New IOCG concepts – why Minotaur is returning to explore in South Australia

A. P. Belperio

SA Resources & Energy Investment Conference
Adelaide, 13 April 2015

Mineral Systems Drilling Program - 2015

Announced by Minister Koutsantonis 5 December 2014

A partnership between SA Government, Deep Exploration Technologies CRC (DetCRC), and Exploration Companies Minotaur Exploration and Kingston Resources.

A Research and Technology Development program investigating the 1590Ma Mineral Systems developed along the Southern Margin of the GRV

Very much field oriented and Company input driven.

SOUTH AUSTRALIA Government of South Australia

News Release **Treasurer Tom Koutsantonis**

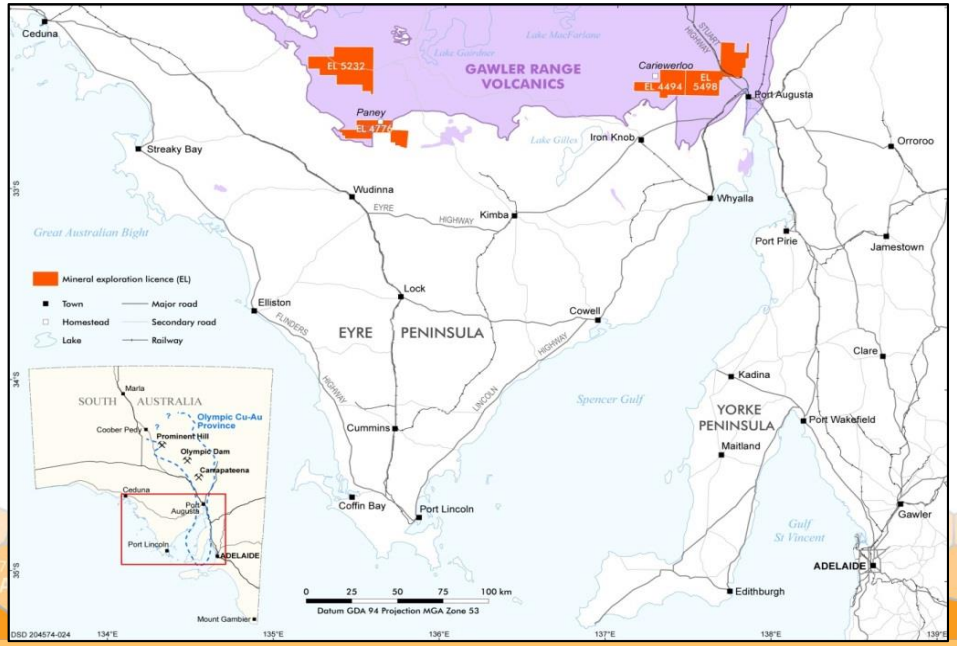
Minister for Finance
Minister for State Development
Minister for Mineral Resources and Energy
Minister for Small Business

Friday, 5 December, 2014

Northern Eyre Peninsula selected for real-time trial

The far north of Eyre Peninsula has been selected as the location for a world-first trial program which delivers real-time drilling results, improving explorers' chances of finding the next major discovery.

Opening the South Australian Exploration and Mining Conference in Adelaide today, Mineral Resources and Energy Minister Tom Koutsantonis said the new $2 million PACE Frontiers 2015 Mineral Systems Drilling program will allow explorers to make decisions "on the spot" and better target their efforts to drive exploration dollars further.



Mineral Systems Drilling Program - 2015

Aim:

- to investigate the various components of the mineral systems of the northern Eyre Peninsula – southern Gawler Range Volcanics;
- provide a regional framework for current and future exploration in the district through regional, mineral system-scale drilling;
- use broadly spaced drilling to identify regional-scale vectors to mineralisation;
- apply and evaluate DET CRC 'real-time' data collection technology in the context of a drill program; and,
- investigate new deposit models and concepts that are applicable to the broader region.

SA Government input:

- Approx $2M of drilling expenditure
- DSD Mineral Systems Team

DetCRC Inputs

- Latest real-time Lab At Rig technology and other drilling technology trials
- Technical Team

Minotaur Inputs

- Mineral systems concepts and targets in the Paney-Peltabinna region going back to 2006
- VTEM survey data (2012), modelling, interpretations and conceptual to direct targets
- Selected ground and DH EM followup
- $0.6M direct contribution to drilling and ground geophysical surveys in 2015
- $0.6M of past expenditure

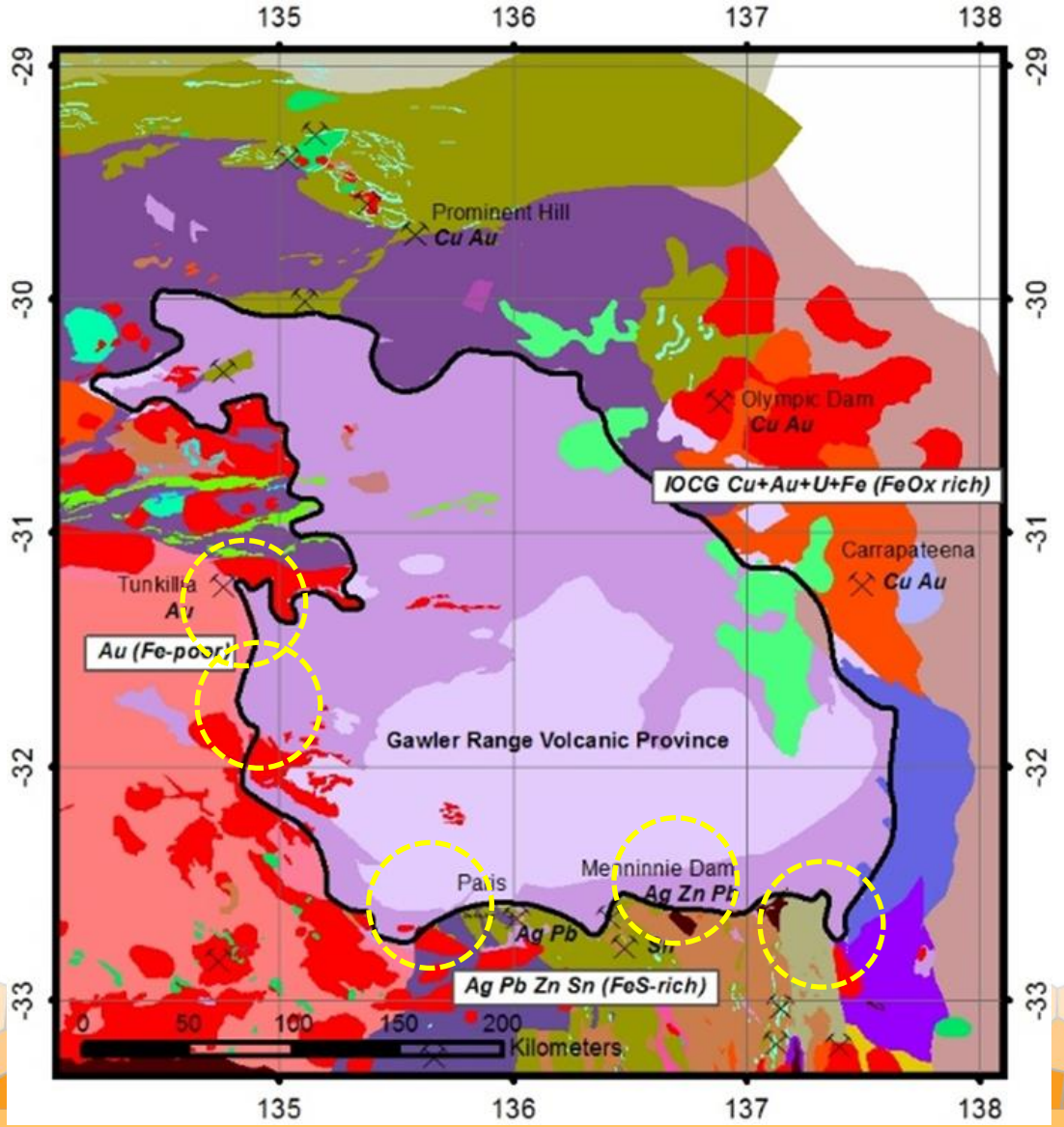
Southern GRV Margin: 2006 - 2014

In addition to our better known work in the Eastern Gawler IOCG belt, Minotaur has been active, albeit in a low key way, in the southern GRV margin for more than 10 years.

This was predicated on the belief that a mineralising event as large as the Olympic Dam-Carrapateena-Prominent Hill, and driven as it was by the 1590Ma Gawler Range Volcanics and Hiltaba Suite thermal event, should have some equally large consequences along its western and southern margins with known mineralisation of that age at Tunkillia, Nuckulla, Barns, Weednana, Menninnie Dam and Telephone Dam being “smoke”.

Our investigations have included the Paney, Nonning, Uno and Pandurra areas, and more regionally the Tunkillia-Nukulla-Glyde Hill areas.

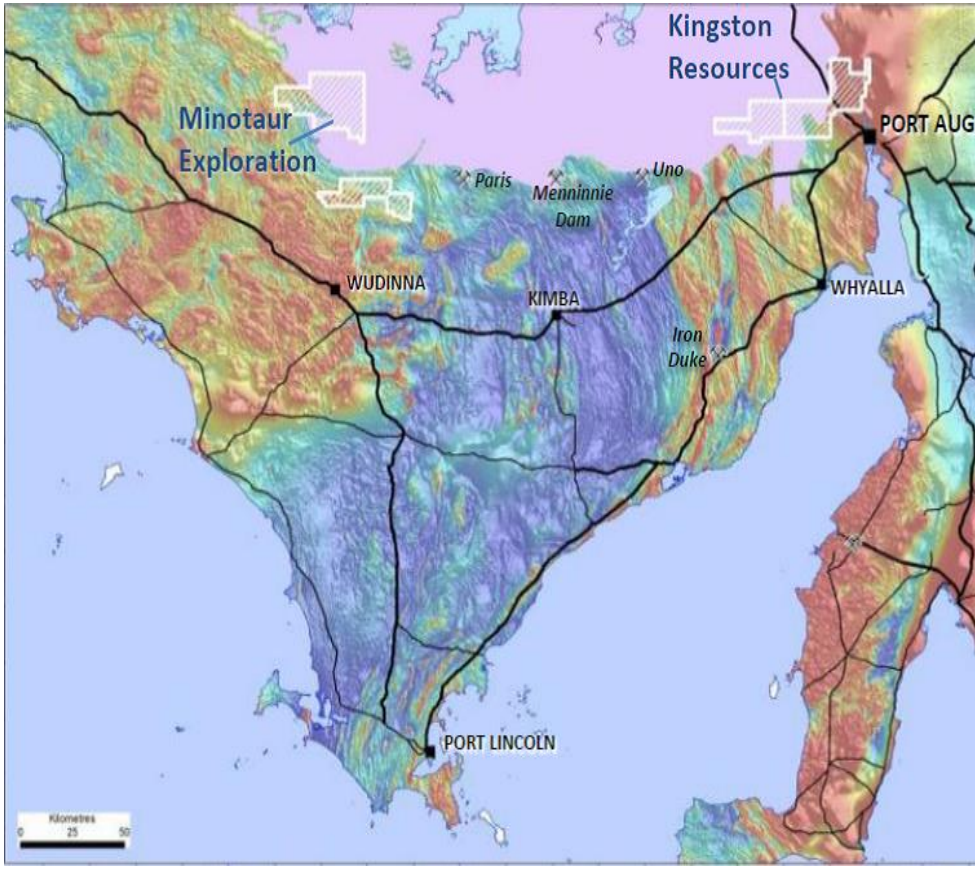
So what has happened to bring this activity to a new level?



