



Andromeda

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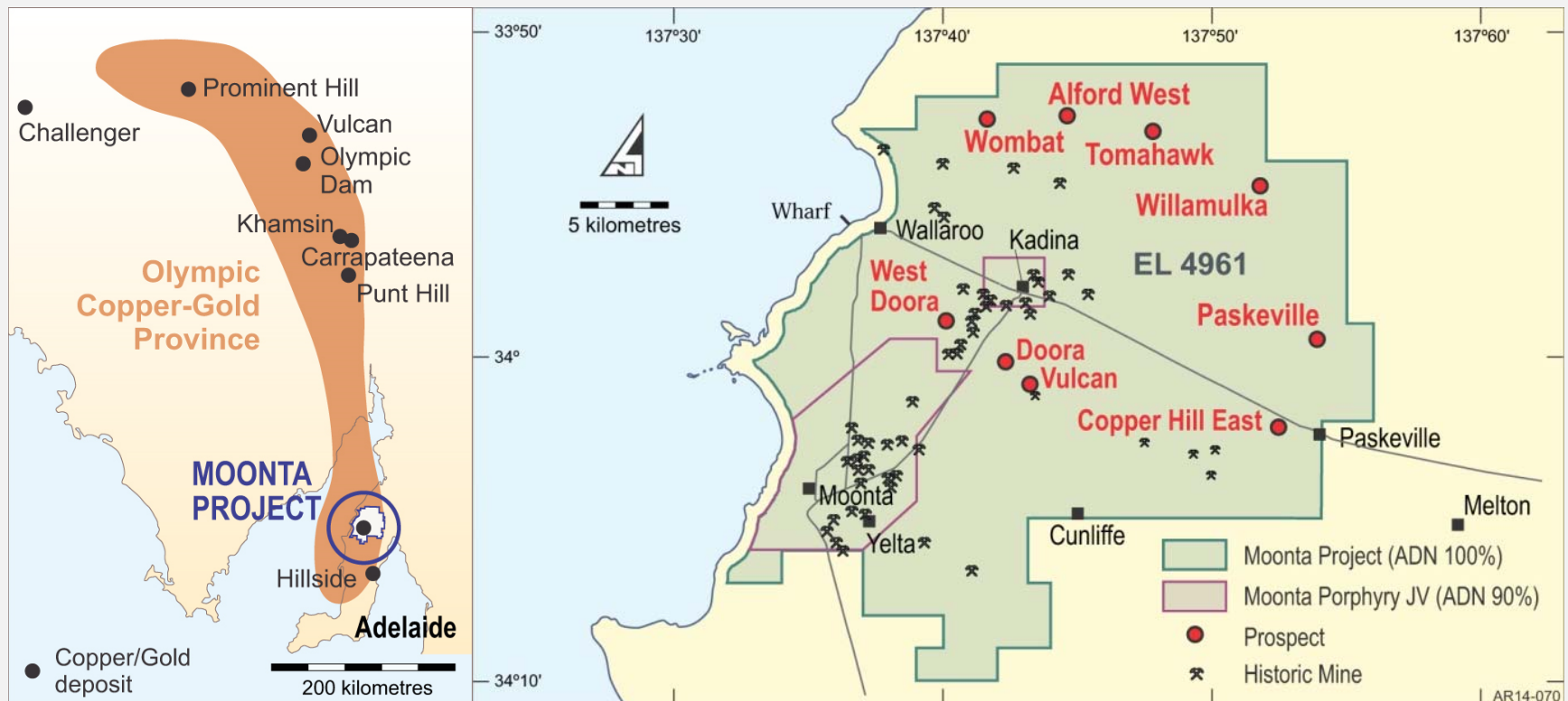
SA
EXPLORATION
& MINING
CONFERENCE

In-situ copper recovery investigation Moonta – Wallaroo district

Andromeda Metals' Moonta Copper Project

Famous “Copper Triangle” location at southern end of Olympic IOCG province.

- Copper first discovered in 1859
- Long history of conventional mining



Conventional mines – Copper Triangle

Poona Open Pit



Wheal Hughes underground



Is there a different way of producing copper?

In-situ recovery (ISR) concept

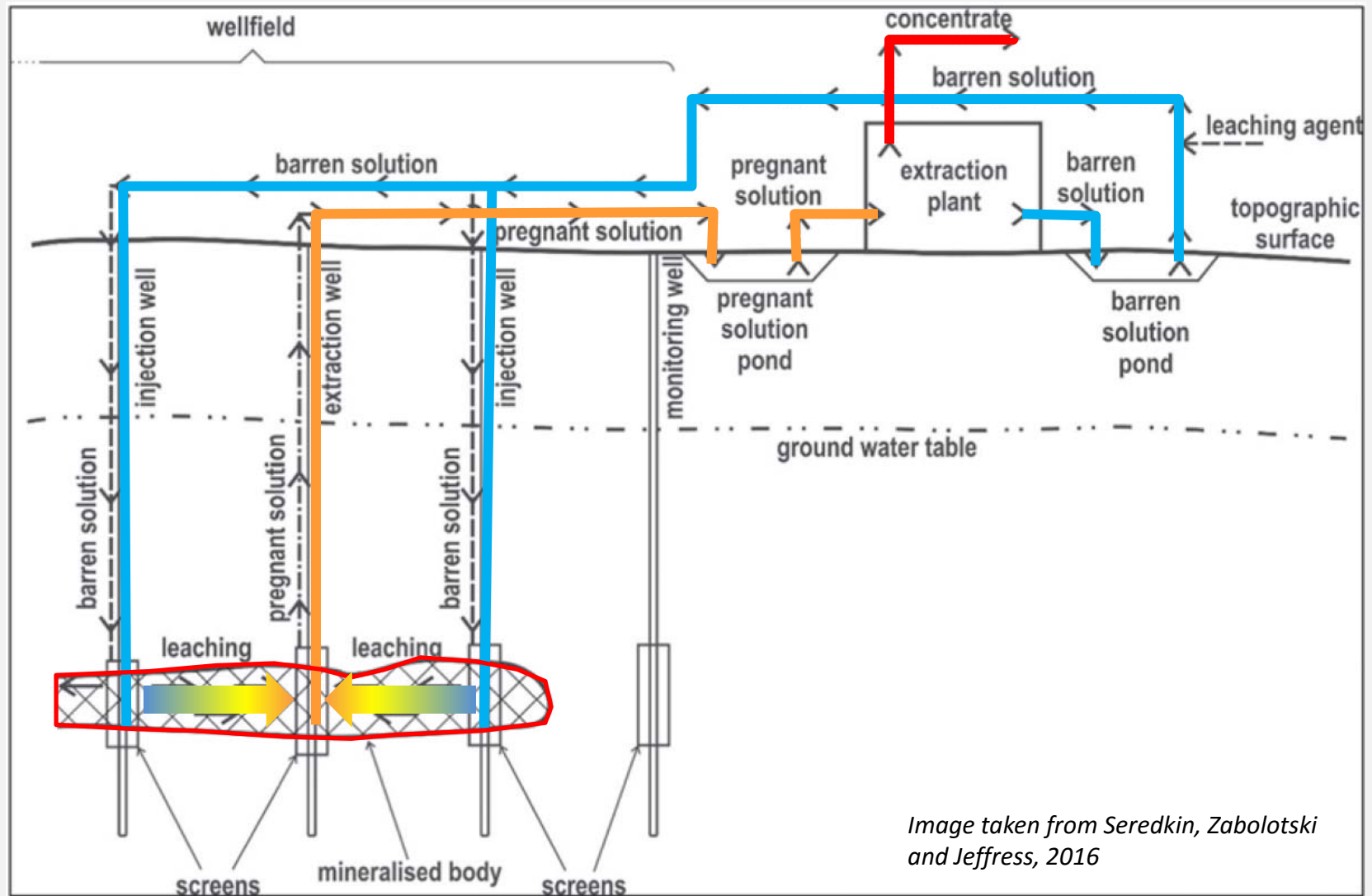


Image taken from Seredkin, Zabolotski and Jeffress, 2016

Examples of ISR copper project resources

- Van Dyke project (Copper Fox Metals – Arizona US):
Resource 260 million tonnes grading **0.25% Cu**.
89% soluble copper
- Florence project (Taseko Mines – Arizona US):
Resource 300 million tonnes grading **0.36% Cu**.
70% soluble copper
- Gunnison project (Excelsior Mining Corp. - Arizona US):
Resource 780 million tonnes grading **0.29% Cu**
48% recovery
(US\$46.9M capex)

