



## Drilling at Doolgunna Project Recommences

- **5,000m infill and extensional aircore drilling program commences along strike from Vulcan Prospect in Narracoota volcanics.**
- **Enterprise commences search for sediment hosted (Sedex style) massive sulphide copper deposits along Southern Boundary Fault.**
- **GSWA & CSIRO's Spectrem<sub>2000</sub> Airborne Electromagnetic (AEM) Time Domain Bryah Basin survey identifies 6 bedrock conductors (potential massive sulphides) rated "Excellent" within and along southern boundary of Doolgunna Graben.**
- **4,000m regional aircore drilling program planned to test regolith above magnetic and Spectrem<sub>2000</sub> AEM targets and copper-in-soil anomalies associated with the Southern Boundary Fault.**

### SUMMARY

Enterprise Metals Limited ("Enterprise" or "the Company", ASX: "ENT") announces that it has recommenced its infill and follow up aircore drilling program at Doolgunna. The 5,000m aircore drilling program is designed to follow up anomalous gold and base metal targets at Scotty, Sulu, McCoy and Nimoy, which lie within the Narracoota Fm volcanics 13 km southwest of Sandfire Resources NL's DeGrussa Copper-Gold Mine.

A second regional aircore drilling program of approximately 4,000m is planned to commence in early April. This program will test the regolith above magnetic and Spectrem<sub>2000</sub> AEM targets and selected copper-in-soil anomalies associated with the Southern Boundary Fault (SBF), which forms the southern margin of the Doolgunna Graben.

The Company has acquired data from the GSWA & CSIRO's 2012 Bryah Basin Spectrem<sub>2000</sub> Airborne Electromagnetic Time Domain survey, which recorded five "excellent" rated conductors along the Southern Boundary Fault, and a sixth excellent rated conductor located in the centre of the Doolgunna Graben. These AEM anomalies represent very strong discrete bedrock conductors which are potentially massive sulphides.

Enterprise believes that the regional geological setting of the SBF and Doolgunna Graben is analogous with many of the major sediment-hosted copper provinces such as Mount Isa in Queensland, Zambia in Africa and the Kupferschiefer in eastern Europe. These **Sedex** deposits occur within carbonaceous rich sediments such as shales, siltstones and dolomites deposited in intracontinental rift settings. The copper mineralisation is thought to have been emplaced by saline rich reduced fluids with associated silica alteration into structurally prepared settings.

## CSIRO'S YERRIDA BASIN SPECTREM<sub>2000</sub> AEM SURVEY

Spectrem Air Ltd is a division of Anglo American, and its proprietary Spectrem<sub>2000</sub> fixed wing Airborne Electromagnetic Time Domain system represents the state-of-the art in airborne geophysical exploration. The system provides superior technological advantages in terms of the Electromagnetic design, power of the system and processing ability. The aim of the Spectrem<sub>2000</sub> system is to map and discriminate geological units and basement conductive bodies to depth of 500 metres in the presence of conductive cover. It also provides superior shallow mapping capability in the first 100 metres due to its design and manufacturing.

In late 2012, the GSWA & CSIRO undertook a major survey of the Bryah Basin with the Spectrem<sub>2000</sub> system. The survey was flown at 2.5km line spacing in a north-south direction and anomalies generated were rated on a four part scale from '*excellent*' to '*poor*'. **Five bedrock conductors rated "excellent"** were identified along the Southern Boundary Fault within Enterprise's landholdings, and a **sixth conductor ("D") rated excellent** was located in the centre of the Doolgunna Graben. These AEM anomalies represent very strong discrete bedrock conductors with potential for massive sulphides. (Refer Figure 1 below)

Enterprise has commenced moving loop ground EM surveys over the "excellent" Spectrem<sub>2000</sub> AEM targets in order to locate them more precisely on the ground. As part of the regional aircore drilling program along the Southern Boundary Fault, aircore drill traverses will be undertaken over these AEM targets to test for regolith accumulations of copper.

