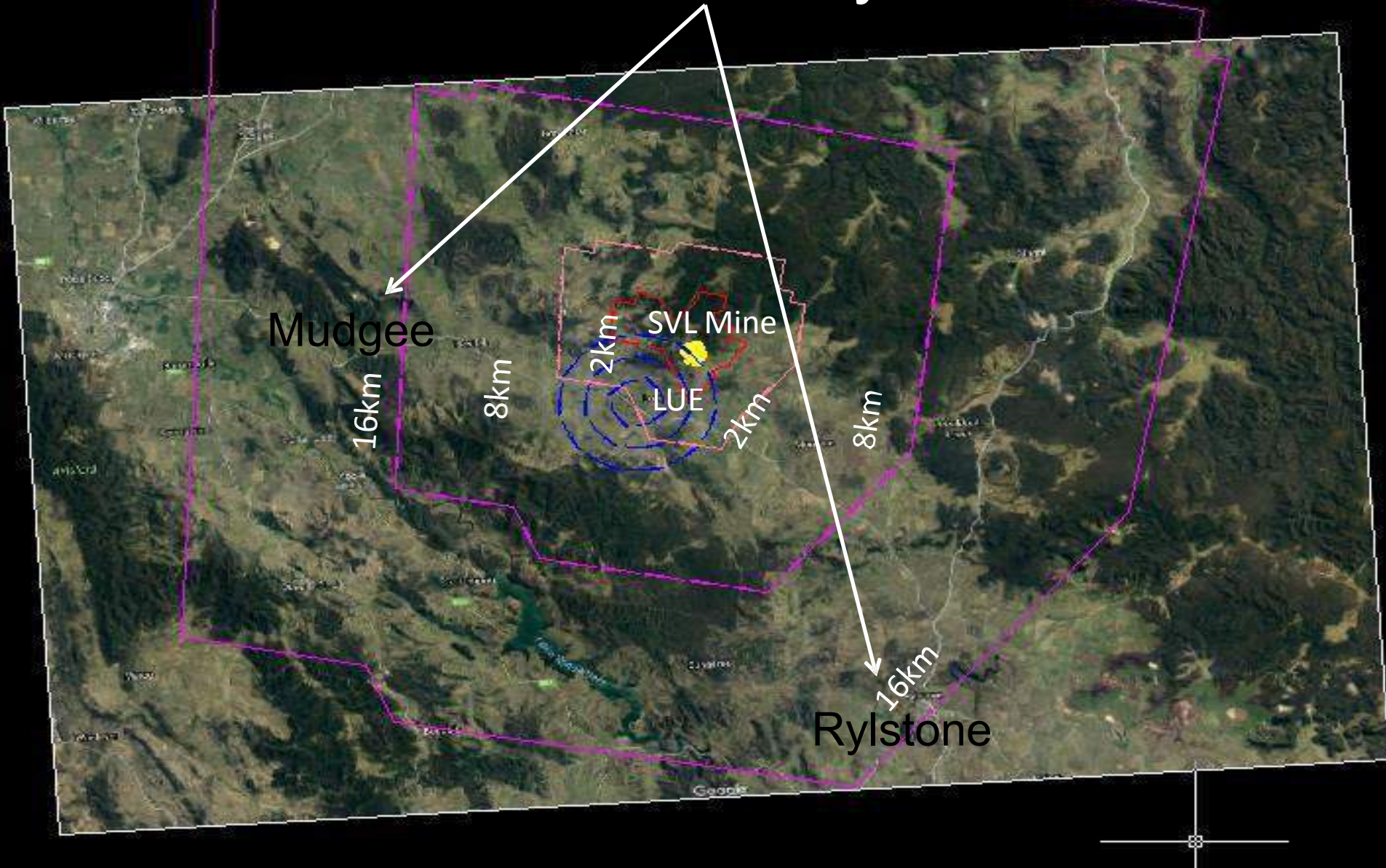


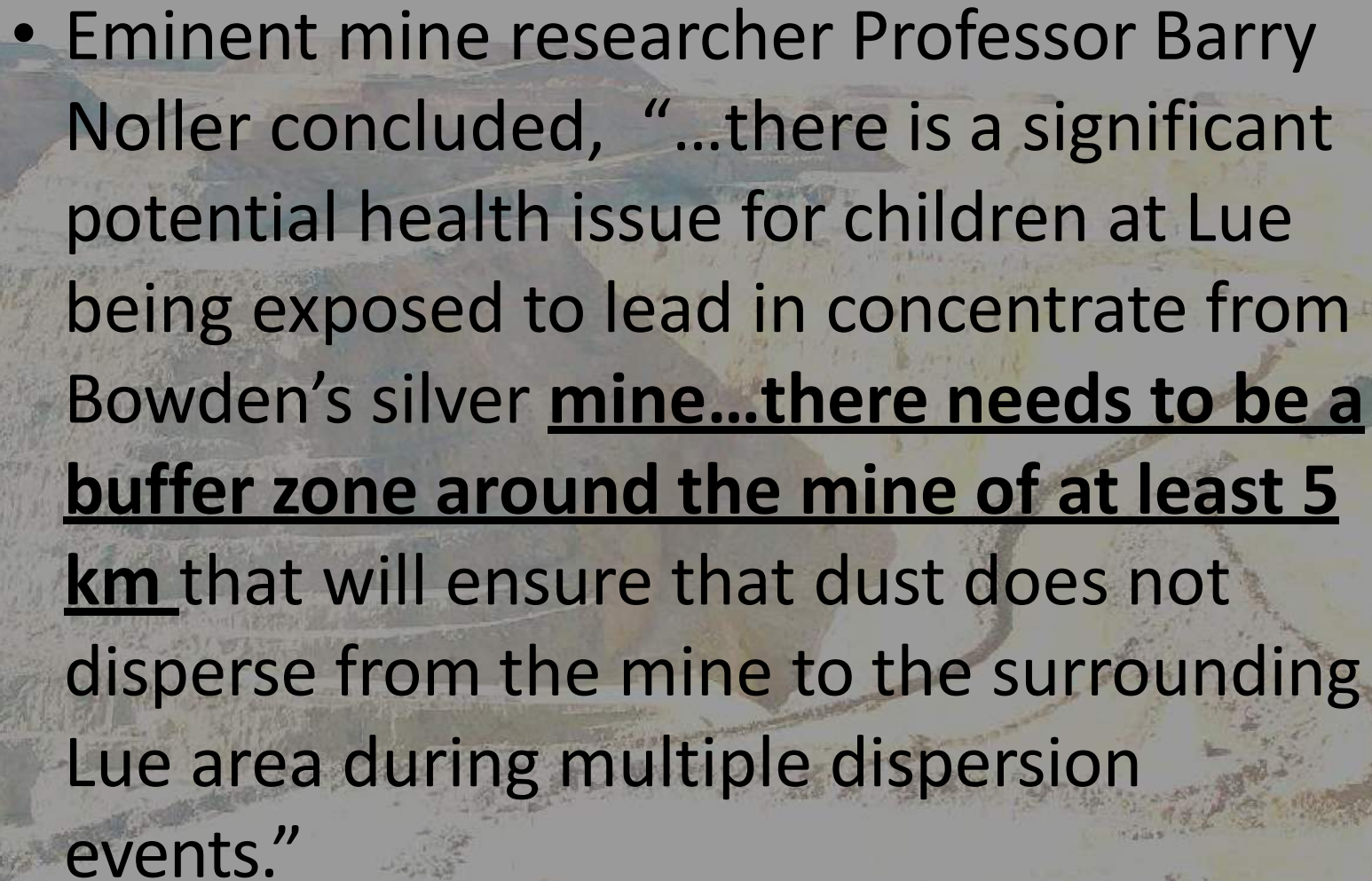
# SVL IMPACT on Lue Village & Surrounds

## Mine Site Boundary + 8 Km



# SVL IMPACT on Mudgee & Rylstone Mine Site Boundary +16km



- 
- Eminent mine researcher Professor Barry Noller concluded, “...there is a significant potential health issue for children at Lue being exposed to lead in concentrate from Bowden’s silver mine...there needs to be a buffer zone around the mine of at least 5 km that will ensure that dust does not disperse from the mine to the surrounding Lue area during multiple dispersion events.”



# LUE PUBLIC SCHOOL

At 2.5kms well  
within this 5km  
buffer zone



# Lue's Multiple Diverse Sustainable Businesses



# RYLSTONE

OLIVE PRESS





Winner at the New York International Olive Oil Competition gaining an international reputation of one of the finest, freshest and most sought after oils in the world.

## RYLSTONE

OLIVE PRESS



We have consistently won trophies for over 15 years as our micro climate of olive growing is similar to Tuscany

WE ARE VERY PROUD OF OUR ACHIEVEMENTS & HAVING THE VERY BEST OLIVE OILS IN THE WORLD

**Acceptable levels of lead in olive oil - zero**

Slide inserted in order to include link below from  
Rylstone Olive Press

<https://vimeo.com/215930815/c26888da7f>



  
**LOUEE**  
ENDURO & MOTOCROSS COMPLEX



## Accommodation - Lue Station



## LUE STATION

150 years of sustainable agriculture. What will the effect of lead dust be on a clean, green product.?

## Elephant Mountain Guesthouse and Vineyard





**NagelsTables**



**Grassfed Bara Beef**



**Camping**



**Nagel Sculptures**

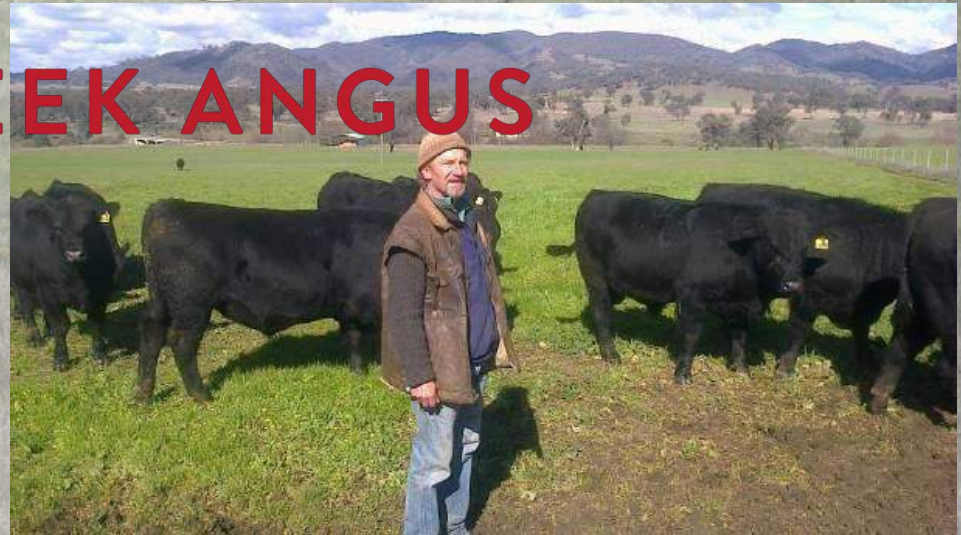
Our mission at Coffin Creek is to produce quality Angus genetics highly suited to the local environment.

The ecological approach is also one of minimal chemical inputs that seeks to improve water and soil quality at all times.



**zcc**

**COFFIN CREEK ANGUS**



# Lue Pottery



LUE  
POTTERY





## EAST RIDGE OLIVE GROVE



# The Rare Art of 'Chinese Penjing', the Ancestor of Japanese Bonsai can now be studied in LUE, just 20km from Mudgee centre with **The Lingnan Penjing Academy of Australia.**





## **AGRICULTURE – A BOOMING INDUSTRY – The land that sustains you!!**

- Grazing businesses practising sustainable regenerative agriculture and reliant on clean, green credentials for their EU accreditation and Russian eligible status.
  - Some of these Lue properties/businesses are also members of the WLI Grazing Group.
  - Many have reticulated stock water and are reliant on secure groundwater systems.
- This involves many properties in the Lue area such as Lochiely, Lue Station, Monivae, Monivae West, Havilah, Havilah North, Eastwood, Glendos just to name a few.**
- Agriculture is a big employer here.**





**Lue's Multiple Diverse Sustainable  
Businesses**

**OR**

**One Environmentally Dangerous and  
Economically Risky One**



# **NOISE or lack thereof currently!!**

- play video

(video has been added to website as separate item)

# WATER

Dr Haydn Washington, Visiting Fellow at UNSW and specialist on heavy metal pollution of inland waterways. “Dust pollution can take place for at least a couple of km from site.

Remember, heavy metals can *never* be destroyed, they stay there forever on site. If dust gets on roofs it gets into water tanks, if it gets into gardens it will get into vegetables.

Children absorb 10 times more lead than adults, and it attacks brain cells.”

