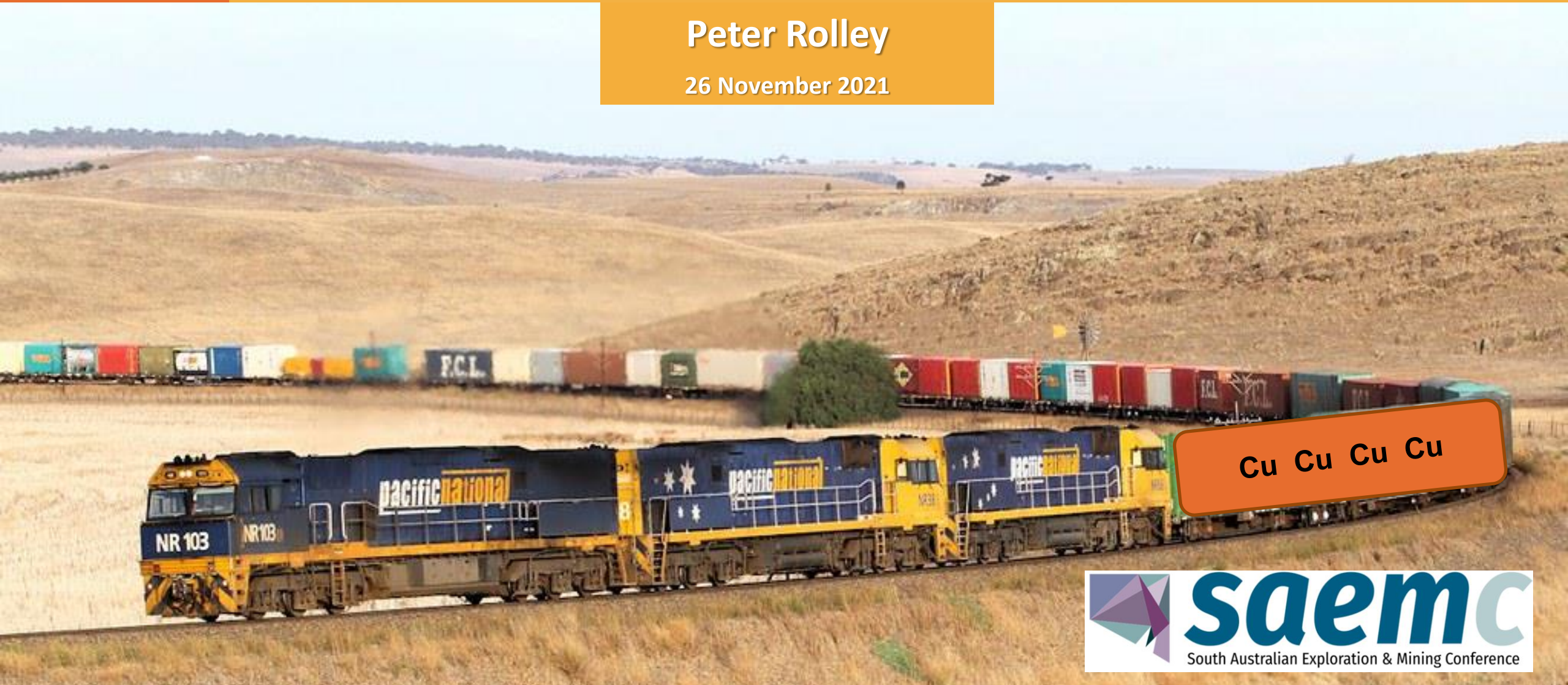
HILLGROVE RESOURCES

THE CHALLENGE OF CHALLENGING GEOLOGICAL TIMES IN THE SOUTH EAST OF SOUTH AUSTRALIA

Peter Rolley

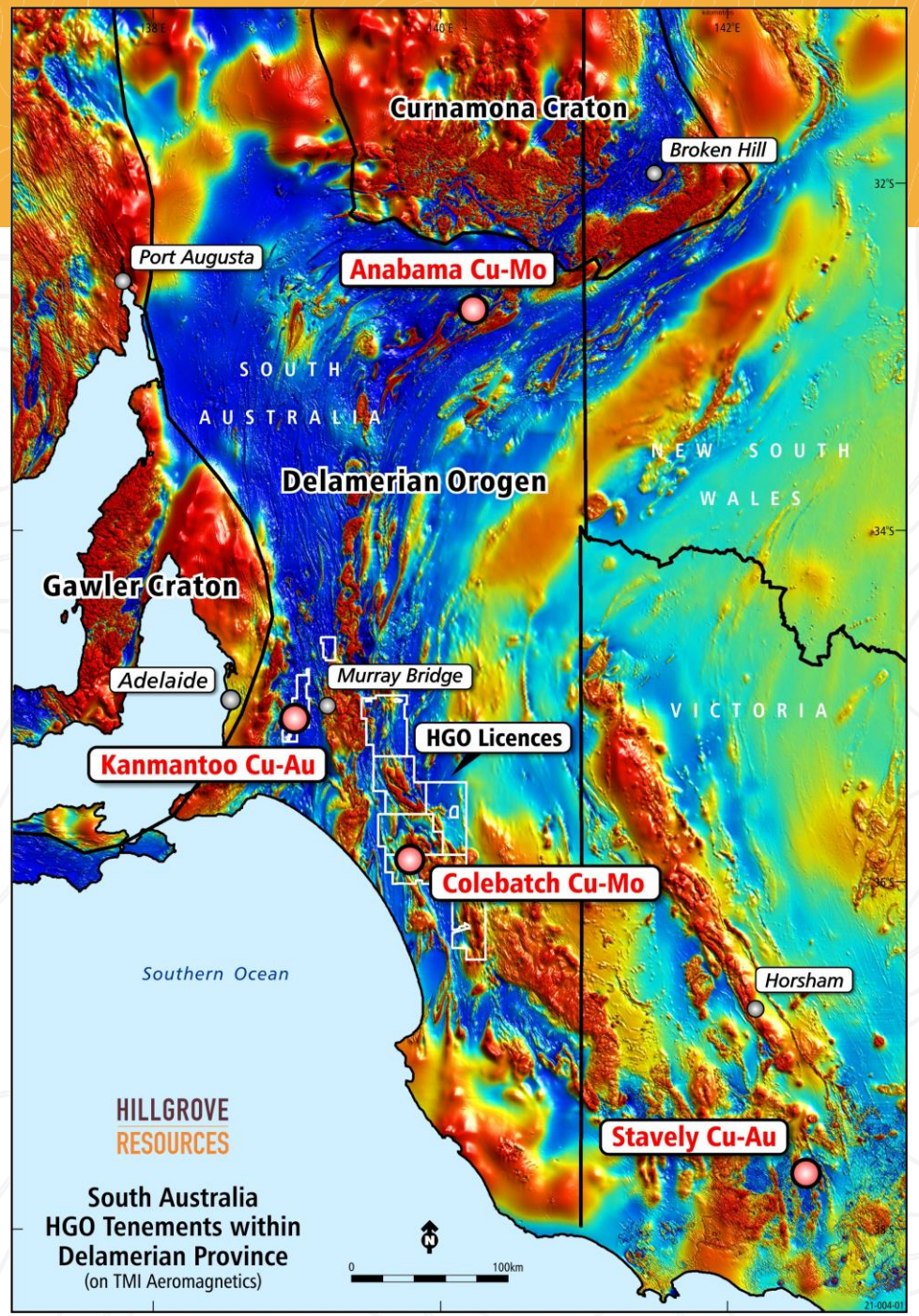
26 November 2021



saemc
South Australian Exploration & Mining Conference

Exploration in the South East Overview

- Focused on copper – gold
- Objective 1 is a new Cu system near Kanmantoo
- Objective 2 is a Tier One new discovery in the South East
- Seven tenements covering 6,125 km^2
- 100% owned by HGO
- Engaging with local communities and landowners
- Prospective for sedimentary and magmatic hosted mineral systems
- HGO is undertaking a fundamentals approach to exploration



Exploration in the South East
Working Together at all Times

So let's work together to make sure that we can keep the benefits and jobs from these new copper 'green energy enabler' industries in regional towns.

We seek your support as we take our first steps to build a new industry in the South-East, and welcome your comments and questions.

Please get in touch!

www.hillgroveresources.com.au

Hillgrove Resources

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Working together to bring a new industry to the South-East