Low capex requirements allow economic production from low grade resources

Mineralogical requirements

- Target metal must be present as a leachable/soluble mineral phase
- Mineralisation should not contain non-target phases which consume lixiviant (leaching agent)

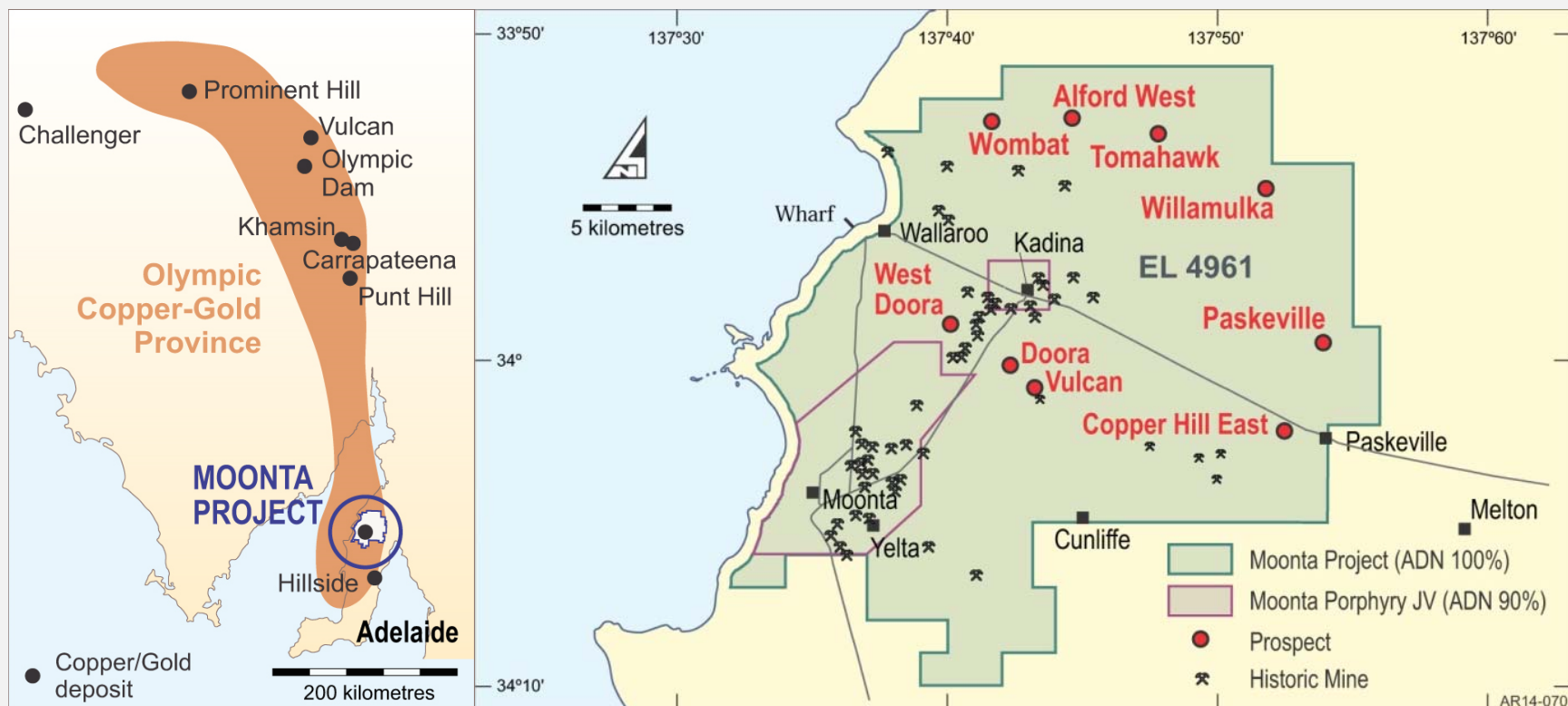
Hydrological requirements

- Mineralised zone must be porous and permeable to allow fluid flow
- Mineralisation to be leached should be below the water table
- There must be aquacludes that act as barriers that restrict the lixiviant to the target mineralisation and prevent contamination of groundwater

Moonta ISR potential

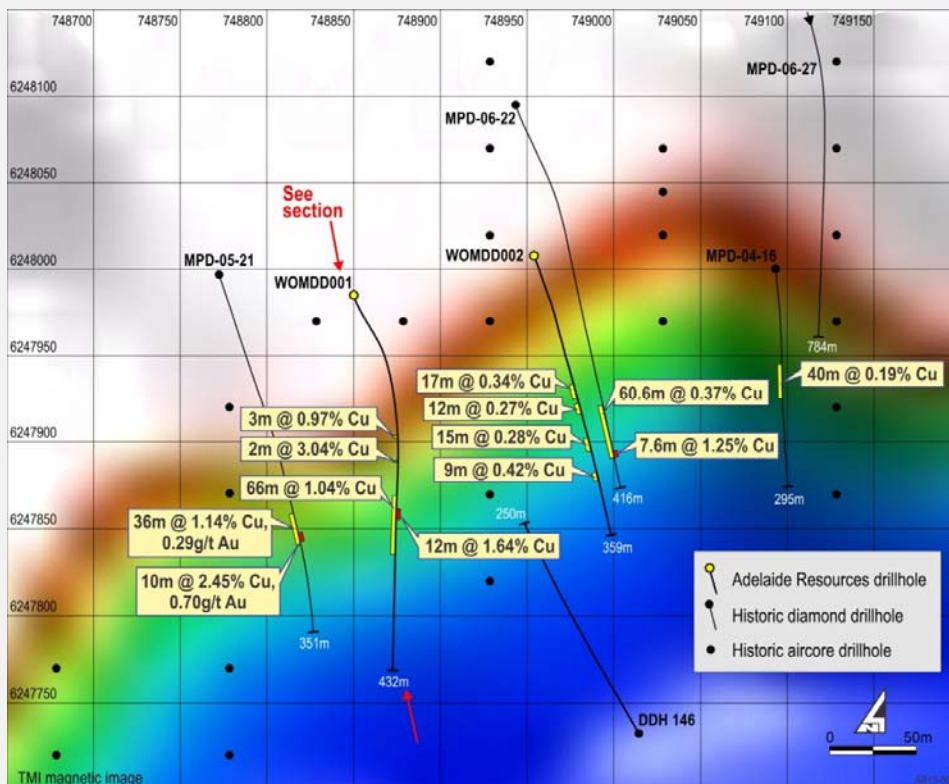
Two deposits appear to have the right characteristics for ISR.

