



**CASSINI**  
RESOURCES LIMITED

# Brisbane Resources Round-up 2018

17-18 October 2018

RICHARD BEVAN, MANAGING DIRECTOR



[www.cassiniresources.com.au](http://www.cassiniresources.com.au)

# Disclaimer and important notice



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## Competent Persons Statement

The information in this statement which relates to the Mineral Resource data, including tenement information, drilling, sampling, and analytical results, geology interpretation, and selection of cut-off grade has been overseen by Mr Greg Miles who is a full-time employee of Cassini Resources Ltd and a Member of the Australasian Institute of Geoscientists. Mr Miles has sufficient relevant experience to the style of mineralisation and type of deposit under consideration and to the activity for which he is undertaking to qualify as a Competent Person as defined in the JORC Code, 2012 Edition.

The information in this report which relates to the Nebo-Babel Mineral Resource estimation and classification has been prepared by Mr Andrew Weeks who is a full-time employee of Golder Associates Pty Ltd and a Fellow of the Australasian Institute of Mining and Metallurgy. Mr Weeks has sufficient relevant experience to the style of mineralisation and type of deposit under consideration and to the activity for which he is undertaking to qualify as a Competent Person as defined in the JORC Code, 2012 Edition. Both Mr Miles and Mr Weeks consent to the inclusion in this report of the matters based on information in the form and context in which it appears.

Please refer to Cassini's ASX announcement of 7 December 2015 for the Competent Person Statement and JORC disclosure tables relating to the Succoth Mineral Resource Estimate.

Cassini is not aware of any new information or data, other than that disclosed in this report, that materially affects the information included in this report and that all material assumptions and parameters underpinning Exploration Results, Mineral Resource Estimates and Production Targets continue to apply and have not materially changed.

The nickel equivalent (NiEq) and copper equivalent (CuEq) calculations take into account resources, reserves, and grades as stated in latest ASX releases and assumes 100% payability for all metals recovered generating a commodity equivalent value for Ni, Cu, Co, Zn, Au, Ag, Pb and Mo. Only projects with JORC 2012 resources and reserves have been used. Nickel equivalent grade =  $\text{Ni}\% + \text{Cu}\% \times 0.56$ . Copper equivalent grade =  $\text{Cu}\% + \text{Ni}\% \times 1.97$ . Based on assumed recoveries of 73% for Cu and 59% for Ni and commodity prices shown below. It is the Cassini's opinion that all the elements included in the metal equivalents calculation have a reasonable potential to be recovered and sold. NiEq grades have been published to enable a comparison to similar sized nickel sulphide assets. CuEq grades have been published to enable a comparison to similar sized copper assets.

## Forward Looking Statements

Some statements in this report regarding estimates or future events are forward-looking statements. They include indications of, and guidance on, future earnings, cash flow, costs and financial performance. Forward-looking statements include, but are not limited to, statements preceded by words such as "planned", "expected", "projected", "estimated", "may", "scheduled", "intends", "anticipates", "believes", "potential", "could", "nominal", "conceptual" and similar expressions. Forward-looking statements, opinions and estimates included in this announcement are based on assumptions and contingencies which are subject to change without notice, as are statements about market and industry trends, which are based on interpretations of current market conditions. Forward-looking statements are provided as a general guide only and should not be relied on as a guarantee of future performance. Forward-looking statements may be affected by a range of variables that could cause actual results to differ from estimated results, and may cause the Company's actual performance and financial results in future periods to materially differ from any projections of future performance or results expressed or implied by such forward-looking statements. These risks and uncertainties include but are not limited to liabilities inherent in mine development and production, geological, mining and processing technical problems, the inability to obtain mine licenses, permits and other regulatory approvals required in connection with mining and processing operations, competition for among other things, capital, acquisitions of reserves, undeveloped lands and skilled personnel; incorrect assessments of the value of acquisitions; changes in commodity prices and exchange rates; currency and interest rate fluctuations; various events which could disrupt operations and/or the transportation of mineral products, including labour stoppages and severe weather conditions; the demand for and availability of transportation services; the ability to secure adequate financing and management's ability to anticipate and manage the foregoing factors and risks. There can be no assurance that forward-looking statements will prove to be correct.

The production targets referred to in this announcement are based on 52% In-pit Indicated Resources and 48% Inferred Mineral Resources. The Inferred Resources do not determine the economic viability of the project, and approximately 80% of resources within the optimisation pit shells are in the Indicated Category during the pay-back period. There is a low level of geological confidence associated with Inferred Mineral Resources and there is no certainty that further exploration work will result in the determination of Indicated Mineral Resources or that the production targets themselves will be realised.

Statements regarding plans with respect to the Company's mineral properties may contain forward looking statements. Statements in relation to future matters can only be made where the Company has a reasonable basis for making those statements.





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## Company Highlights

- ✓ Rapidly progressing a **world class** nickel + copper sulphide project with ASX100 partner **OZ Minerals (ASX:OZL)**
- ✓ One of the few new sulphide **projects of scale** being developed globally
- ✓ Significant **opportunity** to add value to project through Prefeasibility Study and ongoing exploration
- ✓ Base metal market dynamics continue to improve with new demand for high quality products





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## Recent Events

- ✓ **A\$4.2 million** placement completed to institutional, sophisticated and strategic investors
- ✓ Key cornerstone investors include Mr. Xu Jinfu, Chairman and major shareholder of Chinese end-user **Tinci Materials**
- ✓ Tinci Materials is one of the **largest battery electrolyte manufacturers** in China
- ✓ Other investors with a track record of developing and financing battery minerals assets
- ✓ Add significant funding capacity to CZI



# Corporate Snapshot

## CAPITAL STRUCTURE

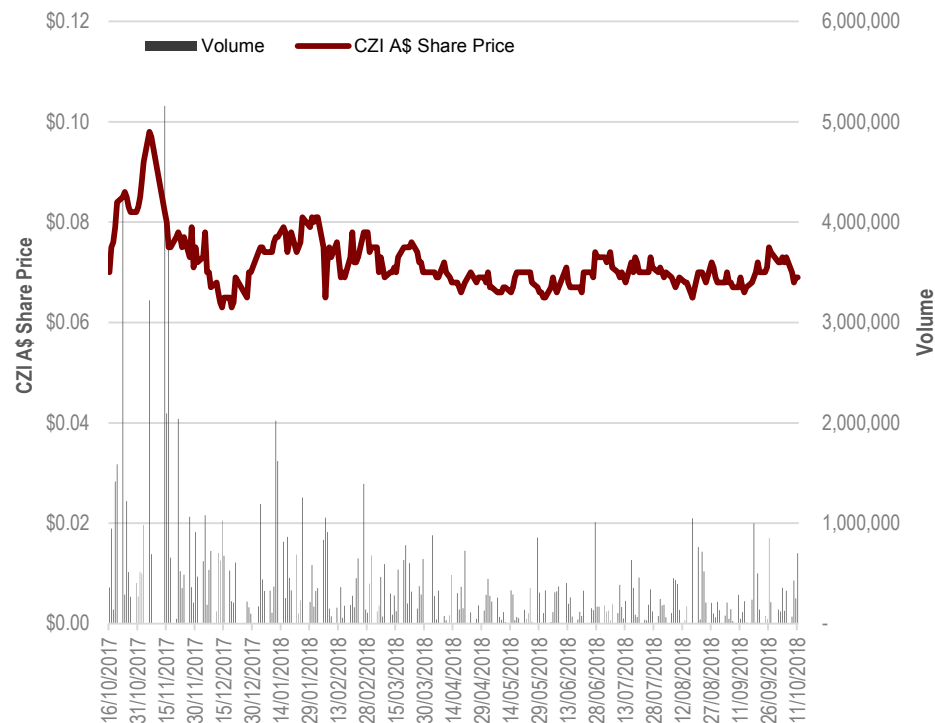
Australian Stock Exchange (ASX) code	<b>CZI</b>
Frankfurt Stock Exchange code	ICR
ASX Share price (close 16-Oct-18)	A\$0.07
52 week low / high	A\$0.06 / A\$0.125
Shares outstanding	345.5M
Options on Issue	15.15M
<b>Market capitalisation</b>	<b>A\$24.5 M</b>
Cash (30-Jun-18)	A\$1.4M
Capital Raise 17-Aug-18	\$4.2M