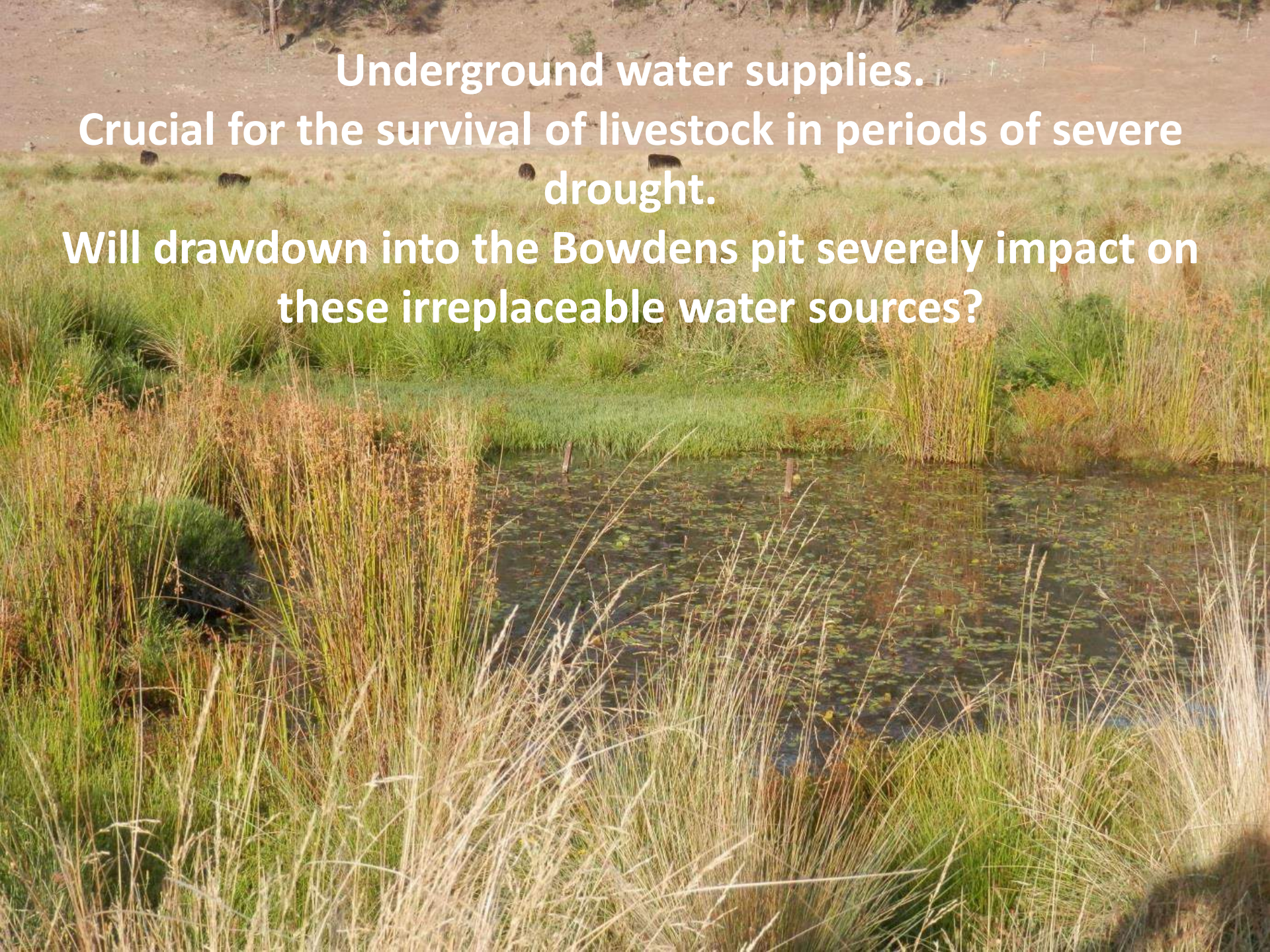


**Underground water sources – crucial for  
continuing, sustainable Agriculture**

**Underground water supplies.**

**Crucial for the survival of livestock in periods of severe drought.**

**Will drawdown into the Bowdens pit severely impact on these irreplaceable water sources?**





**Flood event in Hawkins Creek upstream from the proposed development at Bowdens.**

**What happens if there is a 1: 100 year flood event?**



**2nd moderate flood event in Hawkins Creek.  
Upstream of proposed development at Bowdens.**



**2<sup>nd</sup> moderate flood event upstream of proposed development at Bowdens. 2017**

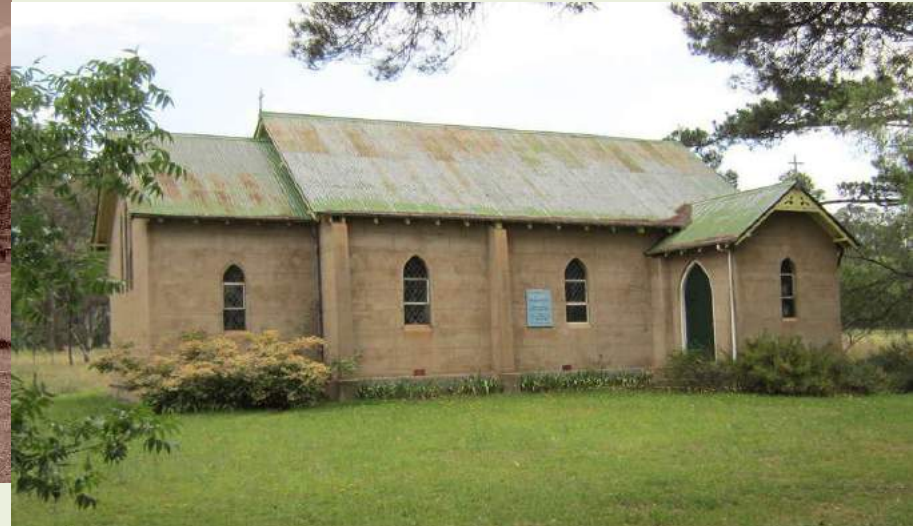




**Businesses such as agriculture working in  
conjunction with biodiversity**

Angus cross cow, with little mate – “Goorari”

# Facilities and Infrastructure



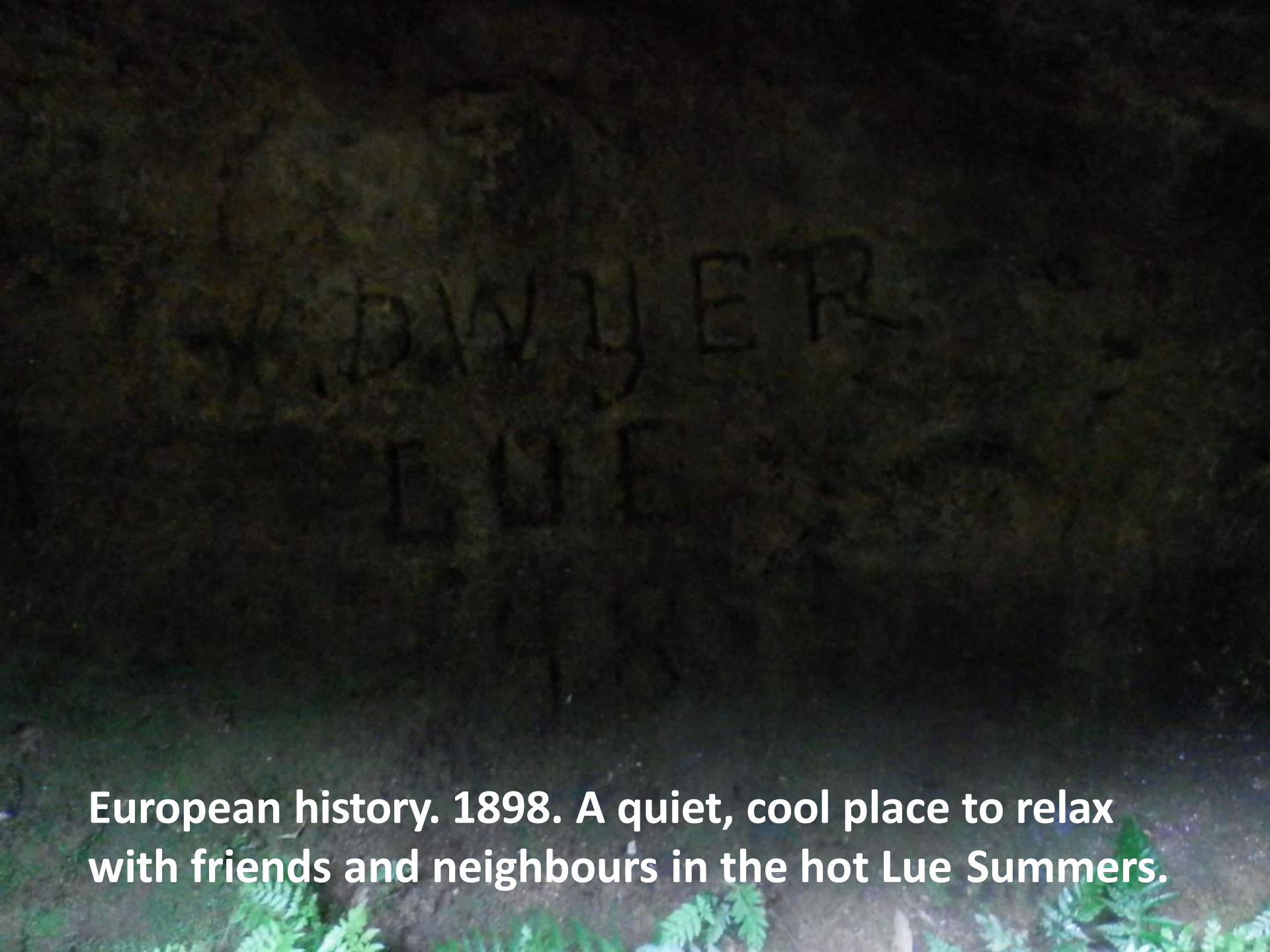


Priceless reminders of a 40,000 year old culture which flourished in this area

## European Cultural Heritage

All that remains of pioneer Powell/Johnstone homestead on “Rock Valley”





European history. 1898. A quiet, cool place to relax  
with friends and neighbours in the hot Lue Summers.



**Herbert Myles Powell Memorial Headstone. KIA at Polygon Wood (Passchendaele) 30<sup>th</sup> September 1917**

*6/10  
Certificate Copy  
C.A. 10 11 52-10*

AUSTRALIAN



MILITARY FORCES.

# AUSTRALIAN IMPERIAL FORCE.

## Attestation Paper of Persons Enlisted for Service Abroad.

No.

*2464*

Name

*POWELL Herbert Myles*

Unit

*6 Coy*

Joined on

*APR 15 1919*

*DEPT*

### Questions to be put to the Person Enlisting before Attestation.

1. What is your Name? ..... *HERBERT MYLES POWELL*
2. In the Parish of *Kylestone* ..... in or  
near the Town of *Kylestone* .....  
in the County of .....
3. Are you a natural born British Subject or a  
Naturalized British Subject? (N.B.—If the  
latter, papers to be shown.) ..... *Natural*
4. What is your age? ..... *24 yrs*
5. What is your trade or calling? ..... *Turner*
6. Are you, or have you been, an Apprentice? If so,  
where, to whom, and for what period? ..... *NO*
7. Are you married? ..... *N.C.*
8. Who is your next of kin? (Address to be stated) ..... *Thomas Powell  
Larbert, Work Valley  
Dist. N. S. W.*
9. Have you ever been convicted by the Civil Power? ..... *NO (L.V.E.)*
10. Have you ever been discharged from any part of His  
Majesty's Forces, with Ignominy, or as Incon-  
rigible and Worthless, or on account of Con-  
viction of Felony, or of a Sentence of Penal Ser-  
vitude, or have you been dismissed with Disgrace  
from the Navy? ..... *NO*
11. Do you now belong to, or have you ever served in, His  
Majesty's Army, the Marines, the Militia, the  
Militia Reserve, the Territorial Force, Royal Navy,  
or Colonial Forces? If so, state which, and if not  
now serving, state cause of discharge ..... *NO*
12. Have you stated the whole, if any, of your previous  
service? ..... *No*
13. Have you ever been rejected as unfit for His Majesty's  
Service? If so, on what grounds? ..... *No*
14. Do you understand that no Separation Allowance will  
be issued in respect of your service beyond an  
amount which together with Pay would reach  
eight shillings per day? ..... *Yes*
15. Are you prepared to undergo inoculation against smallpox  
and enteric fever? ..... *Yes*

I, *Herbert Myles Powell* ..... do solemnly declare that the above answers made  
by me to the above questions are true, and I am willing and hereby voluntarily agree to serve in the Military  
Forces of the Commonwealth of Australia within or beyond the limits of the Commonwealth.

Our European Heritage

Key Biodiversity Areas (KBA) are 'sites that contribute to the global persistence of biodiversity', including vital habitat for threatened plant and animal species in terrestrial, freshwater and marine ecosystems. They are also of particular importance to the private sector, in providing 'watch lists' of sites at which development activities require a particularly high level of scrutiny to avoid negative impacts on biodiversity.

