



MINOTAUR  
EXPLORATION

# Minotaur Exploration | ASX: MEP

## An active base metals explorer

4 November 2019



# The outlook for base metals is strong

The macro outlook for copper foreshadows a supply crunch and increasing worldwide consumption



## Demand forecast



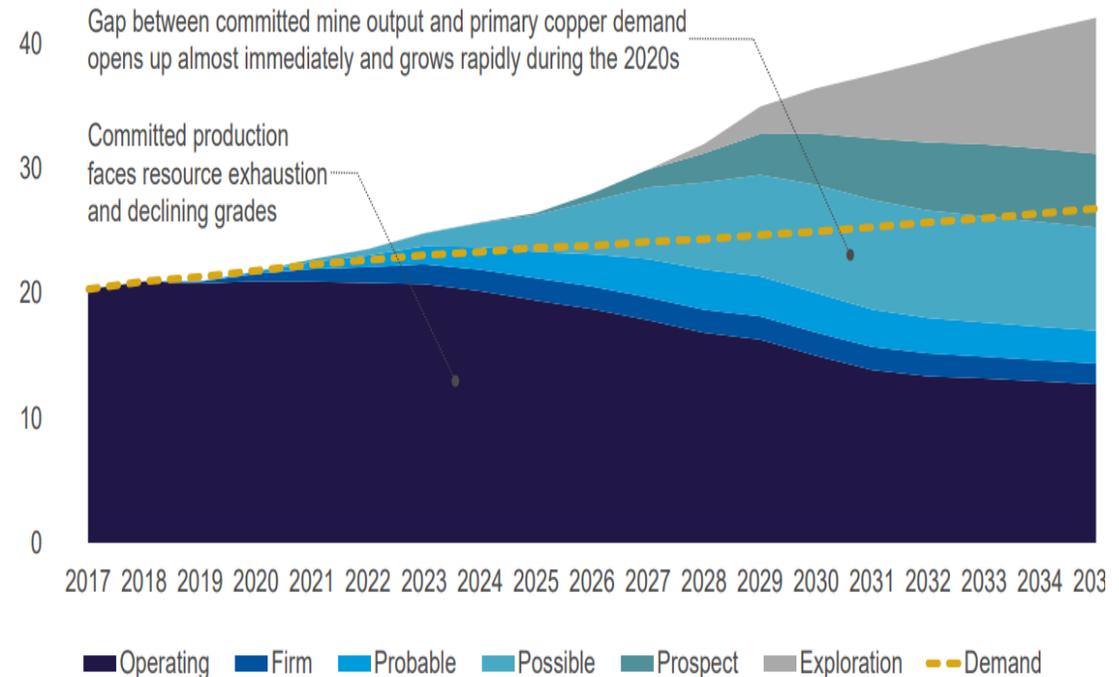
- Long term demand driven by renewable industry
- Despite easing China demand compared to historical years, modest growth expected in construction, consumer products, transport support and power infrastructure
- Continued urbanisation in emerging markets such as India and other Asian countries forecast

## Supply forecast



- Declining ore grade challenges expected to continue, especially in dominant ore producing countries such as Chile and Peru
- Lack of mega-projects coming on board due to increased investment costs required for mine construction over the past decade and local stakeholder opposition
- Large proportion of mines currently in operation will reach end of their productive lives by 2035

## Supply gap forecast to be 8Mt by end of 2030

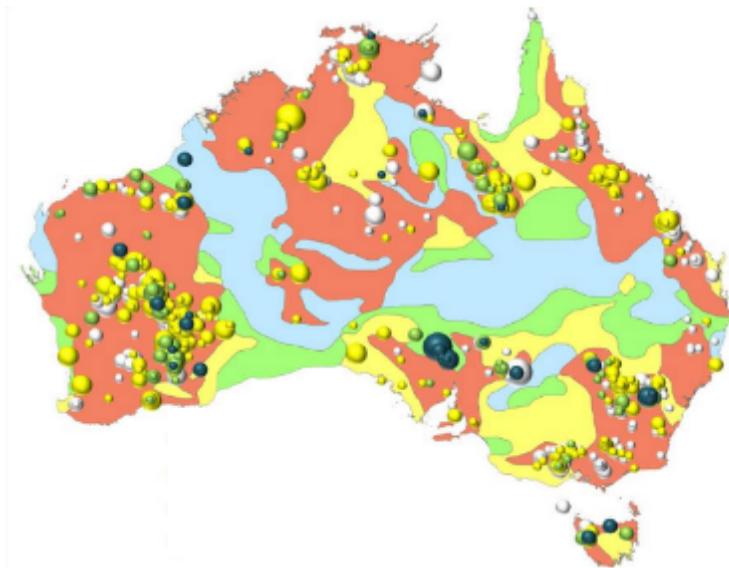


Source: Copper Market Outlook, CRU Group, June 2019

# Minerals exploration is going under cover



Approximately 80% is under cover <sup>1</sup>



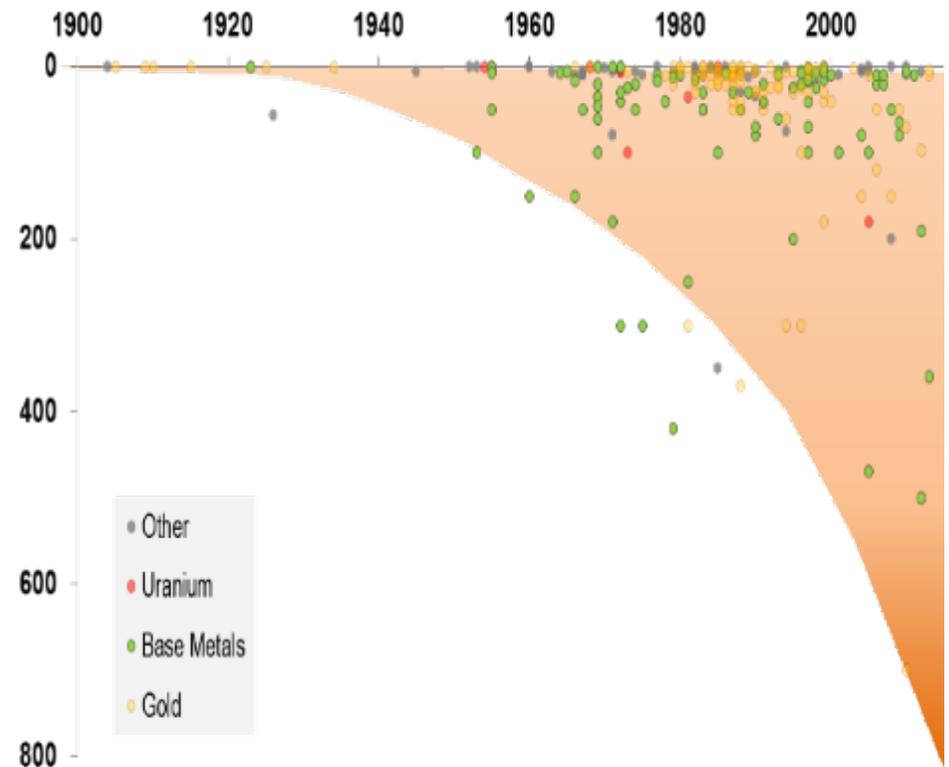
### Discoveries

- Outcropping
- 1-50 Metres
- 51-200 Metres
- >200 Metres

### Indicative depth of cover:

- Outcrop & shallow cover over Basement <100m
- Depth to Basement 100 to 500m
- Depth to Basement 500 to 1000m
- Depth to Basement >1000m