## MAJOR SHAREHOLDERS

MACA (ASX:MLD)	8.6%
Mr Xu, Jing Fu (Tinci Material Technology Co)	4.7%
Mr Bu, Xiao Yu	4.7%
GR Engineering (ASX:GNG)	4.4%
Directors and Management	4.1%

## SHARE PRICE PERFORMANCE

### 12 month CZI Price and Volume







**Earnin/Joint Venture**  
(OZL 51%, CZI 49%)

## West Musgrave Project (Ni, Cu, Co, PGE)

**STAGE: PRE FEASIBILITY**

### NEBO-BABEL DEPOSITS

- 283Mt open pit sulphide resource
- Low operating cost and long mine life

**STAGE: ADVANCED EXPLORATION**

### SUCCOTH DEPOSIT

- 156Mt shallow Cu resource
- Provides significant optionality and leverage

**STAGE: EXPLORATION**

### REGIONAL

- 40km mineralised corridor
- Multiple targets

**Significant exploration upside remains**

- West Arunta Project
- West Musgrave Project
- Mount Squires Project
- Yarawindah Project



**100% CZI Owned**

## Mount Squires Project (Au)

**STAGE: EXPLORATION**

### Shallow gold mineralisation

- 50km prospective trend
- Gold in previous drilling

## West Arunta Project (Zn)

**STAGE: EARLY EXPLORATION**

**Potential regional scale zinc project**

**CZI earning in to 80%**

## Yarawindah Brook Project (Ni, Cu, Co, PGE)

**STAGE: EXPLORATION**

### Massive sulphide mineralisation

- Under-explored project
- High grade Ni-Cu-Co massive sulphides

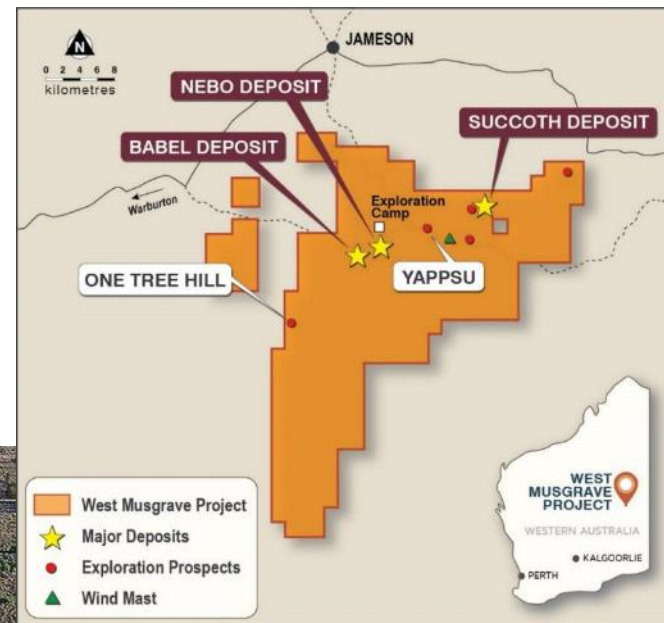


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# West Musgrave Project (WMP): Overview

## Globally significant Ni and Cu deposits with significant exploration upside

- Nebo-Babel discovered by Western Mining Corporation in May 2000
- Cassini acquired WMP from BHP Billiton in April 2014
- Commenced Earnin/ JV with OZ Minerals August 2016
- Significant regional landholding (>1,500 km<sup>2</sup>)
- Leveraging off significant historical exploration work

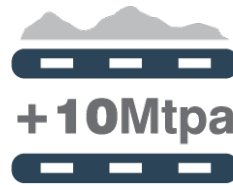


# Nebo-Babel – Scoping Study Outcomes

## RESOURCE



## PROCESSING PLANT



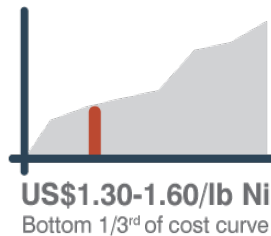
## PRODUCTION AVERAGE P.A.



## MINE LIFE



## LOW C1 CASH COST



## PRE-PRODUCTION CAPITAL



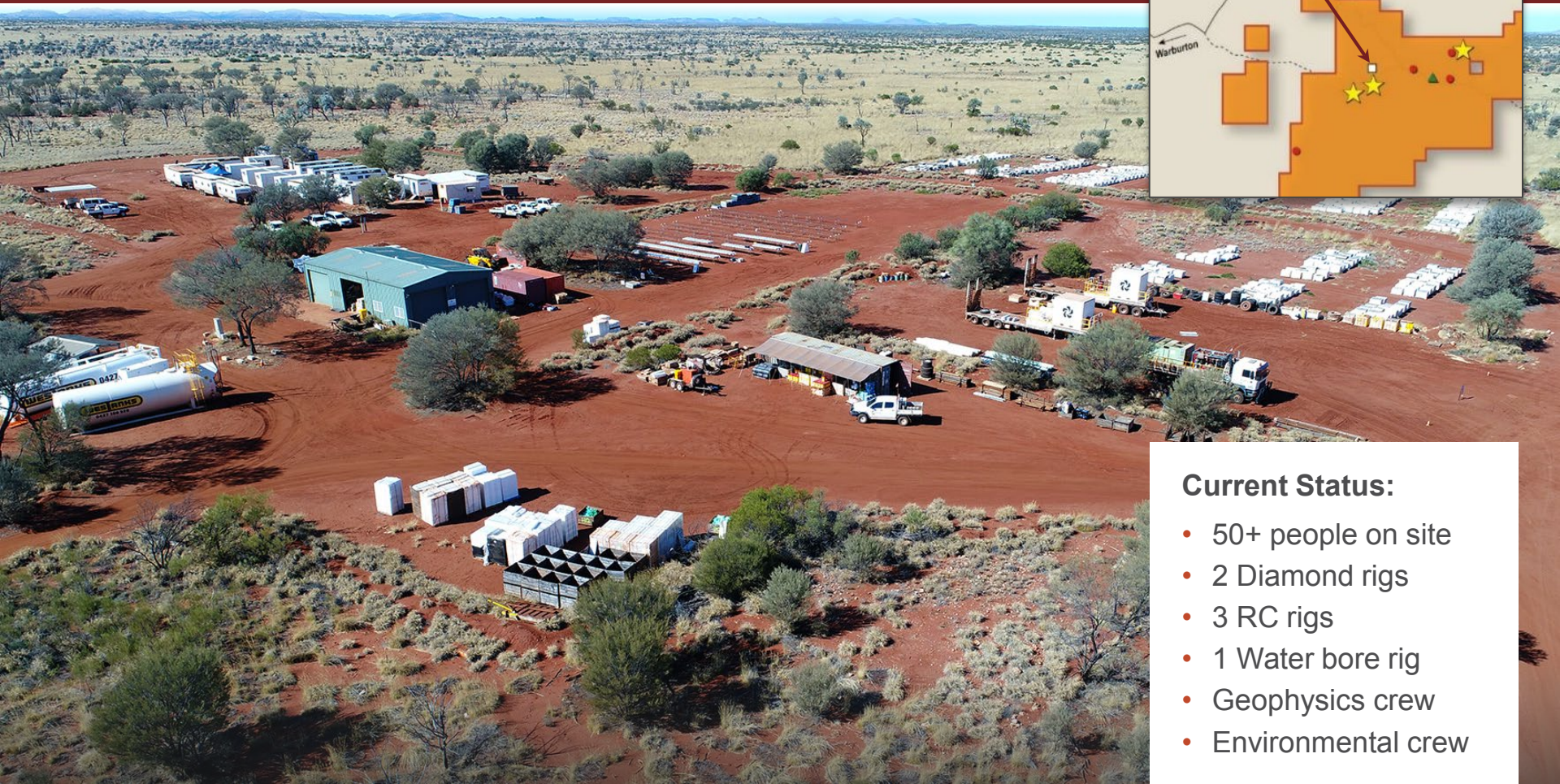
## PROJECT PAYBACK



Details of the Scoping Study Results can be found in Cassini's ASX Announcement of 14 November 2017 available on the Company website [www.cassiniresources.com.au](http://www.cassiniresources.com.au)  
All material assumptions underpinning the forecast financial information derived from a production target in the initial public report of the Scoping Study continue to apply and have not materially changed.



