frontier geology... innovative exploration...



# Northwest Extensions Of The Cobar Basin? - The Thomson Fold Belt, NSW

Mines and Wines, Mudgee, September 2010

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### **COMPANY INTRODUCTION**



- Combines northern NSW assets of Minotaur Exploration
  Ltd, PlatSearch NL and Compass Resources Limited
- Set up in 2009
- Unexplored region prior to 2006 New Frontier
- >6,000 sq km tenements
- Prime position
- Is this the Lachlan under cover?

#### **THOMSON BOARD**



CHAIRMAN – Lindsay Gilligan: Former Director of the Geological Survey NSW

**CEO** – Eoin Rothery: Formerly MD of India Resources, GM Exploration for Consolidated Minerals (Woodie Woodie Mn).

**NED** – Greg Jones: MD of PlatSearch, former senior geological positions in Sino Gold and WMC

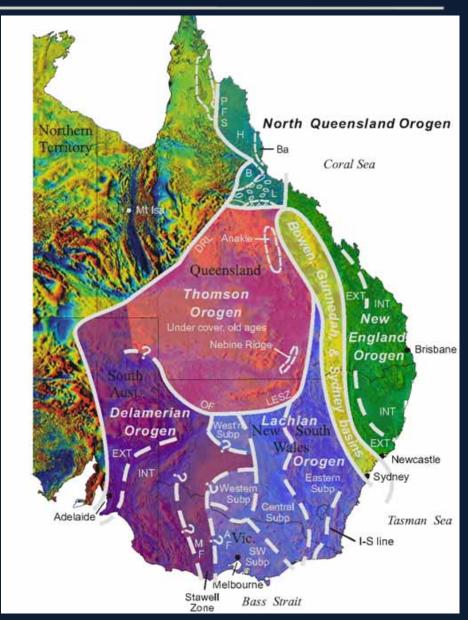
**NED** – Tony Belperio: Exploration Director for Minotaur Exploration

**COMPANY SECRETARY** – Ivo Polovineo: Former secretary and CFO for Sino Gold and Lynas Corp.

#### **LOCATION**



- Part of a more extensive pre-Middle Devonian fold belt of Queensland and NSW
- NSW part is bigger in area than Tasmania
- Largely recognised in NSW by arcuate E-W fabric, as compared to N-S fabric in the Lachlan Fold Belt
- 2006 New NSW
  Government magnetic data reveals detailed structures



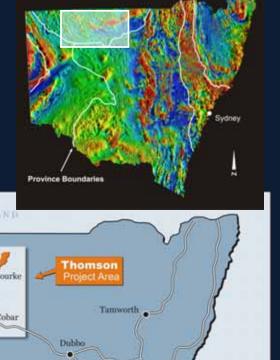
#### **HISTORY**



- 2006 NSW Magnetics
- CMR and PTS applications
- 2007 Minotaur (MEP) JVs
- Approx A\$3.4M spent on exploration

 Detailed aeromagnetics (42,023 line km), ground magnetics and IP

- 12 drill holes into 10 prospects
- 2009 Thomson Resources formed to focus management and apply additional funding into region
- 2010 JVs signed with Compass Resources



SYDNEY

Tenement ...... Township, Road

NEW SOUTH WALES

Canberra:



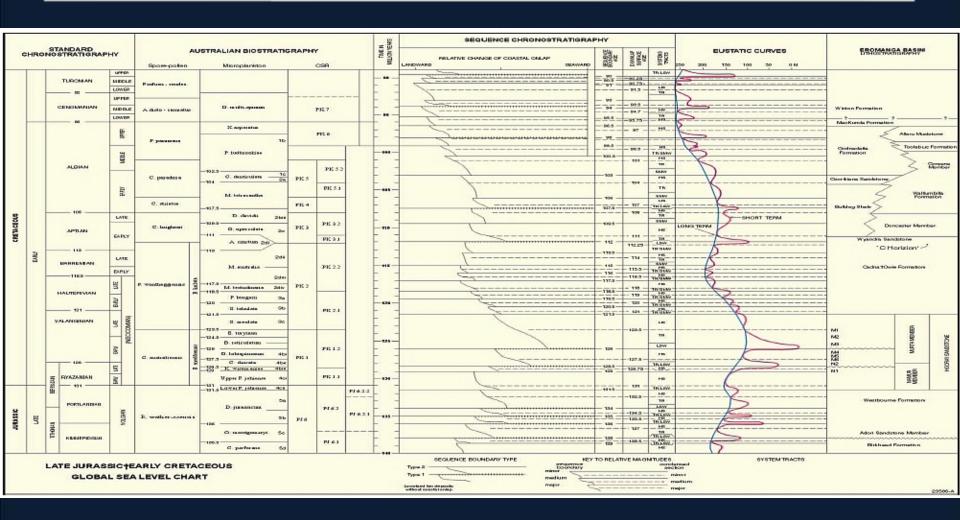
# **TENEMENTS** and all drilling





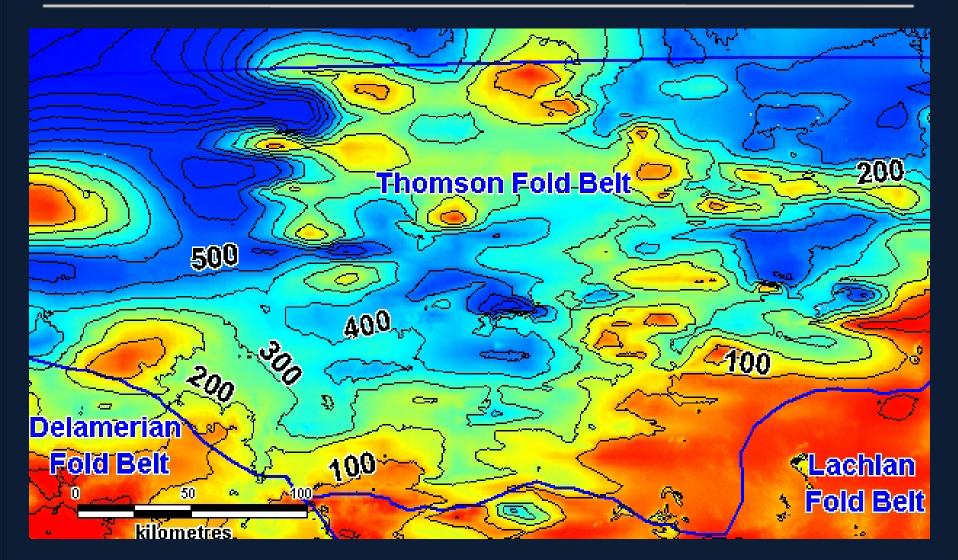
## **EROMANGA BASIN COVER**





# **Depth of Cover**





## **Thomson Fold Belt – Magnetics**

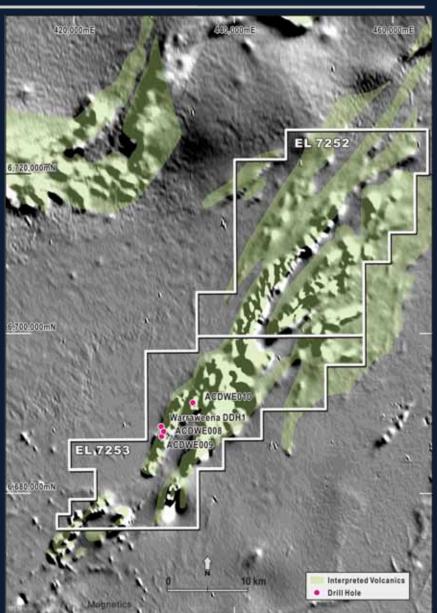


Two prominent volcanic centres: Warraweena and Louth Thomson Fold Belt Warraweer Volcanic TC Porphyry ODoradilla Sn Cu Olepoloko Fault Mt Dijou Au Delamerian Volcanics Fold Belt Endeavor Lachlan 100 Fold Belt kilometres