Depth of cover for major mineral discoveries in Australia is increasing



- Other
- Uranium
- Base Metals
- Gold

Source: MinEx Consulting © November 2015 Geoscience Australia

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# Minotaur's investment highlights



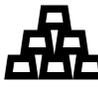
 **Expert in locating 'blind targets':** Exploring difficult-to-prospect areas using a tool box of refined geophysical techniques to locate mineralisation 'under cover'

 **Active in the right space:** Strong outlook for base metals, with an impending long term supply-demand imbalance and expected price growth as head grades decline at major producers

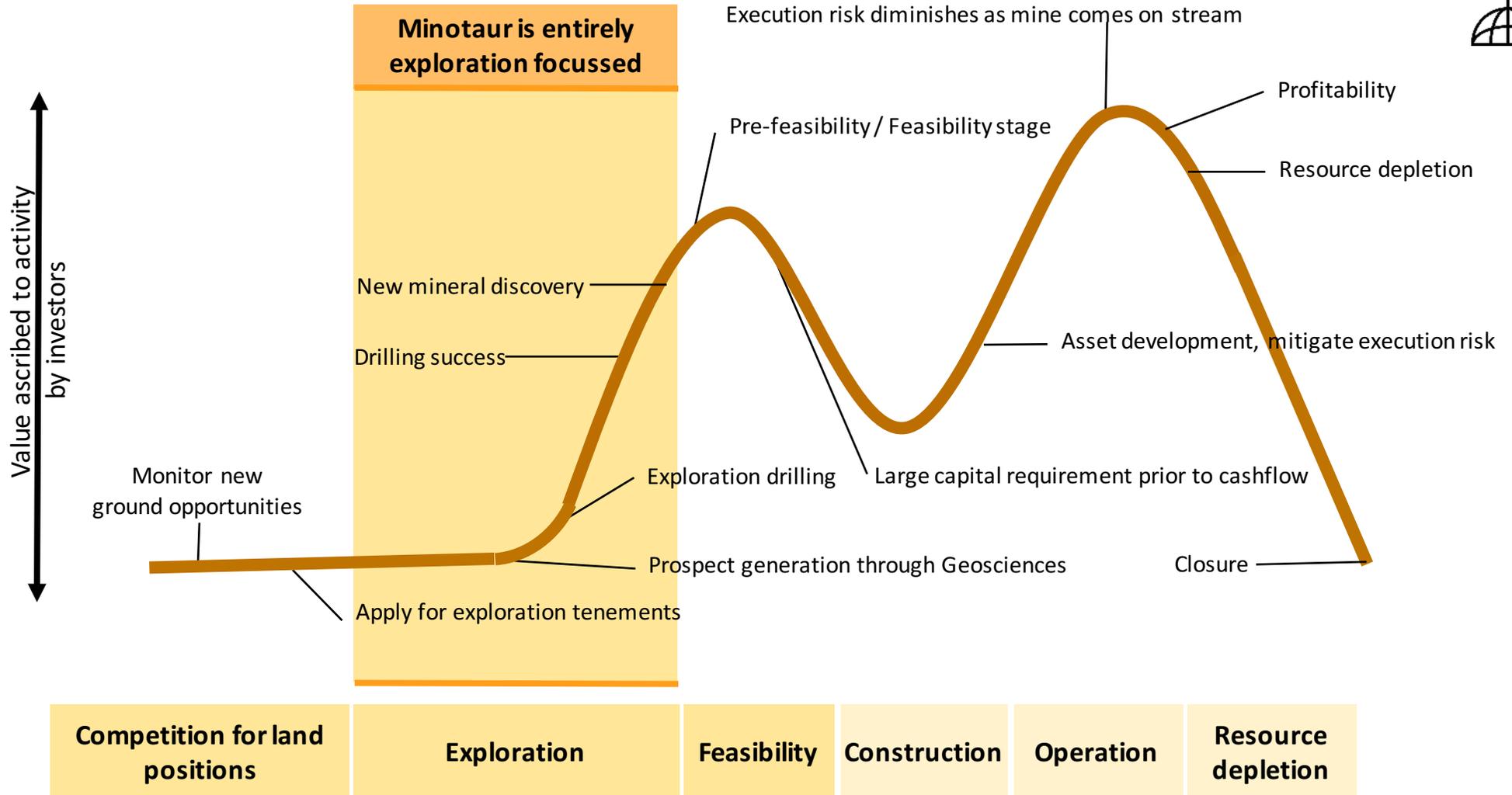
 **Proven JV business model and strong track record:** Minimises risk/dilution for shareholders, leads to high activity levels; demonstrated at Artemis (2014), Iris-Electra (2016), Jericho (2017)

 **High quality portfolio:** Strategic partnerships with OZ Minerals (\$14.5m invested, incl. 30,000m drilled at Jericho), world class halloysite-kaolin deposit at Poochera, Windsor JV VMS prospects

 **Multiple levers for near term re-rating:** Drilling results at Windsor and Eloise JV; ground geophysics at Peake & Denison; Maiden JORC at Jericho; feasibility study at Poochera

 **Platform model grows portfolio:** Strong target generation pipeline - Cloncurry Alliance, Highlands Cu-Au prospects, Peake & Denison IOCG prospects - provides growth options

# Exploration: the early reward phase of the mining value chain



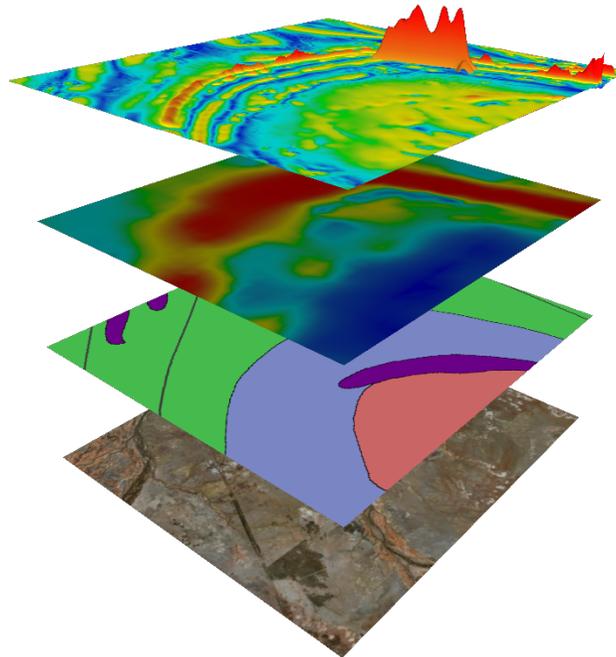
# Minotaur's expertise is searching under cover



## Australia's continental discovery challenge

**Mineral deposits** contained within basement rocks **cannot be located** through **conventional surface exploration** methods

A well honed **interpretive skill set** is required to **pinpoint subsurface mineralisation**



## Minotaur's geosciences solution

**Minotaur** deploys **geophysics** to guide interpretation of **obscured geology**

Our proven ability **integrates remote sensing data** and **geological interpretation**, discriminating **opportunities missed by competitors**