- Wombat
- Bruce Zone at Alford West

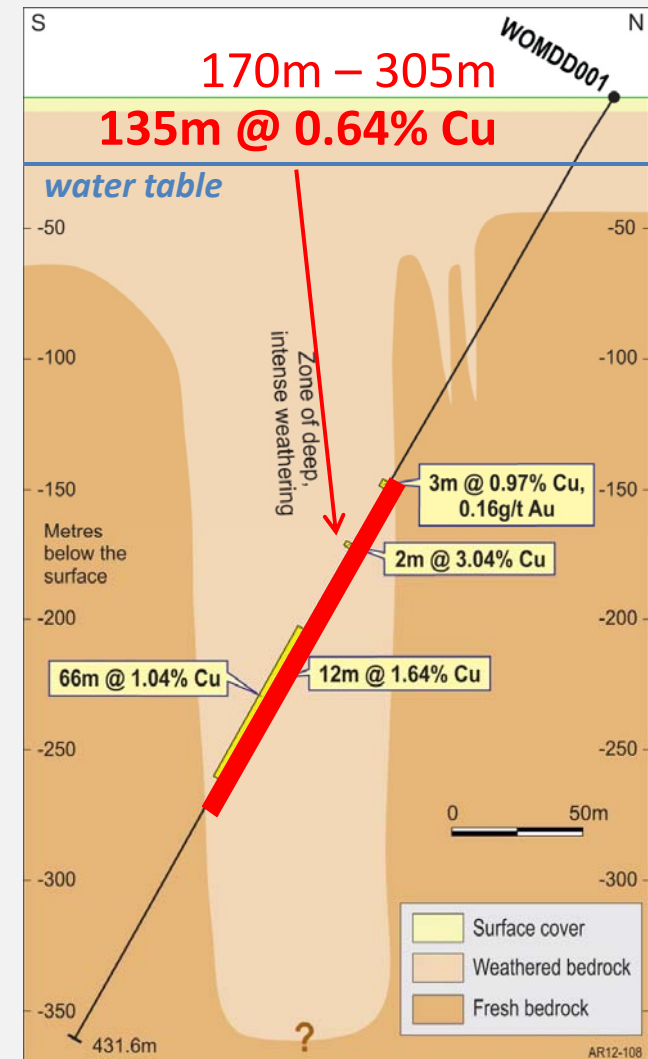


Wombat

- Copper mineralisation hosted in deep trough (>350m?) well below the water table

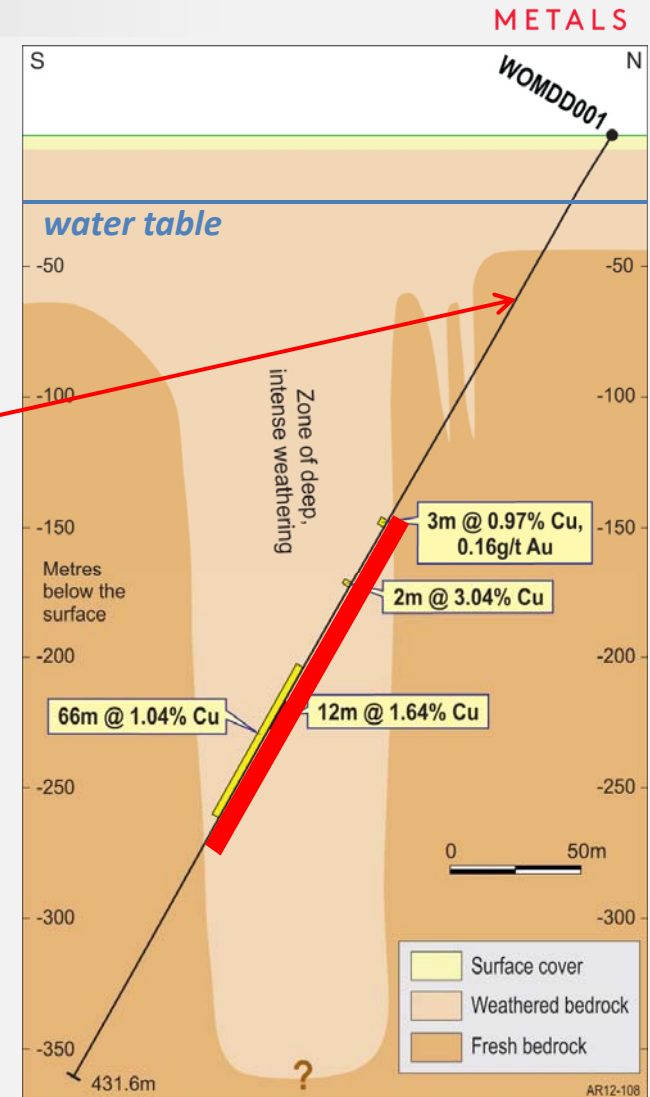


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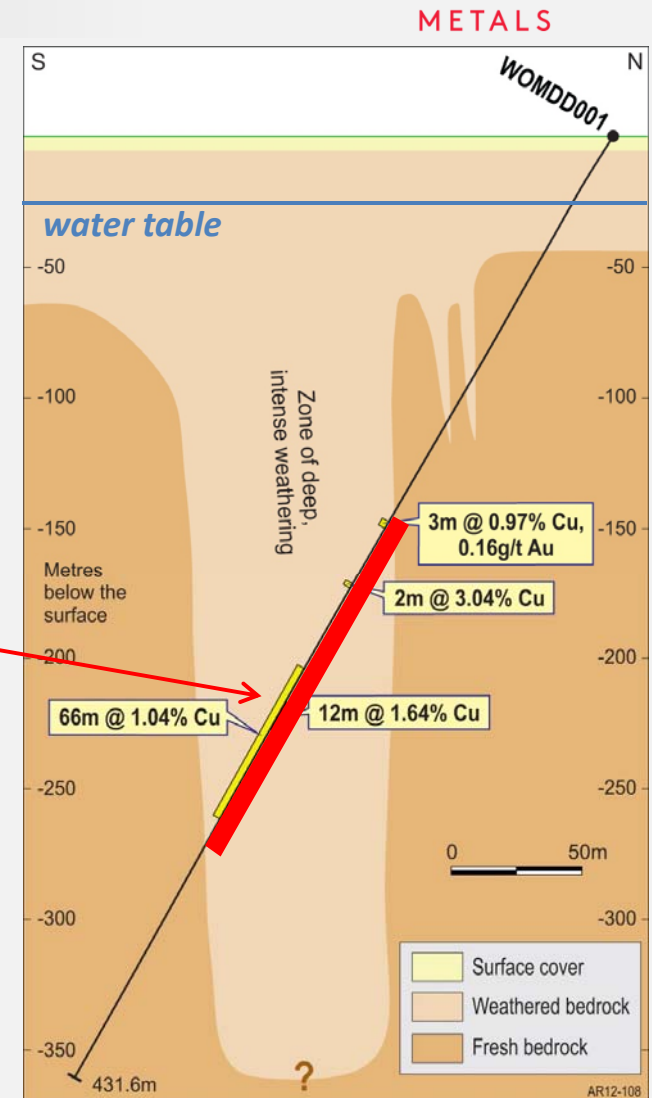
Wombat core 70-77m