#### **Thomson Fold Belt - Volcanics**



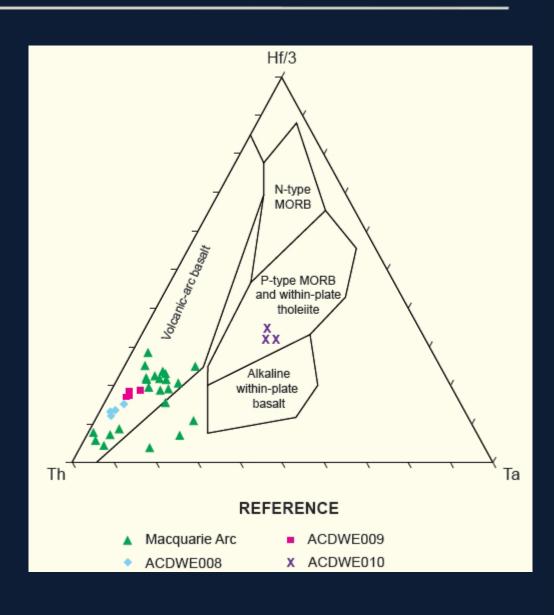
- Porphyry copper-gold type target50km north of YTC discovery
- Newcrest exploration 3 holes
- Following up 1% copper in a 1965
  hole
- Chemistry on Newcrest holes shows Macquarie Arc type volcanics (calc-alkaline shoshonitic)
- host to Cadia-Ridgeway Cu-Au
- Further west a Minotaur drill hole intersected an albite-pyrite altered microdiorite



#### **Thomson Fold Belt - Volcanics**

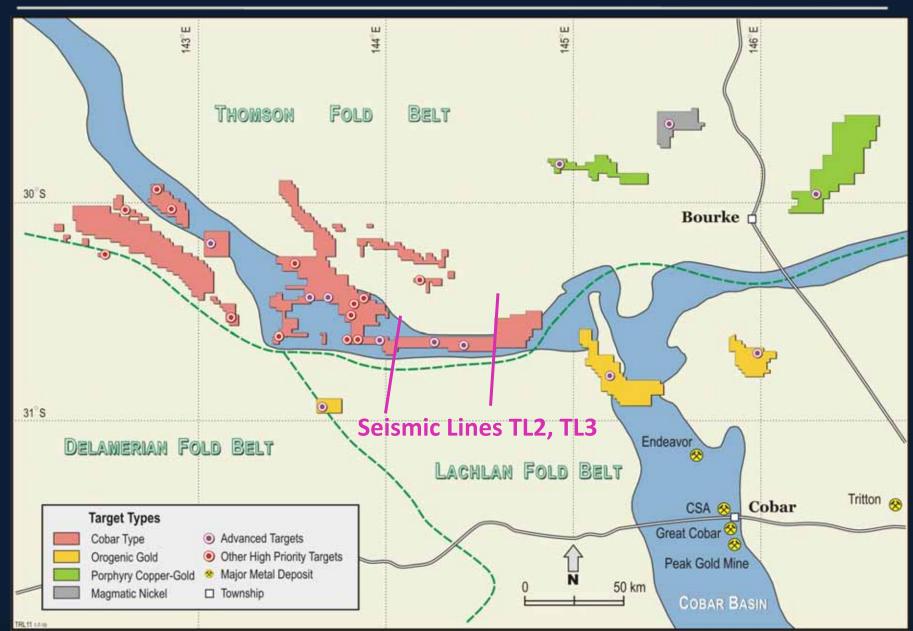


- Warraweena chemistry\* at least partly similar to arc type volcanics in the Macquarie arc of the Lachlan Fold Belt
- but some MORB rocks as well
- SHRIMP zircon provenance dates\*\* :- post Lower Cambrian
- i.e. may well be similarOrdovician age to Macquarie Arc
- \*From Burton et al (2008)
- \*\*From Watkins (2009)