**Share price**  
(30-Oct)

A\$0.055

**Market  
capitalisation**

A\$18.4m

**Net Cash<sup>1</sup>: A\$1.0m**

ASX Investments<sup>2</sup>:  
A\$1.86m

**Enterprise value**

**A\$15.9m**

## Share price performance over past 6 months

Share price (Acps) *Source: IRESS*



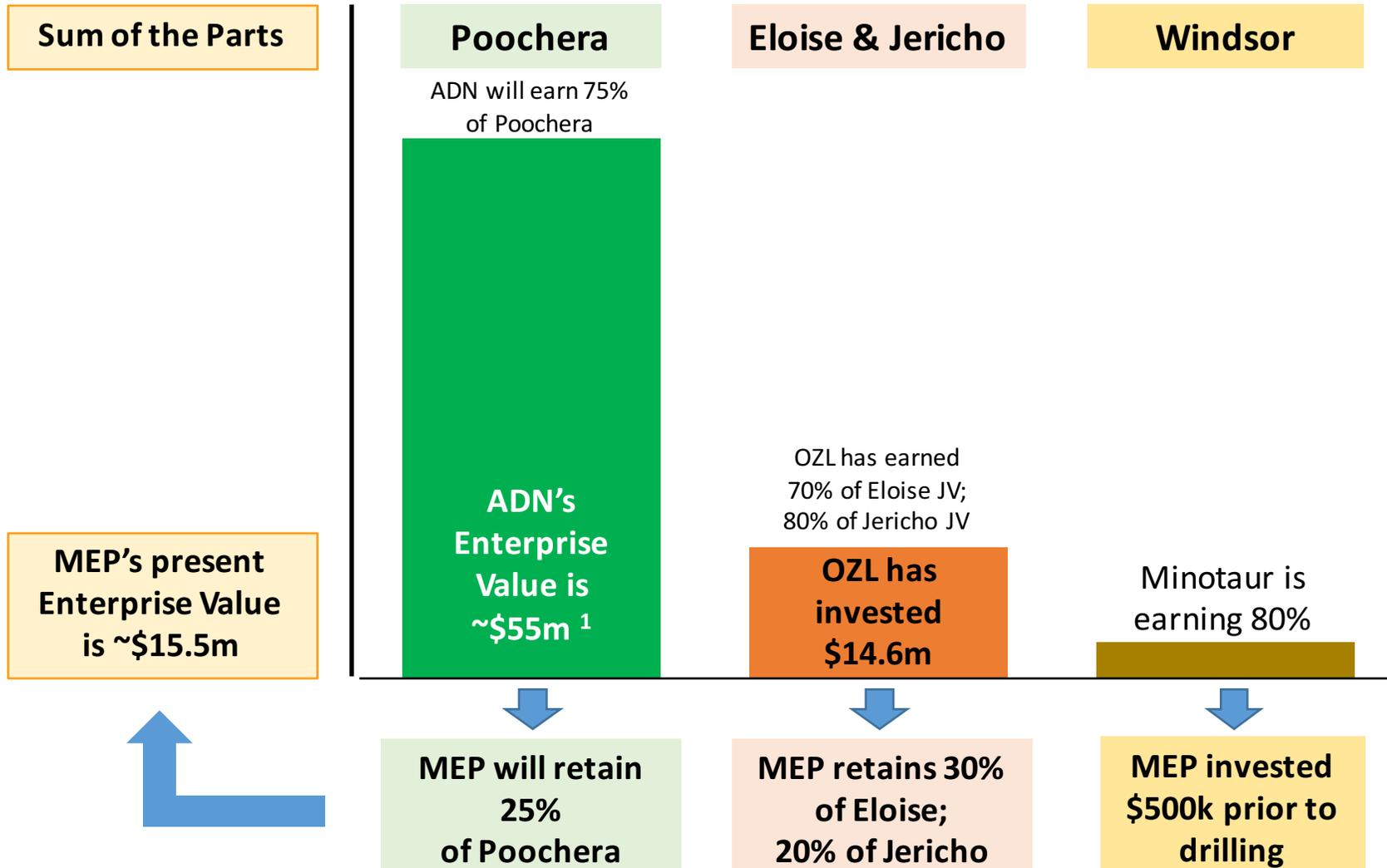
## Major shareholders

<b>Affiliates of the Sprott Group</b>	12%
<b>Yarraandoo Private investor</b>	7.0%
<b>OZ Minerals ASX-listed copper-gold miner</b>	2.4%
<b>Miningnut private investor</b>	1.3%
<b>FMR Investments Owner/operator of the Eloise Copper Mine, Qld</b>	0.9%
<b>Top 20</b>	34.7%

Notes:

1. Cash = A\$1.0m, Debt = A\$0.361m as at 31-Oct-2019, excludes non-recourse loan carry arrangement with OZ Minerals
2. Listed investments = A\$1.745m as at 30-Oct-2019; comprised of 13.95% stake in Auroch Minerals (ASX:AOU), 0.63% stake in Petrathern (ASX:PTR) and 13% stake in Thomson (ASX:TMZ)

# Minotaur's value components



Notes:

1. Andromeda's Enterprise value of ~\$55m rounded down from a calculated value of \$58.7m @ 31 October 2019. Calculation based on market capitalisation of \$60.6m as at 31-Oct-2019, and net cash of \$1.89m as retrieved from Andromeda's September Quarterly Report

# New capital for Minotaur controlled projects

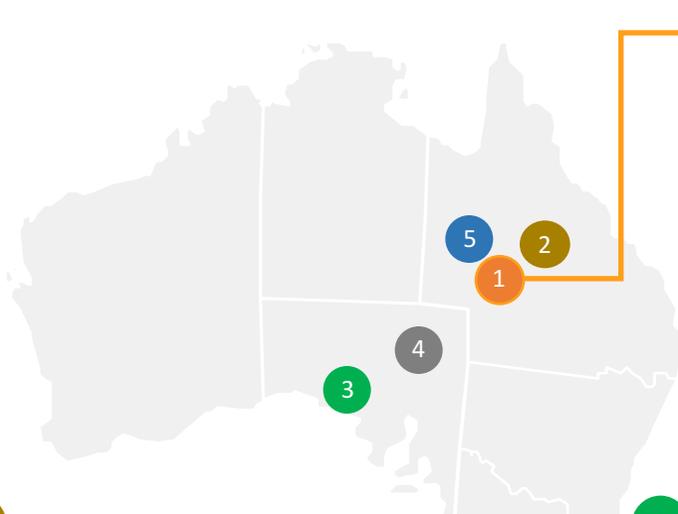


November Placement enables Minotaur to advance its own exploration interests

Project	Amount
Windsor:	
• Hastings Reconnaissance drilling	\$500k
• IP along Trooper Creek Formation	\$250k
• Warrawee 3D IP Survey	\$200k
• <b>Sub Total</b>	<b>\$950k</b>
Peake & Denison:	
• Ground AMT	\$100k
• Drill Target modelling	\$25k
Highlands:	
• Ground EM and drill target definition	\$100k
Costs of the Issue/Working Capital	\$325k
<b>Application of funds received from Placement 1 November 2019</b>	<b>\$1.5m</b>



Portfolio developed through careful ground selection and project generation expertise



1

## Cloncurry partnerships with OZ Minerals



- i. Jericho JV (OZL 80%)* OZL has invested \$10.6m to date  
Minotaur is 'loan carried' to production from April 2019
- ii. Eloise JV (OZL 70%)* OZL has invested \$4m to date  
drill ready EM targets prepared  
OZ Minerals is sole funding Eloise JV by A\$3m to 2021
- iii. Cloncurry Alliance* OZ Minerals is funding Minotaur with \$1m for project generation activities to 2021