Southern GRV Margin: 2006 - 2014

From our point of view, four disparite events have come together to give the southern GRV margin new focus:

1. Our R&D work with the ***pmdCRC** in 2006 on fluid flow modelling had highlighted the prospectivity of the basal GRV and underlying structures meeting that palaeosurface as key focal points for mineralising fluids.
2. Our **Cloncurry IOCG** work from 2008-2014 increasingly highlighted the significance of electrical geophysics as the appropriate toolbox for IOCG exploration in reduced terranes rather than gravity-magnetics.
3. The desire of **DSD** to drive a new Mineral Systems understanding of the southern GRV in the light of new discoveries being made by companies such as Tasman, Investigator, Trafford, Menninnie Metals and Musgrave Minerals
4. The technological advances being made at **DetCRC** into real-time vectoring and decision making at the exploration coal face requiring real-time field testing.



Southern GRV Margin: 2006 - 2014

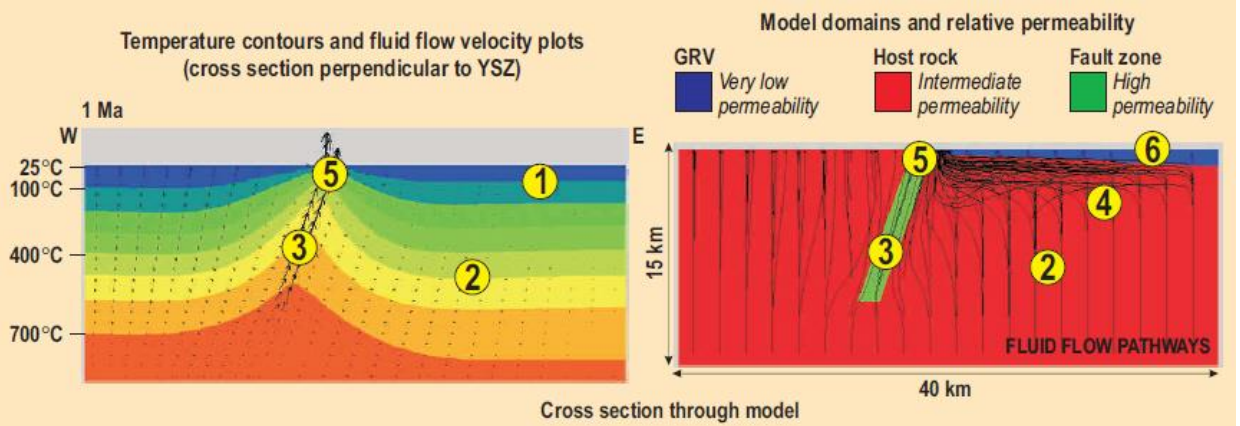
MINOTAUR EXPLORATION

Plumbing Systems and Fluid Flow Modelling

In 2006, **pmd*CRC** undertook commissioned research for Minotaur and PIRSA on numerical modelling of fluid flow around the western GRV margin.

That work concluded that the GRV blanket would have created a significant thermal circulation cell with enhanced fluid flow immediately below the GRV base and along basement structures below the GRV pile.

Rocks within 200m of the base of the GRV "seal" are the most prospective Steep structures intersecting or abutting the base of the GRV increase the probability of mineralisation as these provide a path for deeper mineralising fluids to intersect the shallower GRV driven circulation cell



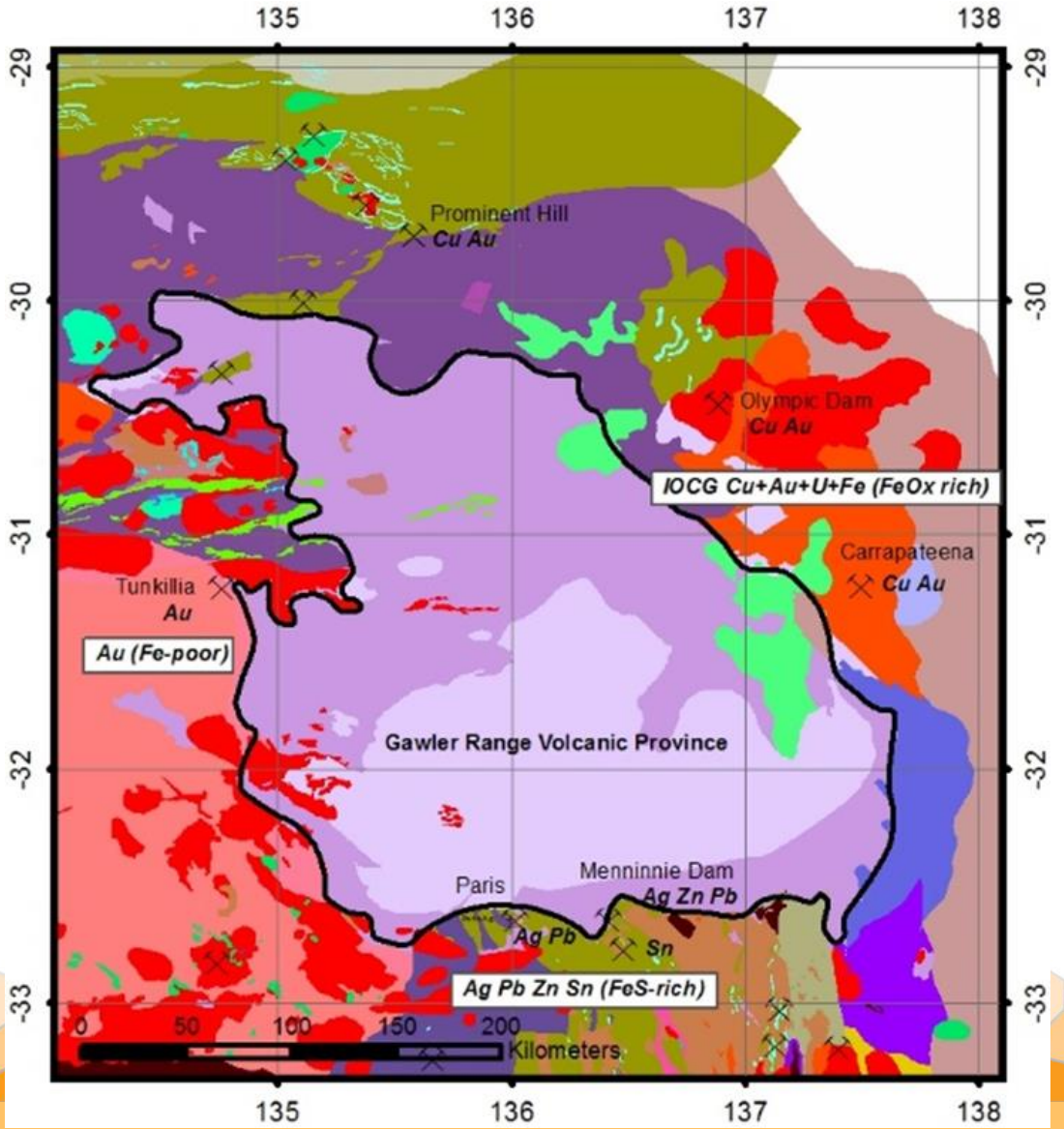
1. The medium to long term thermal impact of the thin (<2km) GRV blanket is negligible.
2. Slower rock buffered flow. Potential dissolution source for ore minerals, particularly if hot fluids pass through mafic rock sequences.
3. Rapid fluid buffered flow, fluid chemistry similar to source
4. Focussed lateral flow (isobaric and isothermal) seeking to escape from under impermeable GRV, either through ruptures or by flowing to GRV margins.
5. Potential 2 fluid mixing zone (cooler rock buffered fluid and hotter fluid with chemistry similar to source).
6. The GRV forms an impermeable blanket that forces focused lateral flow in the rocks immediately beneath the GRV.

This was the key conceptual reason for Minotaur to start investigating practical ways of exploring through the (shallower parts) of the GRV pile.

IOCG Districts and Exploration Toolbox

The "classic" South Australian IOCG Belt along the eastern margin of the Gawler Craton

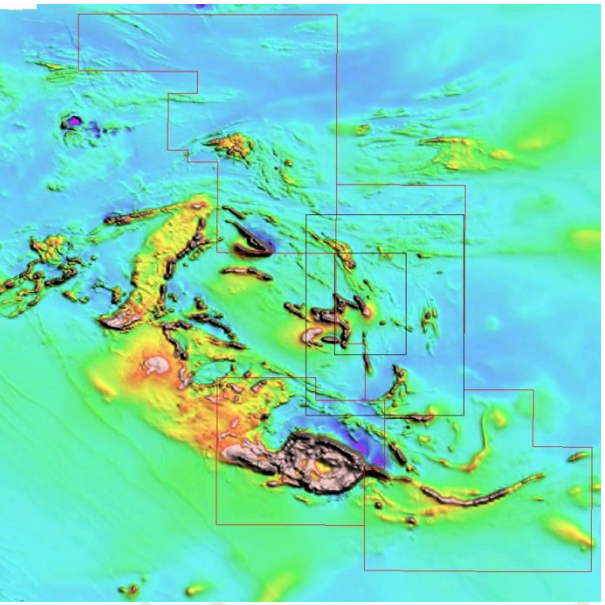
- *Eastern margin of Gawler Craton*
- *Bimodal mafic and felsic intrusives*
- *Lower Gawler Range Volcanics*
- *Intense iron oxide replacement and alteration*
- *Exploration toolbox dominated by magnetics and gravity*

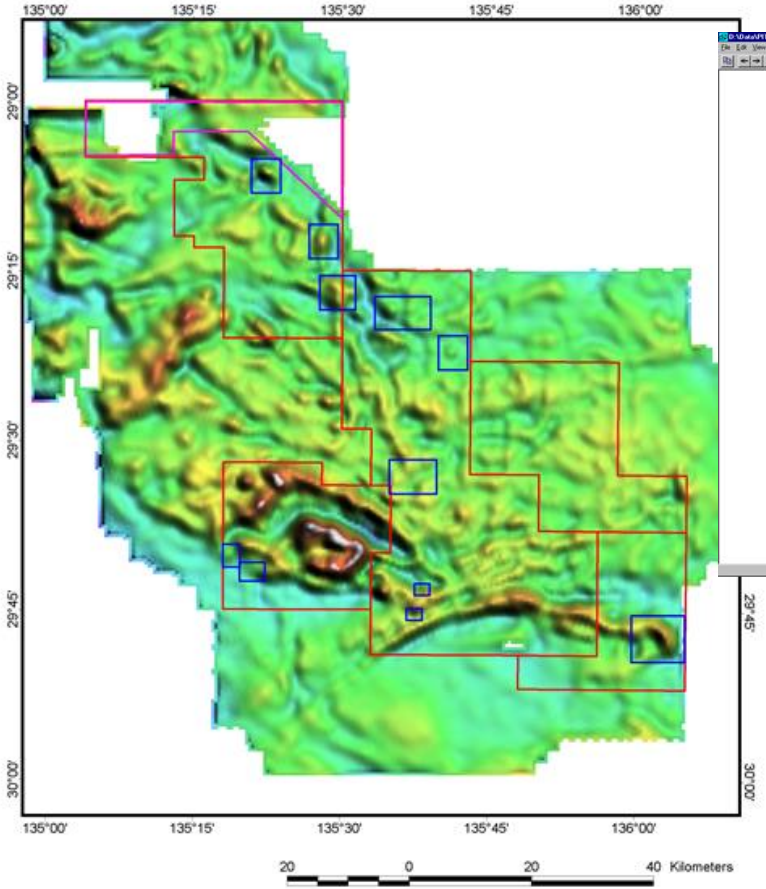


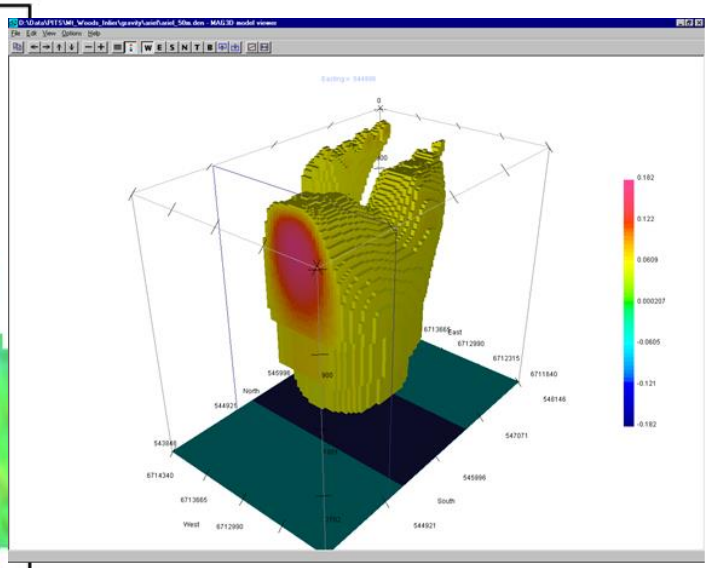
IOCG Districts - Gawler

Gawler Craton IOCG – Magnetite and Hematite dominant

- *Exploration toolbox – magnetics and gravity work well in eastern Gawler*
- *Map magnetite and hematite alteration and replacement*
- *No success in western or southern Gawler*