## **TARGET TYPES**

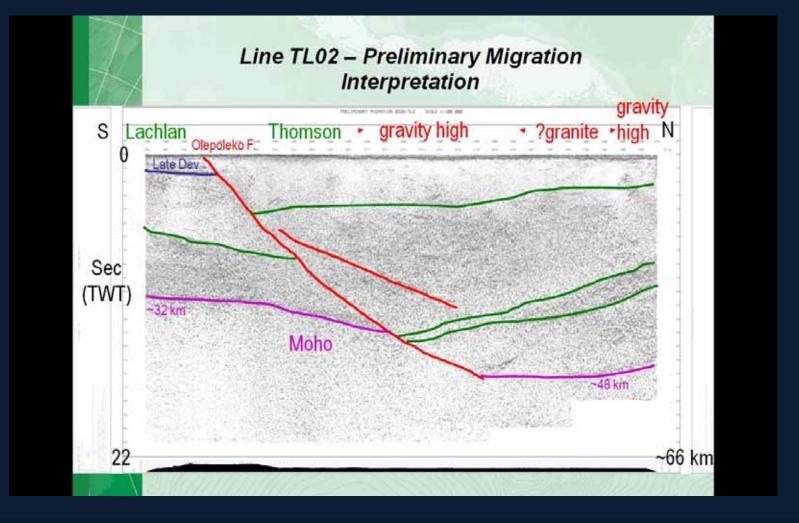




## **Boundary with Lachlan Orogen?**

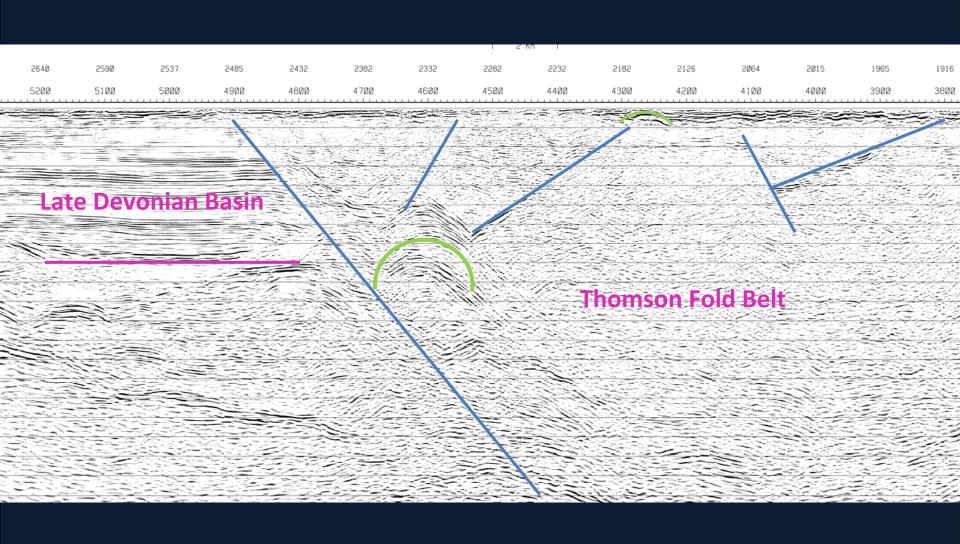


- New Frontier program seismic imaged the Olepoloko fault as crustal-scale.
- Major post-Middle Devonian (Kanimblan?) movement



## Seismic detail



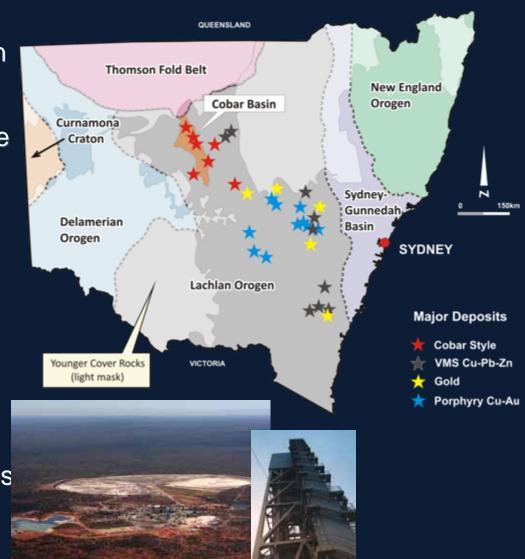


#### THOMSON FOLD BELT



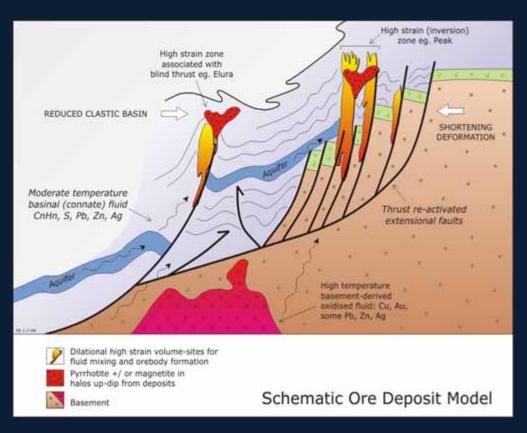
#### **Regional Geology**

- Northern projection of Lachlan Orogen
- A world class mineral province
- Produced >A\$200 billion in metals
- Cobar Basin significant Cu-Pb-Zn-Au production region
- Largest deposits include CSA (Cu), The Peak (Cu-Au) and Endeavor (Pb-Zn-Ag)
- Thomson geology (rocks, ages and deformation) similar to Lachlan