2

## Windsor base metals JV (MEP may earn 80%)

- 631km<sup>2</sup> tenement package sited immediately east of Red River's Thalanga Zn-Pb-Cu mine
- Inaugural IP survey located 'Hastings' – a prospective VMS horizon under shallow cover
- Reconnaissance drilling through November; 12 RC holes for 1,400m
- 3D IP survey at 'Warrawee' over mineralised outcrop planned for November to map sub surface for sulphide host of historic Zn-Pb-Cu drill intercepts

3

## Poochera JV (MEP 100%; ADN: earning 75%)

- 'World-class' Kaolin-Halloysite deposits
- Andromeda Metals (ASX: ADN) to invest A\$6m by 2023
- ADN's Scoping study reported 174% IRR for 15 year LoM
- ADN is fully funded to complete PFS
- ADN proceeding with mine permitting activities
- Minotaur will receive 25% of mine cash flows

4

## Peake & Denison (MEP: 100%)

- 2,500km<sup>2</sup> potentially a new frontier IOCG terrane
- Multiple IOCG and BHT style targets modelled from regional magnetics
- AMT survey planned for November to pinpoint anomalies, subject to land access approvals

5

## Highlands (MEP: 100%)

- 753km<sup>2</sup> surrounding Round Oak Mineral's new Barbara Cu-Au mine

# Multiple levers for near-term re-rating



**Notes:**

1. Refer to ADN announcement released on 16<sup>th</sup> October 2019. 'Andromeda fully funded to complete feasibility study into developing the Poochera Project'

# Adding value to our portfolio assets



## Asset

## Upcoming activities

Eloise JV,  
Jericho JV,  
Cloncurry Alliance

### Nov-Dec 2019:

- Matilda tenement to be granted, providing access for -
  - Ground EM over Big Foot/Little Foot targets

### Ongoing:

- New project acquisition(s) for Alliance
- Jericho Underground mine studies by OZL

Windsor

### Nov - June 2020

- Drill Hastings IP response; validate Hastings as a VMS style target
- 3D IP over Warrawee to map sulphides in the subsurface
- IP along Trooper Creek Formation to locate VMS type anomalism
- Drill IP response at Warrawee

Peake & Denison Inlier

### Dec 2019 - March 2020:

- Ground AMT surveys over selected magnetic anomalies
- Target refinement and prioritisation
- Drill target designs & JV attraction



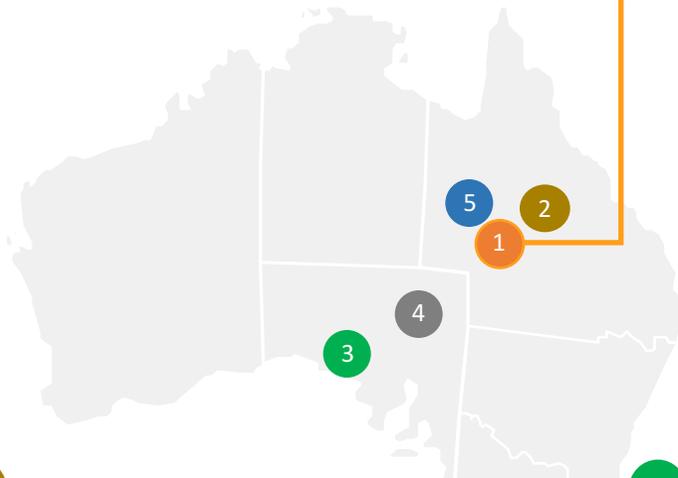
# Portfolio deep dive

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# Recap: Minotaur's portfolio



Portfolio developed through careful ground selection and project generation expertise



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- 'World-class' Kaolin-Halloysite deposits
- Andromeda Metals (ASX: ADN) to invest A\$6m by 2023 for 75% JV interest
- ADN's Scoping study reported 174% IRR for 15 year LoM (refer ADN release dated 30 Sept 2019)
- ADN is proceeding with PFS and mine permitting activities
- Minotaur will receive 25% of mine cash flows

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## Peake & Denison (MEP: 100%)

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- Multiple IOCG and BHT style targets modelled from regional magnetics
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## Highlands (MEP: 100%)

- 753km<sup>2</sup> surrounding Round Oak Mineral's new Barbara Cu-Au mine

# 1 Solid partnerships with OZ Minerals

## JV agreements with OZ Minerals allow for aggressive exploration to continue around Cloncurry

### i Jericho JV, MEP fully funded

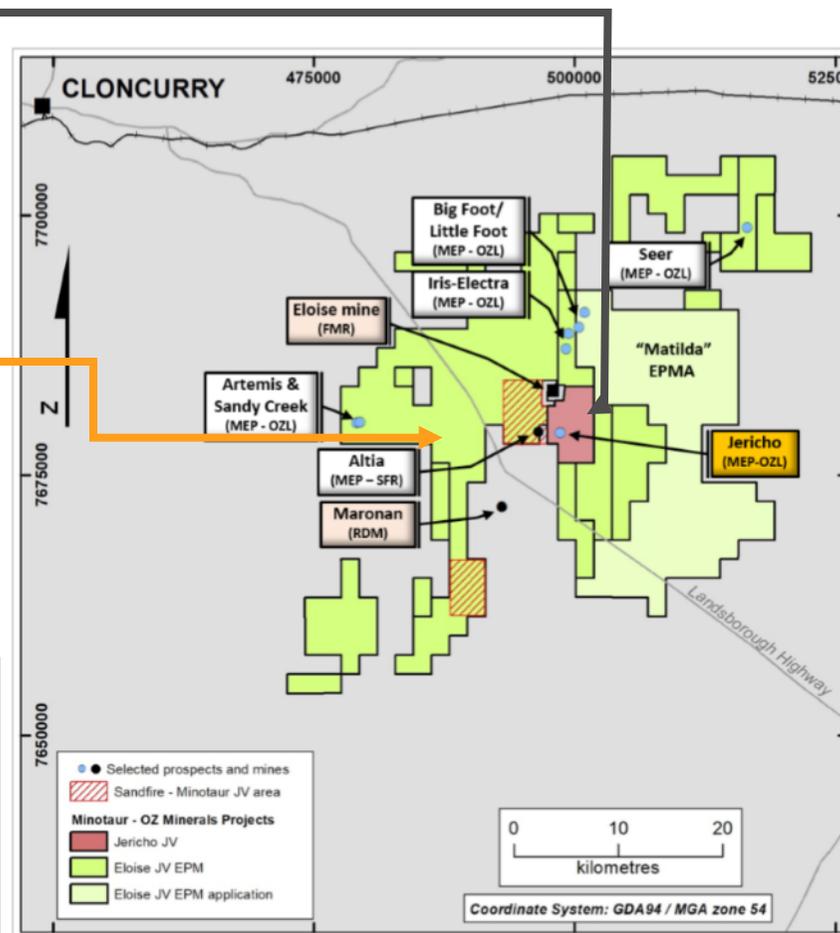
- 2 parallel lodes up to 3.7km long
- 30km of drilling and shoots defined to 350m below surface;
- OZ Minerals created a 'loan carry' facility from April 2019, financing Minotaur's 20% share of all costs through to production
- The loan accrues minimal interest and can only be repaid from positive cash flow from mining of the Jericho deposit

### ii Eloise JV (excluding Jericho)

- Existing A\$10m JV (now completed) expanded to A\$13m
- OZ Minerals to sole fund the additional A\$3m of exploration to test targets within the Eloise JV ground
- OZ Minerals interest maintained at 70% once A\$3m is spent
- Minotaur retains an option to convert its equity to 20% and accept a loan carry via OZ Minerals to production