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Hillgrove has contributed $200 million to local businesses and employees and created 300 full-time jobs within an hour of Kanmantoo – keeping the financial and employment benefits within the community.

Best practice approach: Hillgrove and the KCCCC recognised for Community Excellence by the Hon Steven Marshall MP Premier of South Australia

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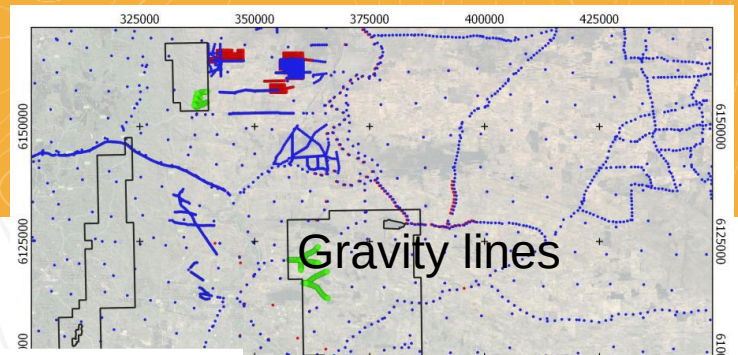
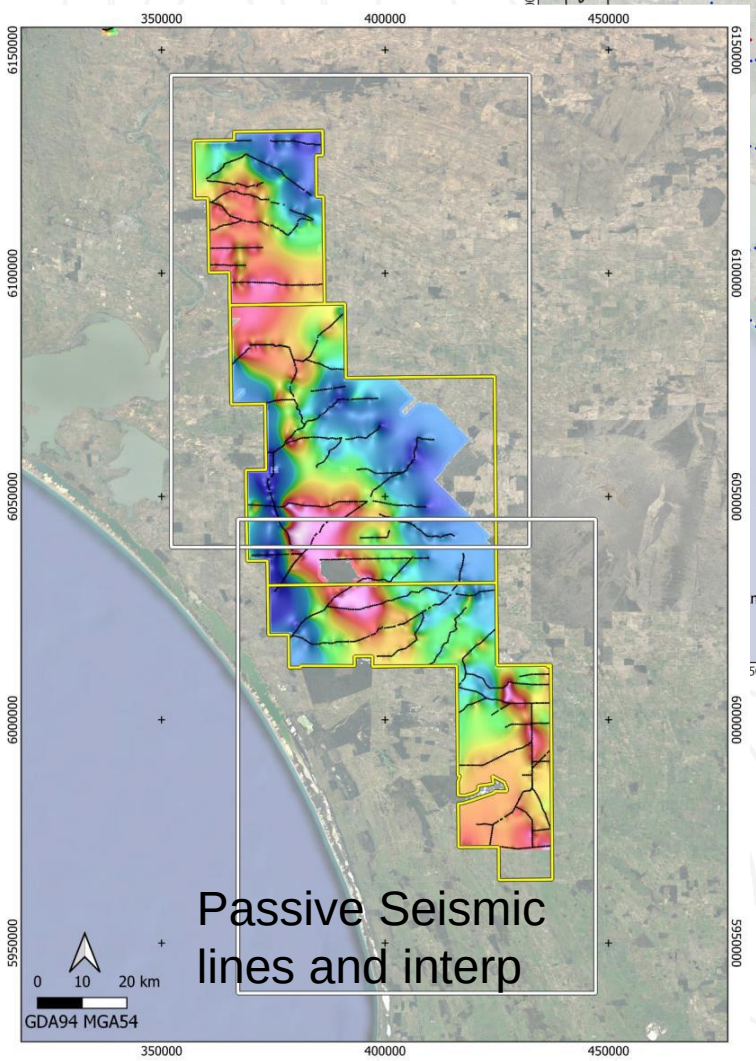
Exploration in the South East Data Collection

- Infill regional Ground Gravity
- Infill Passive Seismic for Depth to Basement
- Whole Rock and multi-element geochemistry from Historic core holes
- Cu Isotope data from multiple veins
- Petrology of altered volcanics and sediments
- SEM of selected samples of interest
- Pyrite SEM-LA
- Soils for low-level and selective extractions (incomplete)
- Collated soil classification schema





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Exploration in the South East – Age Data Collection (Challenging a view of geologic time?)