#### **COBAR DEPOSIT MODEL**





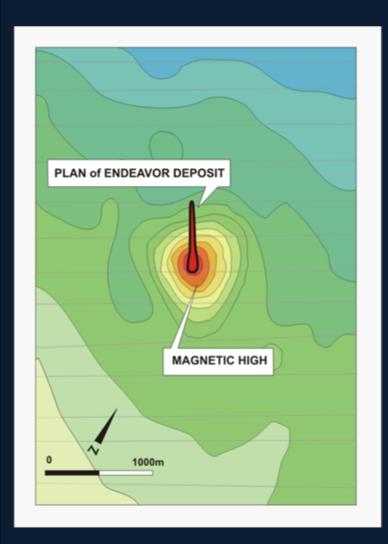
#### **Characteristics**

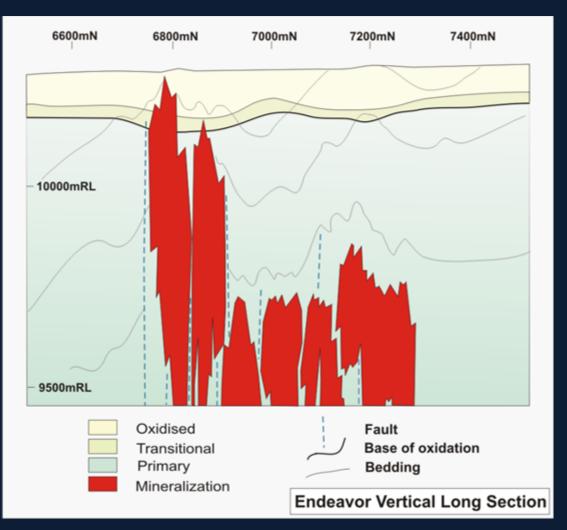
- Rocks marine sediments
- Steeply plunging pipe-like deposits on basin margin faults
- Compressional tectonics on basin margin
- Well defined alteration haloes of chlorite/quartz/sericite ± ankerite,
- Broad, but subtle geochemistry away from mineralisation, and
- Broad iron sulphide aureoles genetically linked to economic ore deposits.

Simple model – clear markers to help geologists discover new deposits

## **ENDEAVOR EXAMPLE**





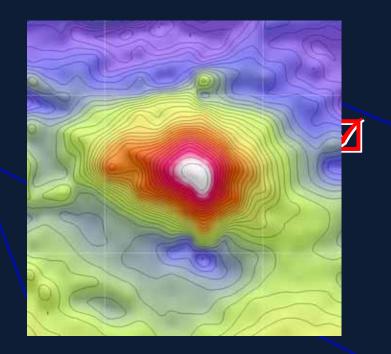


Cobar-type deposits have magnetic "footprint" to look below cover

## **THOMSON FOLD BELT**



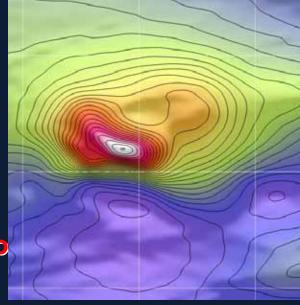
Detailed magnetics clearly show discrete mag anomalies