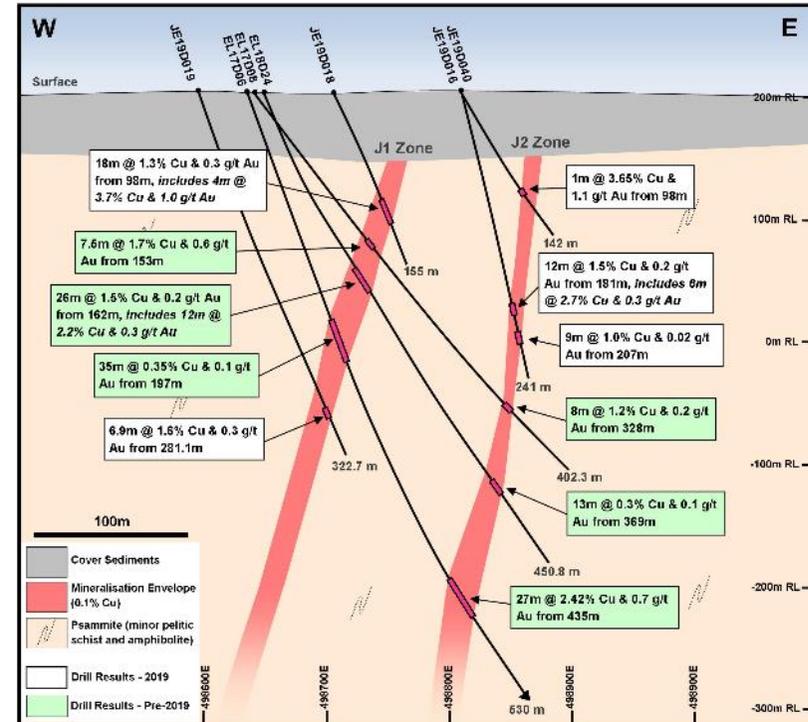
### iii Cloncurry Alliance

- ~24,000km<sup>2</sup> area of exclusivity established in the Cloncurry region
- OZ Minerals to fund A\$1m for project generation activities
- OZ Minerals to fund A\$4m over 3 years for each approved target to earn up to 70%



# 1 Jericho: cross-section

- J1 and J2 copper-gold lodes lie parallel and are approximately 120m apart
- Drilling shows mineralisation along 3.7km of strike and down to at least 650m below surface
- High-grade copper occurs in several coherent shoots, having substantial strike and depth extent
- Full extent of mineralisation remains unknown and is open along strike and up and down dip



Location of cross section denoted in Slide 20 – J1 long section.  
Matilda Shoot depicted within J1 lode

## Recent first-pass metallurgical test results by OZL

Reported outstanding recoveries and a clean, high quality concentrate grade:

- Copper recoveries 93 -95%
- Gold recoveries 65%
- Concentrate grade 27 – 30% Cu + 1.9g/t Au

## OZL's actions through to end of 2019

- Block model finalisation
- pre-resource estimate
- Underground mine development scenarios
- Next phase drill strategy
- Baseline ecological studies



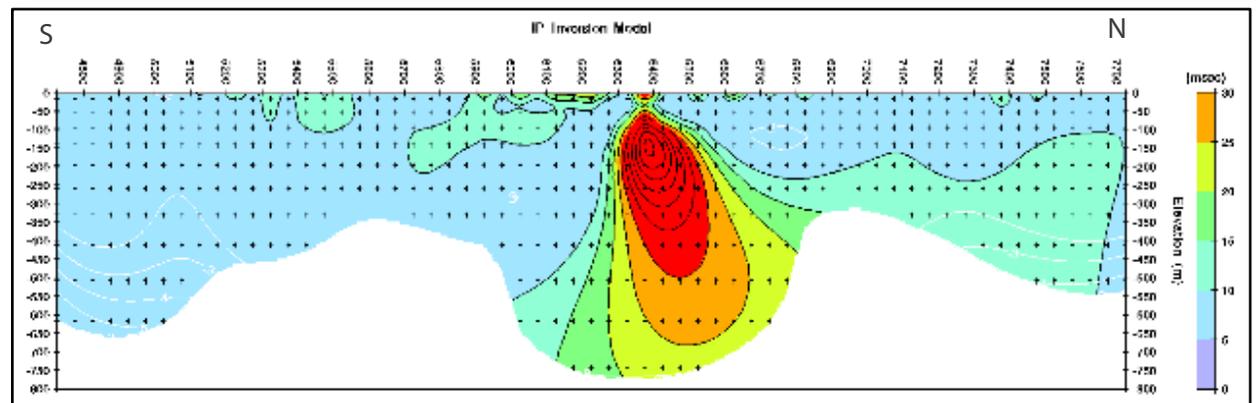
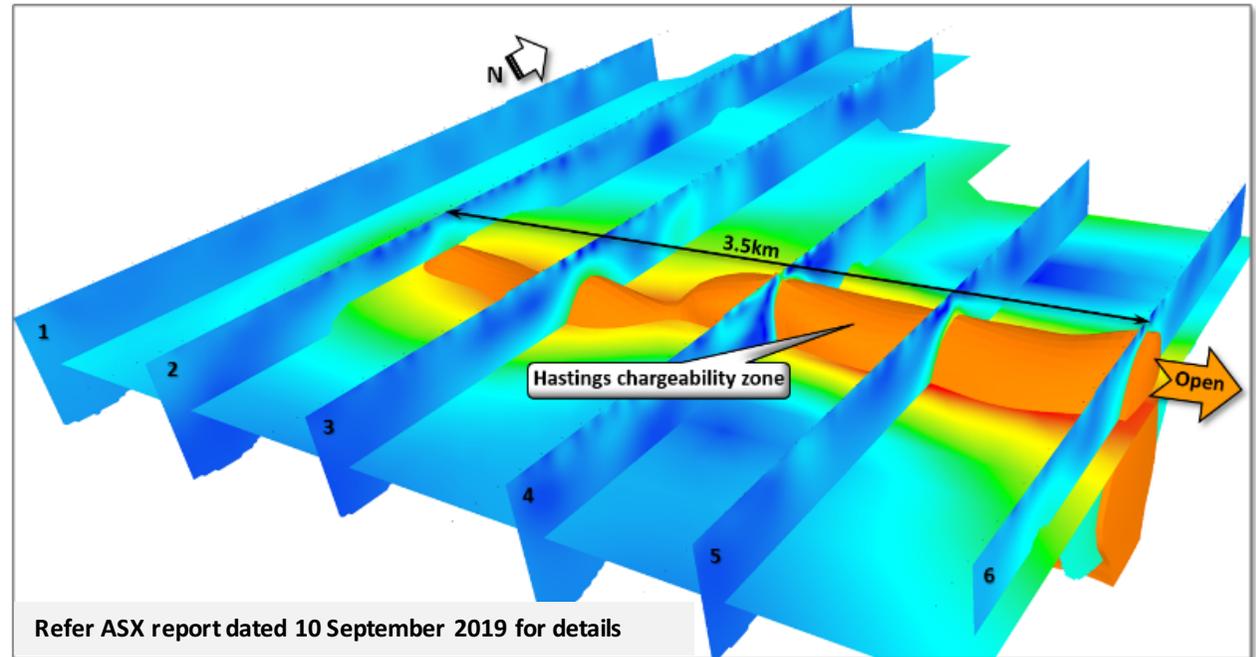
*Jericho Drill core with high-grade lattice network of copper vein mineralisation*