# West Musgrave Project camp

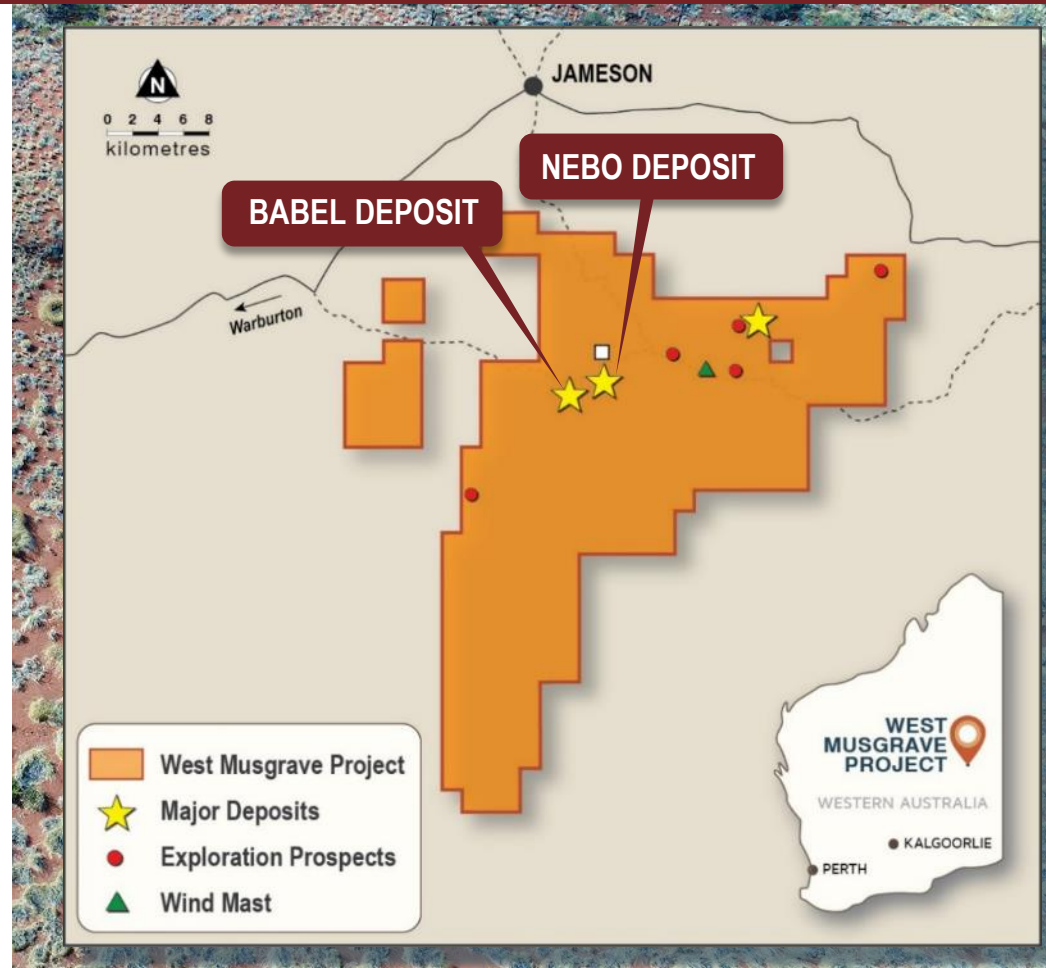


## Current Status:

- 50+ people on site
- 2 Diamond rigs
- 3 RC rigs
- 1 Water bore rig
- Geophysics crew
- Environmental crew

# Nebo-Babel Prefeasibility Study – work programs

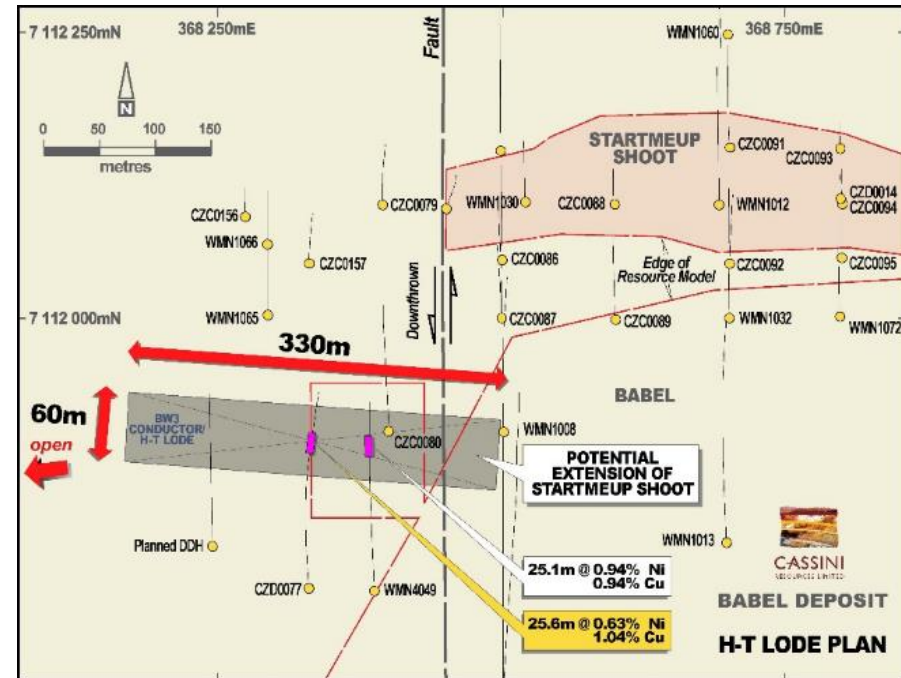
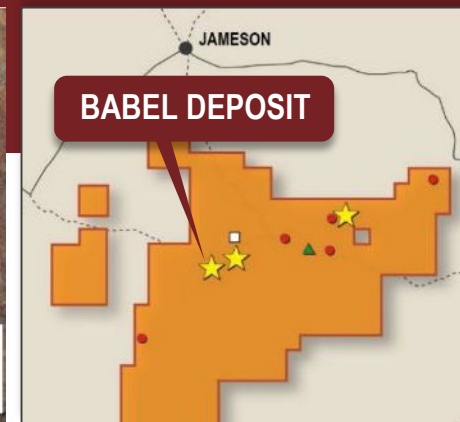
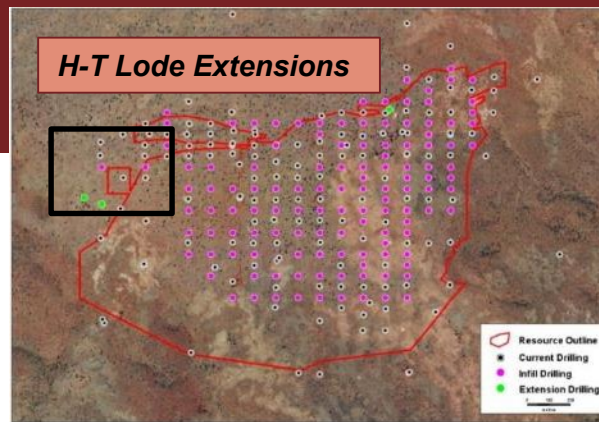
- **40,000m Resource Infill** – increase confidence leading to maiden Reserve
- **Resource Extension drilling** – potential higher grade extensions of the existing resource
- **Metallurgy** – Advanced test work to maximise metal recovery and reduce risk
- **Hydrogeology** – Quantify groundwater resource through exploration drilling and pump tests
- **Renewable energy study** - baseline data collection from wind mast installation
- **Improved mine scheduling** and stockpile management
- **Environmental surveys** for mine permitting
- **Consultation with key stakeholder** groups