IOCG Districts - Cloncurry

Minotaur increased exposure and activity in Cloncurry from 2008

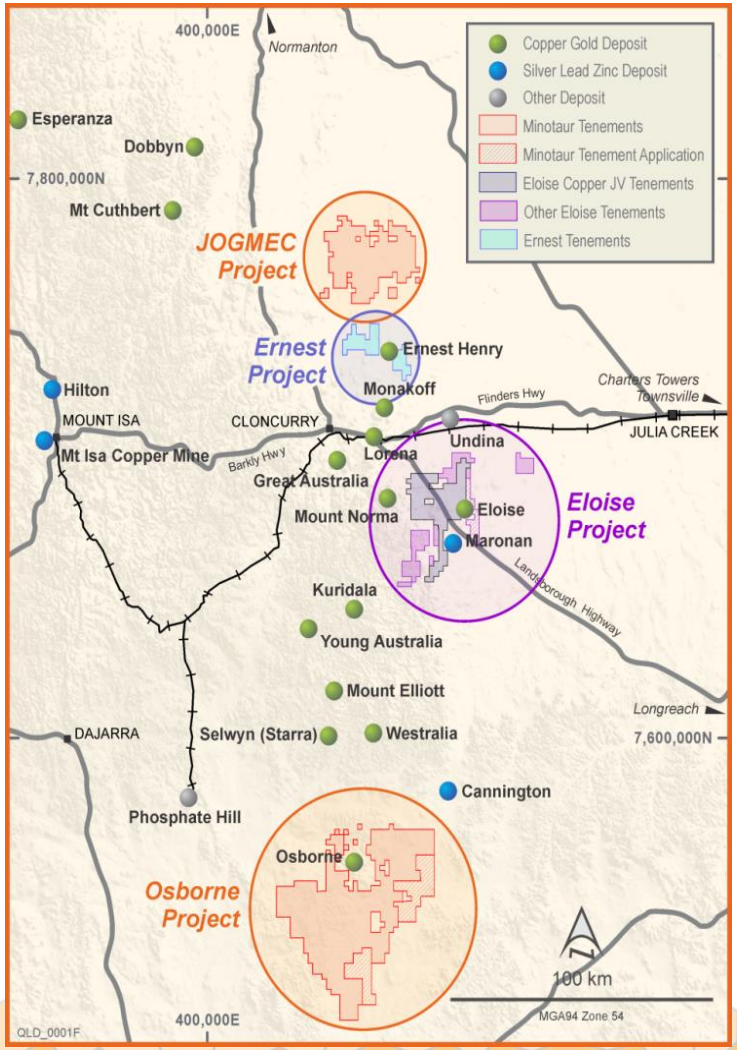
- Built up tenement positions close to producing Cu-Au mines
- Largely covered terranes
- Commenced with conventional SA mag-gravity toolbox

- Cloncurry has a far greater diversity of IOCG deposit styles
- Update exploration toolbox – a necessity

Copper Deposits	Tonnes (M)	Cu %	Au g/t		Contained Cu (Mt)	Contained Au (Moz)	
Ernest Henry	**>230***	**1.1**	**0.54**		**2.53**	**3.99**	
Mt Elliot/SWAN	210	0.52	0.32		1.09	2.16	
Mt Dore	108	0.6	0.1		0.65	0.35	
Osborne	**22[t]**	**2.8**	**1.02**		**0.62**	**0.72**	
Little Eva	106	0.52	0.1		0.55	0.34	
Starra	**37**	**1.2**	**1.6**		**0.44**	**1.9**	
E1 Group	52	0.77	0.23		0.4	0.38	
Eloise	**10[t]**	**3.5**	**0.93**		**0.35**	**0.3**	
Rocklands	30	1	0.21		0.3	0.2	
				Total	**6.93**	**10.34**	
Lead-Zinc Deposits	**Tonnes (M)**	**Pb %**	**Zn g/t**	**Ag g/t**	**Contained Pb (Mt)**	**Contained Zn (Mt)**	**Contained Ag (Moz)**
Cannington	>100*	8.5	4	350	8.5	4	1125.4
Dugald River	53	1.9	12.5	36	1.01	6.63	61.35
				Total	**9.51**	**10.63**	**1186.75**

[t] Estimated production

* Estimated production + remaining resource



IOCG Districts - Cloncurry

The Iron Sulphide (ISCG) style adds to an already broad church, many of which are unknown and/or untested in SA, and each with their own particular exploration toolbox

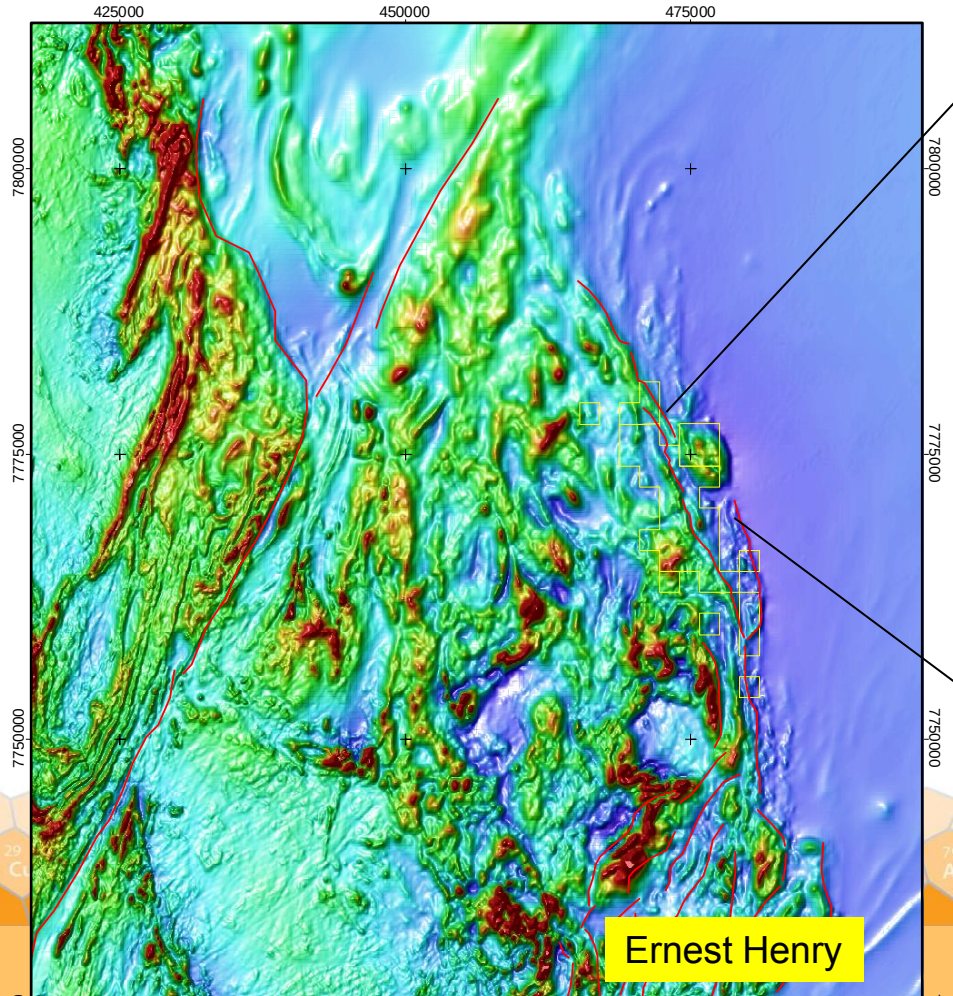
IOCG Deposit Styles	Examples	Mineralisation	Form of Iron	Targeting Methodology
Barren Ironstone	SE Missouri, Kiruna	n/a	Mag, Hm	Magnetics, Gravity
Tenant Ck Ironstone	Peko, Geko	Au-Cu-Bi	Mag, Po, Hm	Magnetics, Gravity
Osborne ironstone	Osborne	Cu-Au	Mag, Hm, Py, Po	Magnetics, Gravity
Haematite Breccia	Olympic Dam, Prominent Hill	Cu-Au-U-REE	Hm	Gravity, IP
Magnetite Breccia	Ernest Henry, Candelaria, Salobo	Cu-Au	Mag, Bio	Magnetics
Magnetite-Apatite	Kiruna, Acropolis	n/a	Mag	Magnetics
Iron Sulphide	**Cormorant, Eloise, Artemis, Kulthor**	**Cu-Au-Zn-Pb-Ag-Co**	**Po, Py**	**Electrical Conductivity**
Cobaltiferous	Nico	Au-Bi-Co-Cu	Mag, Hm, Bio	Magnetics, Radiometrics
Common Features: Bimodal igneous activity, mantle tapping structures, extensive regional Na and K alteration and widespread Fe metasomatism				

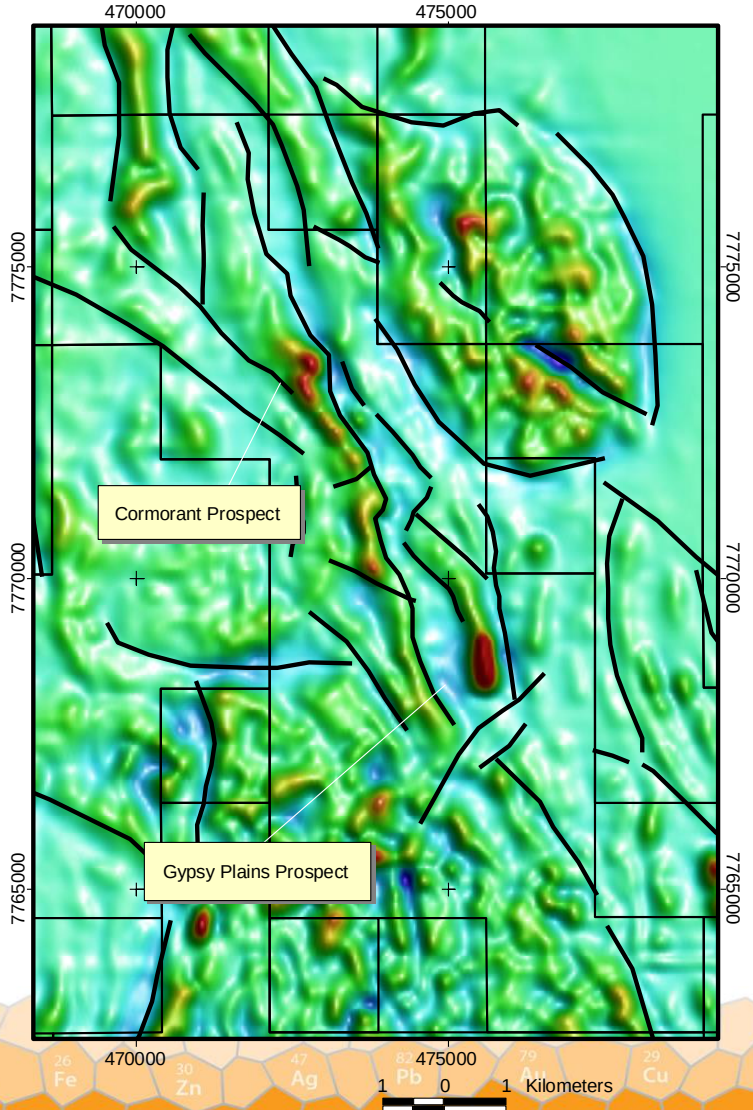
IOCG Districts - Cloncurry

MINOTAUR EXPLORATION

Cloncurry - Cormorant Prospect

- *Black soil plains*
- *Obvious magnetic alteration areas*
- *More subtle targets*