~70 – 77m downhole
tight, fresh impermeable
metasediment



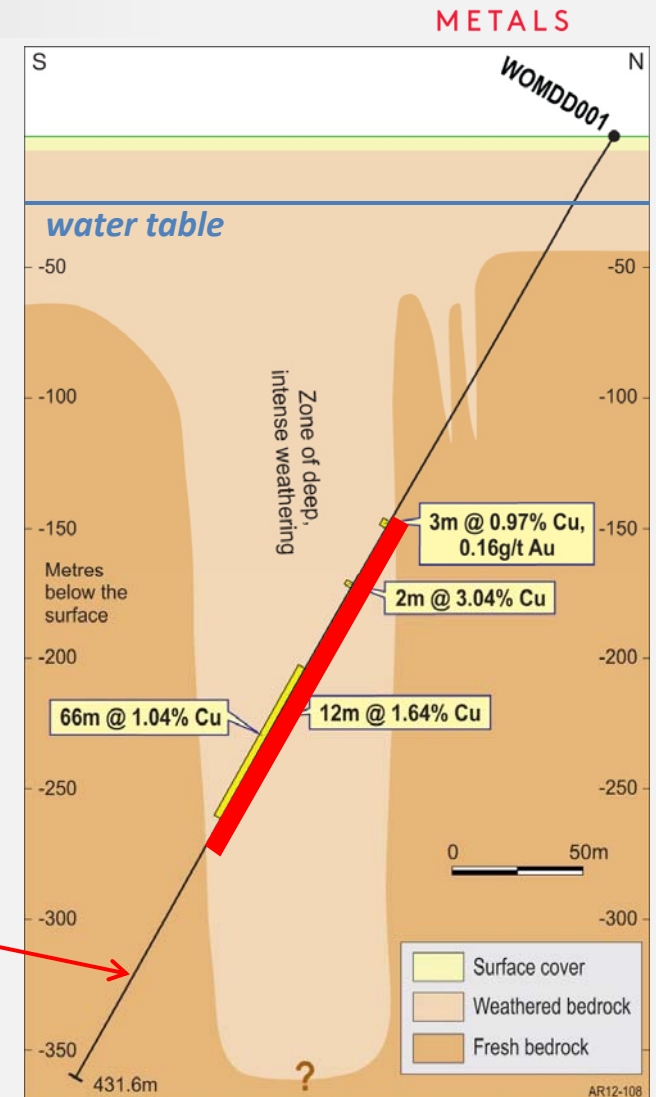
Wombat core 253-267m

~253-267m downhole
Porous, permeable (?)
oxidised material assaying
~1.5% Cu



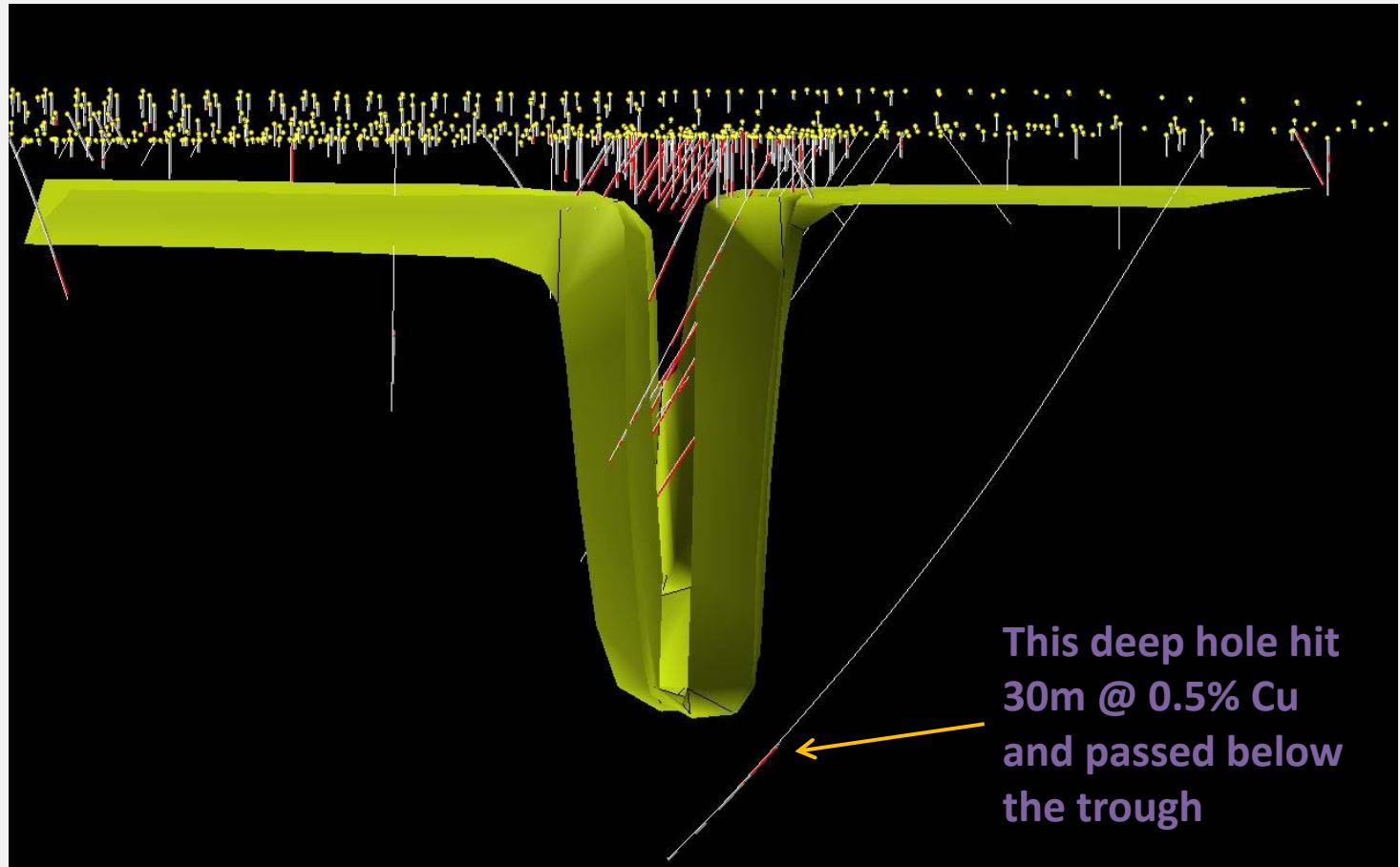
Wombat core 396-405m

~396-405m downhole
tight, fresh, impermeable
metasediment
insignificant Cu



Wombat trough 3-D model

- Looking west along trough



Wombat ISR resource potential

- Looking southwest
- Model is of trough only where it is below general base of weathering