**KBAs are the most important places left for life on Earth**



**It should be noted that critically endangered White Box-Yellow Box – Blakely's Red Gum Grassy Woodland and Derived Native Grassland will be cleared for this project.**

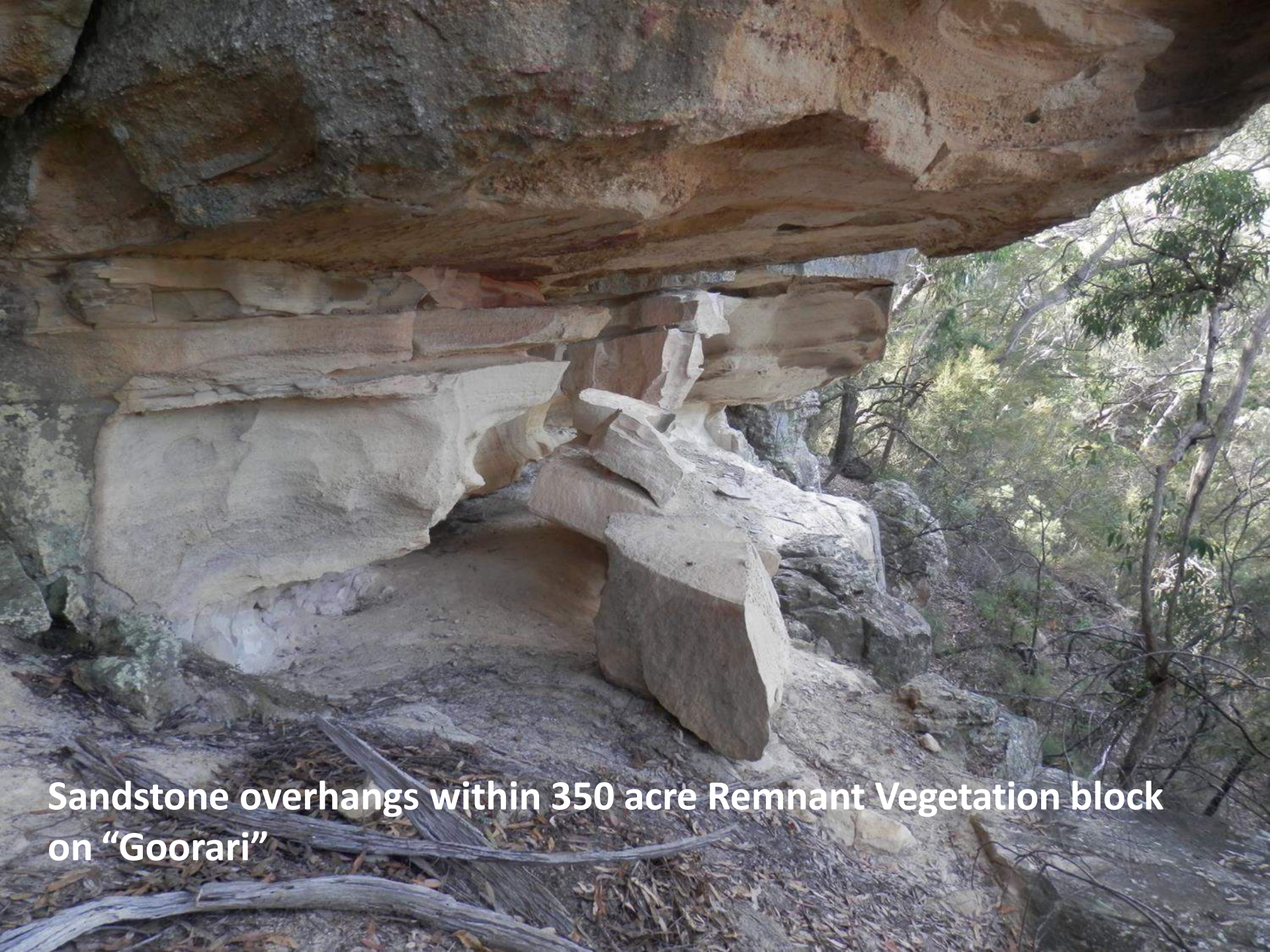


**Private Landholders protecting the environment**

**Just one example:**

**Remnant vegetation Fencing (100 acre block) incorporating 147 and 149.**

**350 Acres in the Powells Road protected in total**



**Sandstone overhangs within 350 acre Remnant Vegetation block  
on “Goorari”**



**Native Red Grass stand flourishing on the Round Mountain**

Yellow-Tailed Black  
Cockatoos  
on "Goorari"





Olive-Backed Oriole – “Goorari”.

# Double-Barred Finch

Photographed Lue





## **Diamond Firetail**

**A vulnerable bird species thriving in the Lue area**



**Most recent validated koala sighting  
1/4/2014 (by Deb Robinson, Lue)**

# Why are metals a potential problem?



- Environmental metals and metalloids easily absorbed into the human body.
- Exposure occurs in 3 main ways:
  - Consumption of produce grown in contaminated soil
  - Ingestion of soil, dust, paint
  - Inhalation of soil and dust
- Young children most at risk - higher absorption; more hand - mouth activity.
- Can cause adverse neurocognitive and behavioural outcomes.

# Lead toxicity – No safe level

## Blood lead guidelines

1968 International study 80 µg/dl →

Pre-1970 CDC 60 µg/dl →

1980 WHO 40 µg/dl →

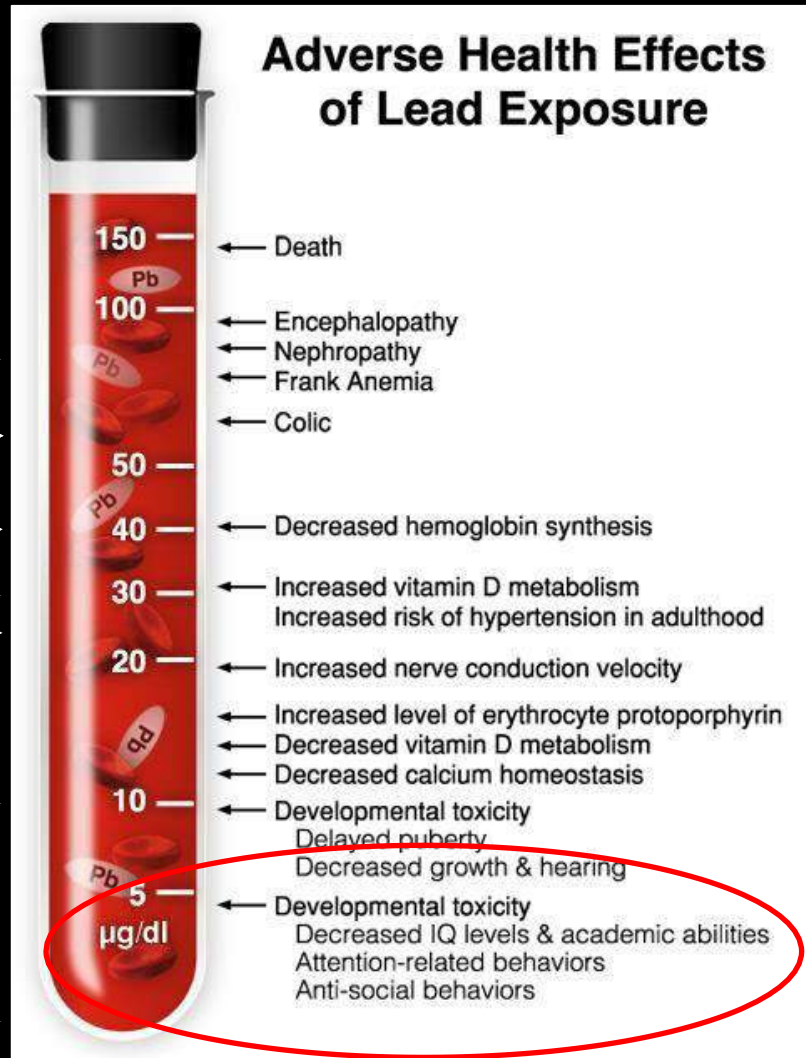
1978 CDC 30 µg/dl →

1983 Australia 25 µg/dl →

1993 NHMRC (Australia) 10 µg/dl →

2015 NHMRC 5 µg/dl →

Pre-industrial humans 0.016 µg/dl →



# Intergovernmental Agreement on the Environment 1992 (Australia)

## SCHEDULE 4 - NATIONAL ENVIRONMENT PROTECTION MEASURES

### General Purpose (objectives)

(i) that people enjoy the benefit of equivalent protection from air, water and soil pollution and from noise, wherever they live;

(ii) that decisions by business are not distorted and markets are not fragmented by variations between jurisdictions in relation to the adoption or implementation of major environment protection measures.

# **Globally - Clear statement that there is no safe level**

- WHO (World Health Organisation)
- German Biomonitoring Commission
- US Centers of Disease Control
- US EPA
- Health Canada

**As you can see the costs  
are far outweighing the  
benefits to the Lue  
Community**



# Bowdens Silver Project

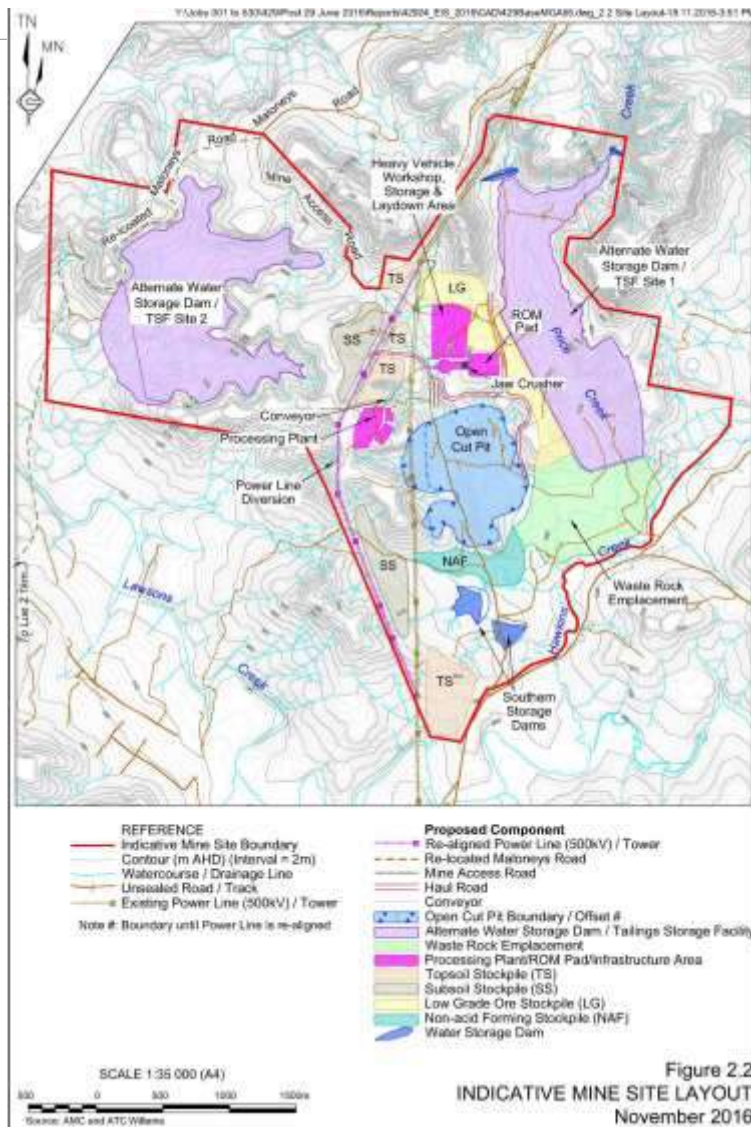
## DPE presentation to CCC

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Planning &  
Environment

# Bowdens Silver Project



# Statutory Context

- State Significant Development – EP&A Act
- NSW Minister for Planning – Consent Authority
- Determining Authority – TBC
- Commonwealth – EPBC Act (TBC)
- Other Approvals
  - Mining Lease
  - EPA Licence
  - Water Licences

# Assessment Process



# Assessment Process

- Exhibition
- Assessment
  - Department of Planning & Environment
  - Council
  - Other NSW Government Agencies (e.g. EPA)
  - Independent Experts (TBC)
- Determination

# Community Engagement

- DA lodgement and notification
- Exhibition + Submissions
- Community Information Sessions
- Meetings with Landowners
- Meetings with Special Interest Groups
- Community Consultative Committee



# Further Information

[www.majorprojects.planning.nsw.gov.au](http://www.majorprojects.planning.nsw.gov.au)

Email: [phillipa.duncan@planning.nsw.gov.au](mailto:phillipa.duncan@planning.nsw.gov.au)