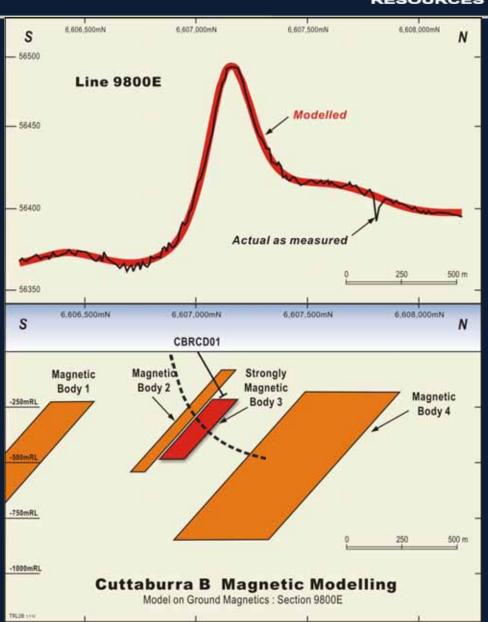
Four anomalies drilled in this area Cobar Style alteration and mineralo



#### **CUTTABURRA B PROSPECT**

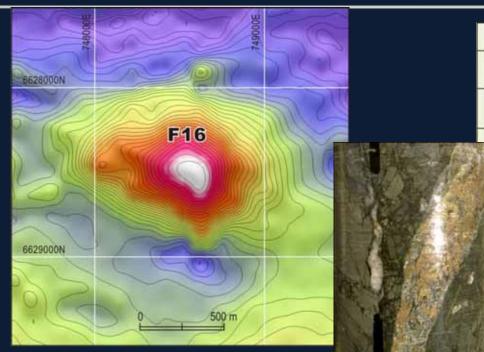


- CBRCD1 hit pyrrhotite veining and quartz stockwork with Ag 40 g/t, Zn – 0.18%, Cu -0.11%, Pb – 572ppm, W – 0.4%
- But not enough pyrrhotite to explain the anomaly
- Next holes will drill the more magnetic body modeled adjacent; and the larger body to the N

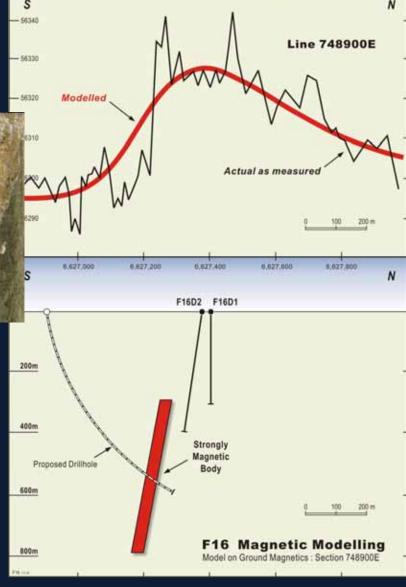


#### **F16 EXAMPLE**





- Initial drilling deep angled holes to cut across and test new targets
- Follow up surveys, including downhole, possible electrical methods and further drilling

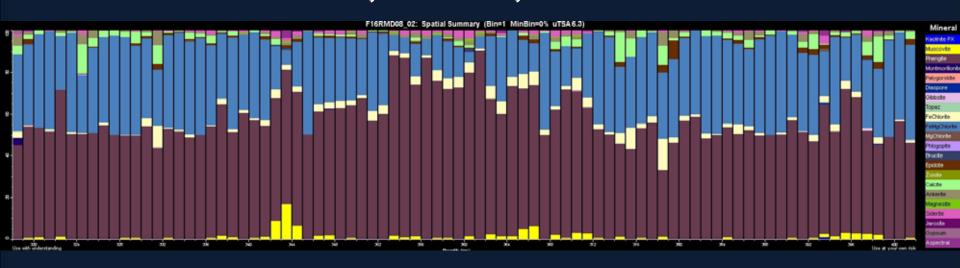


## **Thomson Alteration Style**



- •F16 drill hole Hylogger Log showing zones of Cobar-style alteration
- •Along with pyrrhotite veining, elevated Zn 2,400ppm, Pb 362ppm, Cu 690ppm