- 500 – 490 Ma – Epigenetic Cu-Ag veins & breccias at Kanmantoo – Syn Orogen
- ????? - Epigenetic Au-Bi & Au-As overprinting Cu-Ag veins at Kanmantoo
- 483.1 Ma – Cu mineralised Potassic veins at Kanmantoo – Post Orogen
- ??? – recently discovered albite-carbonate-Fe Sulphide Cu-Au veins – Post Orogen
- 486.9 – 478.4 Ma – Cu-Au mineralised monzonites at Kanappa – Post Orogen
- 477.9 ± 2 Ma – Cu-Mo veins through Post Orogen granite (thank you GSSA)
- 471 ± 4 Ma – Gold quartz-carbonate veins at Deloraine and Mt Palmer gold fields

Conclusion – tectonic, magmatic and mineralised fluids active in an "Accordion" style tectonic environment for over 30 Ma

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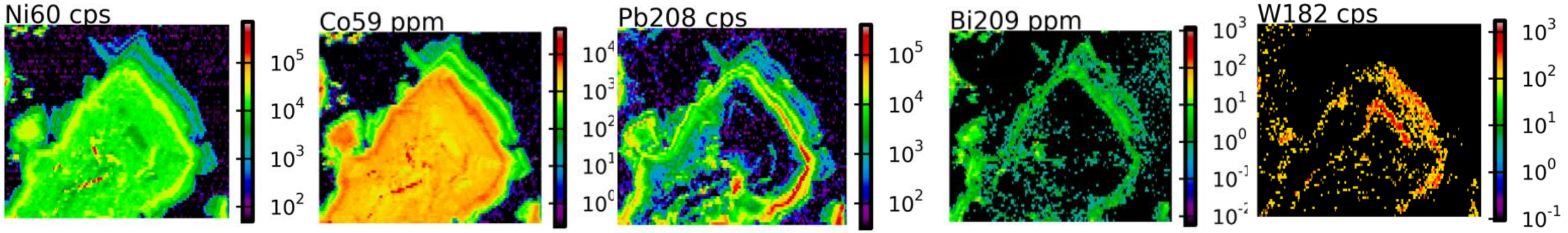
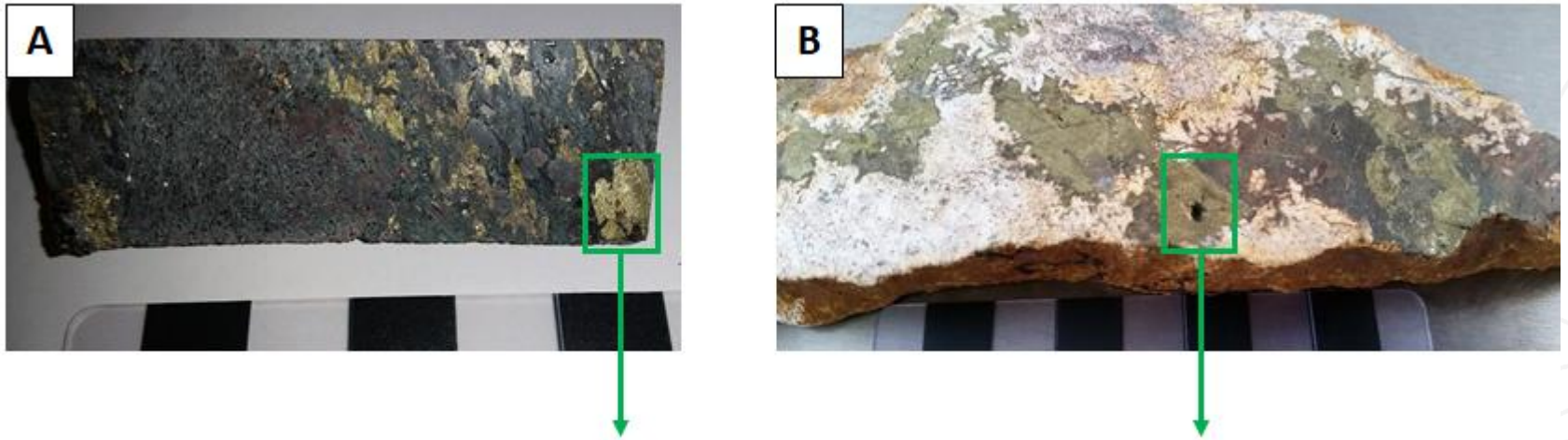
Exploration in the South East – Age Data Collection Many Different Mineralising Events and Ages?



Pyrite LA – Core is High temp Ni-Co-Se => Followed by Pb => Bi, Cu, W Lower temperature more acidic



Credits to;