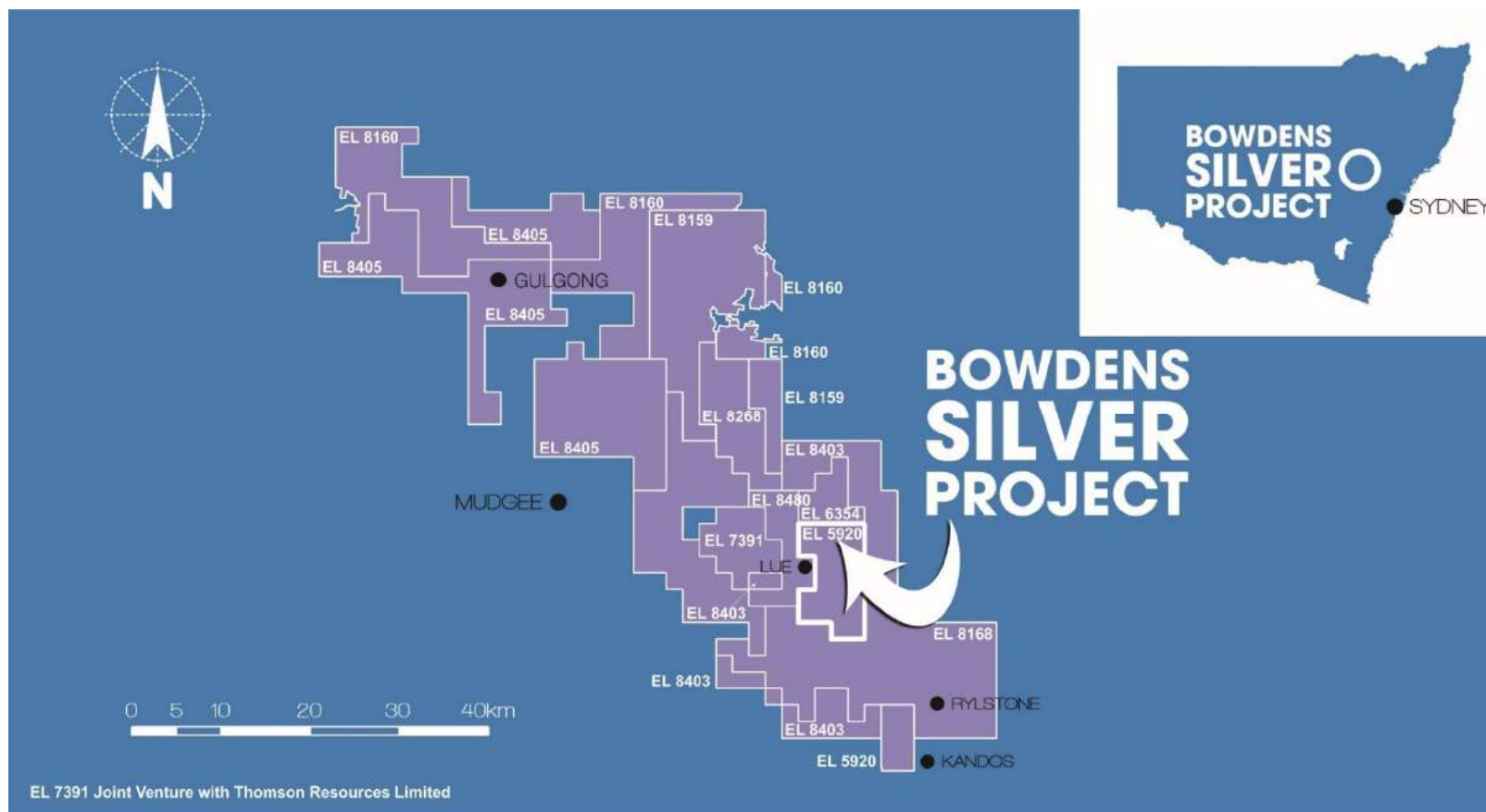


# ***BOWDENS*** **SILVER**

***Community Consultative Committee***

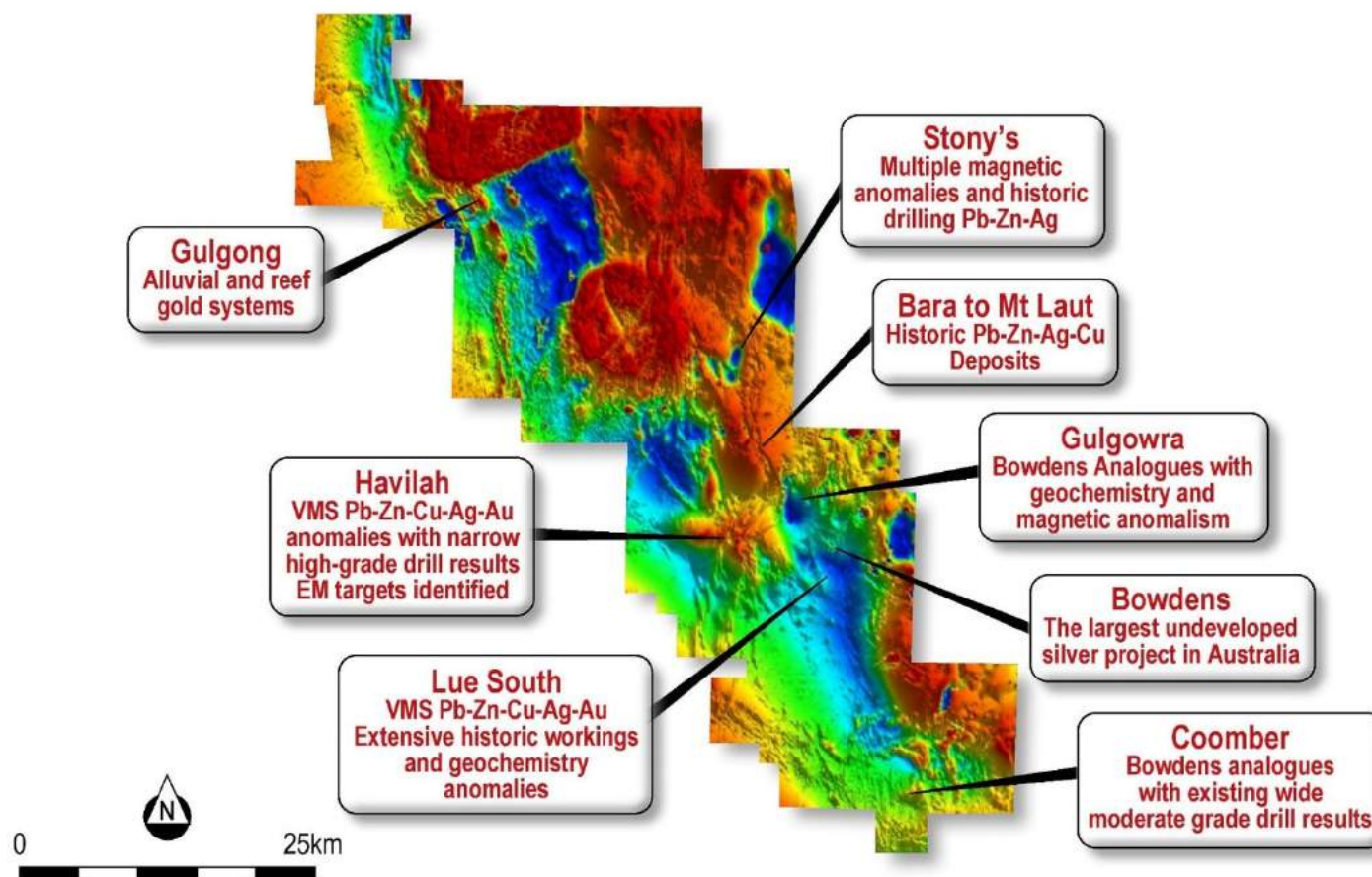
***9<sup>th</sup> May 2017***

# BOWDENS SILVER PROJECT



# BOWDENS SILVER PROJECT

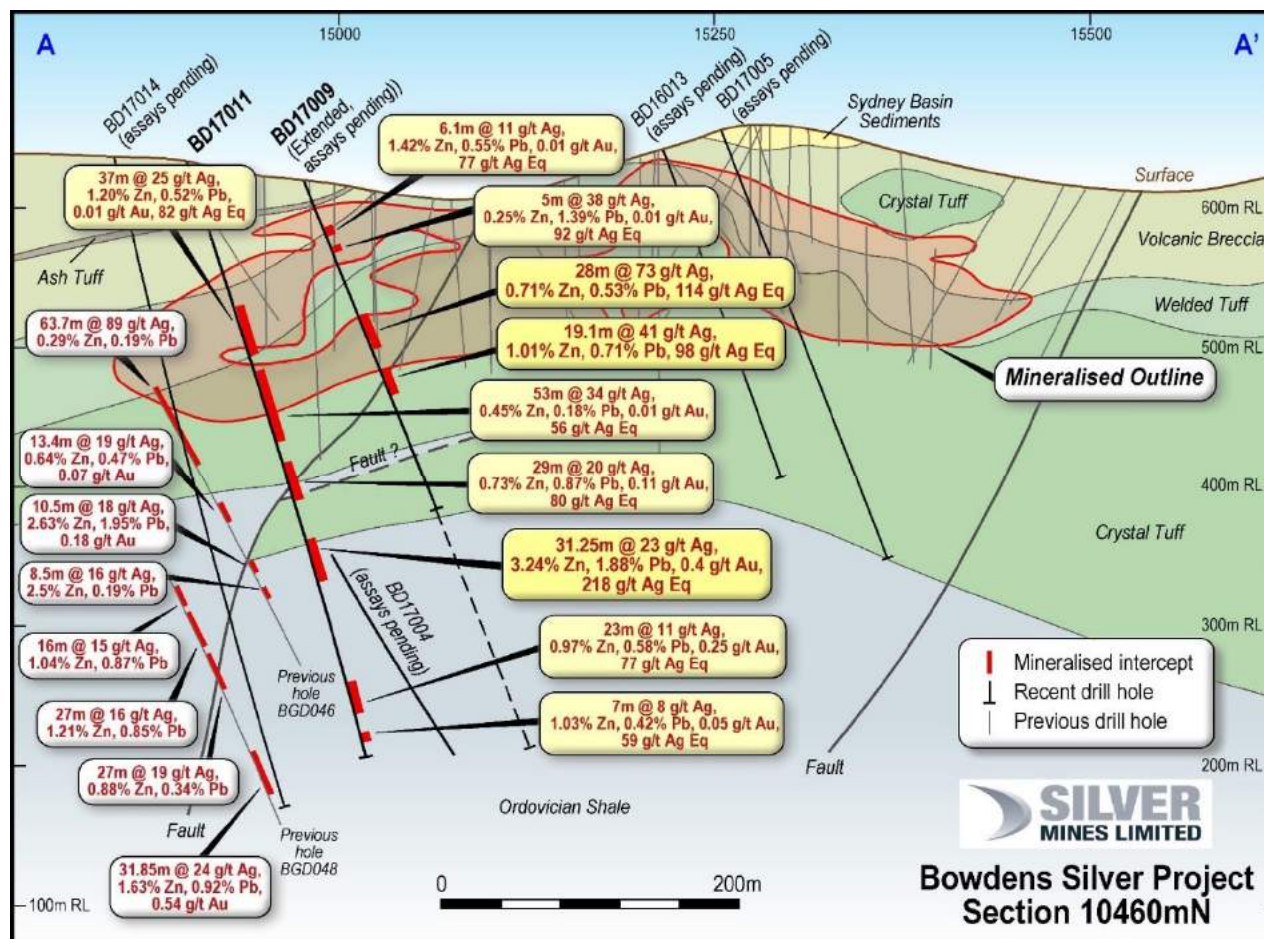
## CURRENT & POTENTIAL EXPLORATION TARGETS



**BOWDENS**  
SILVER

# BOWDENS SILVER PROJECT

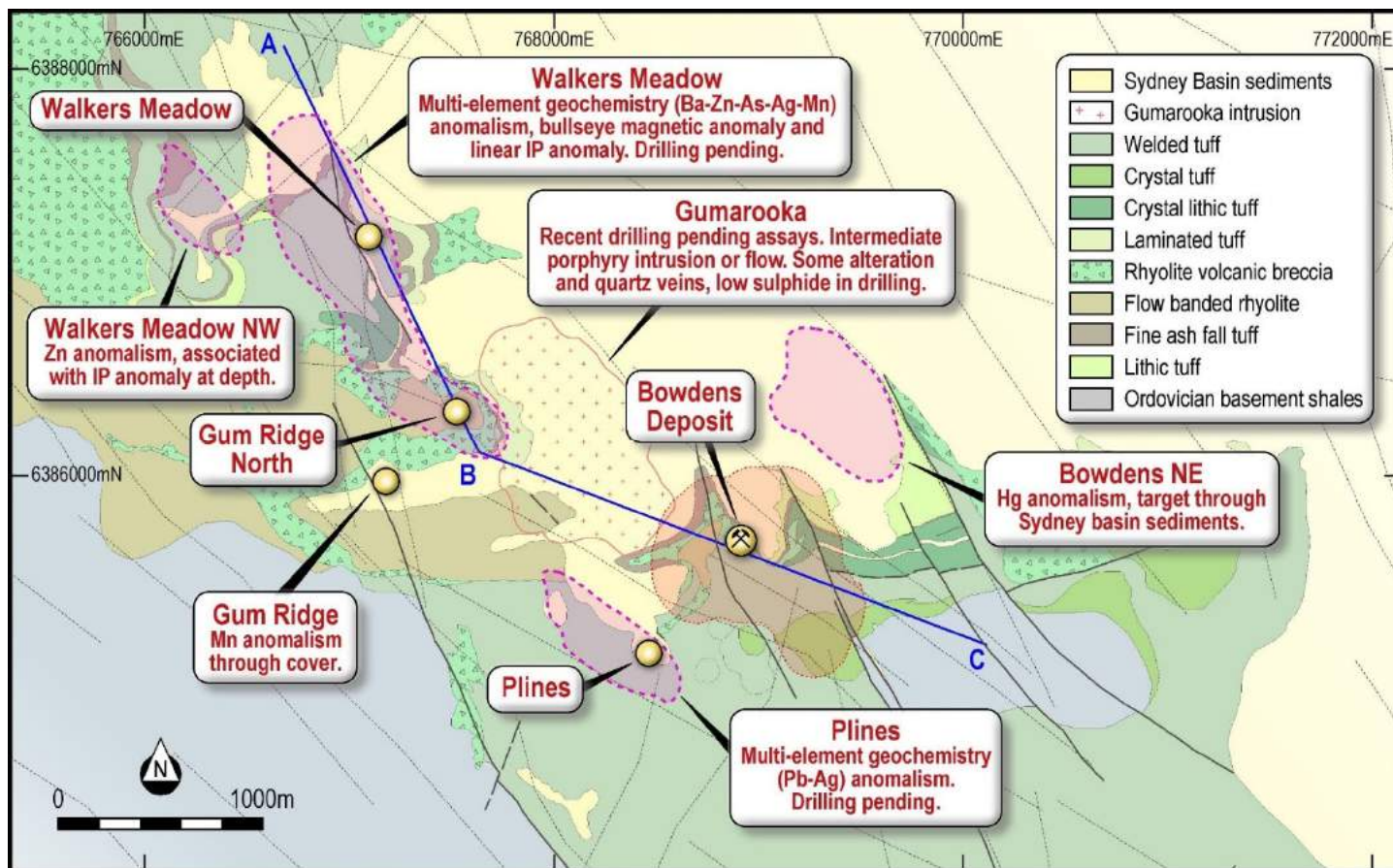
## CURRENT EXPLORATION ACTIVITIES



**BOWDENS**  
SILVER

# BOWDENS SILVER PROJECT

## CURRENT EXPLORATION ACTIVITIES



**BOWDENS**  
SILVER

# BOWDENS SILVER POLICY DEVELOPMENT

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Major environmental and community items of policy development as part of the Environmental Impact Statement (EIS) include;

- A continued “Open Door” policy for all interested stakeholders and community members.
- The protection and continued strong viability of the village of Lue for community members to reside in, socialise in, work in and be proud of.
- Health and safety protection for the community is the most critical issue.
- EIS will be detailed, clear and concise on health and safety.
- Independent continuous monitoring of health and safety (including lead) of the community and staff.
- Availability of on-site medical emergency assets for the community.
- Continual open reporting locally on health and safety issues.