## Hastings IP target

- Minotaur's IP survey shows this geophysical technique can clearly see through highly conductive cover into buried Trooper Creek Formation (TCF)
- Hastings, a very strong IP chargeability anomaly, was defined along 3.5km of the TCF
- Identical geophysical attributes to VMS systems globally
- Cover thickness estimated to be <50m

## Hastings work plan

- Drilling started 30 October 2019; duration 4 weeks
- 12 RC scout holes for 1,400m to vector towards potential VMS mineralisation

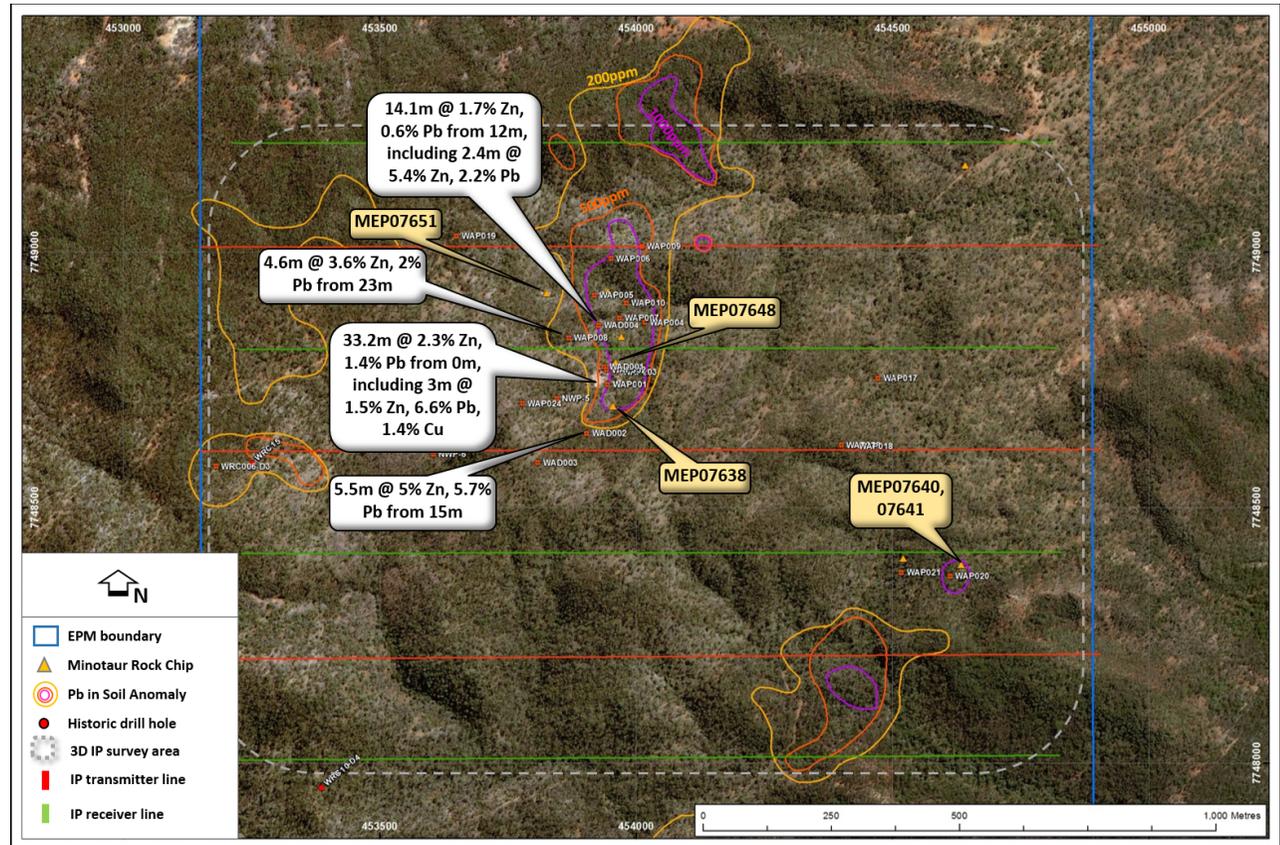


## VMS Outcrop

- Gossans are Pb-Ag-Cu-Zn mineralised
- Shallow 1992 drilling failed to locate source of mineralisation
- Complex geology frustrated previous explorers
- Recent rock chip samples taken:
  - 67.6g/t Au (MEP07641)
  - 5060g/t Ag (MEP07648)
  - 498g/t Ag (MEP07651)

## Warrawee work plan

- 3D IP technique to map the subsurface for sulphide concentration
- 3D IP survey to be done over 1,600m x 1,200m of mineralised outcrop
- Survey team on-site late November

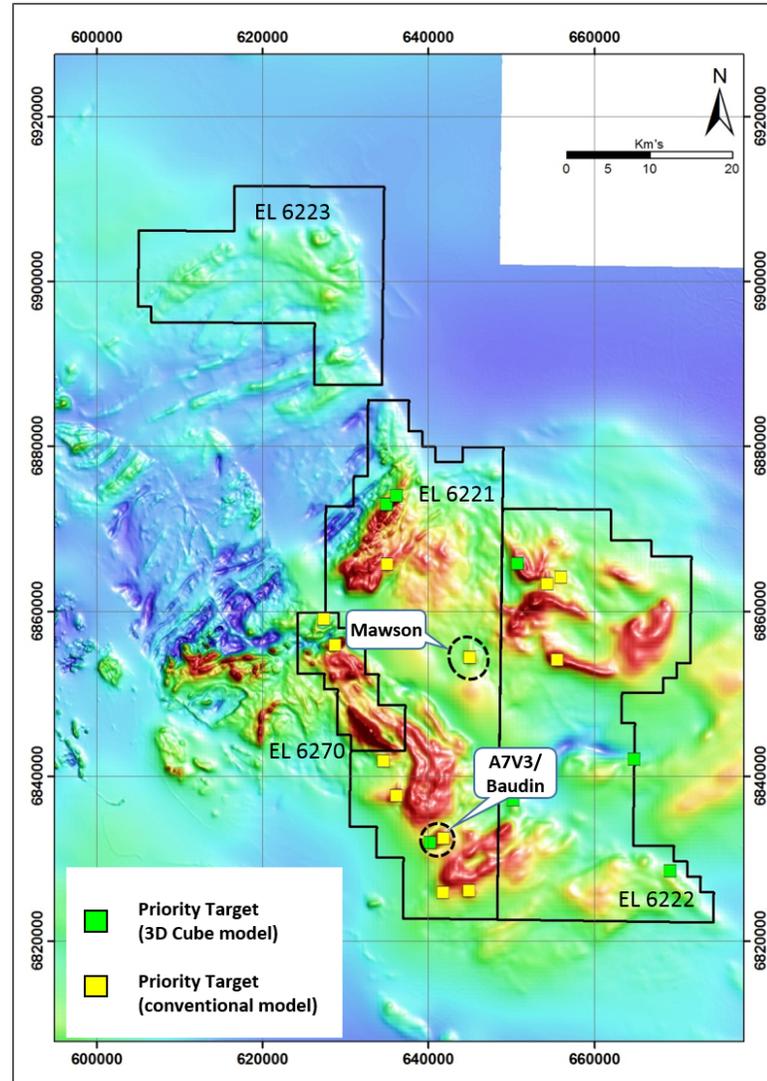
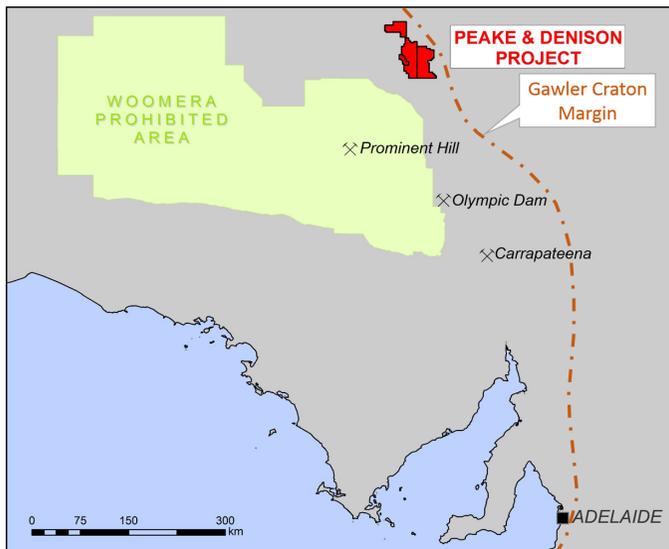