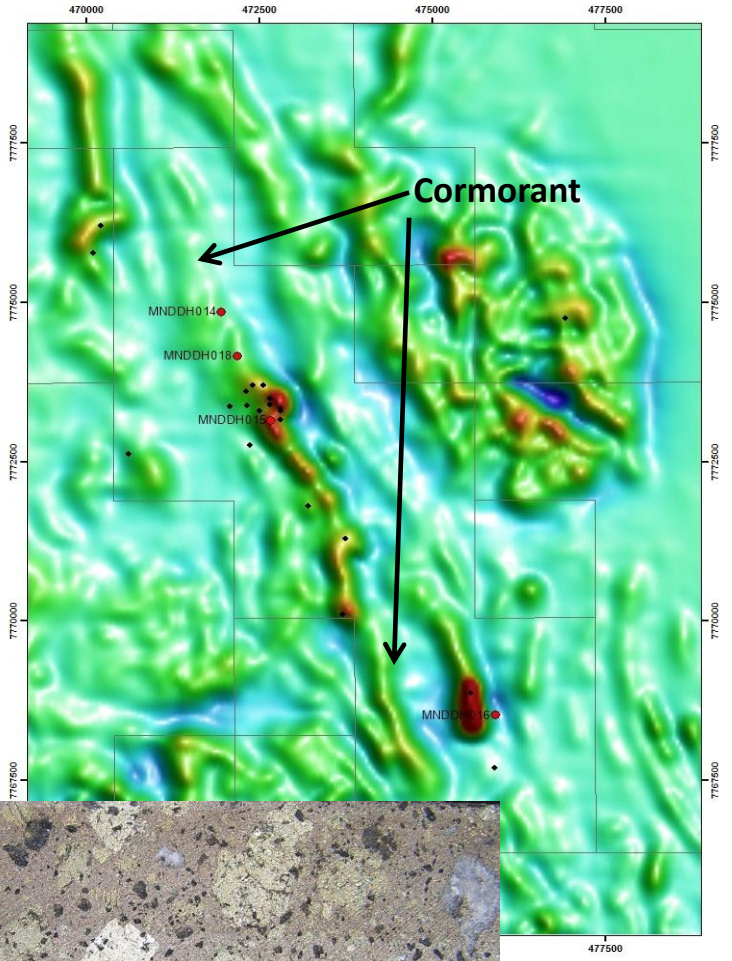


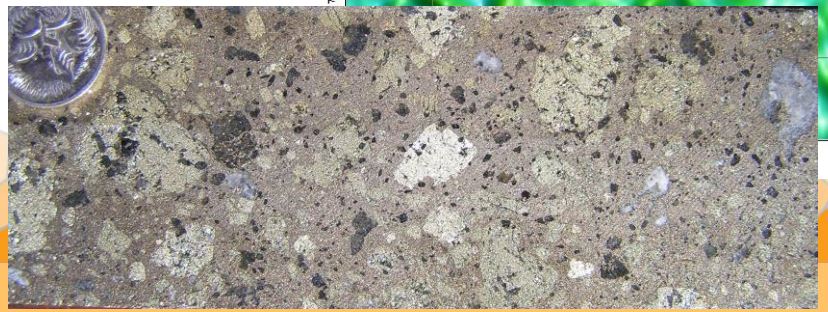


IOCG Districts - Cloncurry

Naraku; Cormorant Prospect from 2008

- Recognition that mineralisation associated with abundant pyrrhotite – highly conductive, but only weakly magnetic
- 100-200m of ultra-conductive Mesozoic cover. R&D on appropriate EM systems successful
- Regional tracking and drill testing confirms +15km, +20m thick iron sulphide system, massive & breccia pyrrhotite, persistently mineralised
- Major Iron Sulphide Copper Gold system (ISCG) encountered within a reduced host rock terrane
- Epigenetic Fe system as large as Prominent Hill
- Weakly magnetic, highly conductive





MIN04 : 20m @ 0.2% Cu, 0.02% Co from 160m

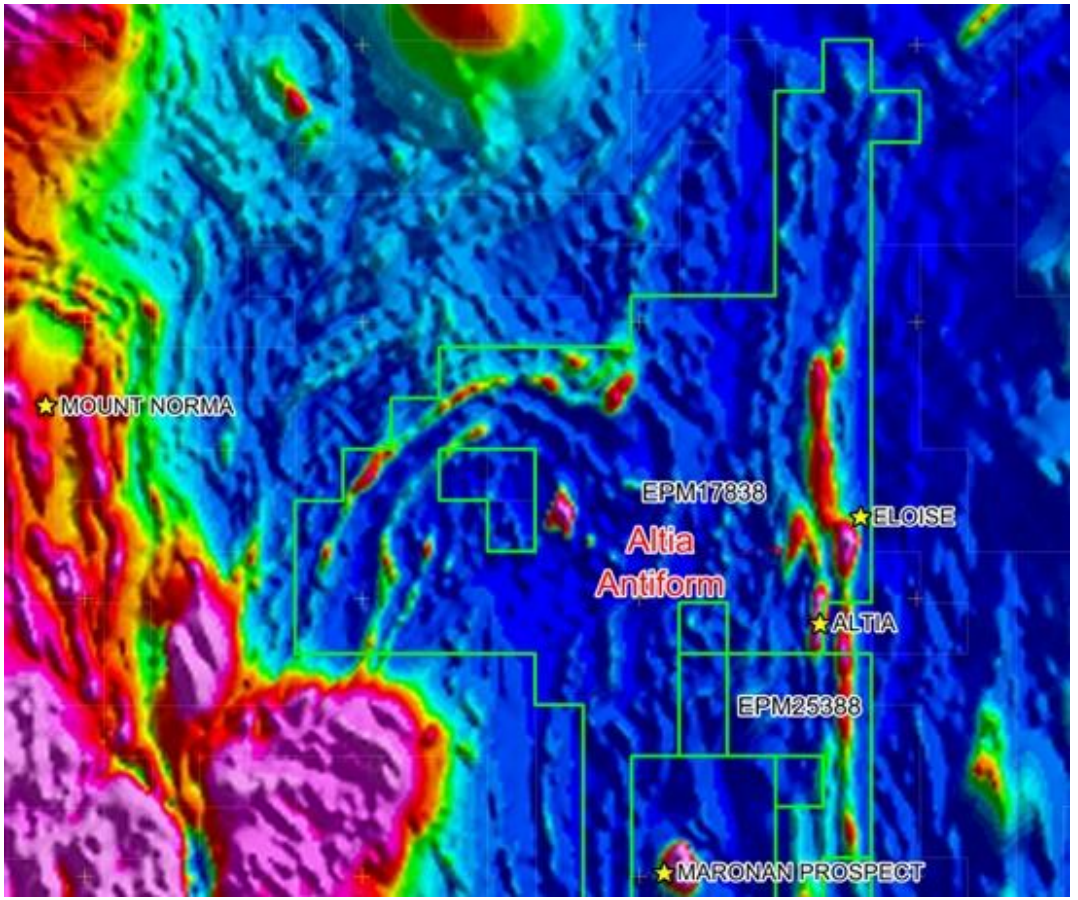
MIN07 : 56m @ 0.1% Cu, 0.03 g/t Au from 186m

MIN10 : 72m @ 0.21% Cu, 0.02% Co from 414m

IOCG Districts - Cloncurry

Minotaur move into Eloise region driven by:

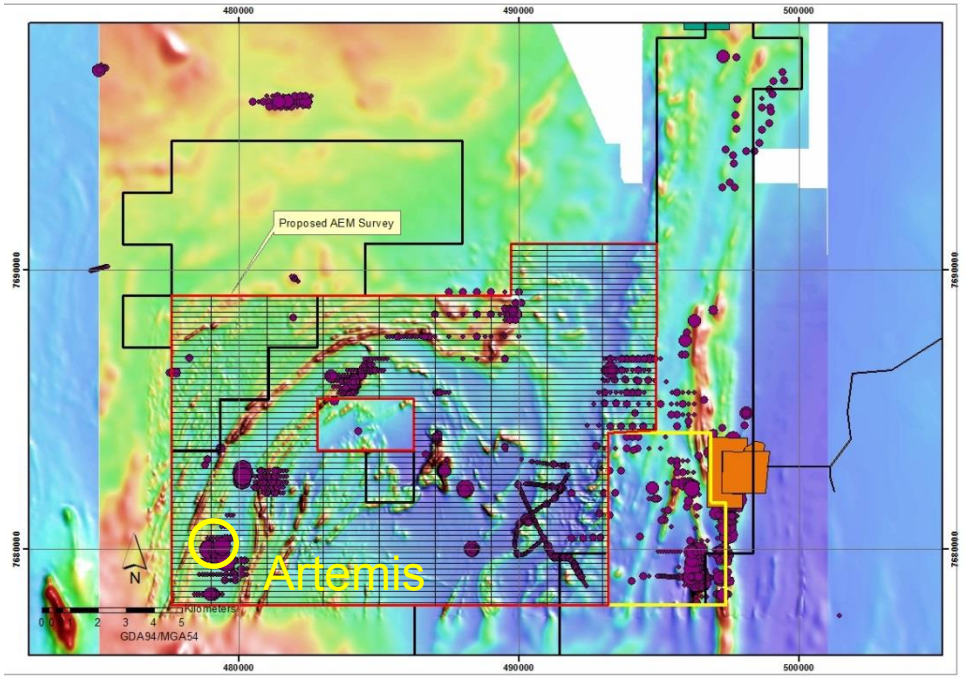
- Recognition of the ISCG style at Cormorant as a significant and different, high grade style of Cu-Au mineralisation
- Understanding of different exploration tools required, particularly EM and AEM
- Requirement for shallower ground that would allow airborne techniques to be used as a more rapid screening tool
- Recognition of Eloise as the pre-eminent example of the ISCG style, with abundant prospects in the surrounding “reduced terrane” that was also amenable to AEM.
- Acquired BRW Eloise tenements December 2013 with pre-determined exploration strategy