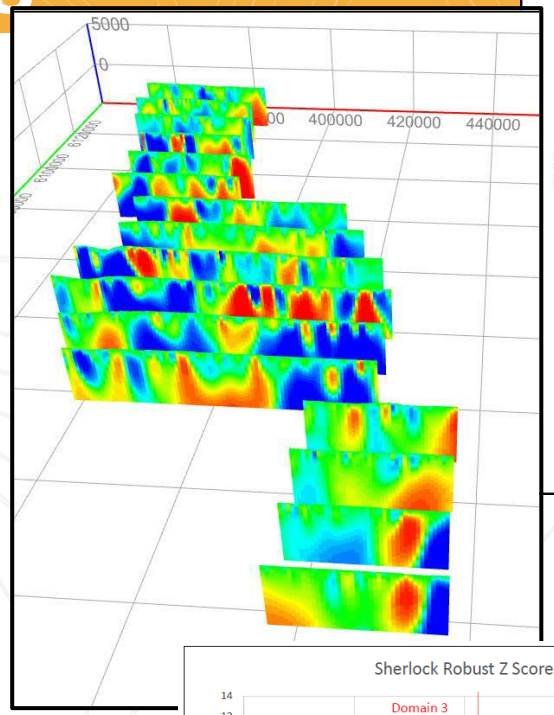
A. A.Chapman and CODES for pyrite LA

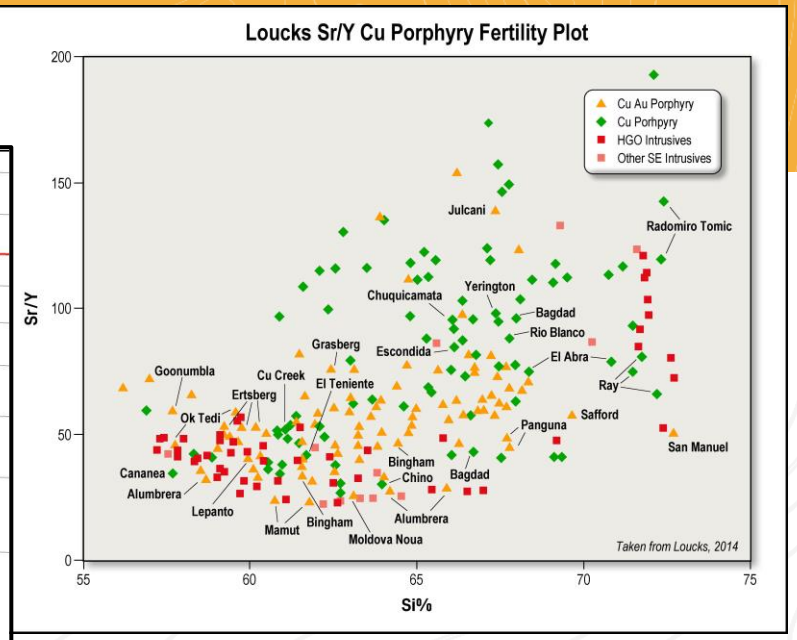
B. Dr. L.McGee for Cu Isotope Uni Adelaide

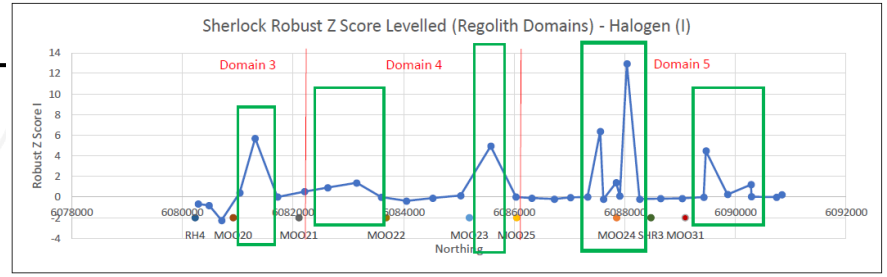
Cu Isotope – Large difference and likely different fluids for different ages –
On Left – Kanmantoo syn-Delamerian Cu ore ~500 Ma
On Right – Post Delamerian Alkali vein with Cu ~483 Ma

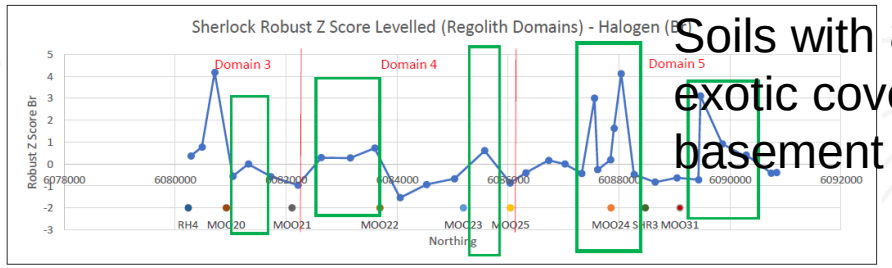
Exploration in the South East Data Processing

- Re-imaged regional Airborne magnetics
- 3D regional model of Depth to Basement (DTB)
- Imaged regional Gravity
- Inversion of regional gravity
- Imaged regional Residual Gravity using new DTB surface
- Inversion of regional Residual Gravity
- Interpreted Basement geochemical Indexes (Loucks, Wells, Foden, Adakite…)
- Interpreted soil geochemical signatures (in progress)