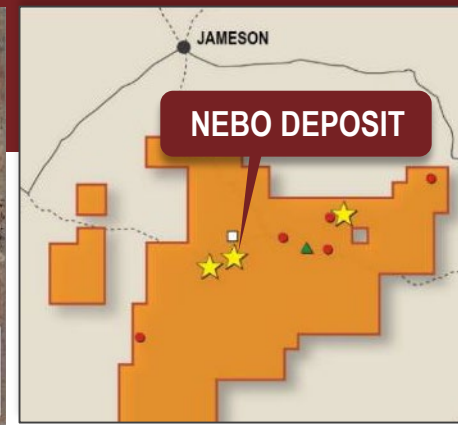
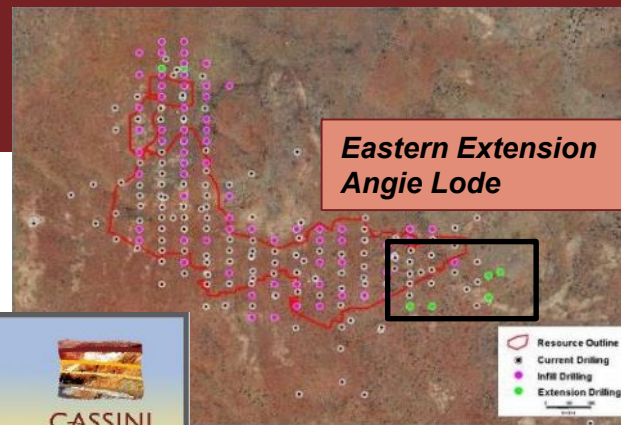
# Babel Resource

- 27,000m Resource Drill out on nominal 100m x 50m centres
- Aiming to report maiden Reserve at end of PFS
- Resource Extension drilling – opportunities to add high-grade mineralisation and options for development
- Early success at H-T lode – 25.6m @ 0.63% Ni, 1.04% Cu
- Apparent fault off-set of Startmeup Shoot
- Mineralisation remains open along strike, follow-up drilling still to come

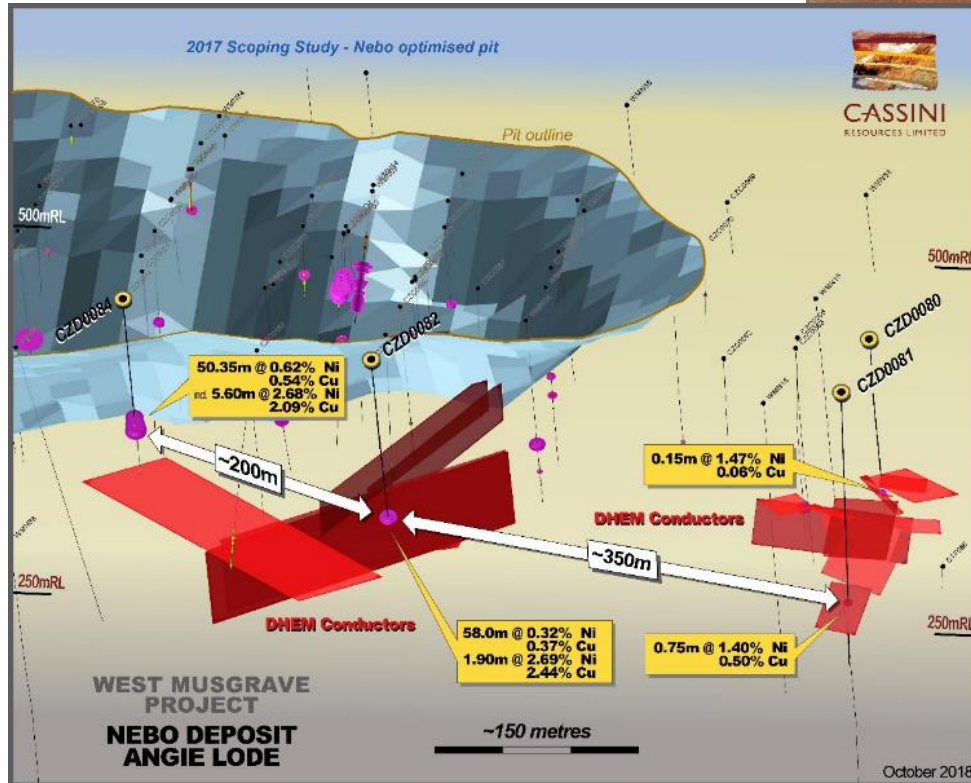




# Nebo Resource



- 13,000m Resource Drill out on nominal 100m x 50m centres
- Aiming to report maiden Reserve at end of PFS
- Resource Extension drilling targeting high grade at Sugar Lode and Eastern Strike Extension

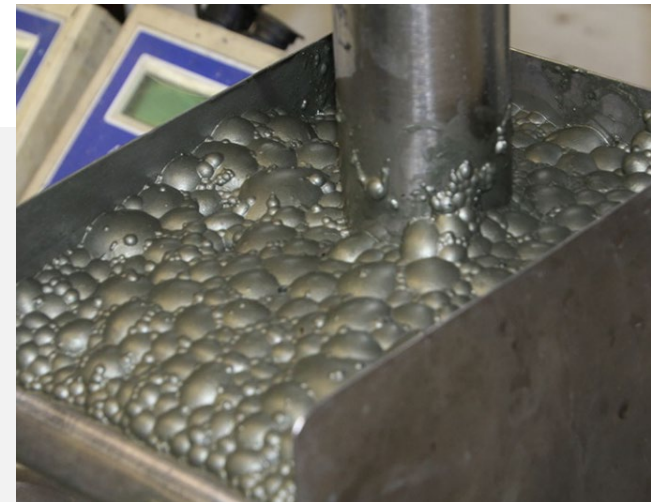
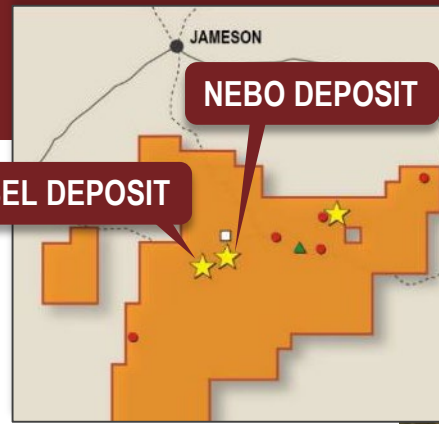


# Metallurgy and Processing



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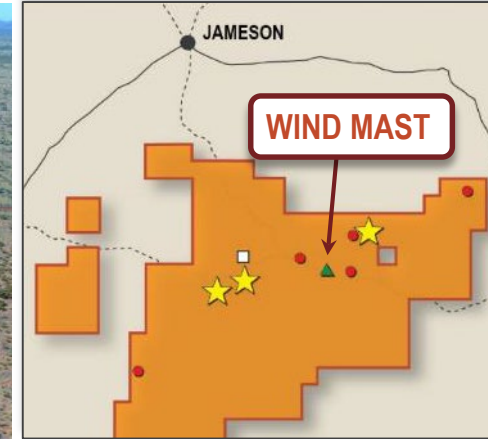
- Optimisation of Scoping Study flow sheet targeting improvements in metal recovery
- Investigation of ore sorting potential
- Comminution testing
- Optimisation of concentrate properties
- Significantly reducing risk on processing



*“Recent early metallurgical test work shows significant improvements over the results achieved during the Further Scoping Study, with a material improvement in copper and nickel recoveries.”*