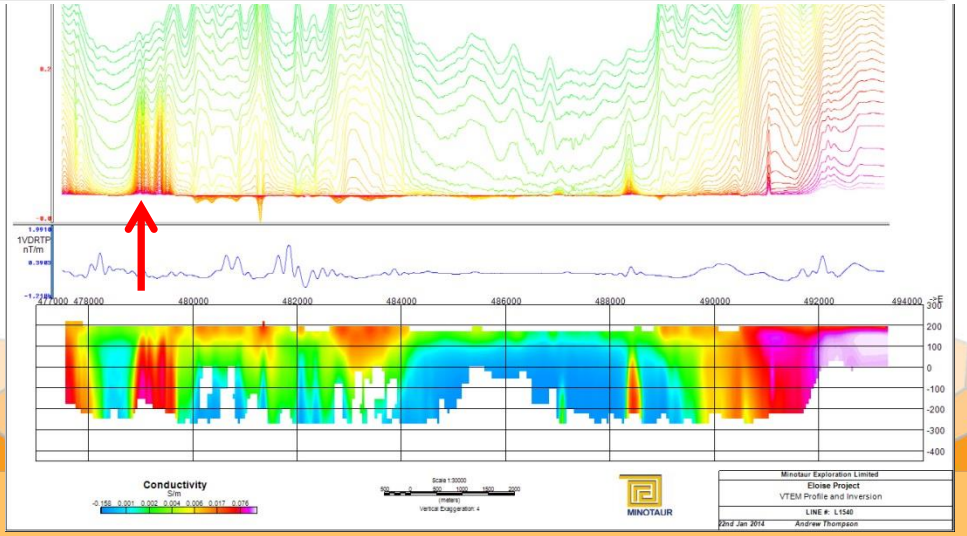


IOCG Districts - Cloncurry

The Artemis discovery exploration tool box involved:

- Regional AEM survey (Dec13) and prioritised target selection
- Ground truth and integration with other available data
- Ground EM follow-up at 16 selected targets (Feb-Apr14)
- Drill test 10 best targets (May-July 2014)
- Artemis Discovery July 2014



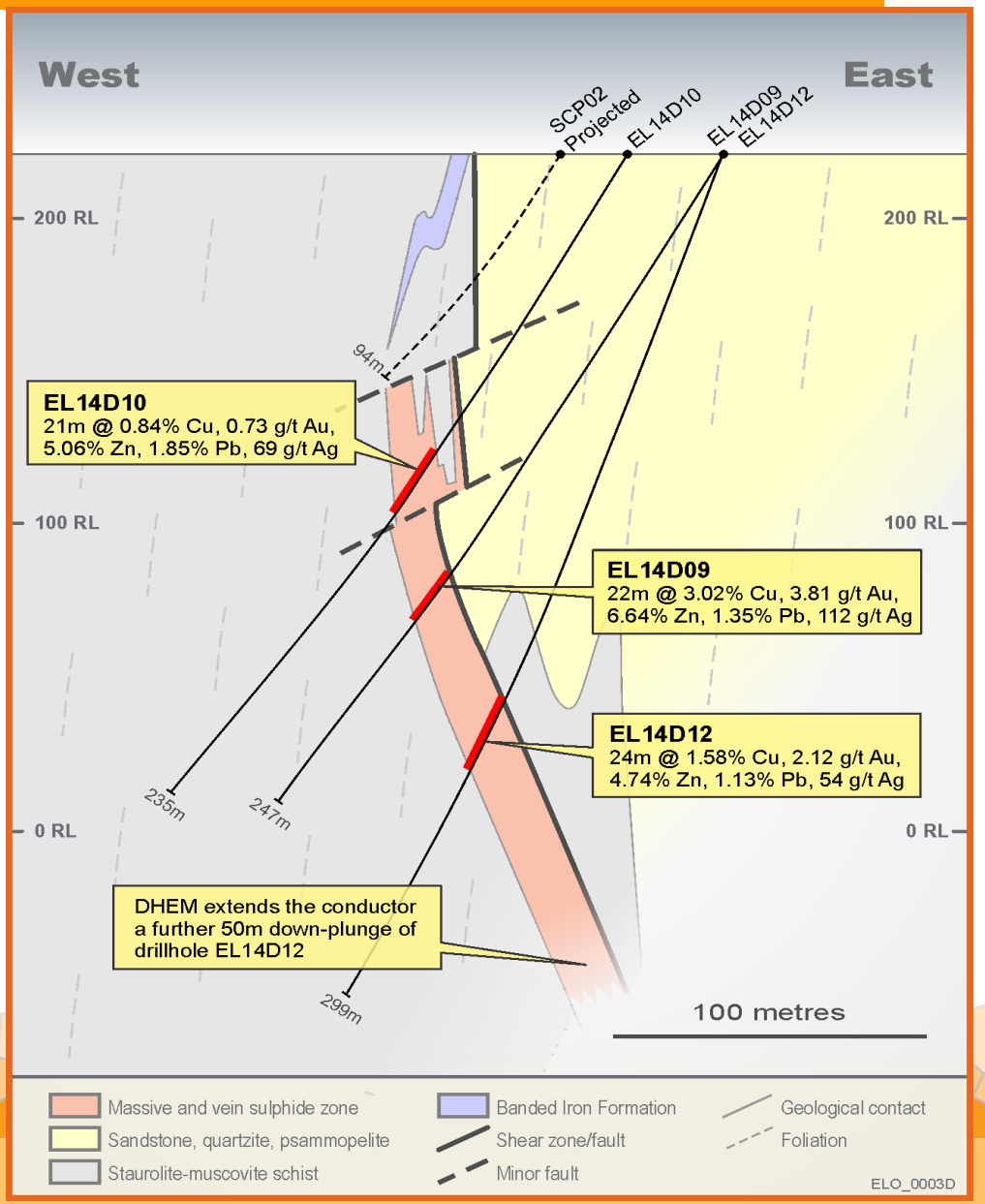


IOCG Districts - Cloncurry

Discovery hole EL14D09:

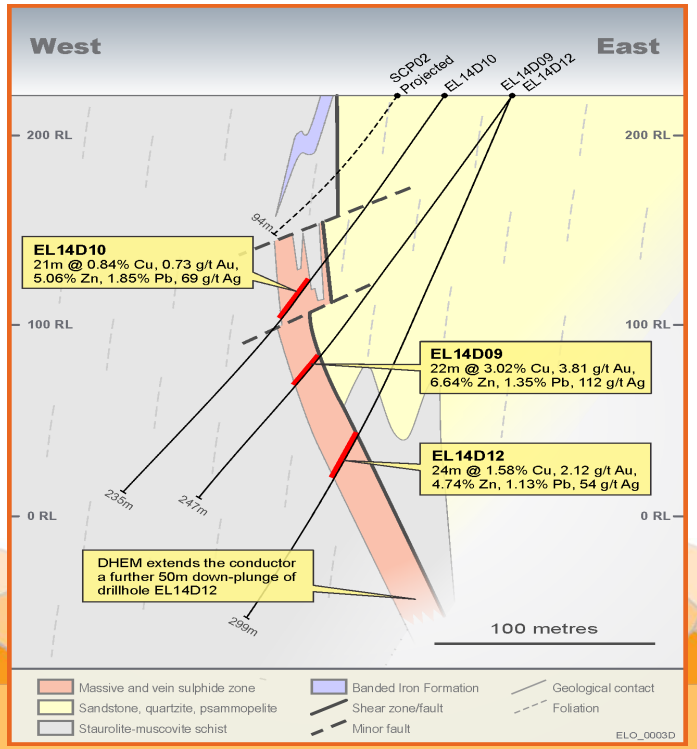
22m @ 27.5% Fe, 3.02% Cu, 3.81 g/t Au, 6.64% Zn, 1.35% Pb, 112 g/t Ag, 0.11% Co from 157 to 179 m

- Blind deposit of late fracture fill massive sulphide
- Fe-Cu-Zn-Pb sulphides. Very limited alteration halo or host rock brecciation
- Steep, tabular body, structurally controlled.
- **No significant magnetic or gravity expression**
- Responsive to Down-hole and Across-hole EM



IOCG Districts - Cloncurry

- Mineralogical association, physical and structural styles at Artemis appear remarkably similar to the Eloise deposit
- Eloise comprise a number of offset pyrrhotite-dominated massive sulphide lenses of short strike length (<200m) but great down dip extent. Mined to date: 10Mt @ 3.5% Cu, 0.93 g/t Au
- Blind at surface, late brittle offsets



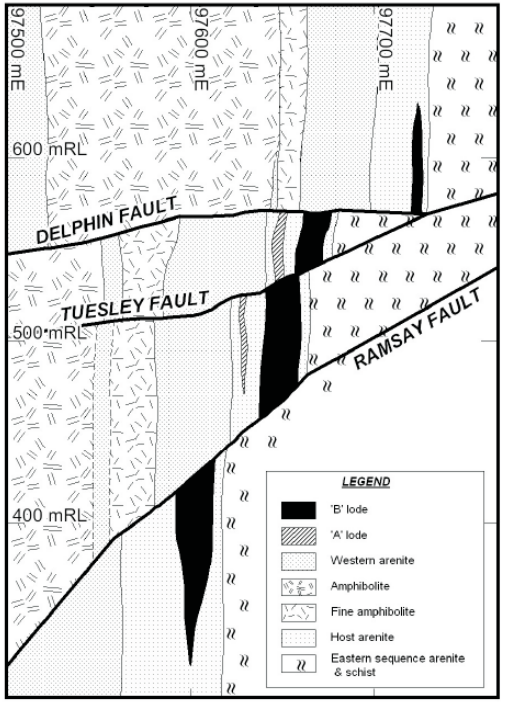


FIG 3 - Simplified east-west geological cross-section 82 175 mN,

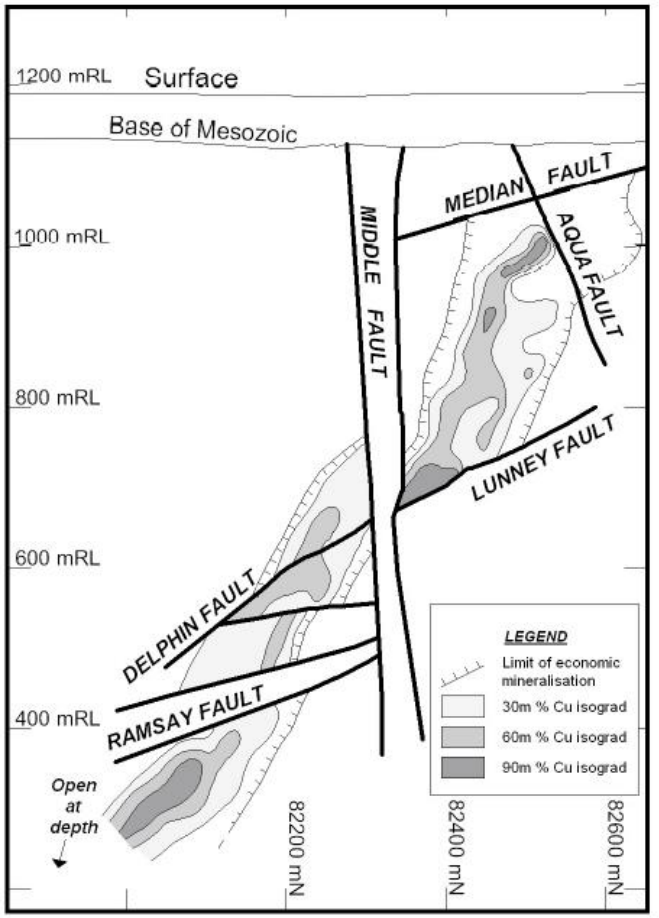


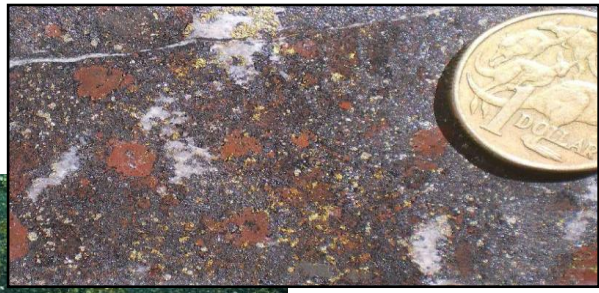
FIG 4 - North-south long section showing copper grade – thickness contours, orebody limits and faults.