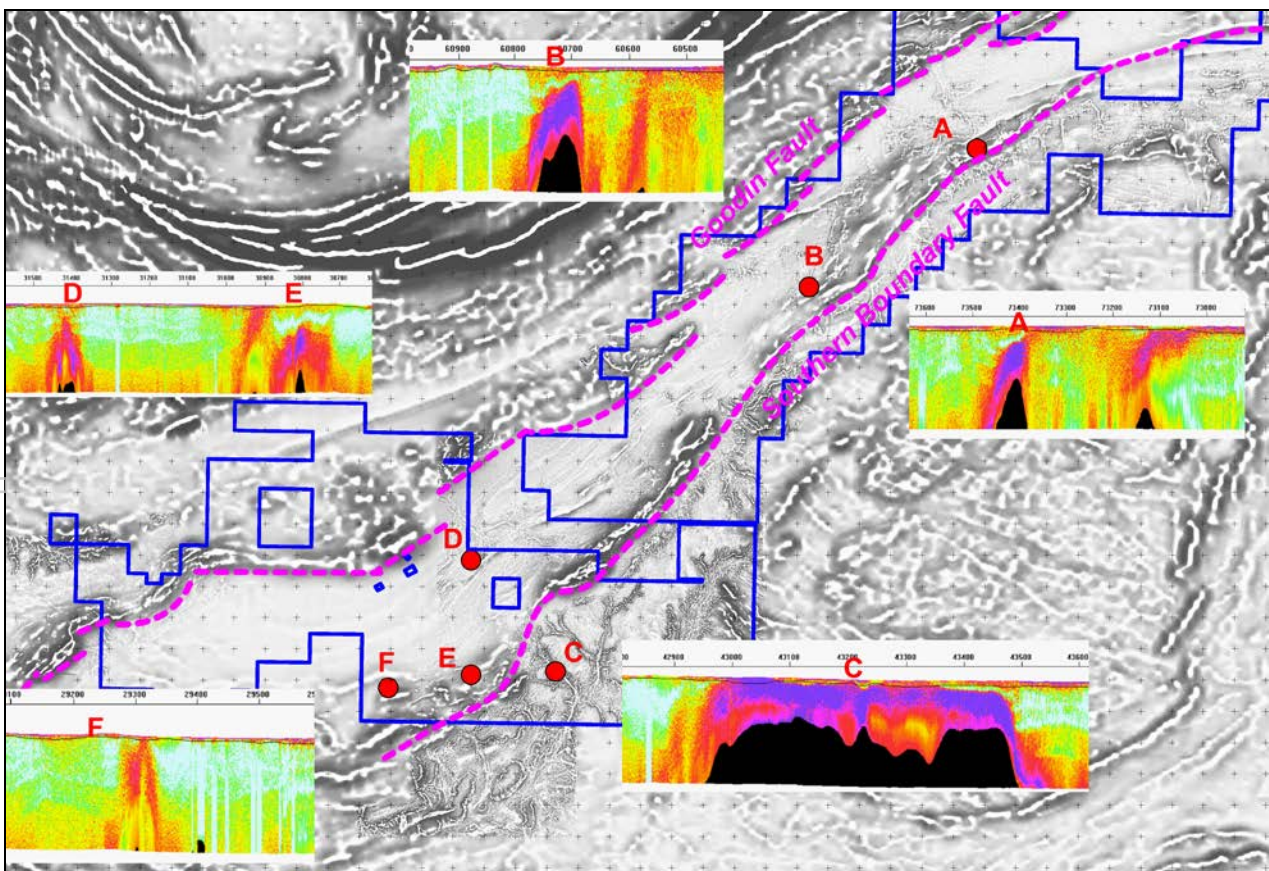


Figure 1: Location of Spectrem<sub>2000</sub> "Excellent" Conductors & Conductivity Depth Images (CDI's)

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## GEOLOGICAL SETTING

The Doolgunna project tenements cover Palaeo-Proterozoic rocks of the Capricorn Orogen, which resulted from the oblique collision of the Pilbara and Yilgarn Cratons at about 1.8 Ga. These Palaeo-Proterozoic rocks are now recognized as the Bryah, Padbury and Yerrida Groups.

The Goodin Fault is a major reactivated reverse fault that separates mafic Narracoota Fm volcanics of the Bryah Group to the north from siliciclastic and mafic units of the Yerrida Group to the south. The Goodin Fault is interpreted to be a major suture acting as a conduit for mineralising fluids during periods of extensional tectonics.

The Southern Boundary Fault (SBF) lies within the Yerrida Basin and separates the Doolgunna Fm sediments from the Johnson Cairn Fm which is draped around the Archaean Goodin Inlier. The SBF is defined by a major but discontinuous magnetic feature which is believed to be associated with basin dewatering.

The geology of the Doolgunna Graben is poorly known due to lack of outcrop, substantial thicknesses of transported cover, deep weathering and little (effective) historical exploration. Exploration of the Doolgunna Graben for sediment hosted copper deposits has not been undertaken before by any company.