OZ Minerals, Oct 2018

# Prefeasibility Study - Opportunities to Add Value

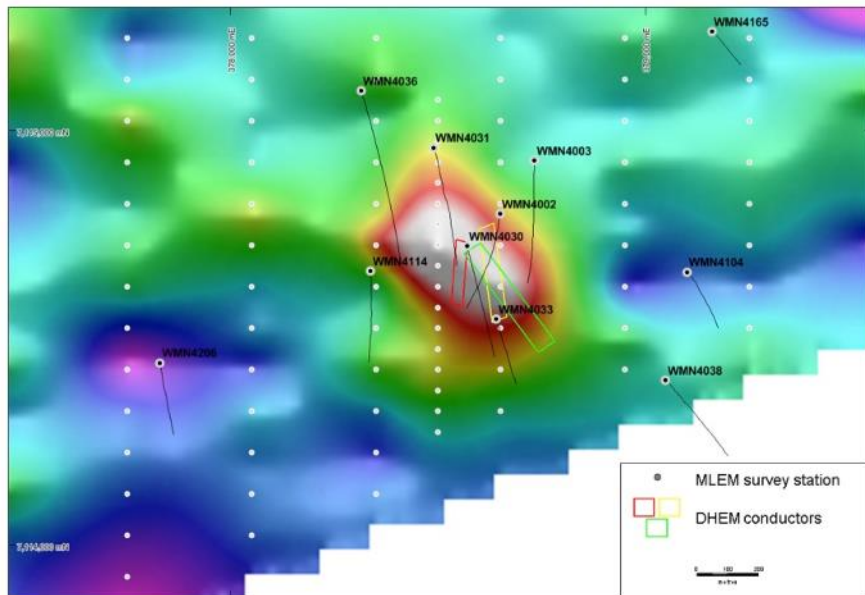


- Evaluation of renewable (wind) power to be combined with hybrid diesel-solar energy systems to further reduce power costs
- High-tech “Smart Mine” solutions to reduce capital and operating costs
- Metallurgical recovery and processing improvements
- Improved mine scheduling and stockpile management
- Assess the potential for Succoth and high-value exploration discoveries, such as Yappsu and One Tree Hill, to be included in development scenarios

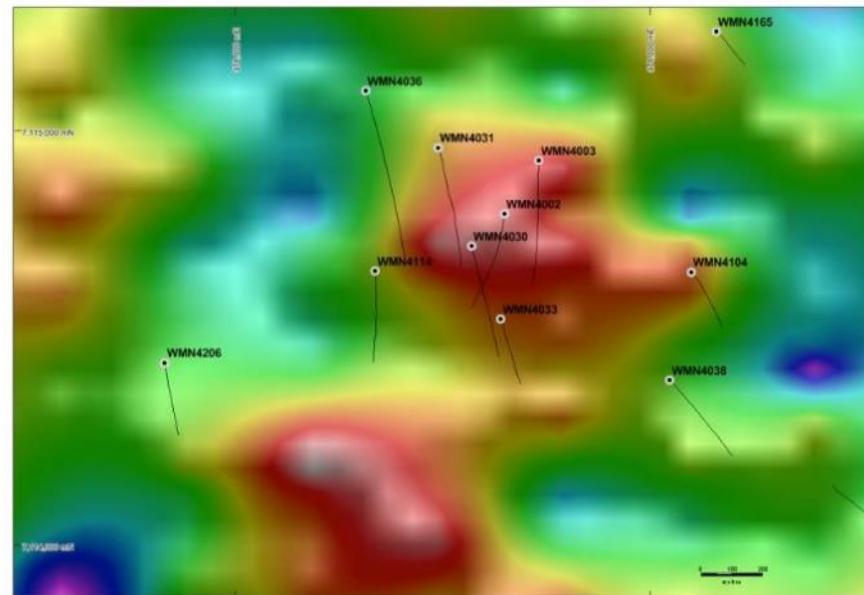


# WMP Exploration – Significant discovery opportunity remains

- Exploration program targeting high value mineralisation to support Nebo – Babel development
- Significant areas where there has been no or ineffective exploration
- Success a function of improved geological understanding, commitment to the Project and improved technology (geophysics)



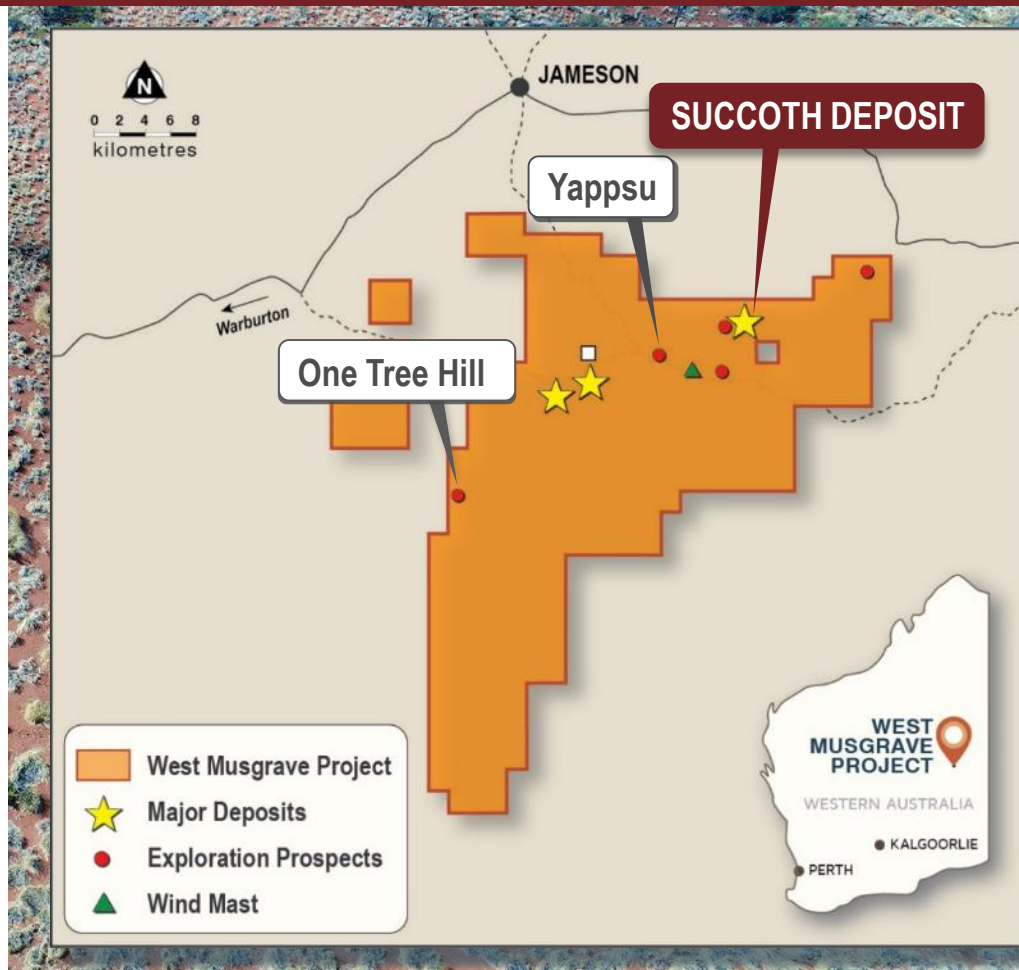
Yappsu – Squid MLEM 2018 – clear anomaly



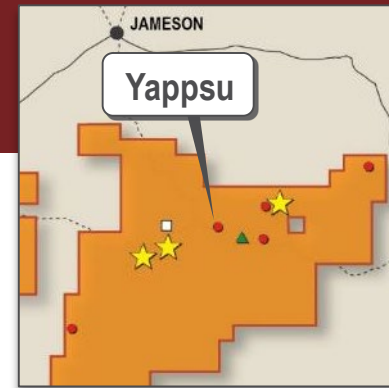
Yappsu – Sampson MLEM image 2009 – noisy data

# Priority exploration targets

- Exploration strategy is to identify additional high grade sources of ore to complement the Nebo-Babel mining operation
- Exploration program is managed by CZI and funded by OZL JV
- Ni + Cu mineralisation identified over 40km of strike
- Multi-commodity prospectivity - Ni, Cu, Co, Au & PGE's
- Initial priority targets are Yappsu, One Tree Hill and Succoth
- Drilling is underway