# BOWDENS SILVER POLICY DEVELOPMENT

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Continued...

- Protection of surface and ground water resources for the village of Lue and surrounds.
- No mining encroachment on Lue village from the Bowdens Silver site.
- Highest mitigation standards and procedures with regards to noise, dust and visibility issues.



**BOWDENS**  
SILVER

# BOWDENS SILVER POLICY DEVELOPMENT

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Continued...

- Consideration of night-time mining activities as part of noise and visibility concerns.
- Site access from west of Lue will substantially minimise traffic through Lue village.
- Local availability of Bowdens Silver water resources for neighbours in drought periods (if available).
- Several homesteads on site to be upgraded and populated.

# BOWDENS SILVER POLICY DEVELOPMENT

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Continued...

- Comprehensive fire strategy on-site with full availability water resource, equipment and personnel for local community and authorities.
- Priority given to local employment including local employment training programs.
- Priority given to local business and services.
- Current strong education policy will expand with local public schools, high schools and tertiary institutions.
- Current strong sponsorship and partnership policy will continue with a clear focus on local activities and sports.
- Development of local charity and support programs .
- Responsible land management strategy including pest and weed eradication.



# **COMMUNITY INFORMATION DAY**

## **LUE COMMUNITY CENTRE**

**7<sup>th</sup> MAY 2017**

(selection of posters see detail at company website)

**BOWDENS**  
**SILVER**

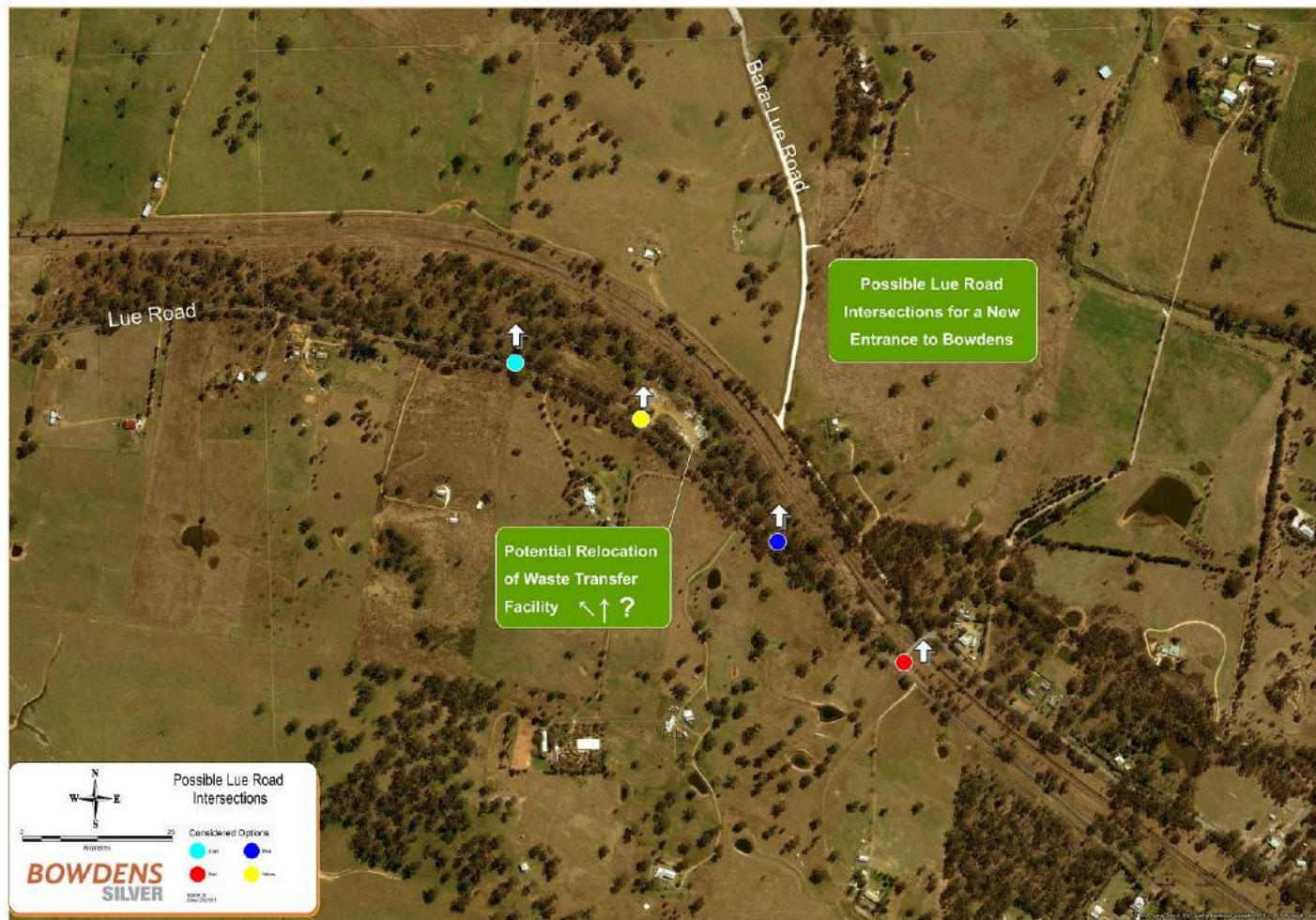
# PARTICIPANTS

EIS Management	Robert Corkery	RW Corkery & Co.
Noise, Vibration & Blasting	Glenn Thomas	SLR Consulting
Health Risk and Lead Management	Jackie Wright	EnRiskS
Surface and Ground Water	Paul Ryall	RW Corkery & Co. on behalf of Jacobs and ATC Williams
Social Impact	Narelle Wolfe & Kristine Bencke	Umwelt
Government & Compliance	Jane Munro	Bowdens Silver
Community Consultation	Blake Hjorth	Bowdens Silver
Environment	Tom Purcell	Bowdens Silver
Human Resources	Georgie King	Bowdens Silver

# DRAFT MINE SITE LAYOUT CHANGES



# POSSIBLE LUE ROAD INTERSECTIONS

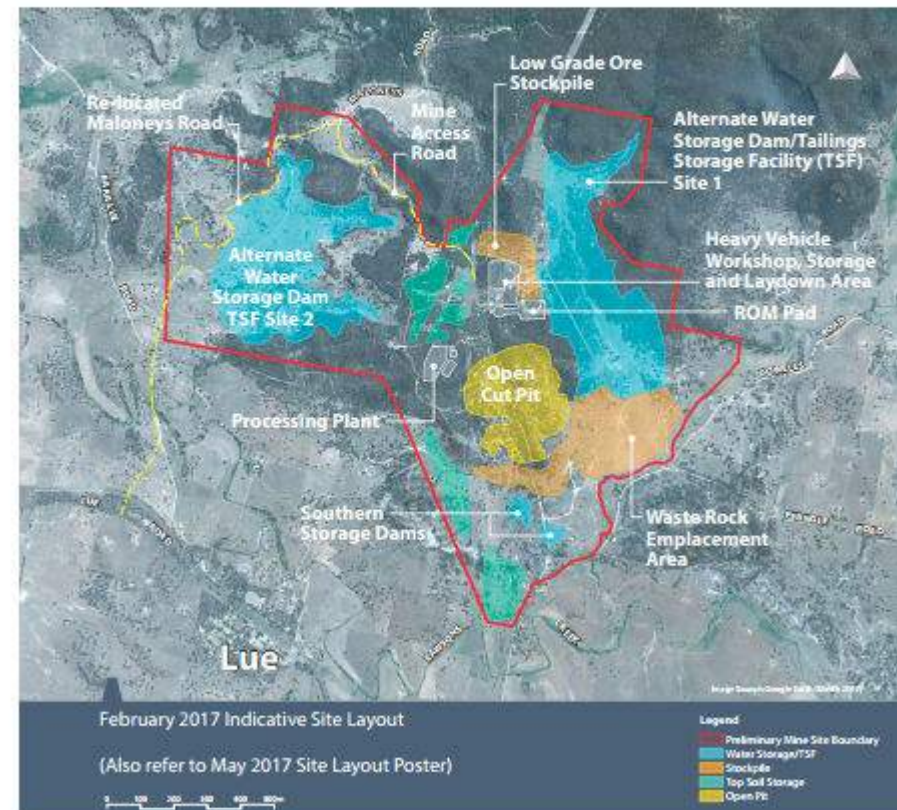


# What are the key features of the Bowdens Silver Project?

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## What is being proposed?

- Open cut mine
- Located approx. 2.5km from Lue
- Production of silver/lead concentrate and silver/zinc concentrate for sale and treatment off site
- 2.0 million tonnes of ore processed annually
- Mine life of at least 17 years
- Capital investment ~\$150 million
- Predicted workforce of approx. 200 during construction and 150 in operations
- Potential site access from west of Lue
- Possible realignment of 500kV power lines





## What's an EIS and SIA?

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An Environmental Impact Statement (EIS) is prepared to assess the environmental effects of the Project

Key environmental and social studies to be undertaken include:

- Noise, Vibration and Blasting
- Visibility
- Air Quality
- Terrestrial Ecology
- Aquatic Ecology
- Soils and Land Capability
- Site Access
- Transport
- Health Risk and Lead Management
- Aboriginal and Cultural Heritage
- Surface Water
- Groundwater
- Social Impact
- Agriculture Impact
- Economic Impact

***“A Social Impact Assessment (SIA) is the process of analysing, assessing and responding to the potential social impacts of a proposed development, with a view to minimising negative social impacts and enhancing positive social impacts”***

(Source: DPE SIA draft Guidelines)

# What is the Development Application Process?

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- Application to be prepared and submitted to the NSW Department of Planning and Environment (DPE)
- Application to be supported by a comprehensive EIS
- Public exhibition of EIS
- Assessment by DPE and review/determination by the independent Planning Assessment Commission (PAC)



## Development Assessment process

Proponent prepares and submits a PEA and request for SEARs

DPE issues project specific SEARs

Applicant prepares the EIS, which includes a social impact assessment, and lodges it together with a Development Application (DA)

DPE assesses the EIS and makes a recommendation on the determination of the DA for review by the PAC

The DA is determined by the consent authority by refusing consent or granting consent with conditions

Applicant must comply with the conditions of consent and monitor performance

DPE monitors Applicant's compliance with the conditions of consent

Community and stakeholder engagement

## Social Impact Assessment process\*

**PHASE 1**  
Understand the issues - profile and scope

**PHASE 2**  
Analyse and assess the likely impact pathways

**PHASE 3**  
Develop mitigation and enhancement strategies and adaptive monitoring and management arrangements

**PHASE 4**  
Implement mitigation and enhancement strategies and adaptive monitoring and management arrangements

*If the Applicant applies for a modification to the consent that is likely to result in social impacts that are new or different to those assessed as part of the original development, the Applicant should seek advice from the DPE on the appropriate process.*

SIA and the development process for State Significant Development resource projects  
\* Based on Vancley P et al (2015), Social impact assessment: Guidance for assessing and managing the social impacts of projects.  
Fargo ND: International Association of Impact Assessment



# Assessment of Health Impacts of Project including Lead

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## Assessing Health Impacts in the EIS

The Secretary's Environmental Assessment Requirements (SEARs) require health impacts from the Project to be evaluated in the EIS.

Potential for impacts to human health:

- air quality (particulates from crustal materials and heavy metals, in particular)
- noise and vibration (including blasting)
- drinking water quality (surface and/or groundwater)

Lead is of particular concern for the local community and will be addressed in a separate assessment that has focused specifically on the impact of the mine on lead exposures in the community.

The assessment will evaluate how these exposures may change as a result of the Project, and what these changes may mean in terms of risks to human health.

## How do we assess Health Impacts?

**Step 1** – understand the concerns of the community and requirements in the SEARs.

**Step 2** – evaluate the existing baseline environment/conditions, specifically existing exposure to lead and other metals (and particles) in the environment.

**Step 3** – evaluate how the mine will change exposures to lead, metals and particles in the community, and evaluate the impact of those changes on the health of the community.

**Step 4** – evaluate how the mine will impact on the health of the community as a result of noise and vibration.

**Step 5** – provide technical reports on lead and health risks, to be incorporated into the EIS.

# Assessment of Health Impacts of Project including Lead

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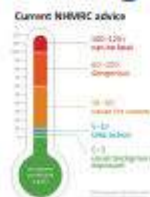
## Existing conditions:

We are all exposed to particles in air, and metals/metalloids, including lead throughout our daily life.

Metals and metalloids are naturally occurring in the environment and are therefore present in soil, water, and food. Sometimes metals may also be present in the environment from other sources.

Data is available to better understand what is currently present in the environment in and around Lue. This data has focused on lead in the environment, but also includes other metals.

## Assessing health risk: lead



Current NHMRC advice

100-120 µg/dL: increased blood pressure, liver haemoglobin, abnormal kidney function, long-term kidney damage, abnormal brain function, with levels higher than 100 µg/dL can be fatal

10-20 µg/dL: association with reductions in IQ and academic achievement

10-20 µg/dL: association with behavioural problems in children

10-20 µg/dL: increased blood pressure in adults and delay in puberty onset

10-20 µg/dL: weaker evidence of effects

Assessed based on blood level and modelling intakes from all sources. Modelling based on NHMRC guidelines and criteria for soil and water blood lead.