#### Siderite, Ankerite, Calcite

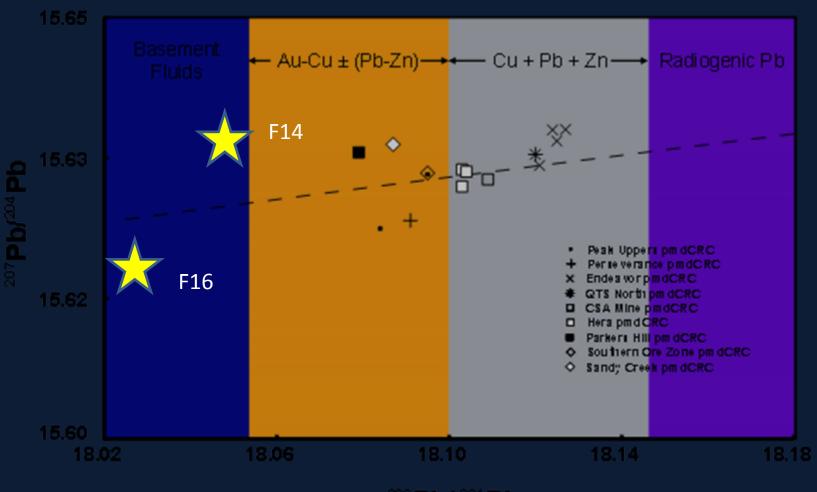


**Muscovite** 

## **Thomson Isotopic Analysis**



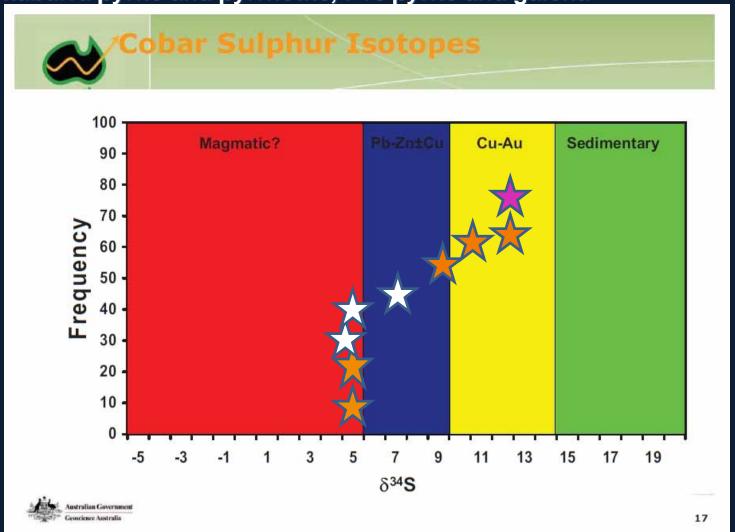
Galena from drill holes at F14 and F16



## **Thomson Isotopic Analysis**

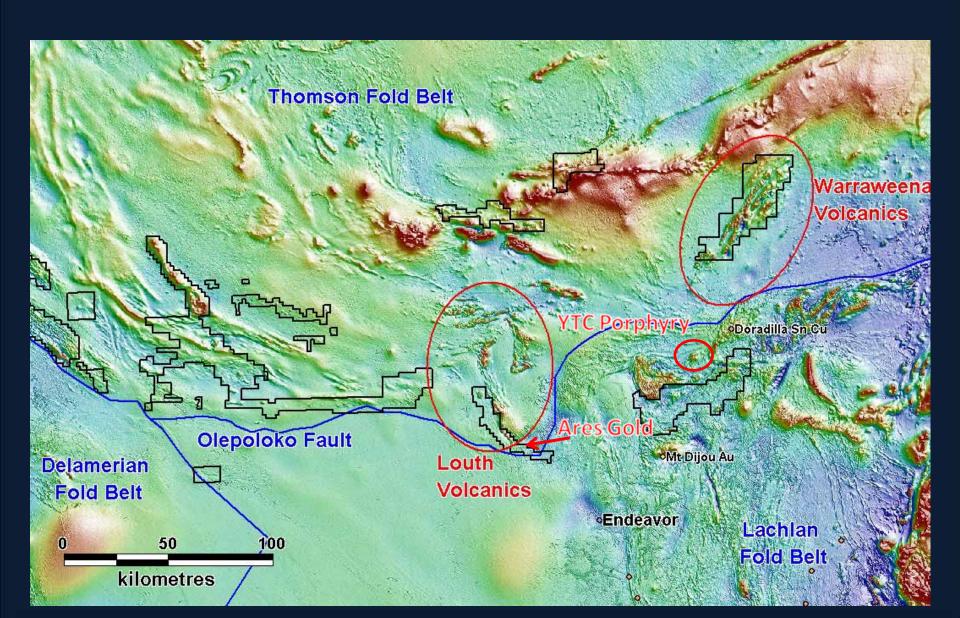


Cuttaburra pyrite and pyrrhotite, F16 pyrite and galena



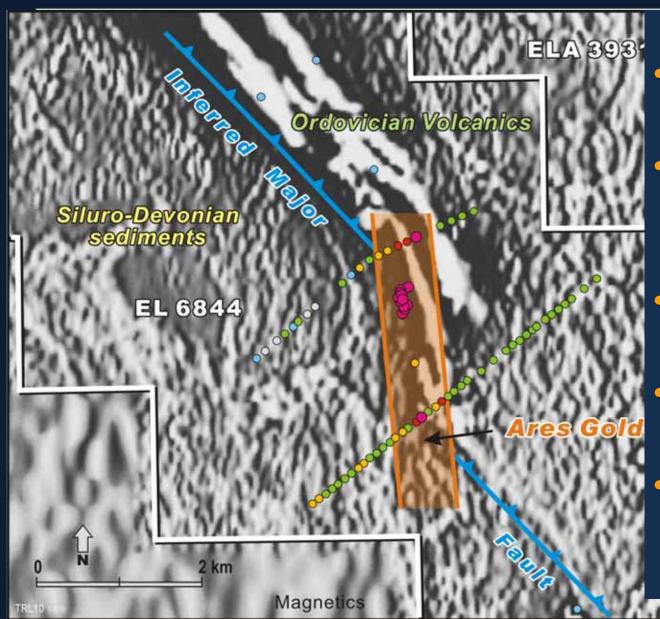
# **Thomson Fold Belt**





#### **GOLD PROSPECTS**

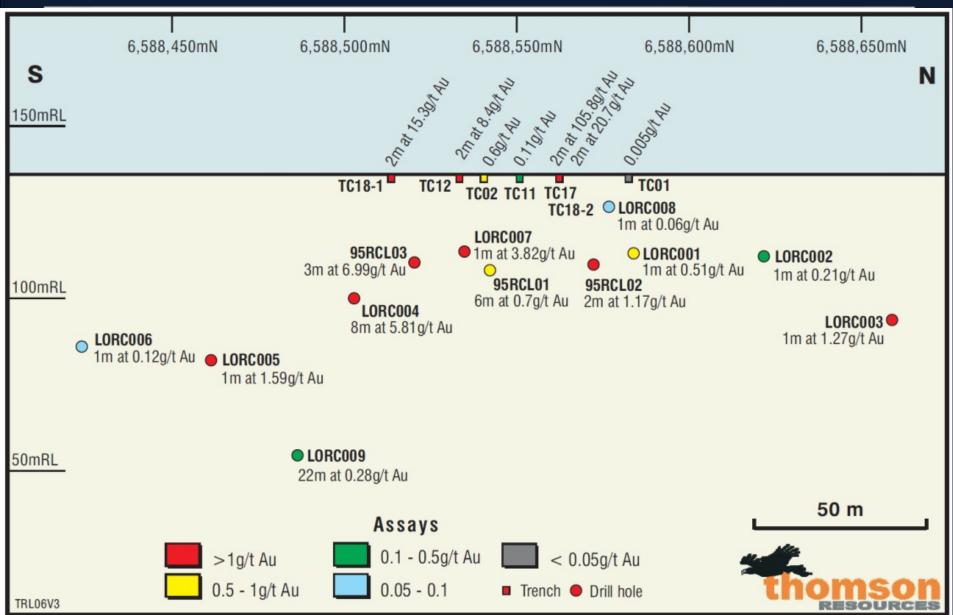




- Discovered 1990 (Geopeko)
- 2.5km long gold and arsenic anomaly
- 15 RC holes tested 300m
- Best 8m at 5.8 g/t and 3m @ 7.0 g/t
- Best trench sample: 2m at 105.8 g/t Au

#### **ARES PROSPECT**





#### **THOMSON RESOURCES SUMMARY**



- Dominant tenement position within new mineral belt
- ✓ But its probably an old belt the Lachlan Fold Belt, just under cover
- Confirmed similarities to nearby Cobar deposits
- ✓ Good gold and porphyry copper potential
- ✓ Well defined exploration program
- Experienced and successful management team
- Strong Government support

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