Soils with 80m of exotic cover over basement Cu-Zn

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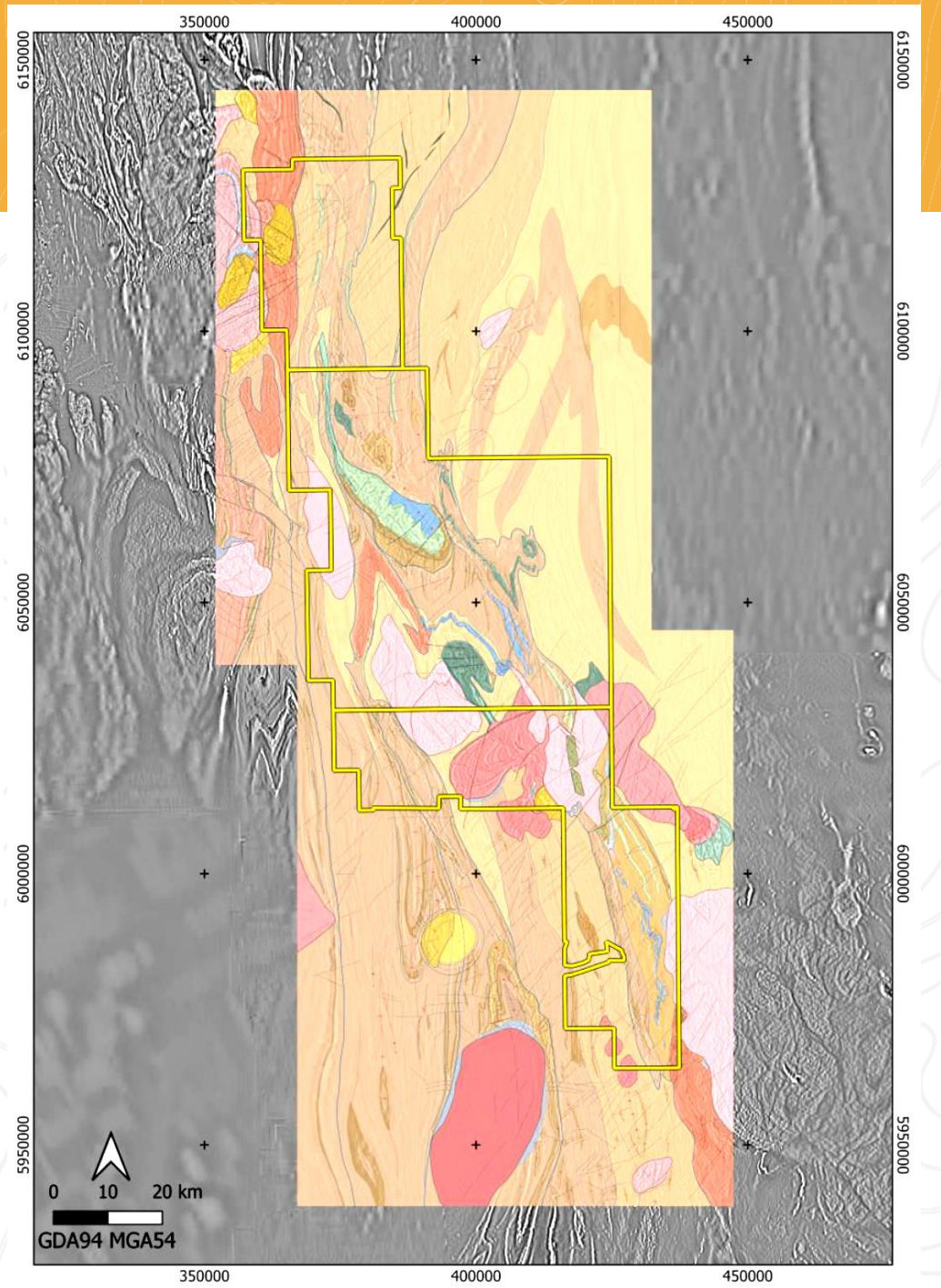
Exploration in the South East Basement Interpretation

- Re-interpreted basement geology
- Re-interpreted basement structural architecture
- Interpreted geophysical targets
  - (Consultation with two separate geophysicists!)
- Overlay geochemical/petrologic indexes
- Heritage Consultation & Surveys
- Community Consultation
- Local Business Consultation

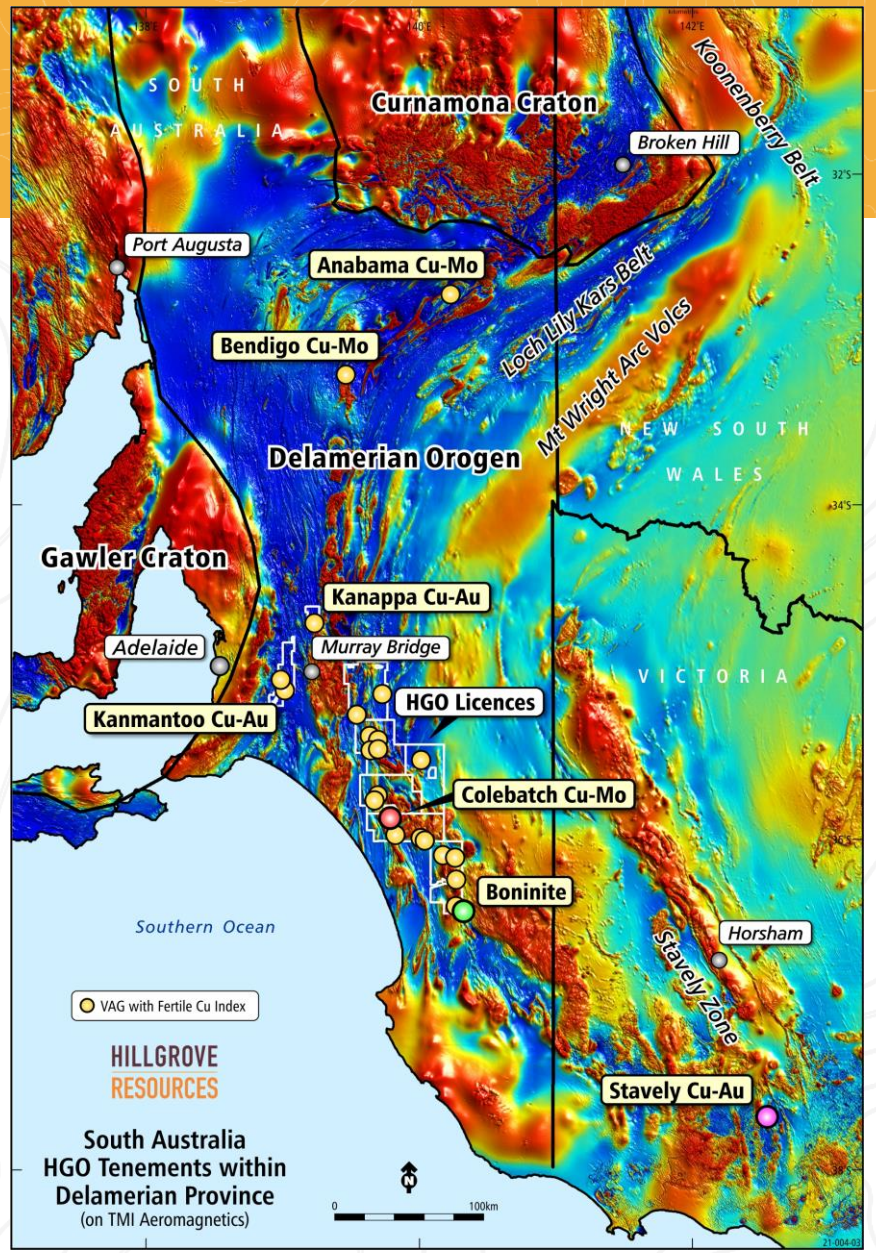
So what does all this mean!!