Warrawee 3D IP survey area with historic drill intercepts, soil anomalism gradients and selected rock samples taken by MEP

## On the edge of the Gawler Craton

Peake and Denison Inlier shows striking similarities to Cloncurry terrane with multiple, large magnetic anomalies

- Regional granitoid Fe-Na-Ca alteration ages (1533-1490Ma) in same age range (1530-1490Ma) as Cloncurry granites
- 2,500km<sup>2</sup> with only 23 historic drill holes penetrating basement



## MEP 100%

- Bedrock ages obtained from historic core by Minotaur
- Core shows chalcopyrite-pyrite breccia in hydrothermal magnetite
- some magnetic anomalies lie adjacent to large faults
- 19 targets identified
- ground geophysics needed to refine drill designs
- AMT technique to be trialled

## Target types

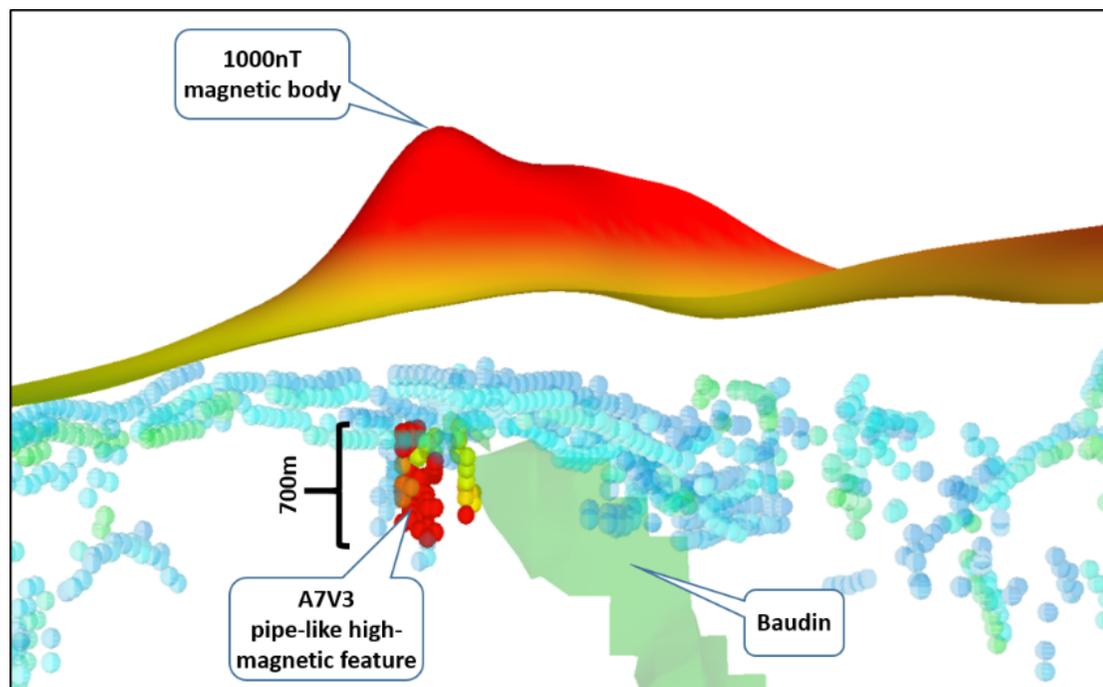
- **Ernest Henry** style Cu-Au breccia
- BHT-type Zn-Pb-Ag similar to **Cannington**

## A7V3 – a magnetite IOCG Target

- Used a proprietary high-res processing methodology to discriminate potential pipe-like magnetic features in basement
- Target A7V3 is a discrete pipe-like target, as distinct from its conventional interpretation 'Baudin'
- A discrete magnetic anomaly of 1000nT coincident with a gravity high
- The high magnetic response is 100m wide and extends from 300m - 1000m below surface

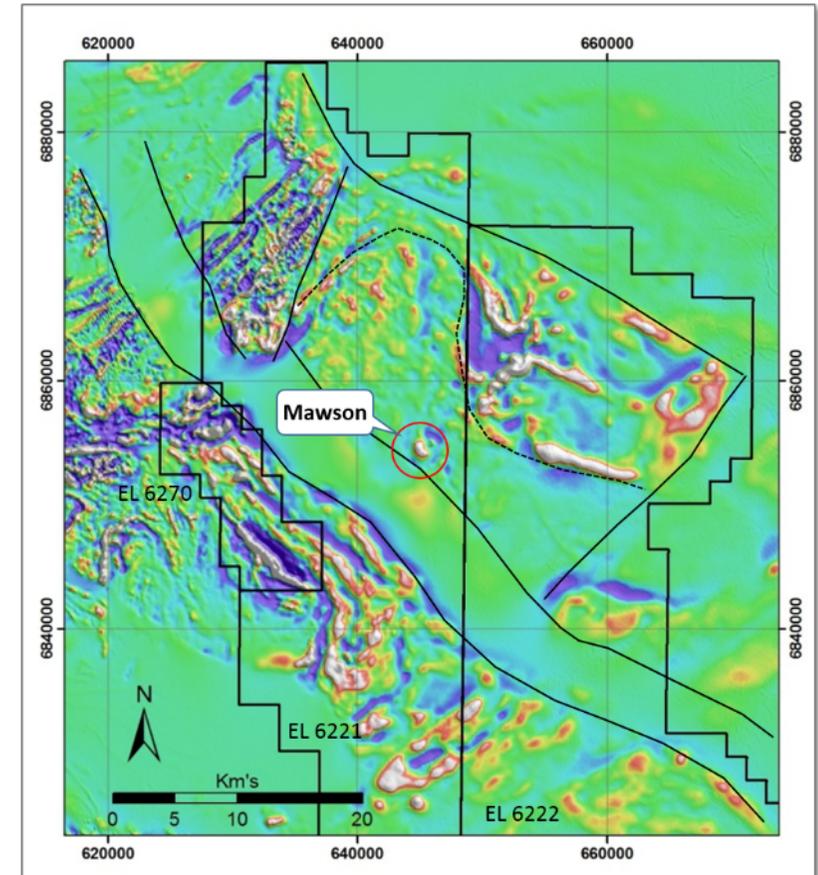
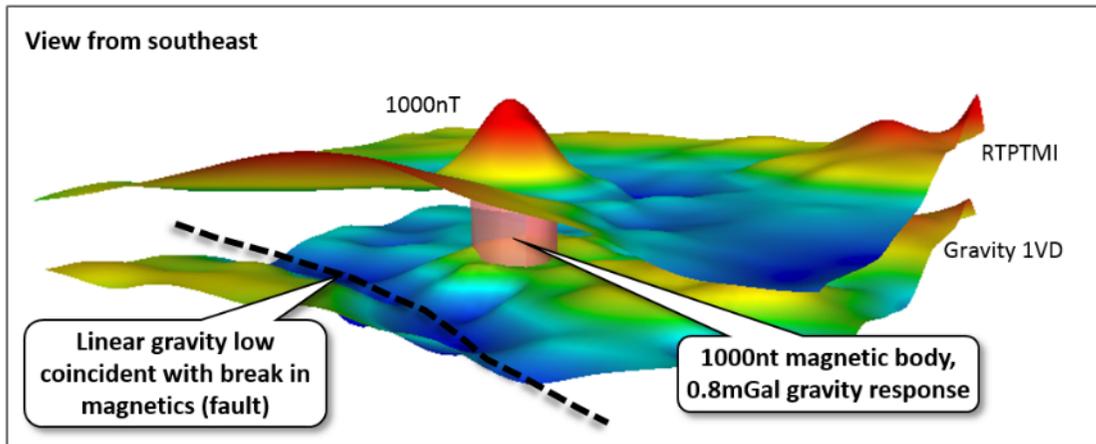
## Peake & Denison work plan