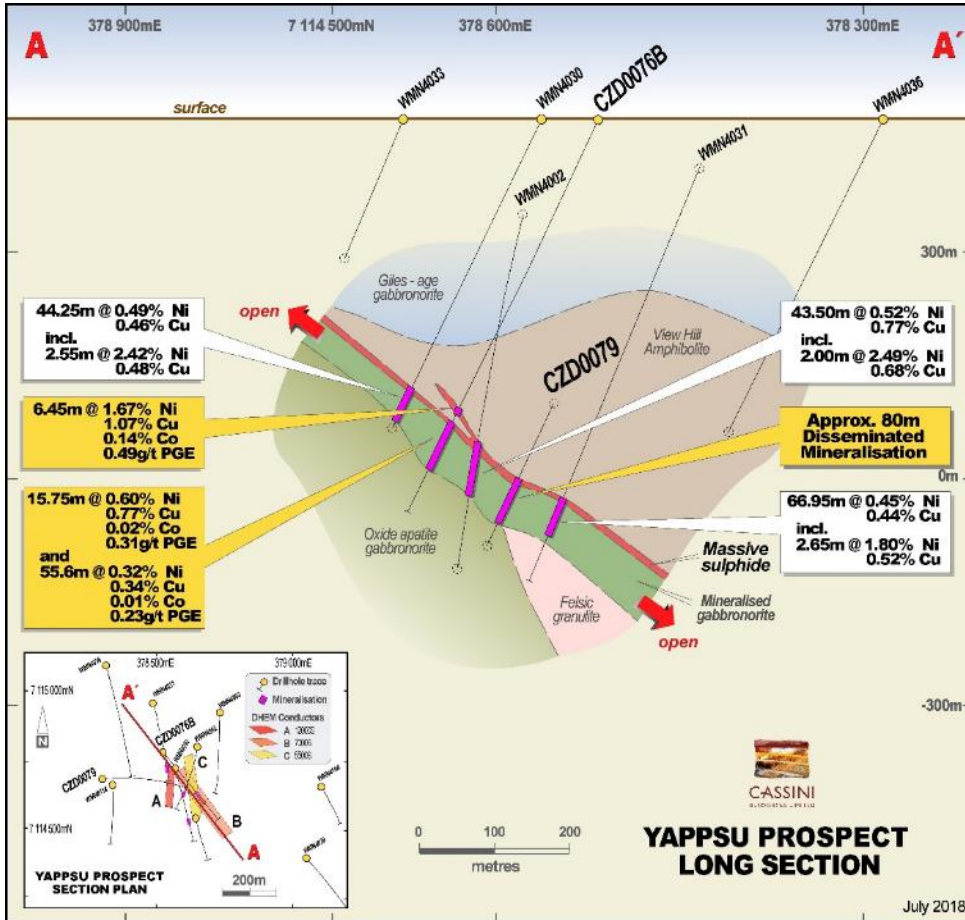


# Yappsu Prospect – Early success



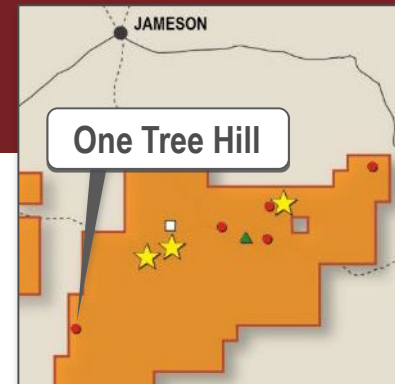
- Thick 78m zone of Ni, Cu, Co, PGE and gold mineralisation (CZD0076B)
- Highest PGE, Au and Co values at WMP to date
- A higher grade version of Babel – potentially a significant deposit in its own right
- Mineralisation open in all directions
- Drilling to continue after down-hole EM

**Substantial discovery with positive implications for Project development**

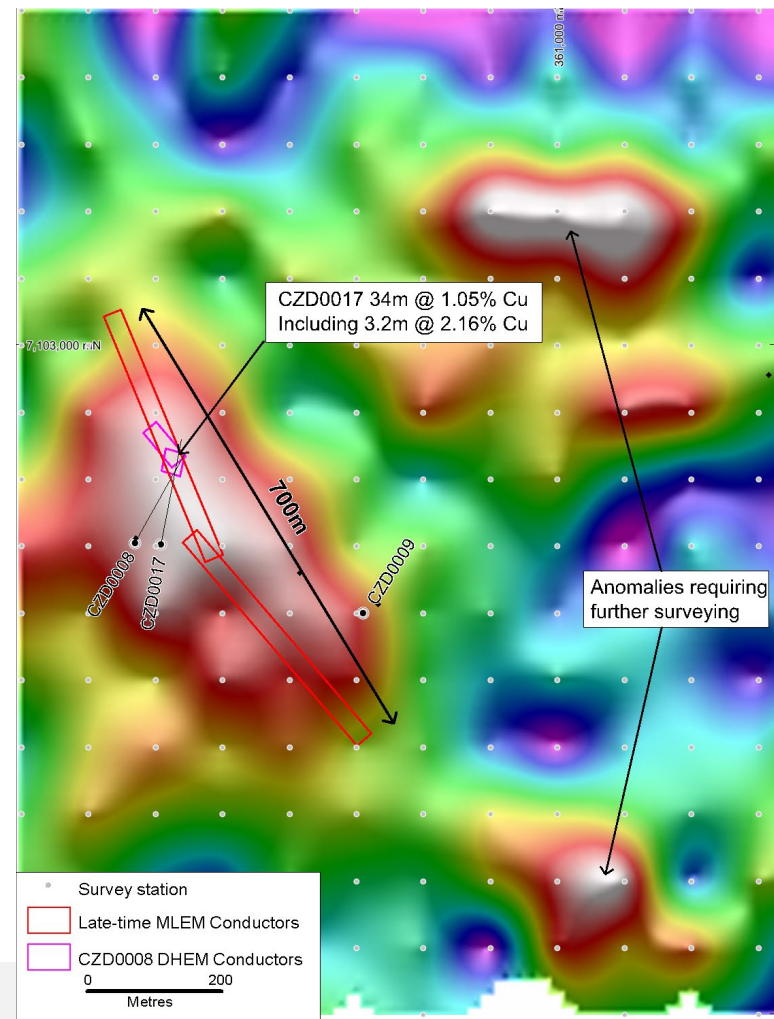




# One Tree Hill Prospect



- Dec 2016, intersected two magmatic mineralised zones
- Widespread low level PGE and Cu anomalism - **possible halo of a large system**
- Potential for more high-value massive sulphide mineralisation
- Recent DH and ground EM identified 2 large conductors striking over 700m
- Initial program of 2 step out holes from CZD0017, results pending