Exploration in the South East Arc Driven Cu-Au-Mo?

- If we take a “view” of the porphyry opportunity within Sth Aust based on
  - Boninite occurrence (subduction zone – Prof J.Foden)
  - Porphyry fractionation indexes (Loucks, Wells, et al)
  - Cu-Mo porphyry occurrences (Anabama, Bendigo)
  - Loch Lily Kars & Mt Wright volcanics representing Arc systems (GSSA)
- And considering Wei Hong’s summary of 25/11/2021
- Certainly Newmont think it is possible with a JV to drill a possible porphyry occurrence in the south-east.

Then Porphyry Cu-Au systems are possible in the South East of Sth Aust



Volcanic Arc Granites (VAG) with positive Porphyry Cu fertility Indexes

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Exploration in the South East – Paterson Province Style?

- If we take a different view of the south-east tectonics, with
  - Local high Buchan Type metamorphism
  - Biotite dominant meta-sediment hosts
  - Fe sulphides with Chalcopyrite, Bi, Ag, W
  - Vein, breccia and skarn textures
  - Veins dominantly axial plane

Then Paterson Province style Cu-Au intrusive related mineral systems may be possible

(e.g. Winu, Havieron)

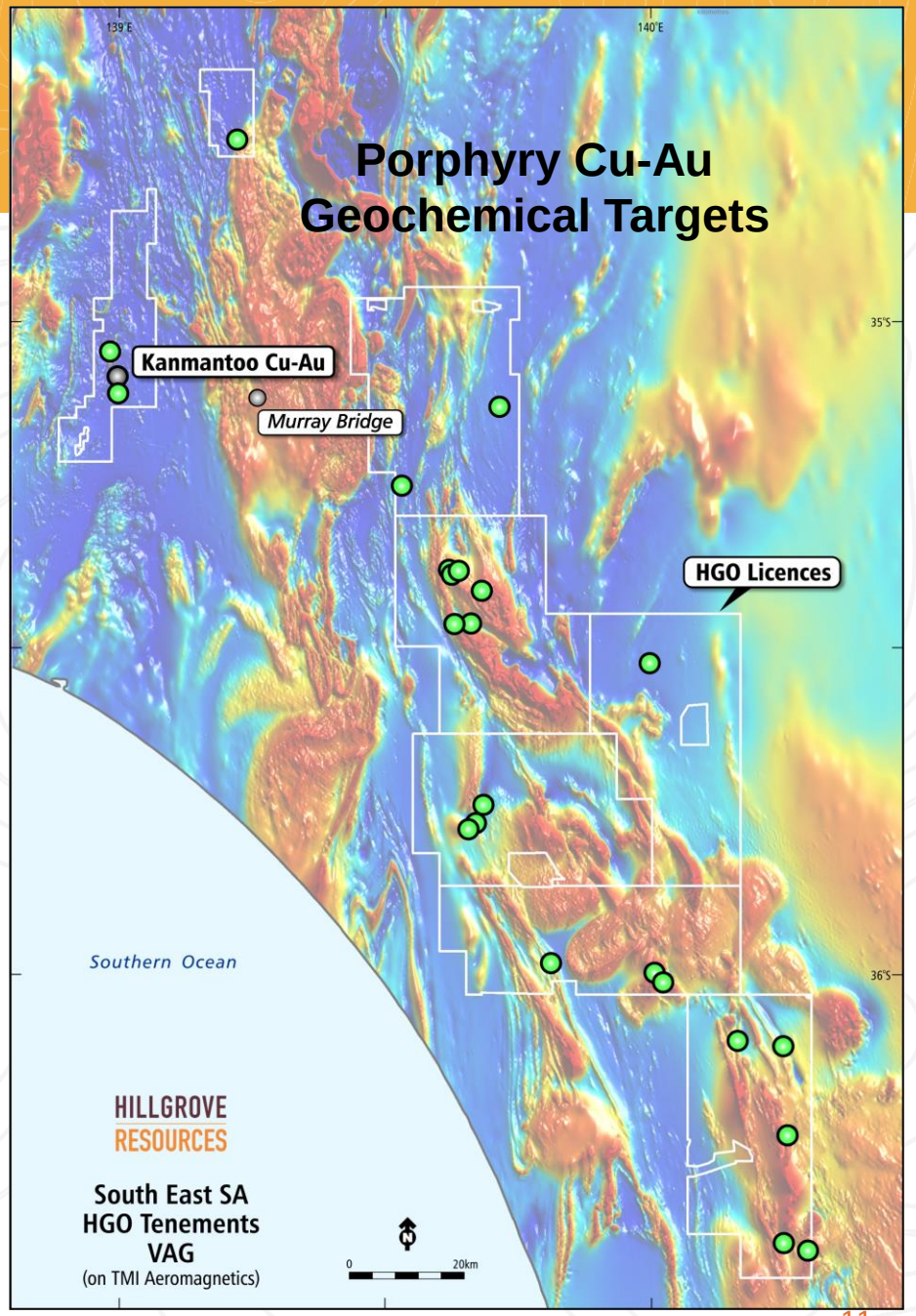
Exploration in the South East a problem of Timing!

- As a result of the geophysical and geochemical interpretation we now have a total of
  - >70 targets

The targets include syn and post Delamerian mineralising events and include Porphyry targets as well as Intrusive Related Cu-Au targets

We have a problem with enough

Time in the Anthropocene!