- 19 targets identified
- Ground geophysics to prioritise and refine drill targets
- Ground AMT will be deployed over small selection of targets to refine drilling plans
- Attract JV participation for proof of concept drilling



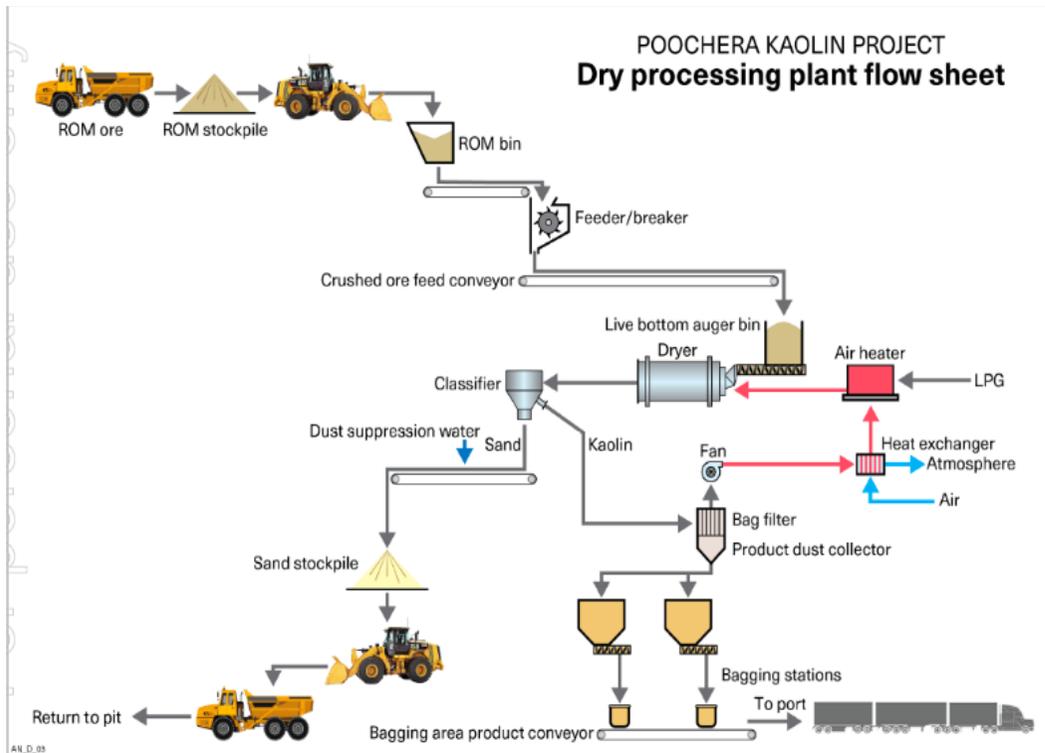
## Mawson – a Cannington style Target

- A discrete magnetic anomaly of 1000nT adjacent an elevated gravity response of 0.8mGal and aside a NW trending fault
- Feature is 1km wide and has modelled depth from surface to top of 260m
- By comparison, Cannington is a magnetic feature of 1000nT, ~1km wide with an adjacent gravity response of ~1mGal at 60m below surface



Andromeda Metals (ASX: ADN, EV ~\$55m) is earning 75%; Minotaur will receive 25% of mine revenues

## Simple, dry processing plant flow sheet



Refer ADN Scoping Study released on  
30 September 2019 for details

## Andromeda Metals' (ADN) Scoping Study

### Mine Plan – Production Target

From Measured Resources	4.2 Mt
From Indicated Resources	3.4 Mt
<b>Total Production Target</b>	<b>7.6 Mt</b>

### Capital Costs

Initial Capital Costs, Year 0	\$9M
Working Capital to Month 3, Year 1	\$16M
Maximum Cash Requirement	\$25M
Processing Plant, funded by internal cash flow, Year 2	\$28M
Sustaining Capital Costs (Years 3-15 @ \$600K/yr)	\$9M

### Production Summary

Mine life	15 years
Dry-processing rate of kaolinised granite	500ktpa
Strip Ratio (Waste:Ore)	2.3
Premium Refined Kaolin Produced	187ktpa
Average Yield of Refined Kaolin (LOM average)	37%

### Project Economics

Kaolin Price – Premium Wet-Refined (A\$/tonne ex Asian works)	\$700/t
Revenue	\$1,953M
AISC equivalent (AUD/tonne Wet-Refined Premium Kaolin)	\$396/t
EBITDA LoM	\$844M
Cashflow	\$798M
NPV (8% pre-tax)	\$413M
IRR	174%
Payback from start of site works	15 months

# Important Notice

## About the Eloise Joint Venture

OZ Minerals Ltd (ASX: OZL) expended \$10 million in exploration activity through to 30 March 2019 on Minotaur's 'Eloise' tenements, 65km south-east of Cloncurry, Queensland, and thereby earned 70% beneficial interest. OZ Minerals will sole fund up to \$13 million by August 2021 to maintain its 70% beneficial interest in the tenement package. Minotaur is manager and operator of the joint venture.

## About the Jericho Joint Venture

OZ Minerals converted its 70% interest in the Jericho deposit to 80% by undertaking to fund Minotaur's 20% share of all expenses at Jericho from 1 April 2019 until production. The accruing amount is captured in a non-recourse loan account which Minotaur is liable to repay only from potential future positive cash flow from the Jericho deposit.

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Information in this presentation that relates to exploration results for Minotaur Exploration Ltd is based on information compiled by Mr Glen Little, who is a full-time employee of the Company and a Member of the Australian Institute of Geoscientists (AIG). Mr Little has sufficient experience relevant to the style of mineralisation and type of deposits under consideration and to the activity that he has undertaken to qualify as a Competent Person as defined in the 2012 Edition of the "Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves" (JORC Code). Mr Little consents to inclusion of this information in the form and context in which it appears.

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