## Assessing health risks: other metals and particles

Range of health effects relevant to the public given exposure to particles and other metals. Assessment based on estimating intakes into the body and comparing with acceptable intakes (i.e. level where there are no health effects). Acceptable intakes set by the National Environment Protection Council (NEPC) and NHMRC, and others such as WHO and USEPA.

$$\text{Risk}^* = \frac{\text{Exposure from all sources (existing and mine)}}{\text{Acceptable intake (i.e. dose with no health effects)}}$$

\* Other metals excluding lead

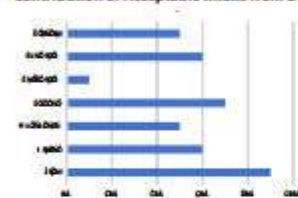
## Want to know more about Lead?

Register to be notified about future sessions.

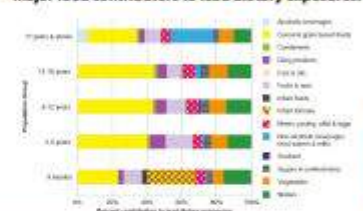
# Assessment of Existing Exposures in the Community

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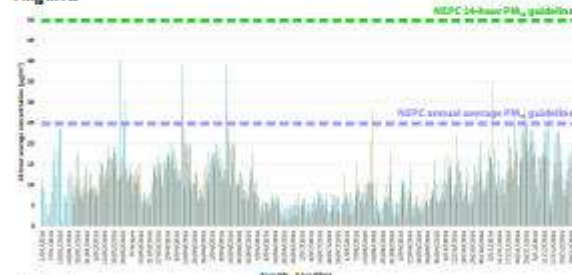
Contribution of Acceptable Intake from Dietary Sources:



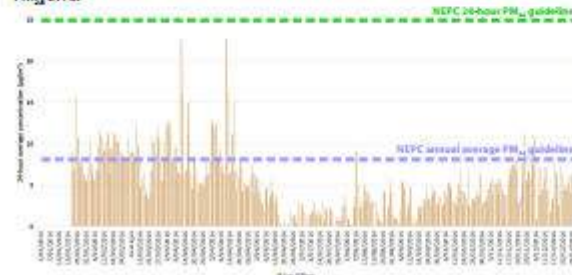
Major food contributors to lead dietary exposures:



Analysis of coarse particles from area indicates lead comprises <0.05% of total particles measured: PM<sub>10</sub> in Air



PM<sub>2.5</sub> in Air

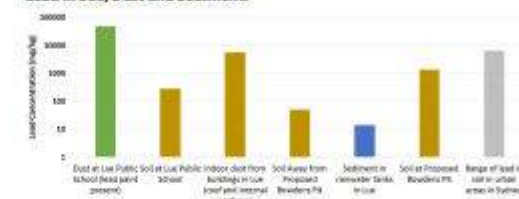


**Air**  
(as particles, and metals/lead bound to particles)

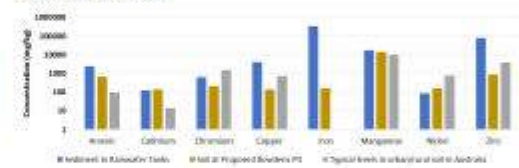
**Existing Exposures**  
(intakes from existing sources)

**Soil & Dust**  
(Lead and other metals)

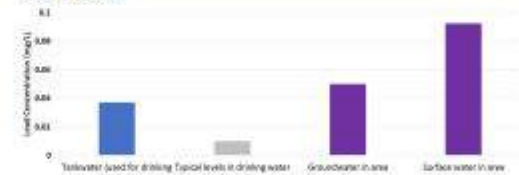
Lead in Soil, Dust and Sediment:



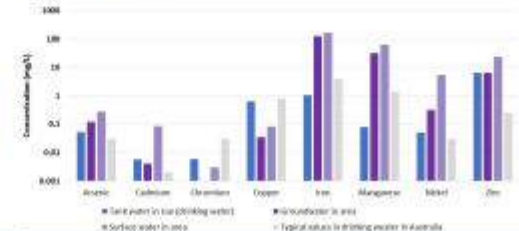
Other metals in Soils:



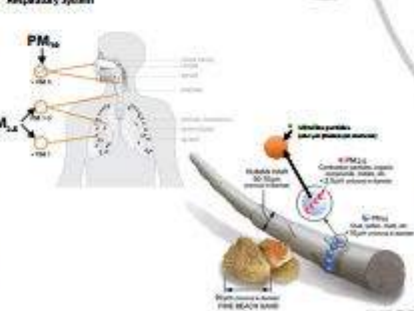
Lead in Water:



Other metals in Water:



Particle Matter in the Respiratory System



# What is involved in a Groundwater Assessment?

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## Understanding Groundwater Impacts

The SEARs for the Bowdens Silver Project require a detailed assessment of the Project's impacts on the groundwater resources beneath and surrounding the proposed open cut pit. It will be important to understand how much groundwater will flow into the open cut pit and its quality. In addition, the extent of drawdown of the regional groundwater table around the mine will need to be established. The assessment is being undertaken in five stages.

**Stage 1:** Establish the depth, rainfall response and aquifer characteristics of the local and regional groundwater system, together with groundwater quality. We also need to understand the occurrence of springs within and surrounding the Mine Site. This information is collected via a monitoring program of existing bores around the Mine Site and a range of bores within the Mine Site.

**Stage 2:** Identify bores and springs (and their uses) that could be affected by groundwater inflows into the open cut pit.

**Stage 3:** Understand the NSW Government's requirements and rules for intersecting the regional groundwater table – through reference to Water Sharing Plans and policies. Bowdens Silver will need to obtain a series of water access licences.

**Stage 4:** Undertake computer modelling taking into account, and calibrated to, the results of the monitoring program (including aquifer characteristics).

**Stage 5:** Predict how much groundwater would be produced and available for use on site and the extent of drawdown, if any, in groundwater bores on privately-owned land surrounding the Mine Site.

## Regional hydrogeology

- Fractured rock system with alluvial sediments along drainage lines.
- Groundwater flow primarily through fractures and faults in rocks.
- Highest hydraulic conductivities in shallow regions of aquifer.

## Local aquifers, occurrence and management

Geologic Province	Stratigraphic Unit	Groundwater Source and Water Sharing Plan
*	Mapped alluvium (Primary aquifer)	Lawsons Creek Water Source of the Macquarie Bogan Unregulated and Alluvial Water Sources
*	Undifferentiated alluvium & colluvium (unmapped)	Subject to the provisions of the groundwater source on which they overlie
Sydney Basin	Narrabeen Illawarra Coal Measures	Sydney Basin Groundwater Source of the NSW Murray Darling Basin Porous Rock Groundwater Sources
Sydney Basin	Shoalhaven Group	
Sydney Basin	Rylstone Volcanics (Primary aquifer)	Lachlan Foldbelt Groundwater Source of the NSW Murray Darling Basin
Lachlan Orogen	Coomber Formation	
Lachlan Orogen	Adaminaby Group	Fractured Rock Groundwater Sources

# What Groundwater activities have been undertaken so far?

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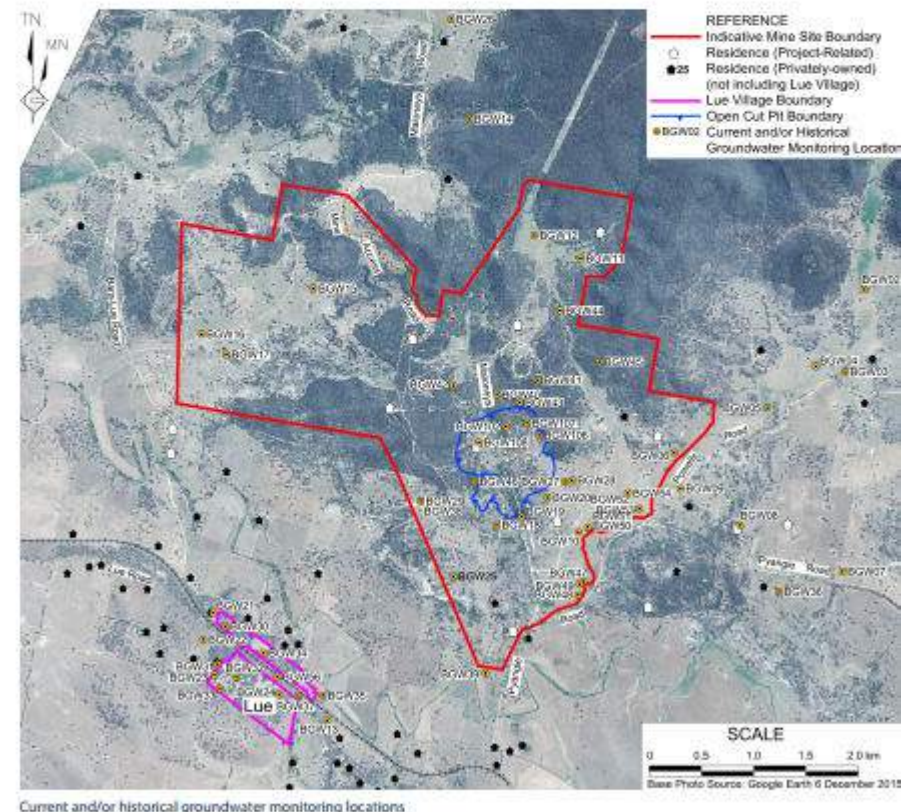
## What monitoring has been undertaken for the baseline assessment?

- 40 bores in network. Monitoring conducted at various locations since 2011
- Monitors groundwater systems including local, regional, alluvial and spring aquifers
- Collection of water level and groundwater quality data on a monthly basis
- Groundwater level ranges between 0.1 to 57 metres below ground surface
- Testing of aquifer parameters (pump tests, packer tests and recovery tests)

## What are the results of the baseline groundwater monitoring program?

Varies with average values for bores:

- |                     |                      |
|---------------------|----------------------|
| • <b>Alluvium:</b>  | • <b>Regional:</b>   |
| pH 6.0–7.2          | pH 6.4–8.1           |
| EC 131–2320 (µS/cm) | EC 642– 4738 (µS/cm) |
| Lead 2–7 (µg/L)     | Lead 1–29 (µg/L)     |
| • <b>Local:</b>     | • <b>Springs:</b>    |
| pH 5.4–7.6          | pH 4.7–7.5           |
| EC 299–2374 (µS/cm) | EC 107–174 (µS/cm)   |
| Lead 1–16 (µg/L)    | Lead 1–8 (µg/L)      |



# How is the Surface Water Assessment undertaken?

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## Understanding Surface Water Impacts

The SEARs for the Bowdens Silver Project require a detailed assessment of the Project's impacts on the surface water resources within and surrounding the Mine Site. It will be important to understand how much water (and its quality) that flows across and near the Mine Site under a range of conditions (dry/average/wet). The assessment is being undertaken in six stages.

**Stage 1:** Identify the catchments within and surrounding the Mine Site – both regionally and locally and collect relevant stream flow, water quality and weather data to understand the variables influencing runoff.

**Stage 2:** Identify existing surface water environment including surface water uses, environmental values and water quality together with stream flow behaviour, including flooding.

**Stage 3:** Understand the NSW Government's requirements and rules for interfering with existing streams through references to the Water Sharing Plans and policies. Bowdens Silver will need to obtain a series of licences to harvest water from within the Mine Site.

**Stage 4:** Undertake computer modelling taking into account the likely variables in stream flows to predict how much water would be collected for use within the Mine Site and what changes would occur to flows (and water quality) off site.

**Stage 5:** Identify the range of additional mitigation measures needed to ensure that surface water containing sediment or any pollutants does not exceed the requirements of the Environment Protection Licence for the Mine Site.

**Stage 6:** Predict the changes in stream flows downstream of the Mine Site (including flooding) and potential changes in water quality.



Cudgegong River Catchment

# What Surface Water Studies have been undertaken?

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## What were the results of the baseline studies?

### pH

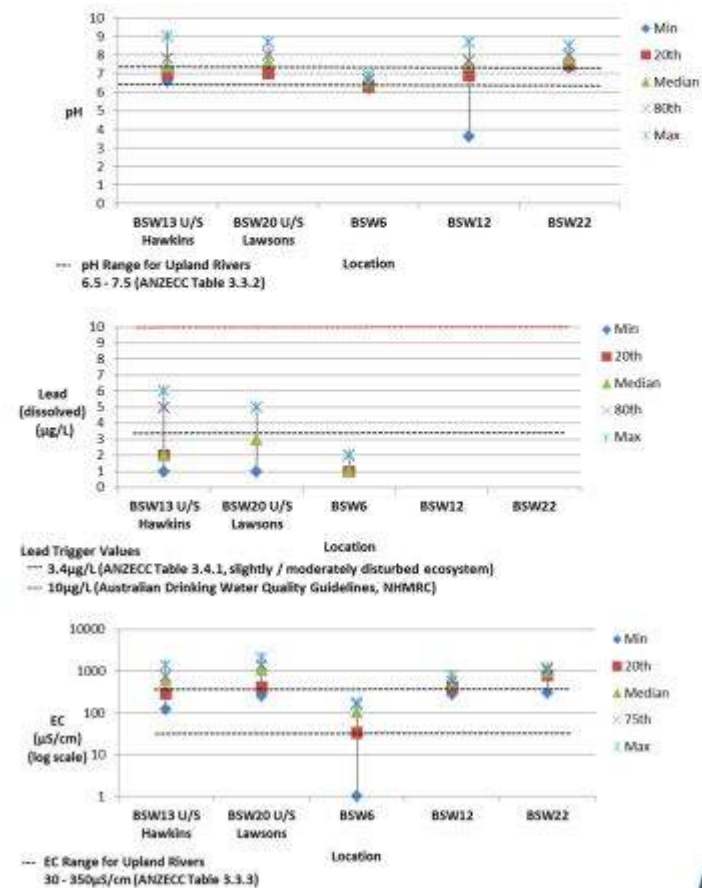
- Minimum values for pH within desired range at most locations
- Maximum values for pH outside desired range at most locations
- Median values for pH outside desired range at most locations

### Lead (dissolved)

- Maximum values for Lead upstream of proposed Mine Site exceed ANZECC trigger value for aquatic ecosystem protection
- No exceedance of drinking water quality guidelines recorded
- Locations downstream of proposed Mine Site below analytical limits

### Electrical Conductivity (EC) (an indication of salinity)

- Minimum values for EC within desired range at most locations
- Maximum values for EC outside desired range at most locations
- Median values for EC outside desired range at most locations



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**Step 6:** Predict noise levels at surrounding rural residences and properties and at residences in Lue.