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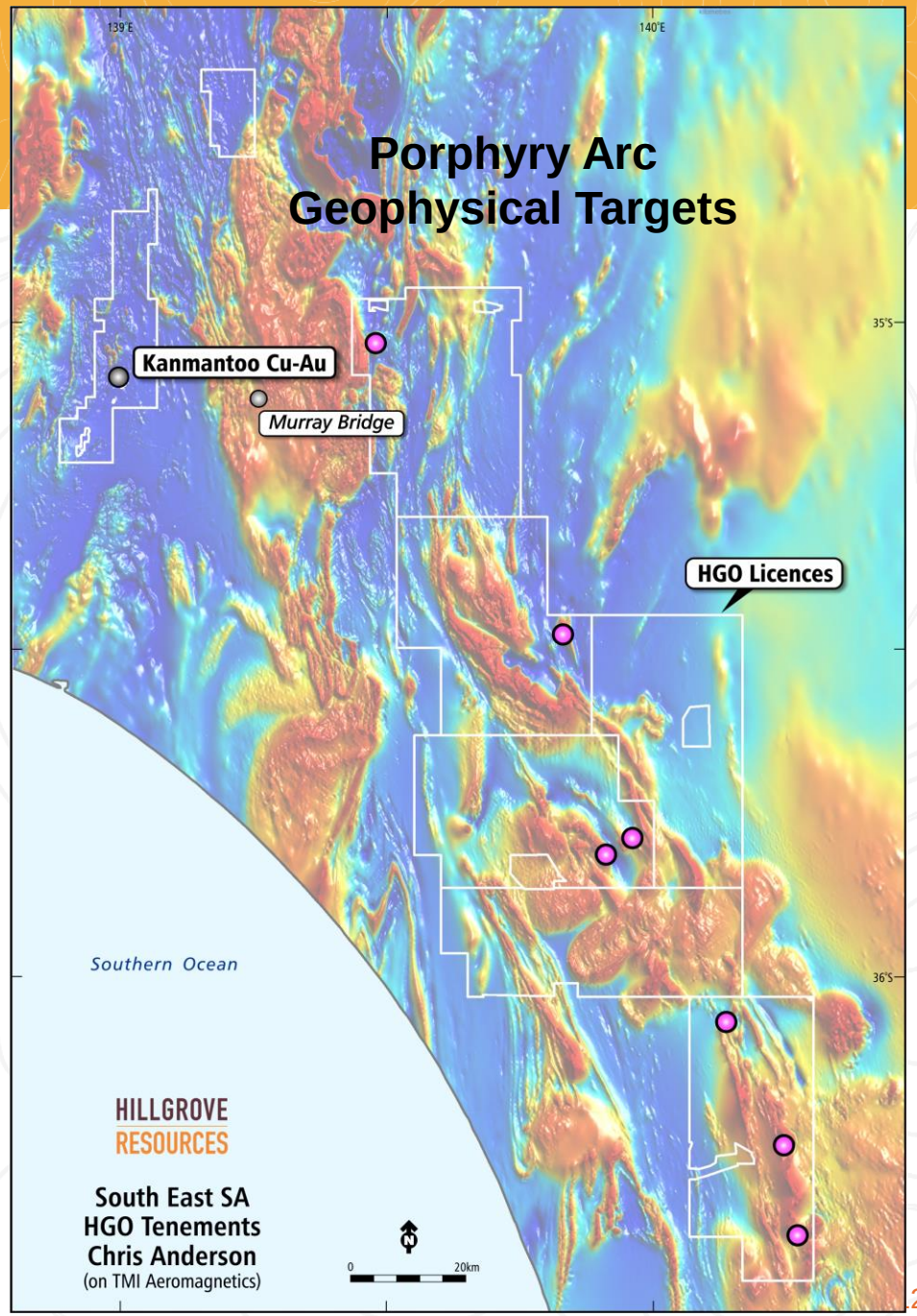

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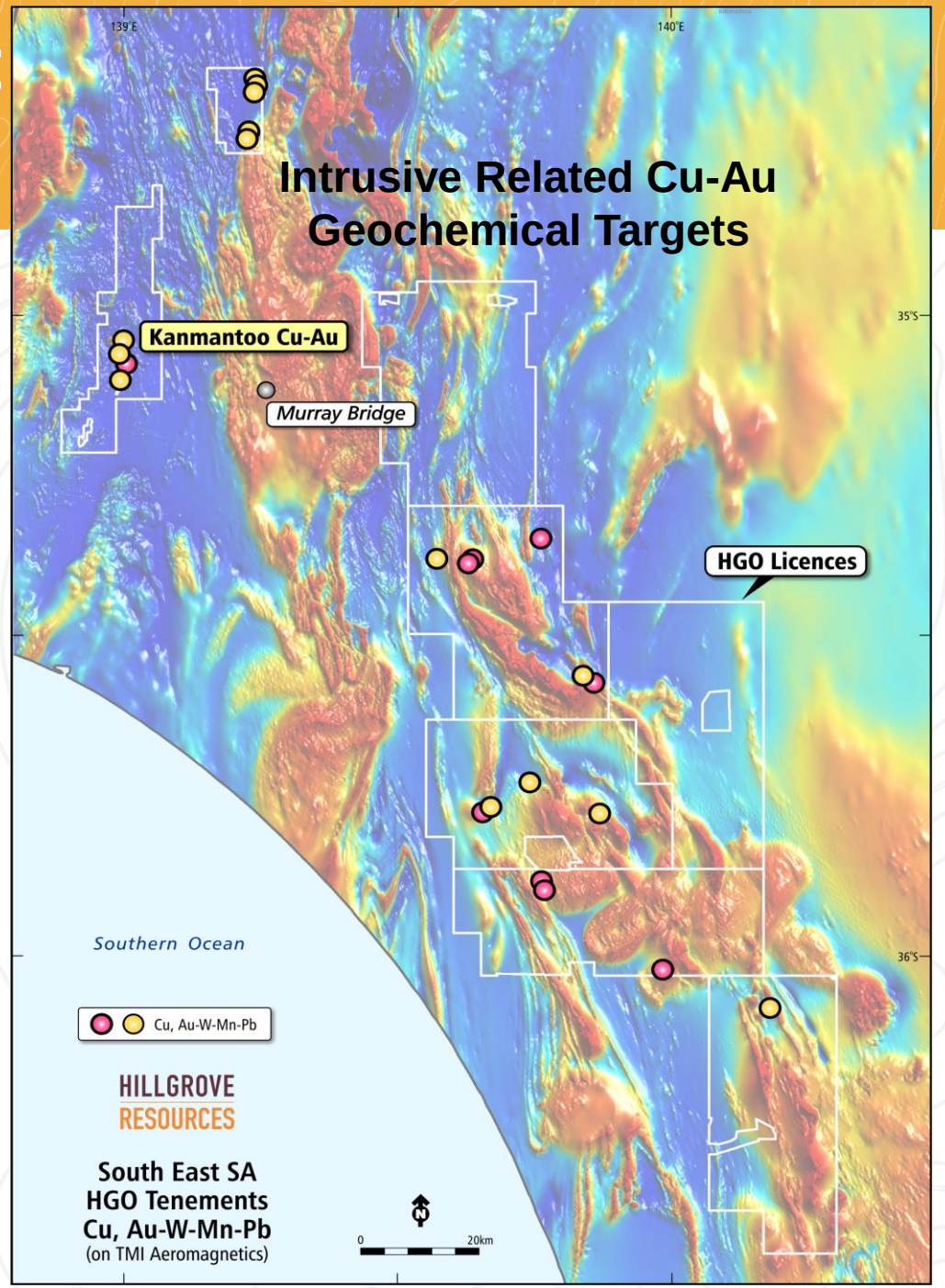