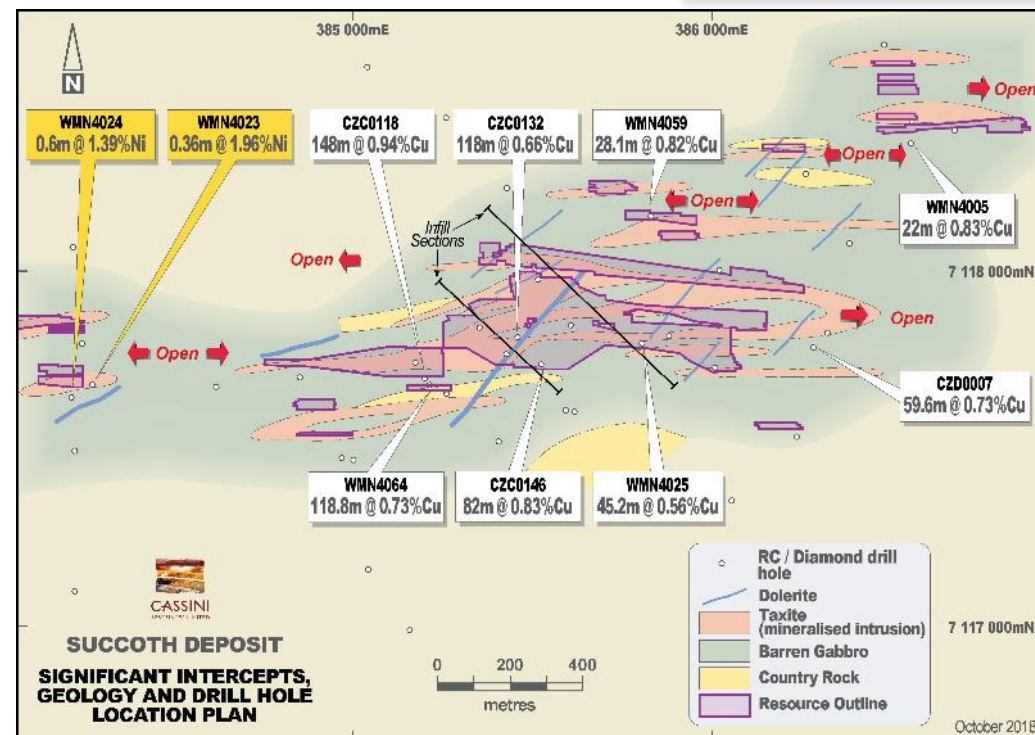
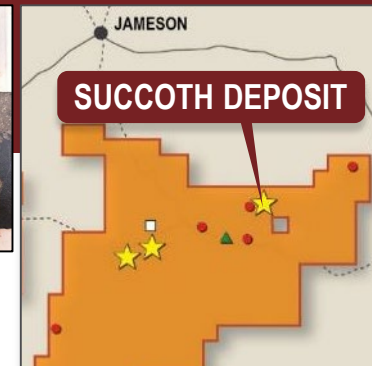


# Succoth Copper Deposit

- Current Inferred resource of 156mt @ 0.6% Cu
- Not currently included in Nebo-Babel development plans
- Provides significant option to extend operations
- Excellent leverage to copper
- Exploration programs targeting:
  - » higher grade, thick zones of mineralisation close to surface; and
  - » chasing nickel mineralisation remains a focus

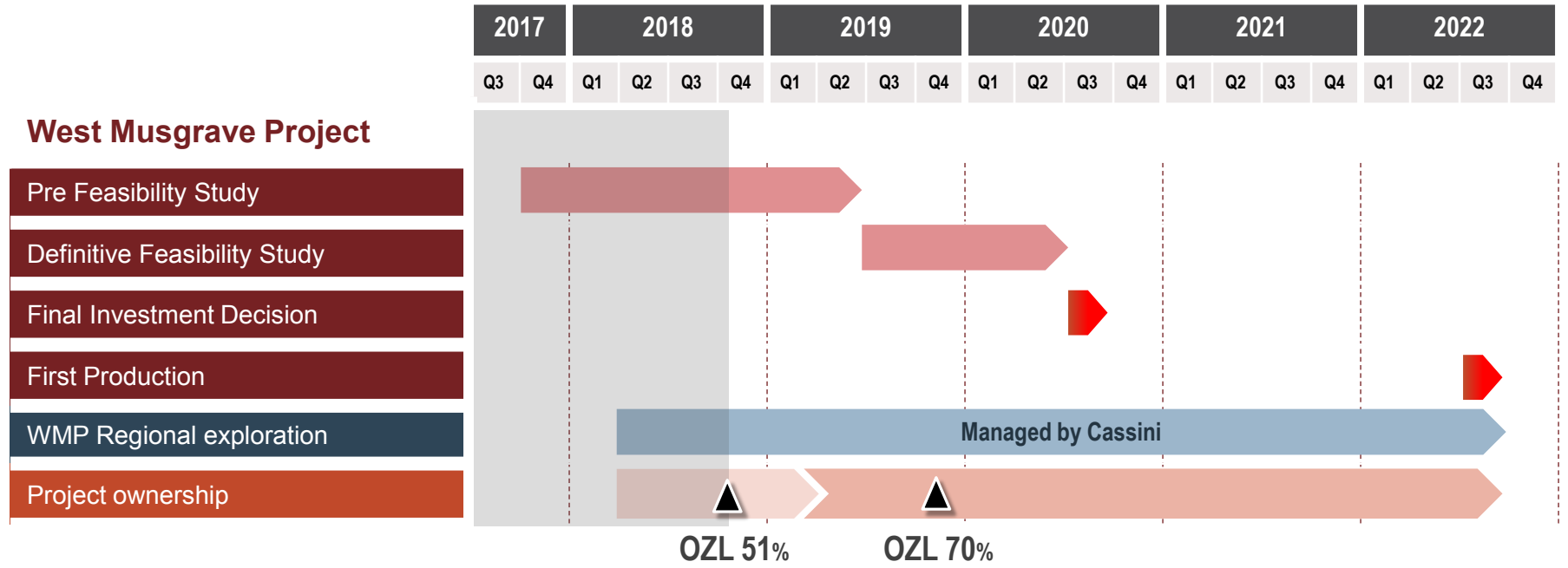


ABOVE: WMN4023 – 226.1m: 1.96% Ni, 0.13% Cu 1.2 g/t Pt+Pd.  
Ni-rich massive sulphide from Babylon (hosted in late dolerite therefore remobilised, but proximal to source)



# West Musgrave Project Schedule

Indicative Timeline







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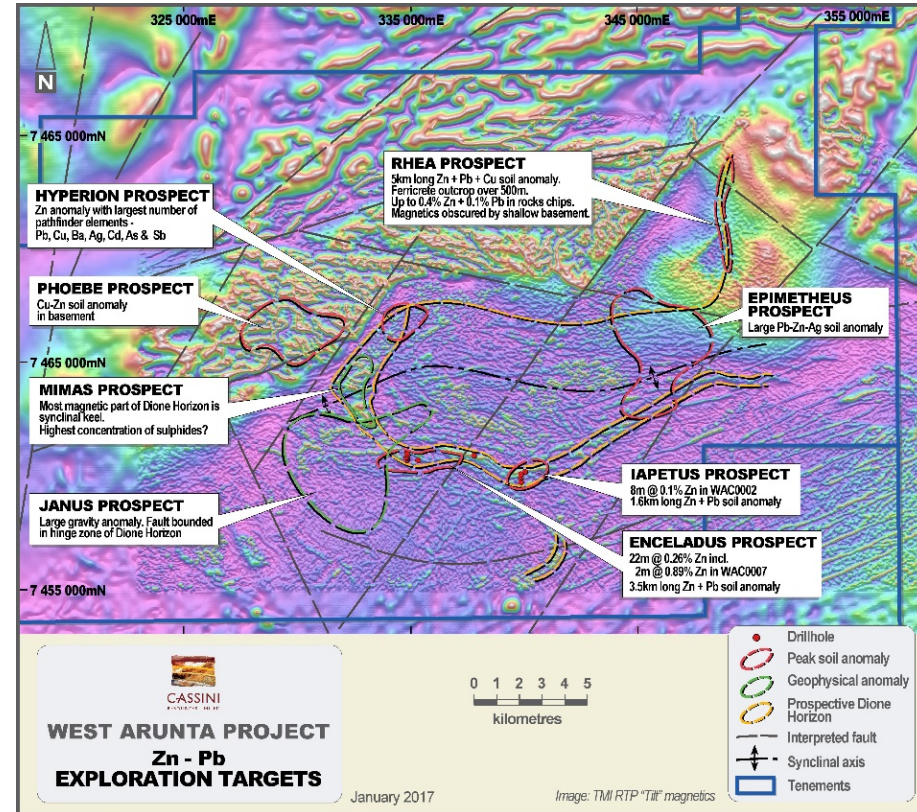
## Other Exploration Projects



# West Arunta Project (Zn) – 100% CZI

## Multiple prospective zinc targets across a 35km prospective strike horizon

- Early-stage, sedimentary zinc exploration project – First mover advantage due to minimal historical exploration in region
- Maiden drill program identified broad zones of sub-surface enrichment in zinc and associated elements
- Airborne geophysics completed
- RC drilling campaign recently completed, results pending