A typical Noise Chart



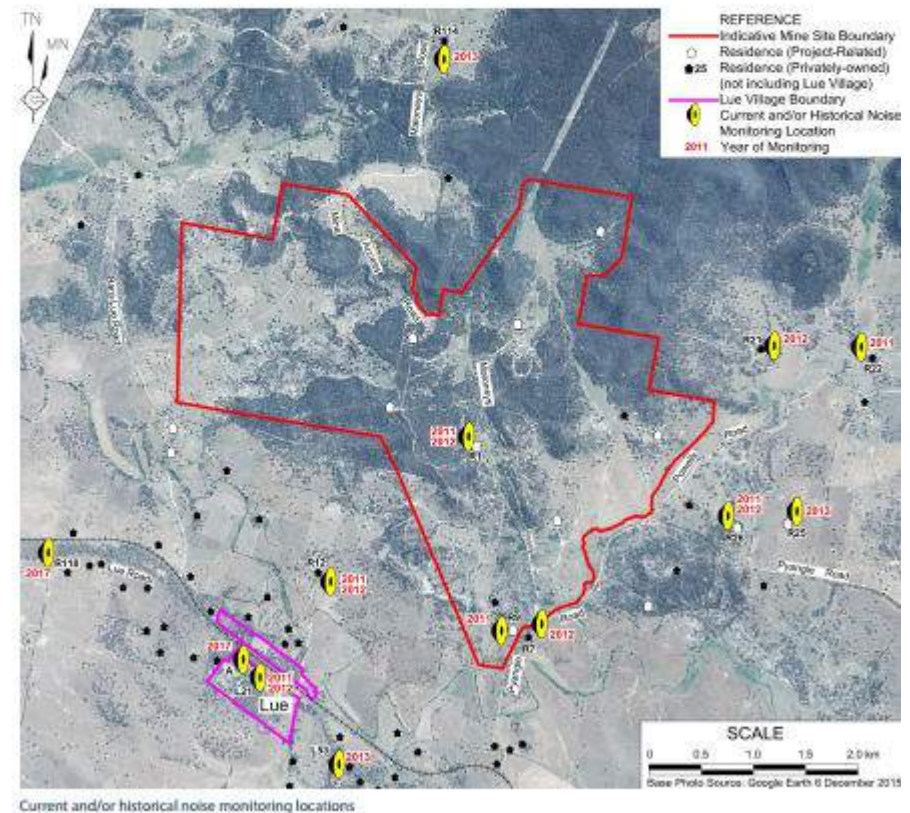
Example of Noise Meter

# Noise Monitoring

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## What noise monitoring will be undertaken?

- Continuous real-time noise monitoring in Lue village (24/7).
- Regular operator-attended noise monitoring in Lue village and at selected surrounding residences.
- Traffic noise monitoring.



# What is involved in a Weather Assessment?

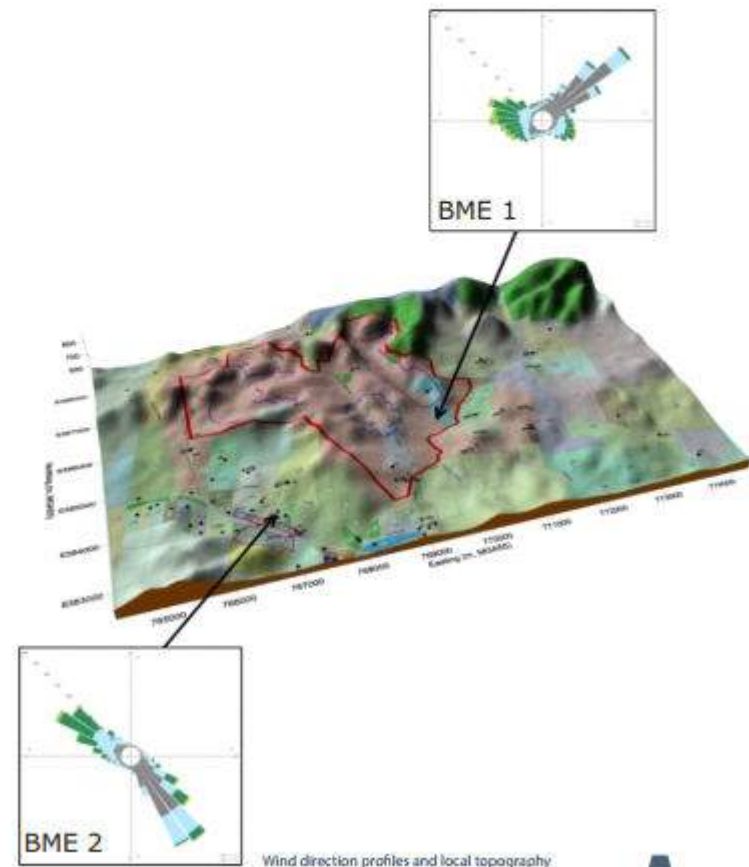
**BOWDENS  
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## Why are we collecting Weather Data?

- So many weather features will influence environmental issues for the Bowdens Silver Project – consequently BSPL has set up two weather stations, one on the Mine Site and one in Lue Village. Two stations have been set up because of the differences principally in wind directions due to local topography.
- Dust could be blown from the Mine Site during periods of high wind or from blasts.
- Noise could be enhanced when gentle winds occur.
- Temperature inversions need to be understood given their potential to increase noise levels.
- Rainfall levels and frequency data are required to understand rainfall runoff and opportunities for water collection.

## Weather Data

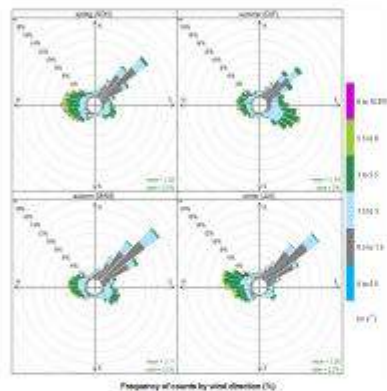
- Both meteorological stations record temperature (2m & 10m), rainfall, wind speed (10m), wind direction, air pressure, humidity and solar radiation.
- Wind direction in Lue is predominately from the northwest and southeast following the general valley terrain features.
- Winds at Bowdens show that winds from southeast are diverted to the northeast by local ridges.
- Winds from the northeast at Bowdens occur during night hours and are generally low in velocity.
- Winds at from the west and northwest at both Lue and Bowdens occur during the day and have higher velocities.



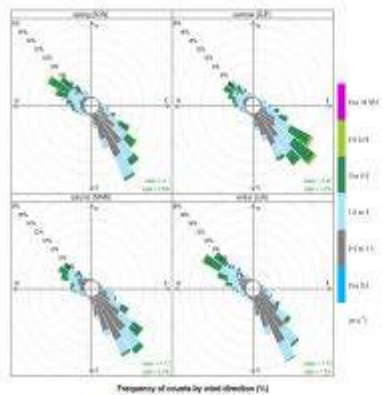
# Weather Monitoring

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## Seasonal Wind Roses

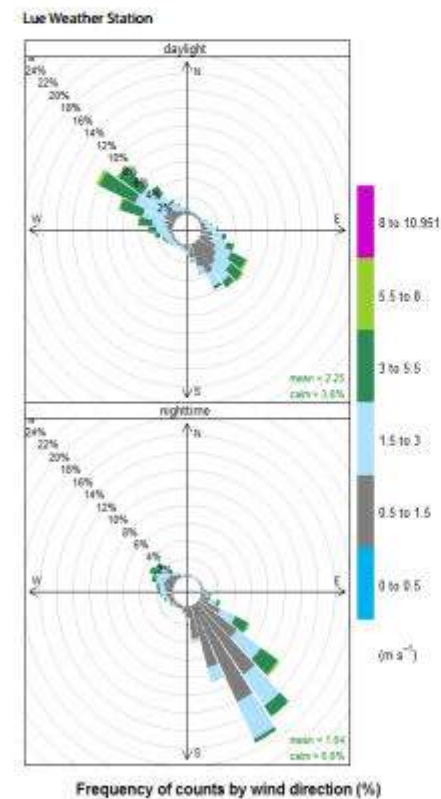
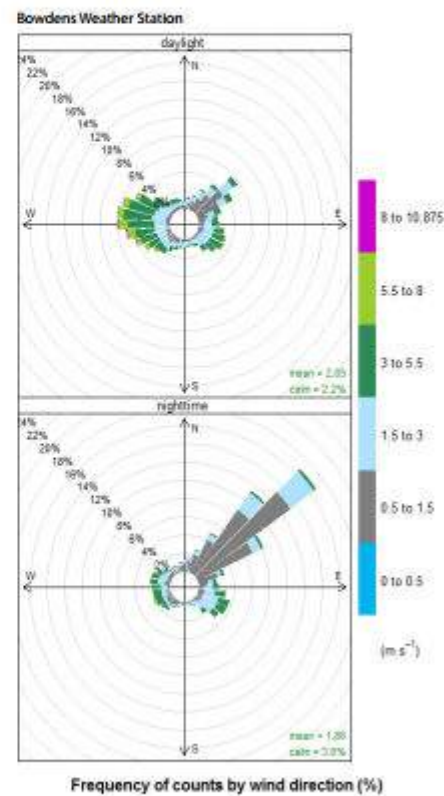


Bowdens Weather Station



Lue Weather Station

## Daytime / Night-time Wind Roses



# How is an Air Quality Assessment undertaken?

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## Understanding Air Quality Impacts

The SEARs for the Bowdens Silver Project require a detailed, quantitative assessment of potential air quality impacts. The assessment is being undertaken in six steps.

**Step 1:** Establish existing air quality levels – through a comprehensive air quality monitoring network.

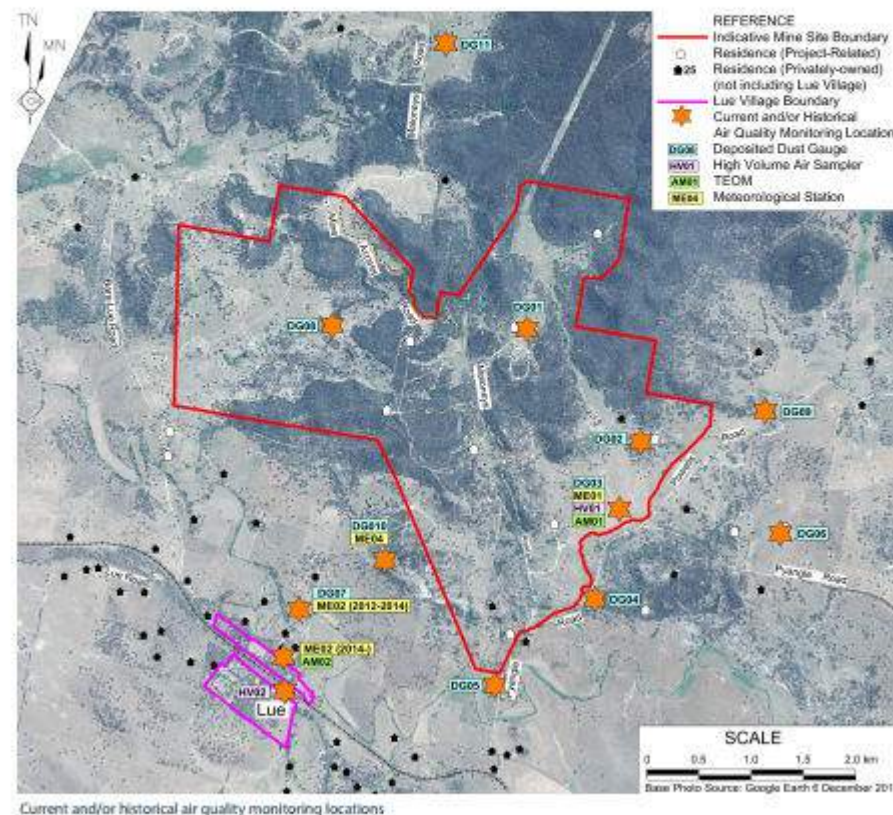
**Step 2:** Identify potential impacts and receivers that could be affected by changes to air quality.

**Step 3:** Establish relevant air quality criteria which are based largely upon potential health impacts.

**Step 4:** Undertake computer modelling taking into account total dust generated on site and dust sizes, weather conditions, topography and mitigation measures to be adopted on site.