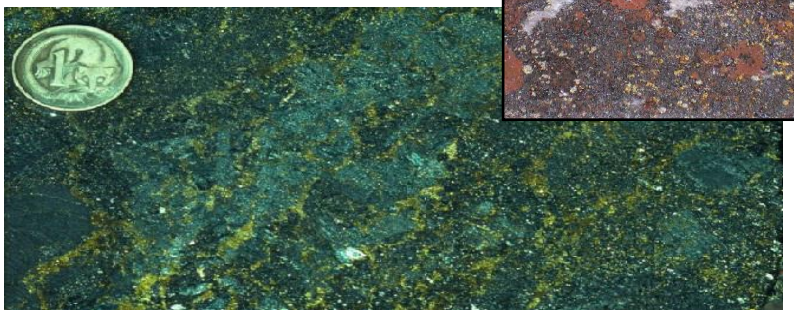
IOCG Districts - Cloncurry

IOCG deposits (**magnetite-rich**; disseminated)
(Ernest Henry, Osborne, Mt Elliott-Swan):

- Significant positive magnetic anomalies
- Positive gravity anomalies
- Strong IP chargeability anomalies
- Oxidised host rock terrane
- Weak to no EM anomalies
- Broad alteration haloes

Ernest Henry



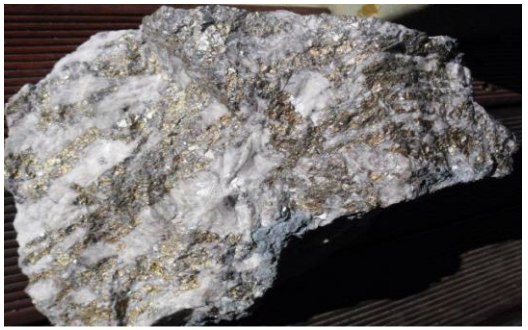


Osborne

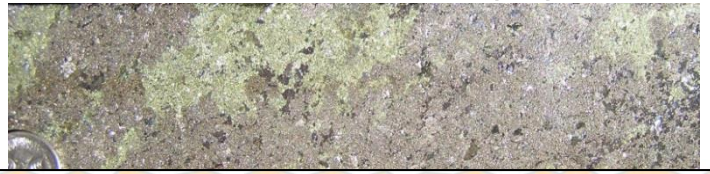
ISCG deposits (**pyrrhotite-rich**; high grade)
(Cormorant, Eloise, Artemis, Kulthor, East Osborne, Greenmount):

- No positive magnetic anomalies
- No or limited gravity anomalism
- Positive IP chargeability anomalies
- Reduced host rock terrane (carbonaceous and graphitic shales)
- Strong ground EM anomalies
- Limited alteration haloes

Kulthor



Artemis



Eloise

This was the second key concept that re-ignited Minotaur's interest in the southern GRV margin.

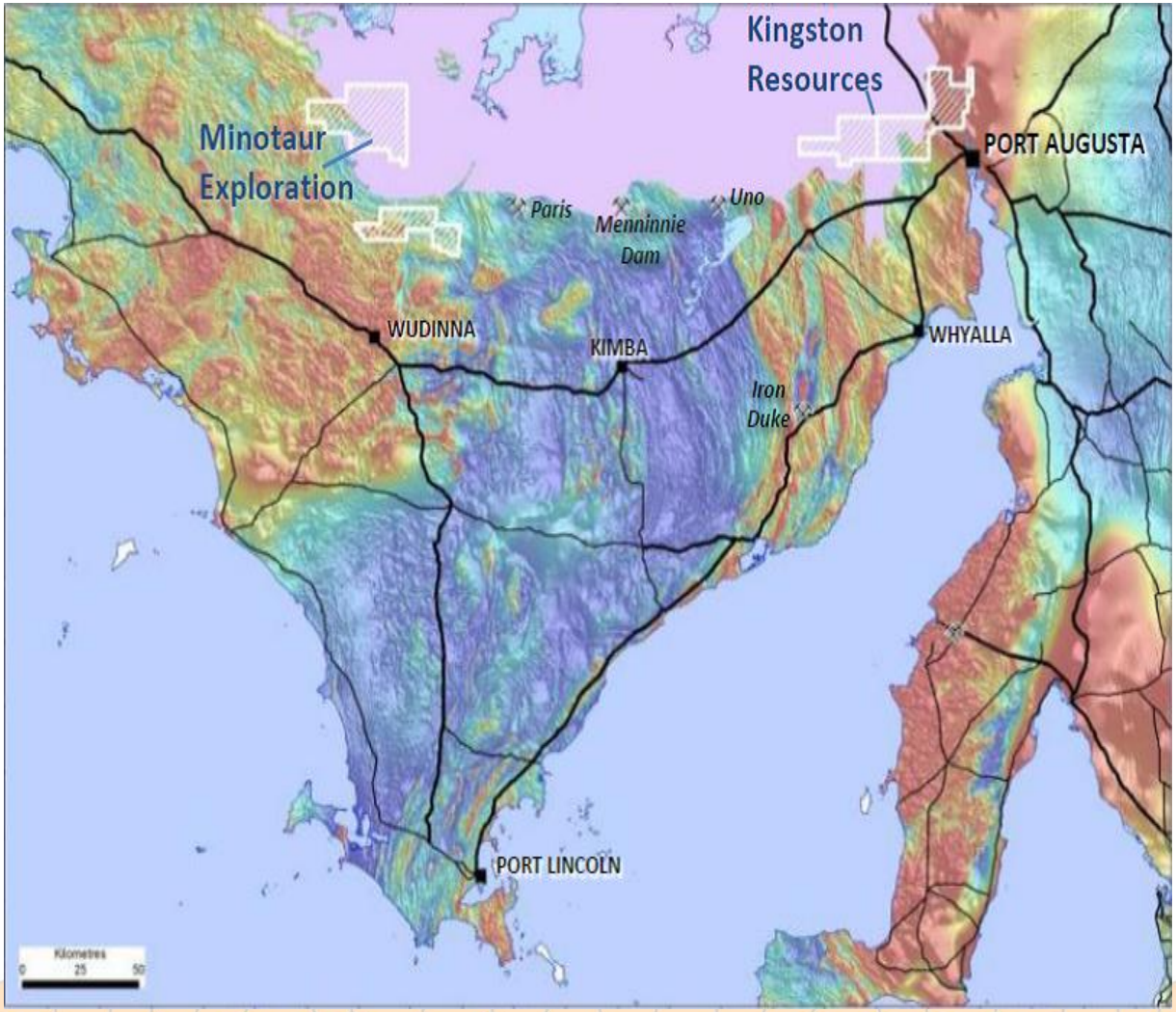
MEP Southern GRV Margin: 2006 - 2014

So back to Minotaur's southern GRV tenements:

The Cloncurry work has possibly answered our question as to why the classic SA exploration toolbox, gravity & magnetics, has been less than successful in the "reduced packages" that make up the southern Gawler terrane west of Pandurra.

The Cloncurry work has highlighted the significance of electrical geophysics to exploration in a reduced terrane such as the southern Gawler Craton where Fe alteration is likely to take the form of Fe-sulphides rather than Fe-oxides

When added to the fluid flow modelling work, and more recent base metal enriched discoveries in the region, the ISCG model application to the southern GRV requires further investigation.



MEP Southern GRV Margin: 2006 - 2014

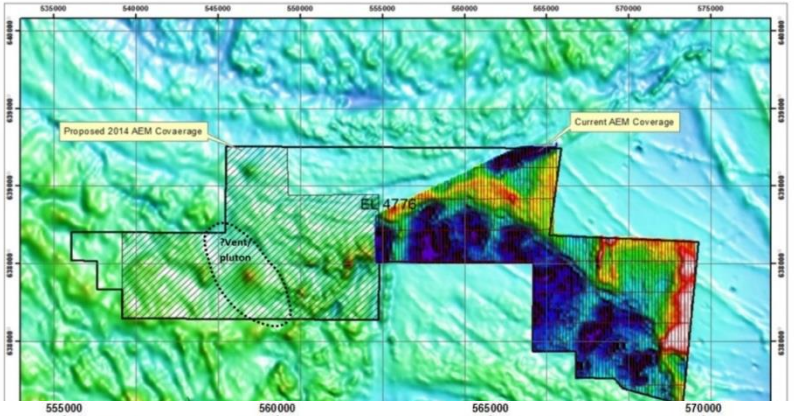
MINOTAUR EXPLORATION

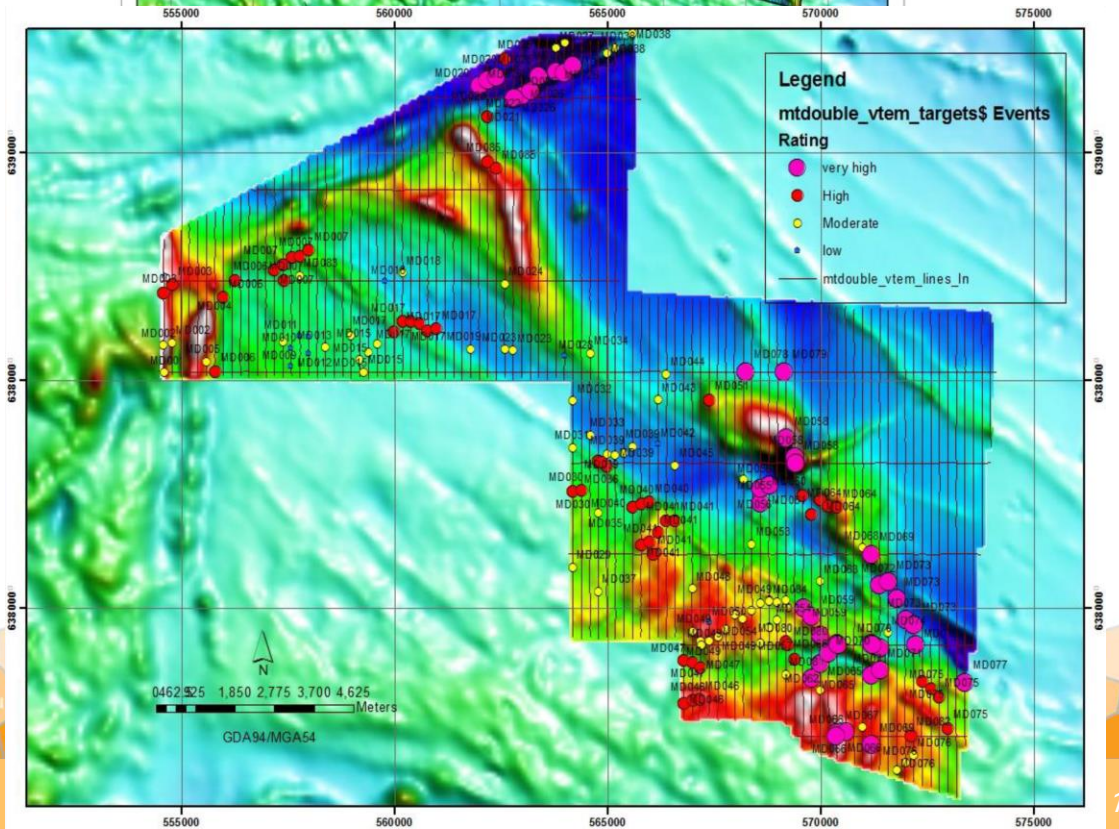
VTEM Survey

In 2012, Minotaur, in part through a vend-out arrangement with Spencer Resources, flew a new generation VTEM airborne EM survey over part of Mt Double (EL 4776) tenement.

The survey generated 37 high-priority targets, for epithermal and/or hydrothermal ISCG-style base and precious metal mineralisation.

The targets occur at the basal Gawler Range Volcanics level, along structures and contacts and along the southern GRV fault margin.