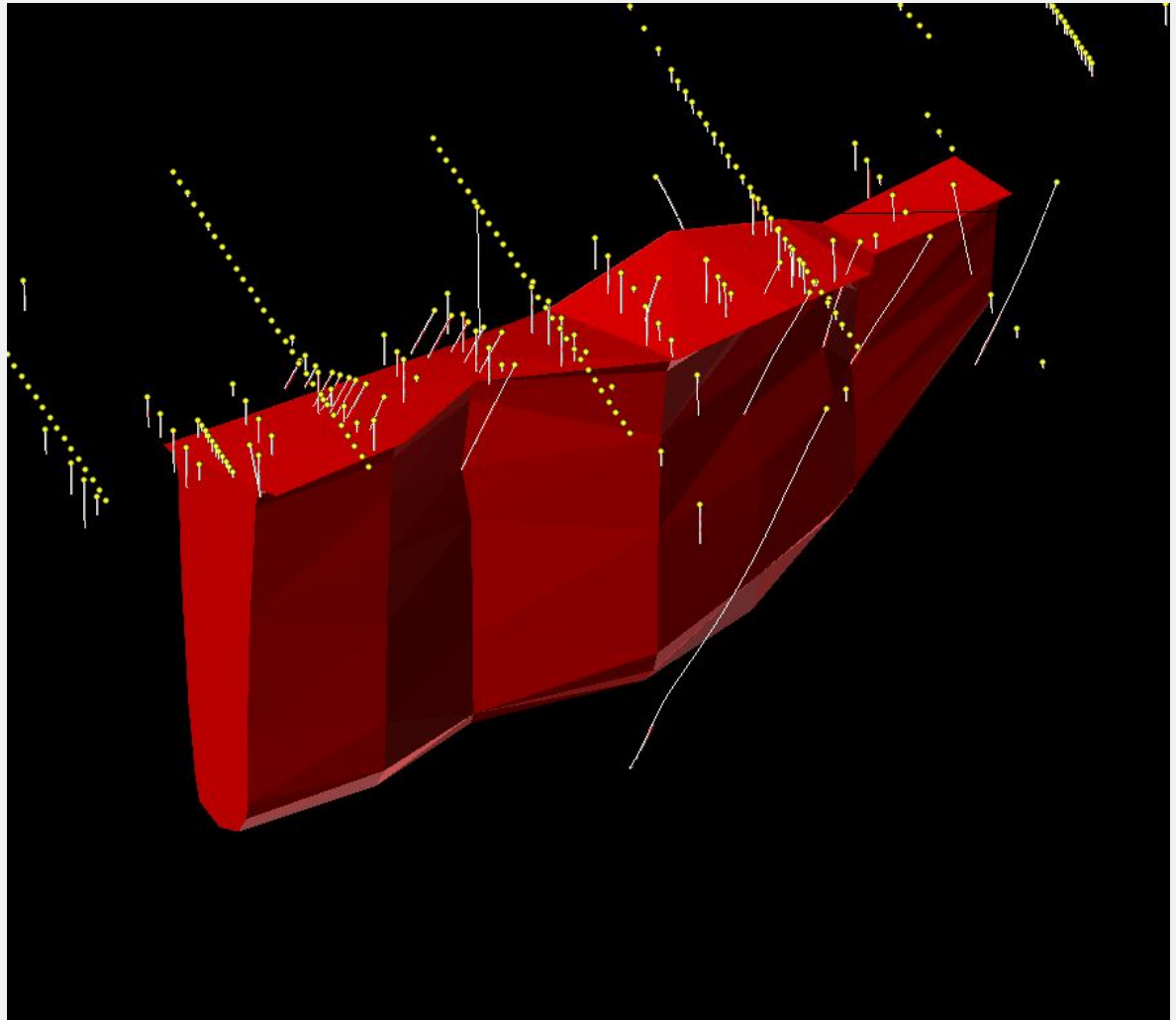
Model volume: $\sim 43\text{M m}^3$

Density factor: 1.8t/m^3

Tonnage: $\sim 75\text{ MT}$

Ave grade samples in model

Cu: 0.19%



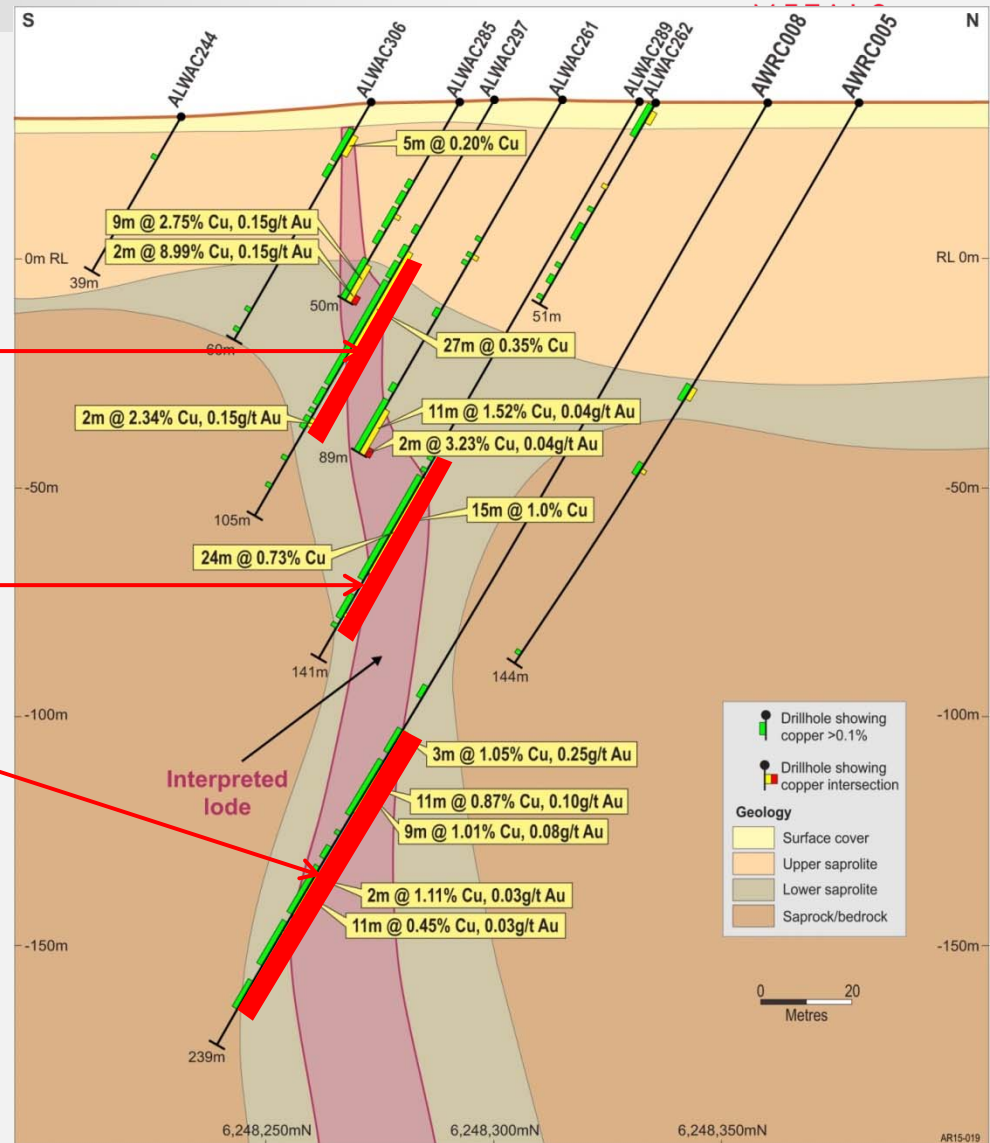
Bruce Zone (Alford West)