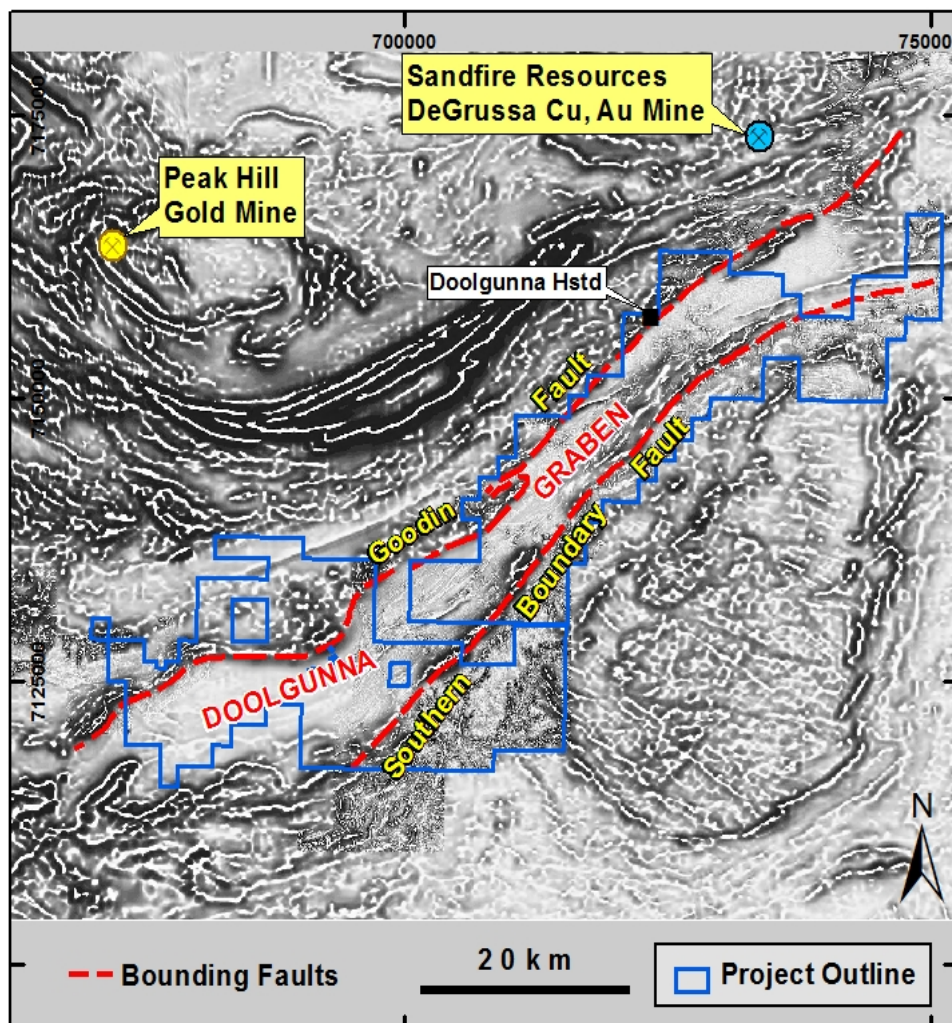


Figure 2: Doolgunna Project Tenement over Magnetic Image

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However, Enterprise believes that the geological setting of the Doolgunna Graben is broadly analogous with many major regional sediment-hosted copper provinces such as Nifty (Paterson Province), Mount Isa, Zambia and the Kupferschiefer in Eastern Europe.

## RATIONAL FOR SEDEX COPPER SEARCH

Based on a model by Dennis P. Cox et al of the USGS ("*Sediment-Hosted Copper Deposits of the World: Deposit Models and Database*") Enterprise believes:

- the "aeromagnetic redox feature" along the Southern Boundary Fault is likely to be a fluid outflow zone, so any mineralisation would be (stratigraphically) below this zone, and probably in a redox trap site away from the immediate outflow zone;
- the target stratigraphy is more or less conformable reduced facies strata, but these could be shales through to conglomerates. The greatest abundance of evaporites appears to be in the Bubble Well Member, quite deep in the pile and close to the Goodin Inlier;
- along the SBF, within the Moolgoolool Group sediments, there are areas of intense magnetism (probably due to magnetite but possibly pyrrhotite) broken by areas of magnetic lows which may represent total magnetite destruction. The magnetite destruction is potentially the result of outflow of reducing fluids, including copper.

Sipa Resources Ltd have located a large geochemical copper anomaly nearby at least 4km long by 1.5km wide, which contains an estimated 84,00 to 210,000 tonnes of copper metal. Sipa conclude that this amount of secondary copper indicates proximity to a large source or sources of primary (*sediment hosted*) copper mineralisation. The Thaduna Fm, which hosts Enigma and Venter Resources Ltd's Thaduna copper deposit, is the lateral equivalent of the Doolgunna Fm. Enterprise considers that the SBF and associated cross structures are potential conduits for mineralising fluids into the Yerrida Basin sediments, and particularly the Doolgunna Fm.

**Dermot Ryan**  
Managing Director

### Contact:

Telephone: 08 9436 9200 Facsimile: 08 9436 9220 Email: [admin@enterprisemetals.com.au](mailto:admin@enterprisemetals.com.au)

### Competent Persons statement

The information in this report that relates to Exploration Results and Mineral Resources is based on information compiled by Mr Dermot Ryan, who is an employee of the Company. Mr Ryan is a Fellow of the Australasian Institute of Mining and Metallurgy and a Member of the Australian Institute of Geoscientists and has sufficient experience of relevance to the styles of mineralisation and the types of deposits under consideration, and to the activities undertaken, to qualify as a Competent Person as defined in the 2004 Edition of the Joint Ore Reserves Committee (JORC) Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves. Mr Ryan consents to the inclusion in this report of the matters based on information in the form and context in which it appears.

Reference: ***Sediment-Hosted Copper Deposits of the World: Deposit Models and Database***

Dennis P. Cox, David A. Lindsey Donald A. Singer, Barry C. Moring, and Michael F. Diggles,  
USGS Open-File Report 03-107, Version 1.3 2003, revised 2007