MEP Southern GRV Margin: 2006 - 2014

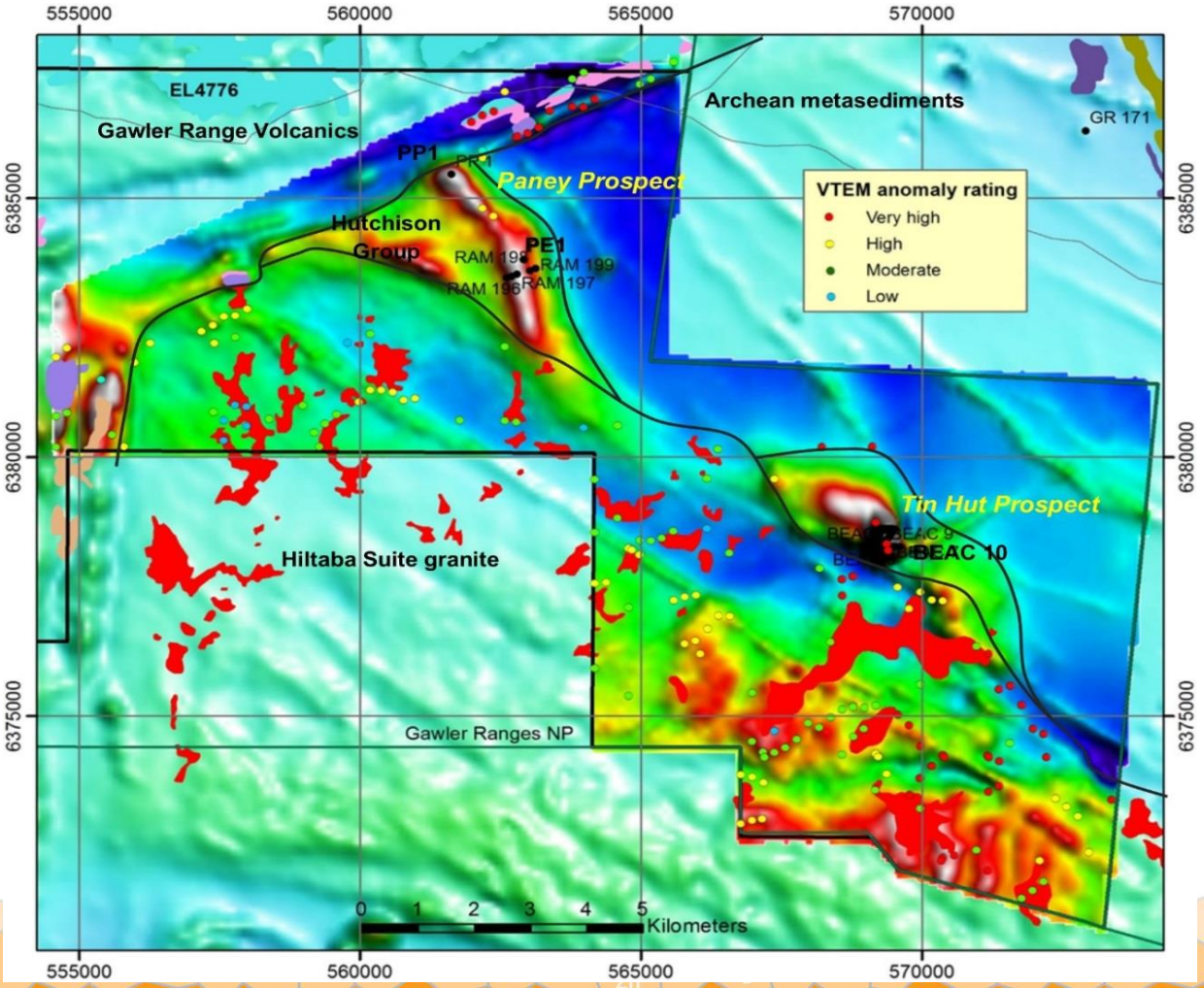
The VTEM anomalies coincide, in part, with historic mineralised intercepts at the Paney and Tin Hut prospects, viz:

Shell Billiton PP1:
2m @ 1.9% Pb, 1.0% Zn, 18 g/t Ag
2m @ 0.96% Pb, 2.0% Zn, 6 g/t Ag
2m @ 1.82% Pb, 0.5% Zn, 7.5g/t Ag

PE1:
1.6m @ 0.27% Pb, 0.49% Zn, 5 g/t Ag

Aurora Gold BEAC10:
18m @ 0.24% Pb, 0.55% Zn, 15 g/t Ag

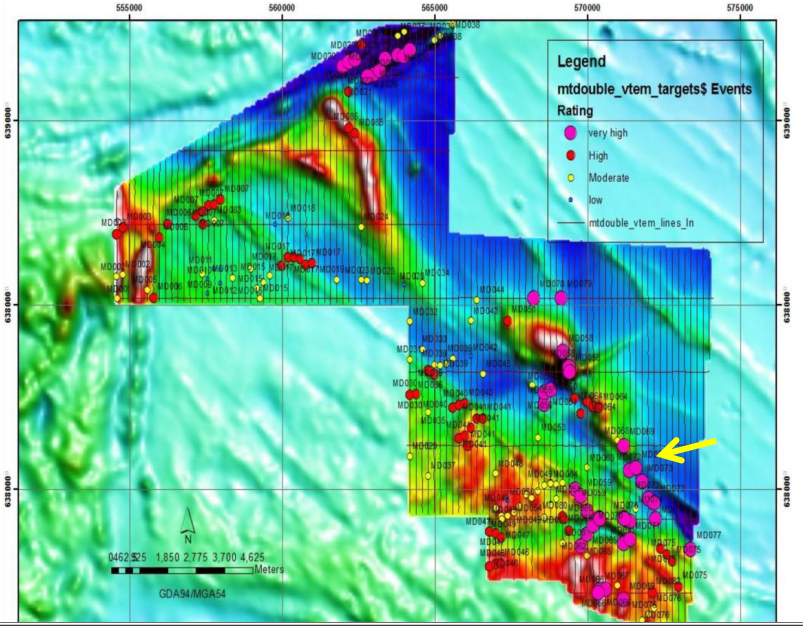
TMI-RTP magnetic image



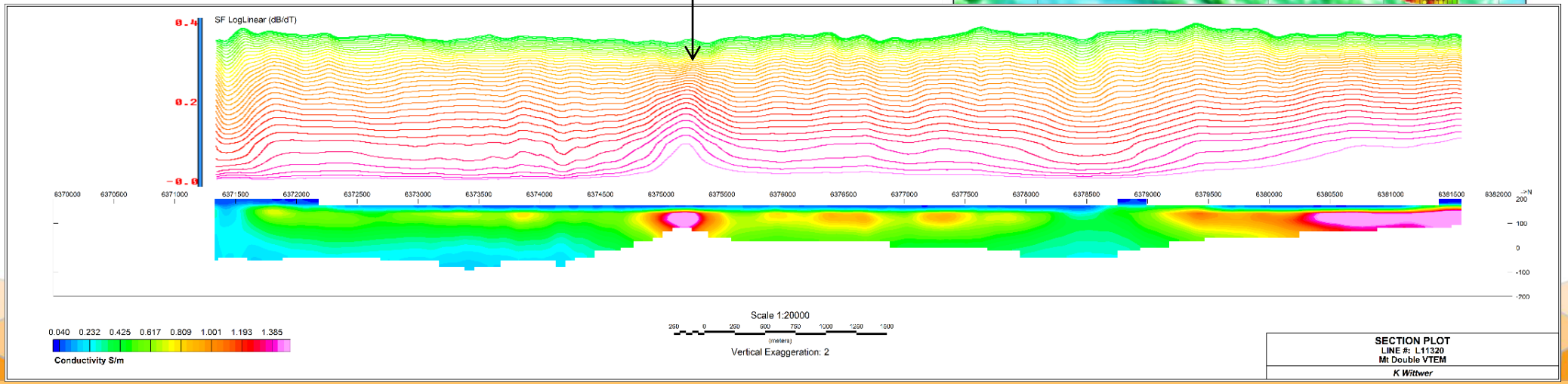
MEP Southern GRV Margin: 2006 - 2014

MINOTAUR EXPLORATION

Example VTEM bedrock conductivity target MD073
- Over 3 flight lines
- Hiltaba granite margin
- awaiting ground EM survey and detailed modelling.



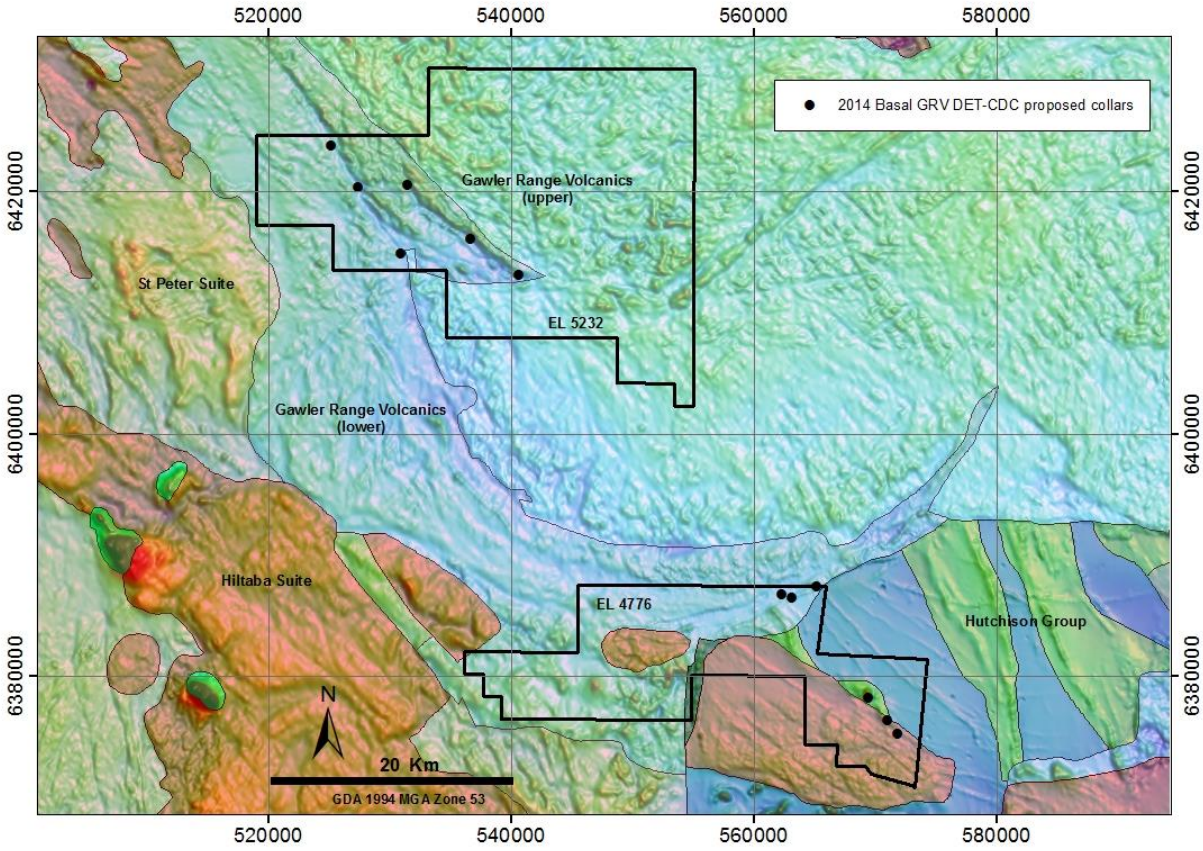
VTEM Target MD073
late-time anomaly



SA Mineral Systems Drilling Program - 2015

In 2014, our work, concepts and proposed activities were submitted for consideration by, and duly accepted and included by the **Department of State Development in their 2015 Mineral Systems Drilling project**.