Drill section 752,750mE

46m – 99m
53m @ 0.31% Cu

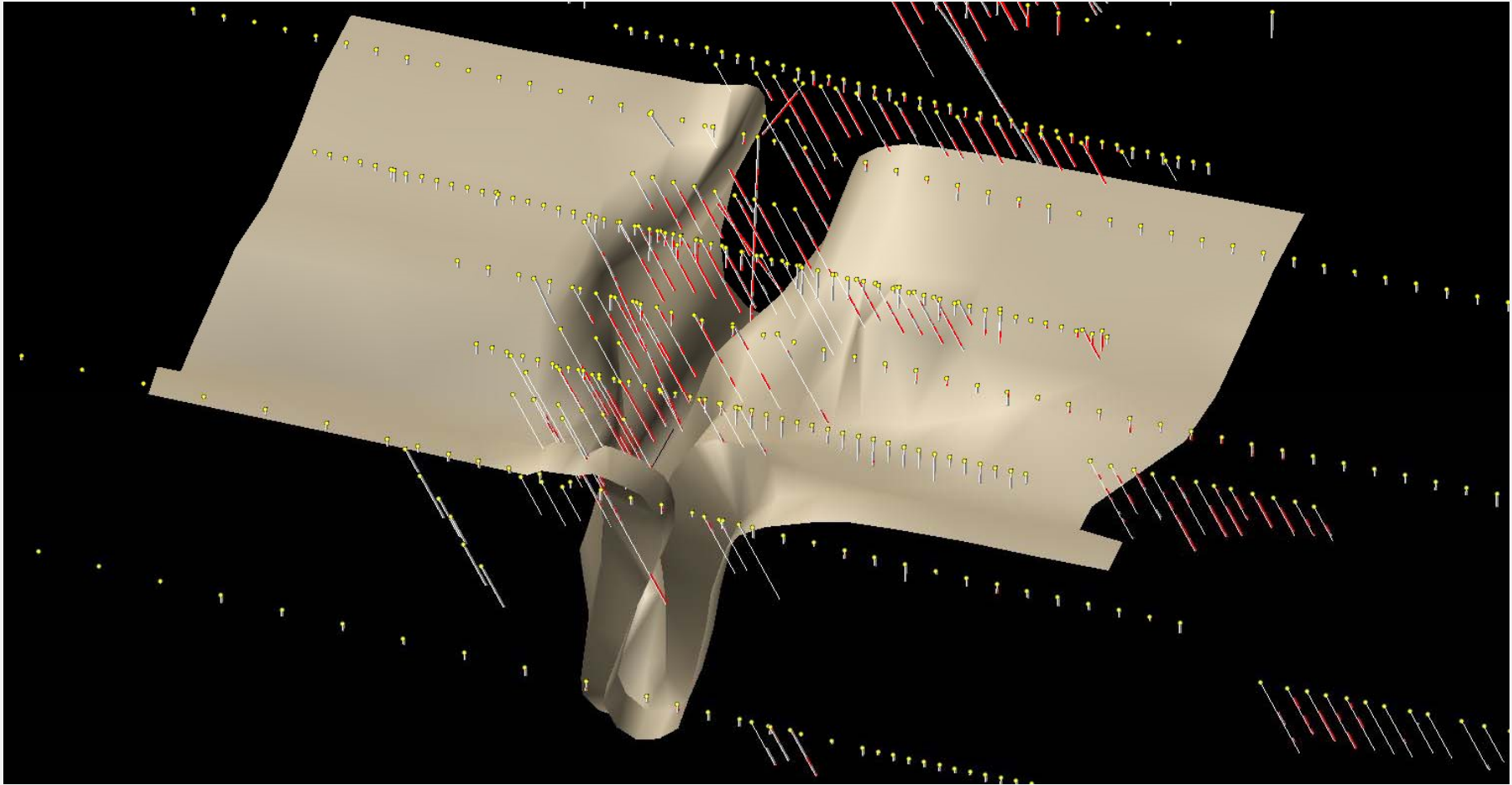
90m – 133m
43m @ 0.46% Cu

159m – 230m
71m @ 0.34% Cu



Bruce Zone trough 3-D model

Looking east



Bruce Zone ISR resource potential

- Looking north
- **Bottom of trough remains undefined**

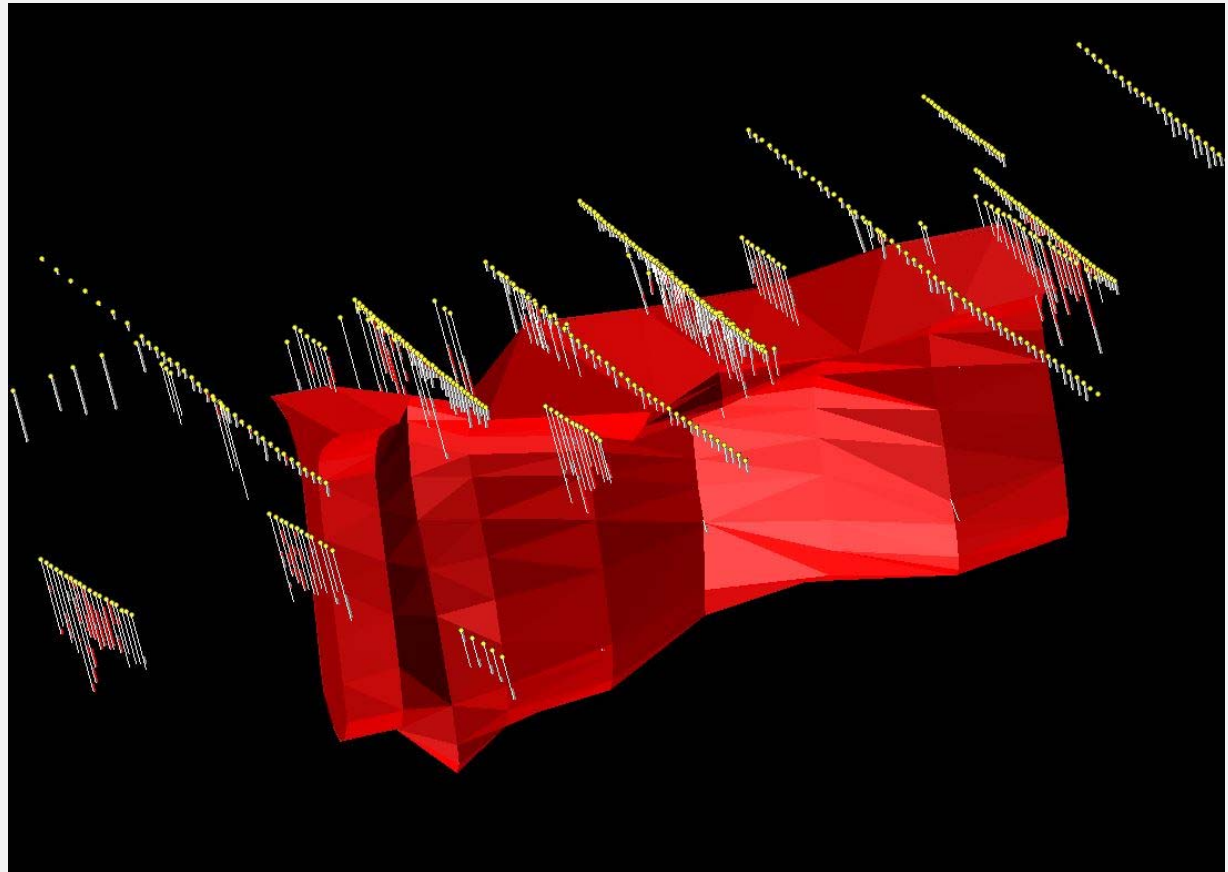
Model volume: $\sim 20\text{M m}^3$

Density factor: 1.8t/m^3

Tonnage: $\sim 35\text{ MT}$

Ave grade samples in model

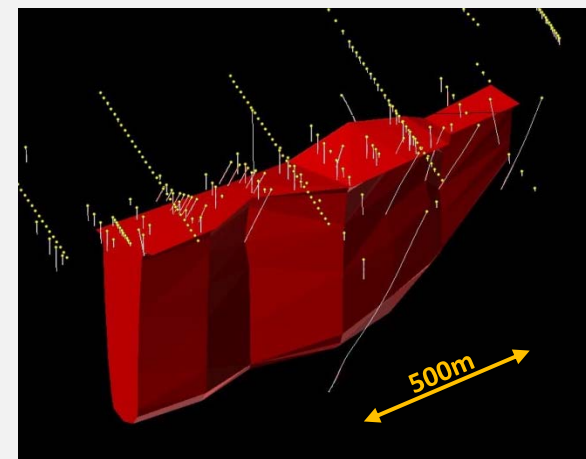
Cu: 0.22%



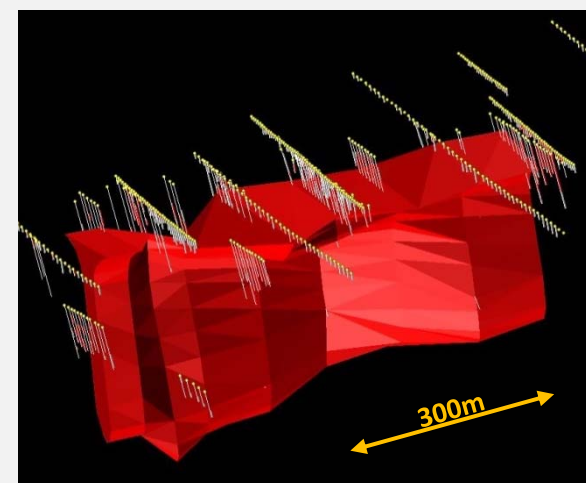
Large Exploration Target estimated

3D models of the Wombat and Bruce weathering troughs allow estimation of resource potential

- Andromeda Metals has estimated a combined Exploration Target for the Wombat and Bruce troughs of 80 to 120 million tonnes at a grade ranging between 0.18 to 0.23% copper for 145,000 to 275,000 tonnes of copper. The potential tonnage and grade of the Exploration Target is conceptual in nature as there has been insufficient exploration to estimate a Mineral Resource, and it remains uncertain if further exploration will result in the estimation of a Mineral Resource.



3-D model of Wombat trough.



3-D model of Bruce trough.

JORC Note: The Exploration Target is taken from ADN's ASX release dated 20 July 2017 titled "Innovative in-situ recovery (ISR) copper production concept under evaluation." for which the Competent Person was Mr Chris Drown, Managing Director of Andromeda Metals. The Company confirms that all material assumptions and technical parameters underpinning the estimate reported in the 20 July 2017 ASX release continue to apply and have not materially changed, and that the form and context of the findings of the Competent Persons of the 20 July 2017 ASX release have not been materially modified.