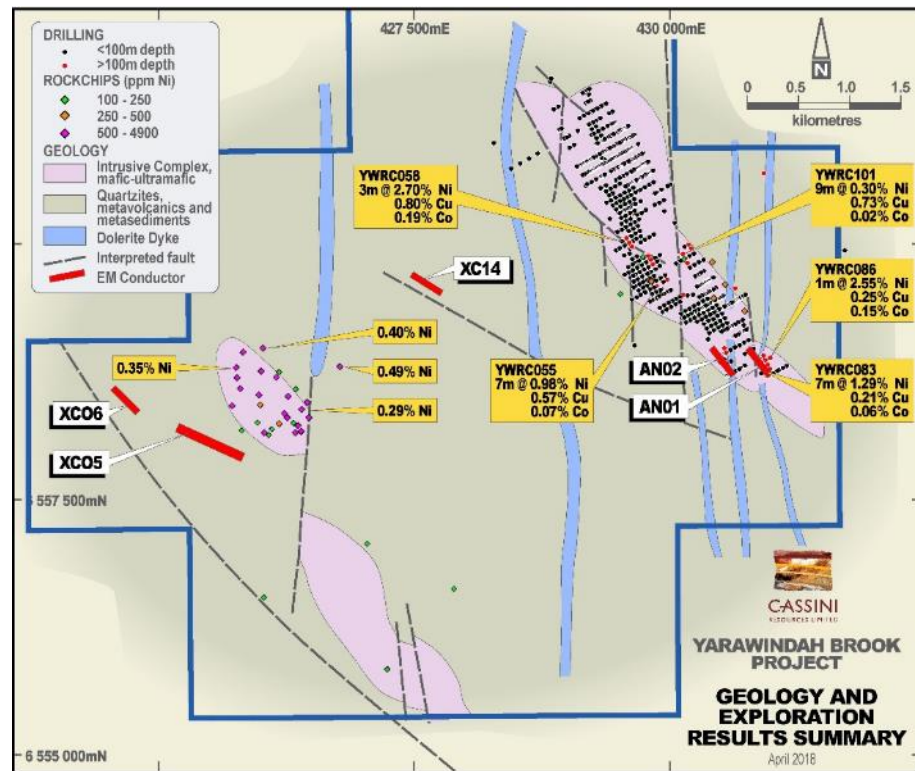


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# Yarawindah Brook (Ni+Cu+Co+PGE) – CZI option to earn 80%

## Increasing exposure to critical EV and battery metals

- Early stage massive Ni-Cu-Co-PGE sulphide project
- Significant intercepts not followed up
  - » **7m @ 1.29% Ni, 0.21% Cu, 0.06% Co**
  - » **3m @ 2.70% Ni, 0.80% Cu, 0.19% Co**
- New EM anomalies identified
- Anomalous surface rocks not tested – no drilling
- Infrastructure advantages – close to power, transport & water
- Applying learnings from WMP to a similar, but under-explored project





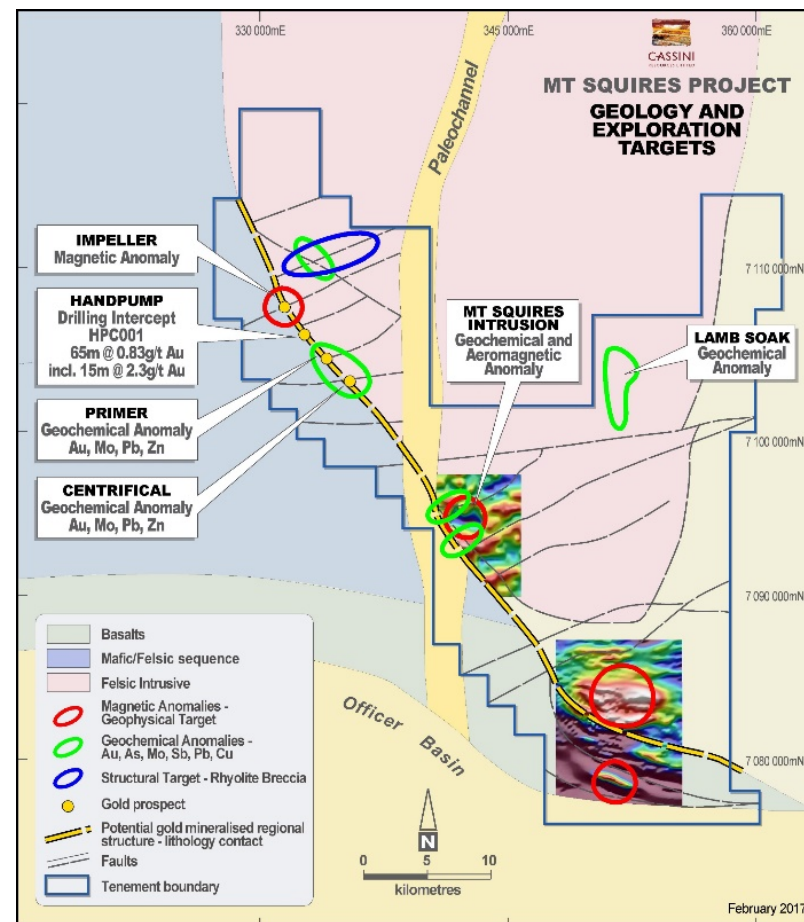


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## Mt Squires Project (Au) – 100% CZI

### 50km long structure with confirmed gold mineralisation

- Large-scale greenfields gold project
- Historical drilling identified significant mineralisation at the Handpump Prospect:
  - » 15m @ 2.3g/t Au from 31m, including 5m @ 4.7g/t from 34m
  - » 12m @ 1.3g/t Au from 25m, including 5m @ 2.0g/t from 25m
- Multiple new targets identified with no previous exploration





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## Investment in Cassini

- ✓ Leverage to positive Ni and Cu price outlook and emerging battery metals thematic
- ✓ Exposure to a large scale, long life, low cost Ni + Cu project in a safe, first world jurisdiction
- ✓ Project study and development de-risked by strong partner OZ Minerals
- ✓ Cassini is funded up to a decision to mine = reduced capital dilution for shareholders
- ✓ Significant upside exploration opportunity exists.
- ✓ The gap between CZI market cap and project value that will close!







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ASSOCIATION OF MINING  
AND EXPLORATION COMPANIES

**2018 MEMBER**



# Appendix A: Mineral Resource Table

## West Musgrave Project Indicated and Inferred Mineral Resources<sup>1,2,3</sup>

Mineral Resource estimates provided by independent resource consultants CSA Global Pty Ltd

Prospect	Classification	Tonnes (Mt)	Ni (%)	Cu (%)	Co (ppm)	Au (ppm)	Pd (ppm)	Pt (ppm)
Nebo	Indicated	37.8	0.49	0.44	211	0.04	0.08	0.07
	Inferred	1.9	0.37	0.34	149	0.04	0.08	0.07
	<b>Total</b>	<b>39.7</b>	<b>0.48</b>	<b>0.43</b>	<b>208</b>	<b>0.04</b>	<b>0.08</b>	<b>0.07</b>
Babel	Indicated	73.9	0.36	0.41	132	0.06	0.10	0.09
	Inferred	169.4	0.33	0.37	123	0.06	0.10	0.09
	<b>Total</b>	<b>243.3</b>	<b>0.34</b>	<b>0.38</b>	<b>126</b>	<b>0.06</b>	<b>0.10</b>	<b>0.09</b>
<b>Nebo + Babel</b>	<b>Total</b>	<b>283.0</b>	<b>0.36</b>	<b>0.39</b>	<b>137</b>	<b>0.06</b>	<b>0.10</b>	<b>0.09</b>
Succoth	Inferred	156	0.06	0.60	-	0.02	0.11	0.04

### NOTES:

1. Nebo-Babel Indicated and Inferred Mineral Resource (0.25% Ni cut-off), 8 November 2017
2. Succoth Deposit Inferred Mineral Resource estimate (0.3% Cu cut-off), 7 December 2015
3. The Mineral Resource estimates have been completed in accordance with the guidelines of the JORC Code (2012 edition) - Refer to the company website page:  
<http://www.cassiniresources.com.au/jorc-compliance>