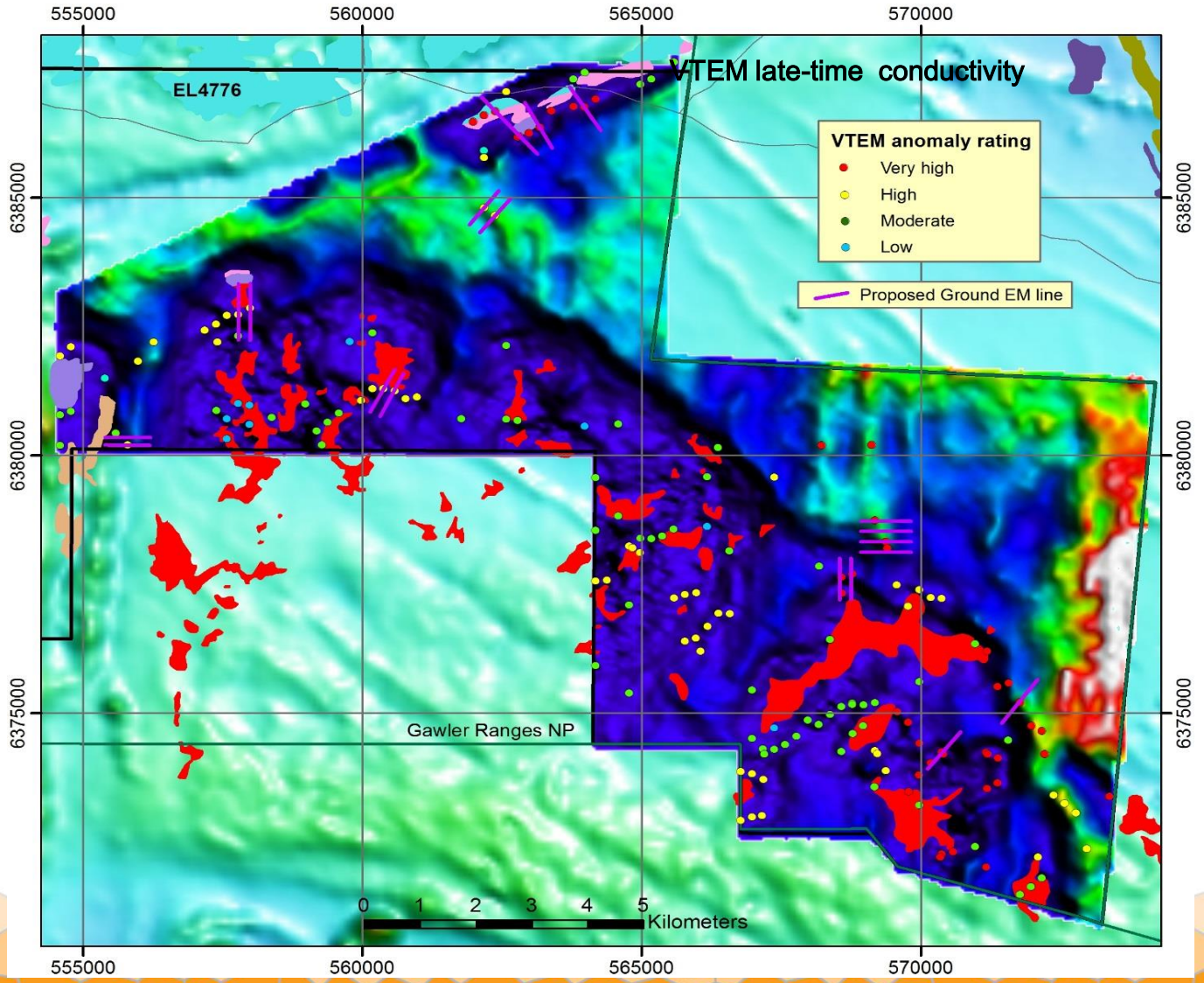
Together with the DSD Mineral Systems team, a broader range of targets have now been selected to assist mineral system mapping and vectoring.



SA Mineral Systems Drilling Program - 2015

12 Basement Targets on EL4776:

- Within Hiltaba Suite pluton,
- Proximal to eastern margin of granite pluton,
- Along southern contact of Gawler Range Volcanic succession
- Some to be sharpened for ground EM modelling
- Others to be tested from direct VTEM modelling



Upcoming activity :
Ground EM surveys
Ground magnetic surveys
Proof of Concept drill testing
Real-time vectoring

Revise Exploration Models and Exploration Toolbox

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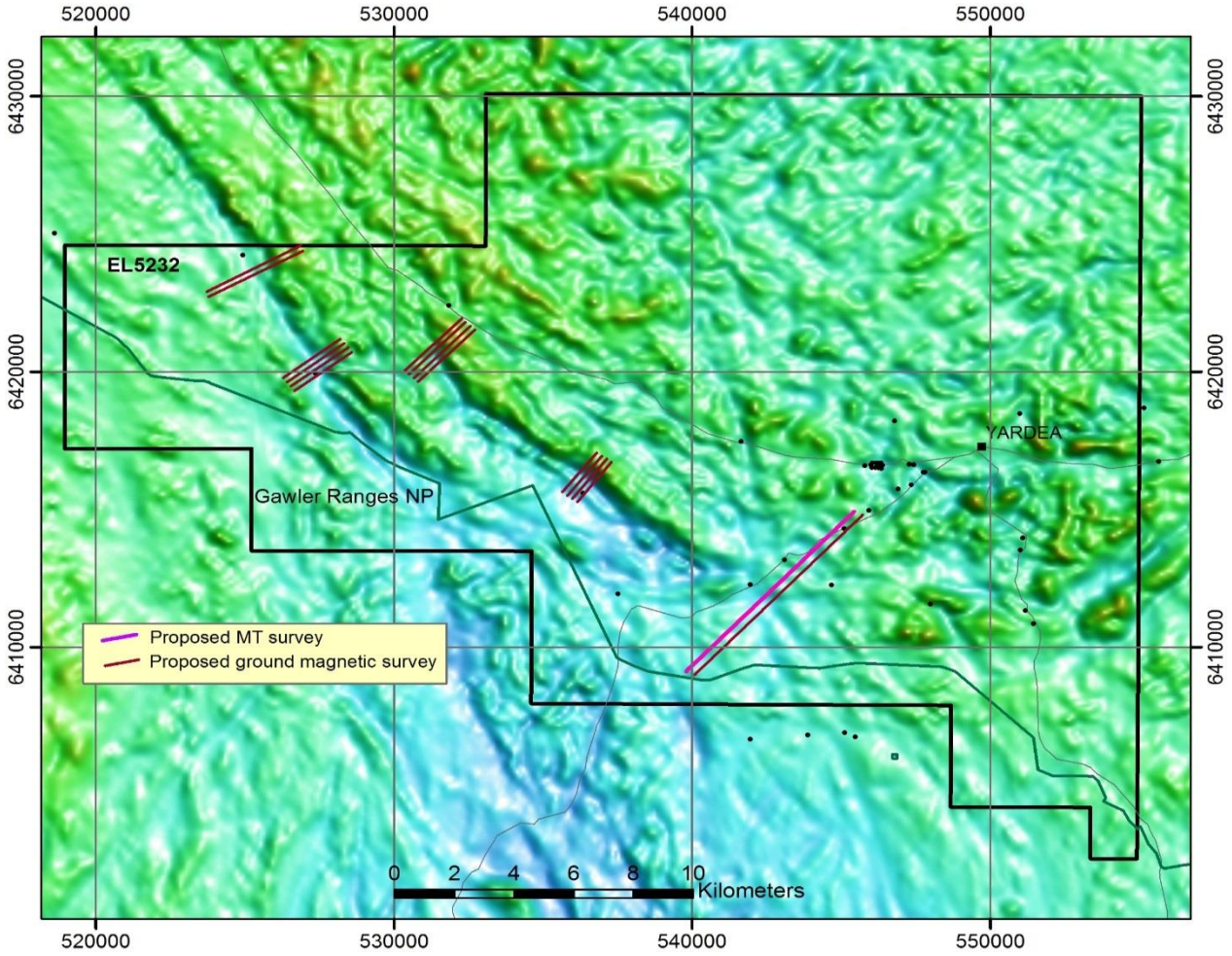
MINOTAUR EXPLORATION

5 Targets through GRV on EL5232

- Key structures and pathways for hydrothermal and epithermal fluids and potential mineralisation
- All concealed by younger volcanic strata
- No erosion of palaeosurface



Upcoming Activity:
Ground magnetic surveys
CSAMT survey
Drill testing
Real-time alteration vectoring

SA Mineral Systems Drilling Program - 2015

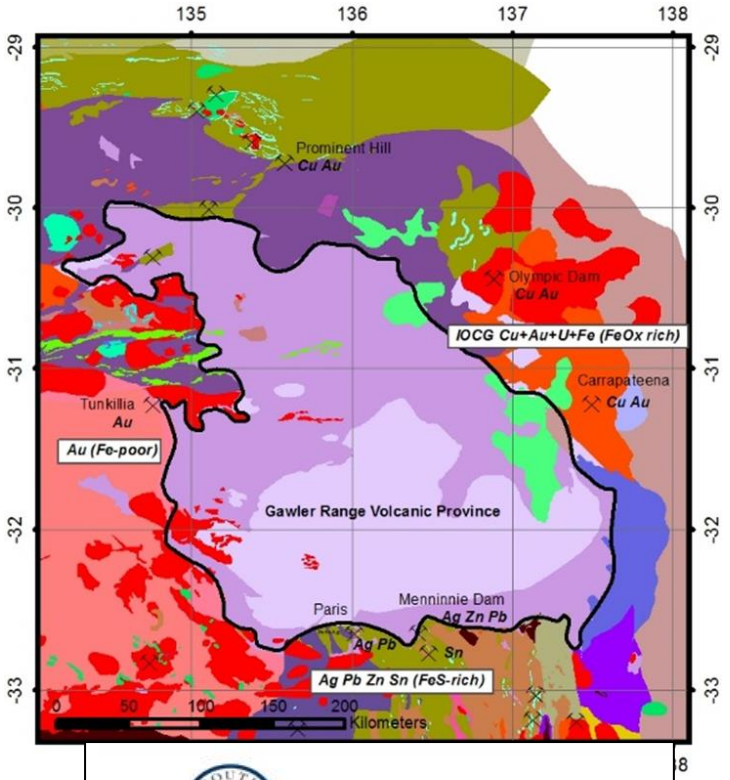
In Conclusion:

Minotaur's "return" to SA driven by:

- *New R&D concepts built around GRV fluid flow modelling and IOCG mineral systems*
- *New exploration concepts and discoveries built around ISCG deposits in the Cloncurry IOCG district*
- *Our initial experimentation in the Southern GRV confirming applicability on new VTEM and EM technologies*
- *Proactive policies of SA Government and DetCRC in researching and testing new Mineral Systems concepts and technologies*

We look forward to an exciting period of field testing of these concepts and targets in the southern GRV area in collaboration with DSD and with DetCRC.

Drilling activity on the Minotaur tenements and targets is expected to commence in July 2015



Government of South Australia
Department of State Development

KINGSTON RESOURCES LIMITED

DEEP EXPLORATION TECHNOLOGIES CRC
Uncovering the future

MINOTAUR EXPLORATION

Mineral systems drilling program 2015

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Competent Person's Statement

Information in this presentation that relates to exploration results for Minotaur Exploration Ltd is based on information compiled by Dr. A. P. Belperio, who is a Director and full-time employee of the Company and a Fellow of the Australian Institute of Mining and Metallurgy. Dr. Belperio 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). Dr. Belperio consents to inclusion of this information in the form and context in which it appears.