Wombat – first pass copper solubility tests



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Hole ID	From (m)	To (m)	Interval (m)	Composite Sample No.	Cu% (total)	Cu% (soluble)	Cu recovery (%)
Wombat Prospect							
WOMDD001	167	173	6	WOMAS001	0.67	0.10	15
	195	201	6	WOMAS002	1.50	0.97	65
	228	233	5	WOMAS003	0.18	0.12	65
	247	253	6	WOMAS004	0.78	0.42	53
	272	278	6	WOMAS005	0.57	0.30	52
	286	291	5	WOMAS006	0.22	<0.01	0
	295	302	7	WOMAS007	2.68	0.81	30
WOMDD002	127	132	5	WOMAS008	0.36	0.20	55
	158	165	7	WOMAS009	0.63	0.22	35
	186	193	7	WOMAS010	0.46	0.14	30
	200	206	6	WOMAS011	0.18	0.10	56
	228	236	8	WOMAS012	0.29	0.02	7
	238	244	6	WOMAS013	0.19	0.02	11
	273	282	9	WOMAS014	0.41	0.12	29

Bruce Zone – first pass copper solubility tests



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Hole ID	From (m)	To (m)	Interval (m)	Composite Sample No.	Cu% (total)	Cu% (soluble)	Cu recovery (%)
Bruce Prospect							
AWRC006	135	141	6	ALFAS001	1.16	0.48	41
	156	162	6	ALFAS002	0.48	0.22	46
	173	179	6	ALFAS003	0.28	0.14	50
	194	200	6	ALFAS004	0.53	0.30	56
	206	212	6	ALFAS005	0.32	0.16	50
AWRC008	159	165	6	ALFAS006	0.72	0.30	42
	170	180	10	ALFAS007	0.96	0.47	49
	195	202	7	ALFAS008	0.61	0.32	52
	208	214	6	ALFAS009	0.18	0.10	56
	224	230	6	ALFAS010	0.26	0.12	46

Samples prepared by compositing equal volumes of 1-metre stored assay pulps. Total copper determined by four acid digest and ICP-AES finish. Soluble copper determined by leaching agitated sample in 4% H₂SO₄ for 1 hour then finished by ICP-OES.

Bruce Zone – permeability

Deep aircore and RC drilling into the mineralised trough at Bruce hit significant flows of ground water suggesting a high degree of natural permeability

These aren't fuel trucks – they are water tankers used to control very high ground water flows encountered during drilling at Bruce.

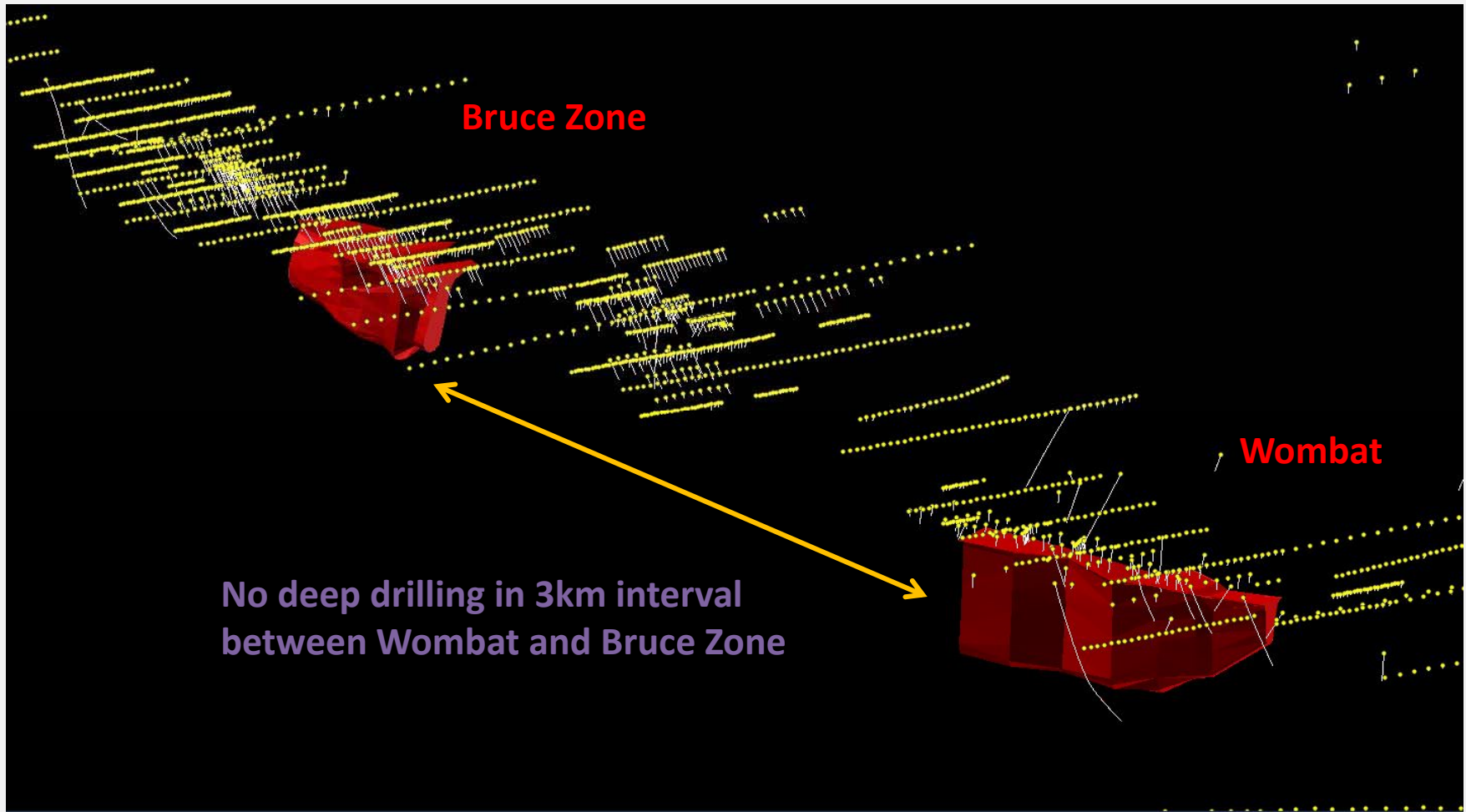
Dry samples from fresh trough “shoulder”