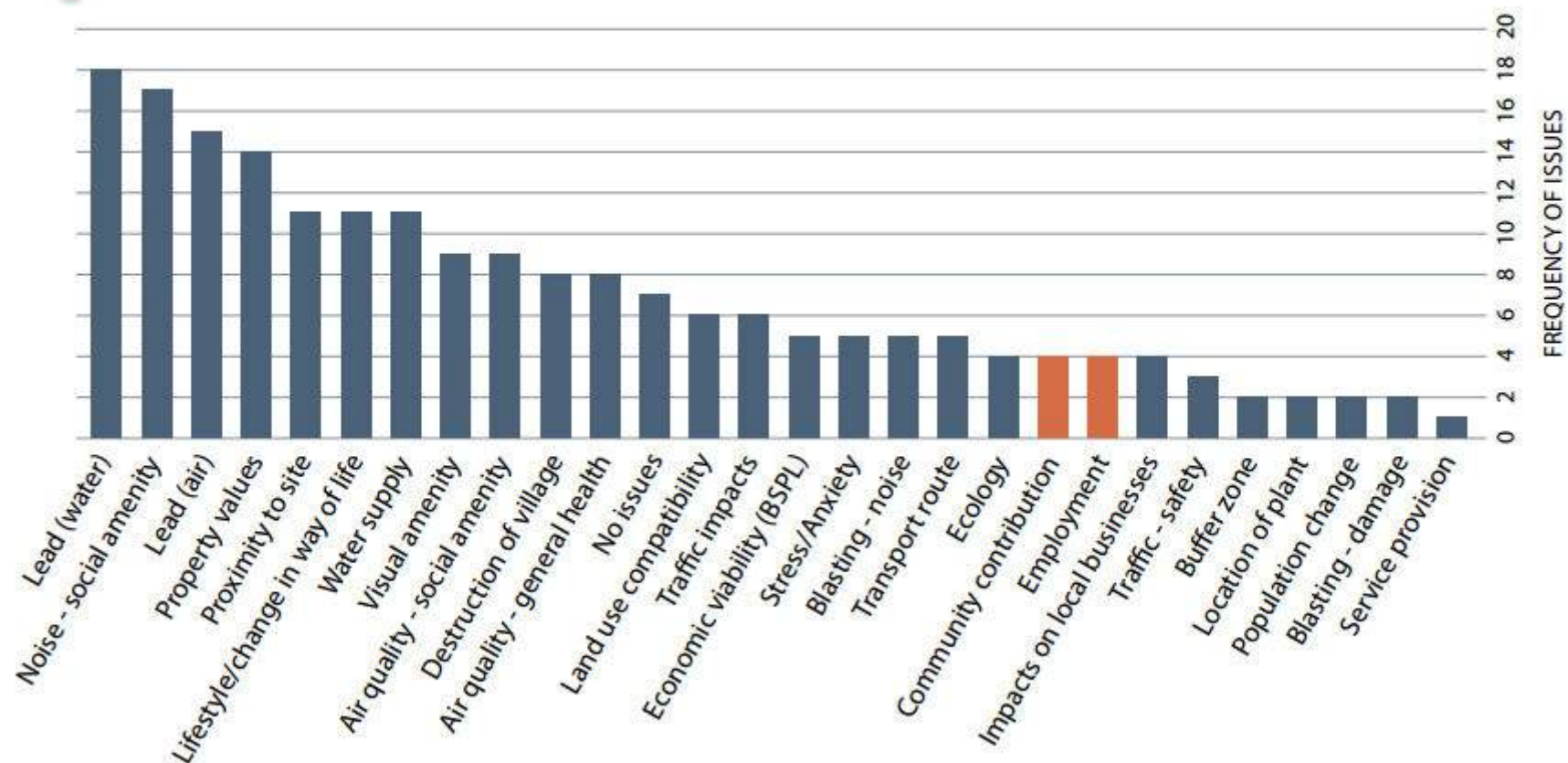
**Step 5:** Identify the need to adopt any additional mitigation measures to ensure air quality criteria are satisfied.

**Step 6:** Predict air quality levels at surrounding rural residences and properties and at residences in Lue.



# What you told us so far

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NOTE: 11 stakeholders declined an interview due to no issues. This data is not captured in graph above.

Positive response



## What you value about Lue?

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*"If push comes to shove you can rely on people"*

*"We like the farming community and the support they can give"*

*"We pull together when we need to. We can call anyone if we need a chat or help"*

*"It's quiet and peaceful"*

*"It's a friendly place if you are willing to go out of your way and participate. There's a community feel where we barter with others"*

*"Tranquillity - A good lifestyle, fresh air, and natural beauty"*

*"We enjoy the tranquillity and privacy of Lue. It's a good community and it's good knowing everyone"*

*"A good community where everyone pitches in to help people. Although we're close, I also enjoy that we mind our own business"*



# What are the community's key assets?

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- **Lue Public School**  
"Fantastic school", "Central to the community, if we lose it we lose the town", "a good asset"
- **Lue Hotel**  
"Key gathering point of the community"
- **Motorcycle track**  
"It brings tourists into the area"
- **Lue Bonsai and Lue Pottery**  
"Great to see business in the area evolve organically"
- **Agriculture**  
"There's a diverse mix of agricultural types in the area"
- **Lue Community Hall**  
"We'd love to see more activities"
- **Rural Fire Service**  
"Community BBQs"
- **Privacy / seclusion / tranquillity / environment**
- **Other recreational areas e.g. sportsground / tennis courts**



Lue Hotel

# What else would you like to see in Lue?

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- **A shop e.g. coffee shop, groceries, fuel**  
"Tourists could easily stop and spend money if they had a chance"; *"A shop for bread and milk would be nice"*
- **Town beautification e.g. mowing near the railway line and planting trees**
- **Restoration of the railway station and line**  
"Reconnect the region again"
- **Upgrade of roads**
- **Maintenance of historical buildings and information about our history**
- **Improved Signage / Plaques / Tourist information**
- **Further employment**  
*"Especially to look at employing locally first"*

- **Maintenance of existing infrastructure - the school, the Lue Hall**  
*"It is in dire need of restoration"*



Lue Hall

## **Community Questions Submitted to Bowdens Silver via CCC Representatives**

Questions have been left verbatim as received by Bowdens Silver. Community members names have been omitted for privacy reasons.

### **1. How will water be accessed for infrastructure and development e.g. roads, buildings before the water storage dams are operational?**

Bowdens Silver is investigating a range of options for the supply of water principally for dust suppression during the early stages of operations, which include:

- advanced pit dewatering (extraction) of groundwater under licence from the relevant water sharing plan;
- use of surface water runoff captured in existing dams on Bowdens Silver's properties under the harvestable rights provisions of the Water Management Act, and
- secure water via commercial arrangements and agreements.

### **2. Where will the processing plant be situated, at the presentation (Lue open day) it was on different sites on each map?**

The Open Day diagrams and the CCC presentation from the 9th of May showed both the February and May iterations of the draft infrastructure plan. These plans are still in draft. Our latest infrastructure draft plan has the processing plant located to the north of the open cut pit, predominantly on the eastern side of Maloney's Road. The differences reflect the on-going studies and planning processes. As design elements change and evolve, we will share these through the appropriate channels. The final design will be set out in detail in the EIS.

### **3. Please no drilling or jack hammering on Saturdays I hear it all week.**

Bowdens Silver currently operates within the operational hours permitted under its exploration activity approvals, i.e. Monday to Saturday 7am-6pm. Saturday operations are restricted where possible to 8am-1pm, in some circumstances, eg: for activities close to occupied residences. No drilling operations occur on Sunday or Public Holidays.

### **4. Will cyanide be used in processing?**

The current plan is a conventional flotation concentration circuit that will produce a highly-concentrated product containing silver, zinc and lead. This product is to be transported offsite (South Australia or overseas) for processing into metal. Other mines including most gold mines generally utilise a carbon-in-leach or carbon-in-pulp (CIL/CIP) as their main extraction process. Those technologies utilise quantities of sodium cyanide that is typically broken down by sunlight in tailings dam facilities. Bowdens Silver's processing will not be using these processing routes.

As part of metallurgical test work Bowdens Silver is testing at a range of products, that in minor amounts, are used as a zinc suppressor in the circuit. Cyanide is a product that is sometimes used as an effective reagent in this type of process (in very small volumes compared to CIL/CIP operations). The company is currently testing this and several other alternative reagents that are used in other operations. Details will be provided in the EIS.

**5. When will the EIS be delivered?**

The current schedule is for submission during the last quarter 2017. This is subject to change as the program and Feasibility Study develops. The EIS will be on display to the public for at least 6 weeks and a summary booklet will be provided to community members.

**6. (Community member) wishes to see a draft of the EIS prior to delivery?**

The EIS including all studies will be on public display and provided to the community once finalised. Prior to the public exhibition period, a summarised EIS information booklet will be produced and provided to the community.

**7. What is the acid forming potential of the ore and the 'overburden' in kg of sulphuric acid per tonne?**

This work is ongoing and information will be provided in the EIS. Bowdens Silver is continuing to assess the non acid forming (NAF) and potentially acid forming (PAF) rocks, which will inform this aspect of the EIS.

Considerable test work has been carried out over a number of years and is ongoing to establish the quantity and location of potentially acid-forming waste rock within the proposed open cut pit. Potentially non-acid-forming waste rock has also been identified and characterised. The results of all testwork, including the details of the extent of potential acid generation and the management of the potentially acid-forming materials will be incorporated in the exhibited EIS.

**8. (Community member) requests copies of these baseline surveys -**

**Ground water, Surface water, Air quality, Blood lead levels in humans and animals.**

All groundwater, surface water, air quality data will be included and analysed in the EIS. The baseline data collection for the EIS is complete (albeit ongoing) and analyses are currently underway. The baseline data forms the basis of the EIS and will be available during the public exhibition period along with specific details on lead. Historical dust deposition data relevant to the community member (collected on their property) has been provided via email.

**9. (Community member) requests a copy of the “Community and Landholder Liaison Plan”.**

This is a Bowdens Silver internal document not for public distribution.

**10. What is the “Area of Impact” for: Groundwater, Surface Water, Dust Pollution, Noise pollution, Health, Financial loss to stakeholders in the region, Property values.**

The area to be assessed for impacts in the EIS are defined by legislation and the Secretary’s Environmental Assessment Requirements, which are developed on the basis of requirements submitted by a range of responsible government departments and statutory bodies. See: <http://bowdenssilver.com.au/wp-content/uploads/2017/02/Bowdens-Silver-Project-Revised-SEARs.pdf>.

Each area of environmental assessment is being conducted by a highly regarded specialist consultant and each discipline’s assessment of impacts will be comprehensively reported in the EIS.

The specialist consultants and their areas of expertise are listed below:

Environmental Impact Statement-Project Manager	R W Corkery & Co. Pty Limited
Site Access Road & Traffic Management.	Barnson and The Transport Planning Partnership
Waste Rock & Tailings Geochemistry	Graham Campbell & Associates
Groundwater Investigation & Modelling	Jacobs Group
Tailings & Surface Water Management	ATC Williams
Lead and Health	EnRiskS
Air Quality	Ramboll Environ
Ecology	Cardno and Envirokey
Noise and Vibration	SLR Consulting
Soils and Land Capability	McKenzie Soil Management
Visual	Richard Lamb & Associates
Economic	Gillespie Economics
Social	Umwelt
Heritage	Landscape Natural and Cultural Heritage Management

**11. Who will be estimating the value of the bonds for acid and heavy metal management for the 50+ years during rehabilitation?**

The Division of Resources and Geoscience (within the Department of Planning & Environment) will determine rehabilitation bonds which the company will be required to lodge prior to the commencement of mining. A comprehensive rehabilitation plan is currently being developed and it will be available for public discussion when the EIS is lodged.

**12. The Rylstone Olive Press olive trees are in the ground and will be producing for 300 years+ . Olive trees in Europe are producing viable agribusiness crops for extra virgin olive oil on 500+ year old trees.**

This is noted.

**13. Will Bowdens be hosting a question and answer session at the village in the middle of the EIS review period?**

At present, there are plans for further public sessions focussing on specific issues to be held with the relevant experts prior to the EIS exhibition period. This will be an opportunity for the community to have input. Further materials will be produced prior to the EIS exhibition period that will include information related to questions and concerns raised, a summary of the consultation undertaken and the EIS information booklet.

In addition, the Department of Planning and Environment will hold a public information session during the exhibition period of the EIS.

**14. Does (sic) the studies performed and presented by the consultants include the development of a worst case scenario for all major risks raised, assessed and reviewed during the development of the EIS? Eg: Disruption to water table, dust cloud disbursement (sic), Maximum possible noise exported from the site, Maximum possible vibration caused by the machinery operation and blasting. Leaching of dam water into the underground. A blow out of a tailings or water storage dam. Just to name a few. If so can we please see these scenarios presented as part of the EIS assessment similar to what Emergency Service Departments would develop in a major catastrophic event whether (sic) its environmental or man made?**

For conservatism, the modelling of dust, noise and blasting (vibration) impacts utilise scenarios which are developed with the primary intent of enabling the assessment of a worst case for the particular area of study. In a similar fashion, the NSW Dam Safety Committee, (a statutory body which manages dams and tailings storage facilities in NSW) requires that the design, construction, management and operation of dams and tailings storage facilities is dictated by the consequence category of a dam or tailings storage facility. Any increase in the consequence category requires the incorporation of lower likelihood events (failure,

earthquake and extreme rainfall) into the design, construction, operation and reporting requirements of a particular dam or tailings storage facility.

**15. Does the 1, 2 or 3 daily truck transport figure include the potential importing of ore from satellite pits such as Havillah or Bara??**

Although yet to be confirmed, the mine will be producing approximately 15,000-20,000 tonnes of concentrate per year. To transport this would require 2-3 trucks per day. This is higher than initially communicated primarily due to adjustments in concentrate production assessments.

With regards to mining other areas, there are no areas outside the Bowdens Silver site that form part of the mine plan. The company holds mineral exploration licences covering over 1600 square kilometres from north of Gulgong to near Kandos. Outside the Bowdens Silver site there have been no discoveries that warrant an additional mine.

**16. So far we have seen many maps and diagrams showing possible infrastructure placements, ore stockpile, waste and top soil dumps placements. Can we have possible haul roads and access roads within the mine lease added to really show the true footprint of the mining activities?**

This is still work in progress and will form part of the detailed mine plan in the EIS. The current work by the project team involves the optimisation of the infrastructure layout drawing from a range of factors including site management, economic and environmental factors.