Wet samples from trough



Resource growth potential

Oblique view of both trough models

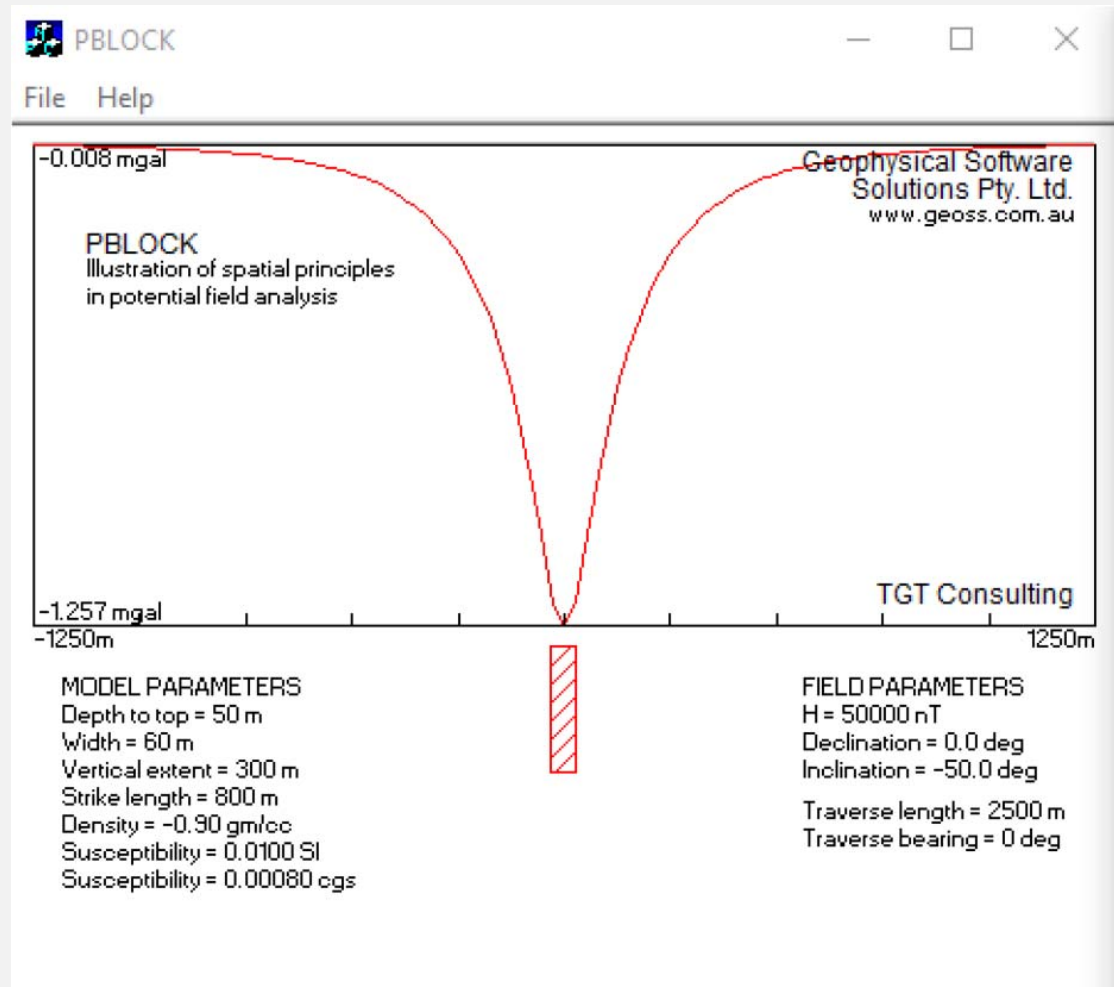


Gravity geophysics can see deep troughs

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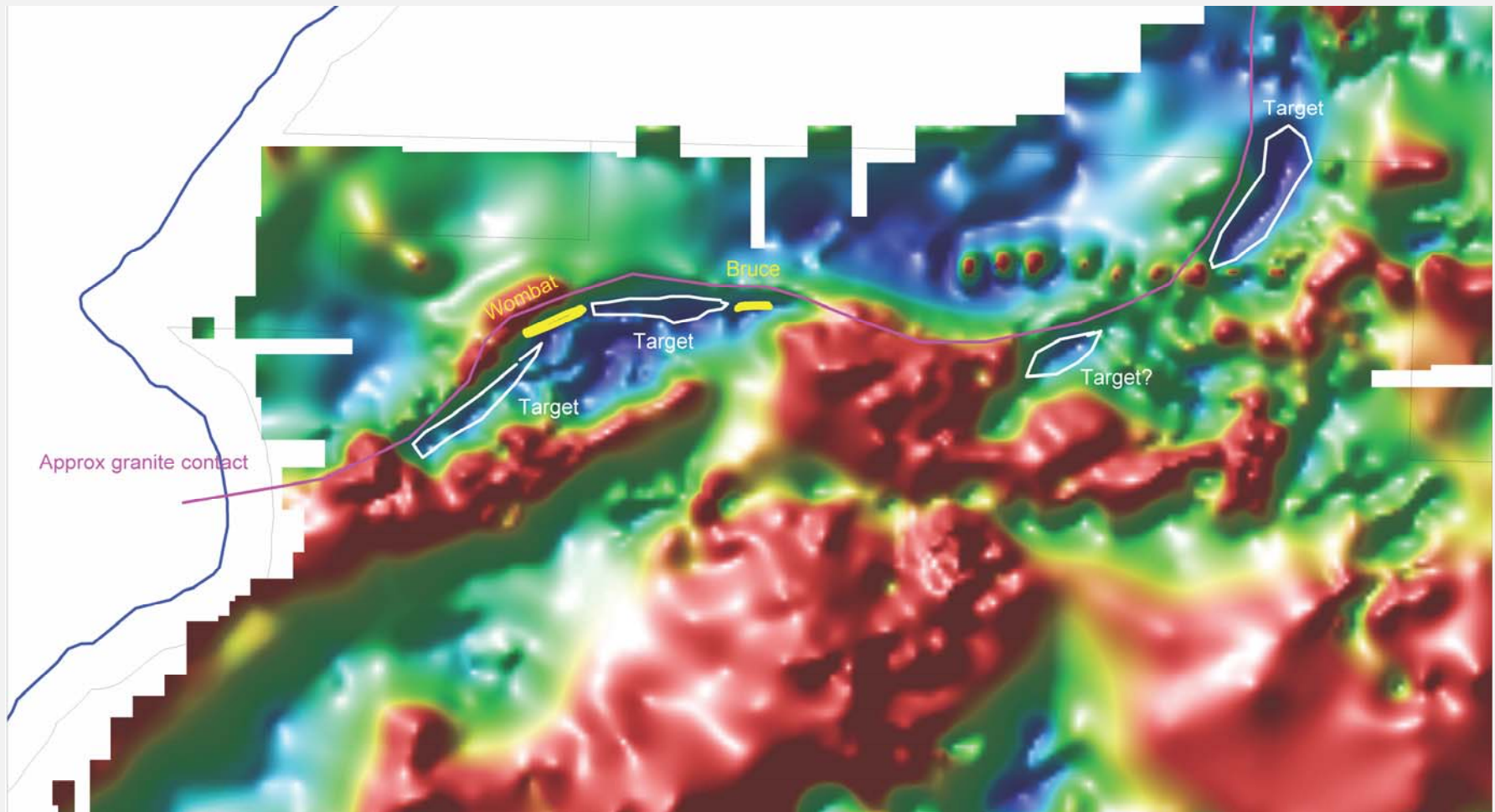
PBLOCK trough model assumptions
(based on Wombat/Bruce)

- Depth: 300m
- Width: 60m
- Strike: 800m
- Depth to top: 50m
- Density contrast: -0.9gm/cm^3
($2.7\text{-}1.8\text{ gm/cm}^3$)
- **Results in negative gravity anomaly of $\sim 1.25\text{ mgal}$**



Gravity suggests additional troughs likely

Residual gravity image – negative anomalies are blue



Moonta ISR summary – South Australia

Critical ISR requirements

- Target metal present as soluble mineral phases ☒
- Other lixiviant consuming phases absent ☒
- Mineralised zone is porous ☒
- Mineralised zone is permeable ☐
- Mineralisation is below the water table ☒
- Aquicludes present to contain lixiviant ☒
- Significant Resource potential confirmed ☒



Other positive attributes

- Groundwater is saline - no current domestic, agricultural or industrial uses
- Minimal surface disturbance – production could conceivably be conducted in conjunction with current agricultural landuse
- Other possible trough targets identified that can build resource

Disclaimer, Competent Person's statement and JORC statements



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Disclaimer

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Competent Person's statement

Except on slides where specifically disclosed, the information in this presentation that relates to Exploration Targets, Exploration Results, Mineral Resources or Ore Reserves is based on information compiled by Chris Drown, a Competent Person, who is a Member of The Australasian Institute of Mining and Metallurgy. Mr Drown is employed by Drown Geological Services Pty Ltd and consults to the Company on a full time basis. Mr Drown has sufficient experience that is relevant to the style of mineralisation and type of deposit under consideration and to the activity being 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'. Mr Drown consents to the inclusion in the report of the matters based on his information in the form and context in which it appears.

JORC Code 2012 statements

The information relating to Andromeda Metals' past exploration to 30 November 2013 and its assessment of exploration completed by past explorers was prepared and first disclosed under the JORC Code 2004. It has not been updated since to comply with the JORC Code 2012 on the basis that the information has not materially changed since it was last reported.

The information relating to Andromeda Metals' exploration since 1 December 2013 has been reported in compliance with the JORC Code 2012. See ADN's ASX releases dated 20 July 2017 titled "Innovative in-situ recovery (ISR) copper production concept under evaluation".



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