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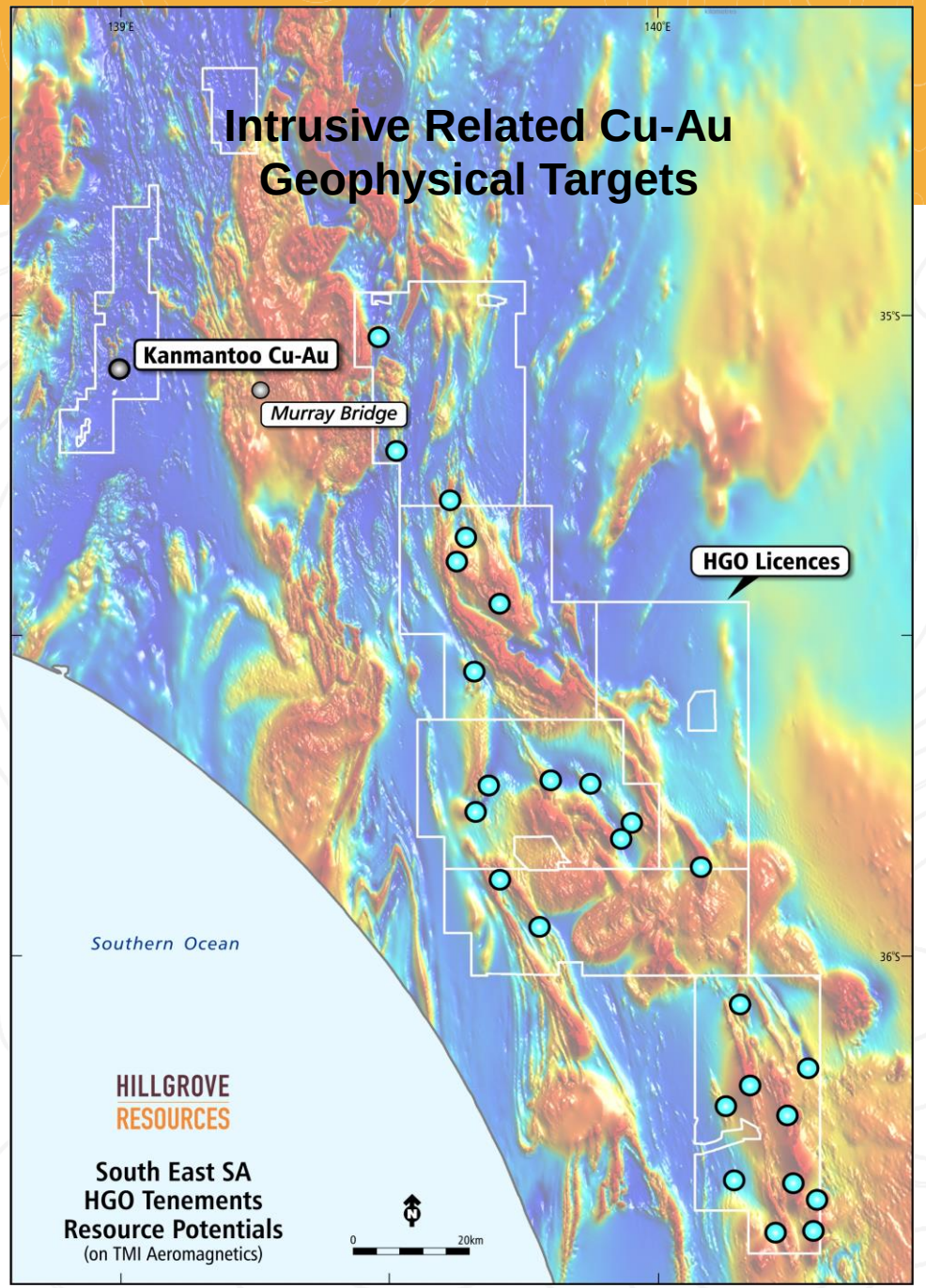
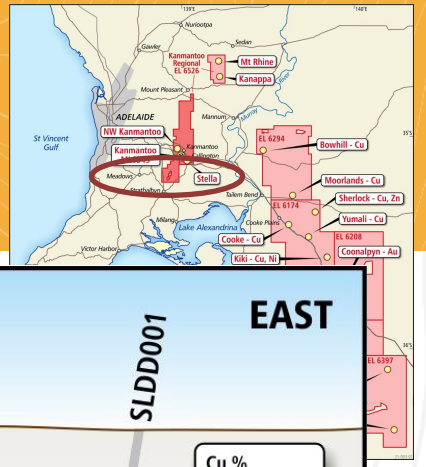


Exploration in the South East
No problem with Timing of Cu-Au at Stella

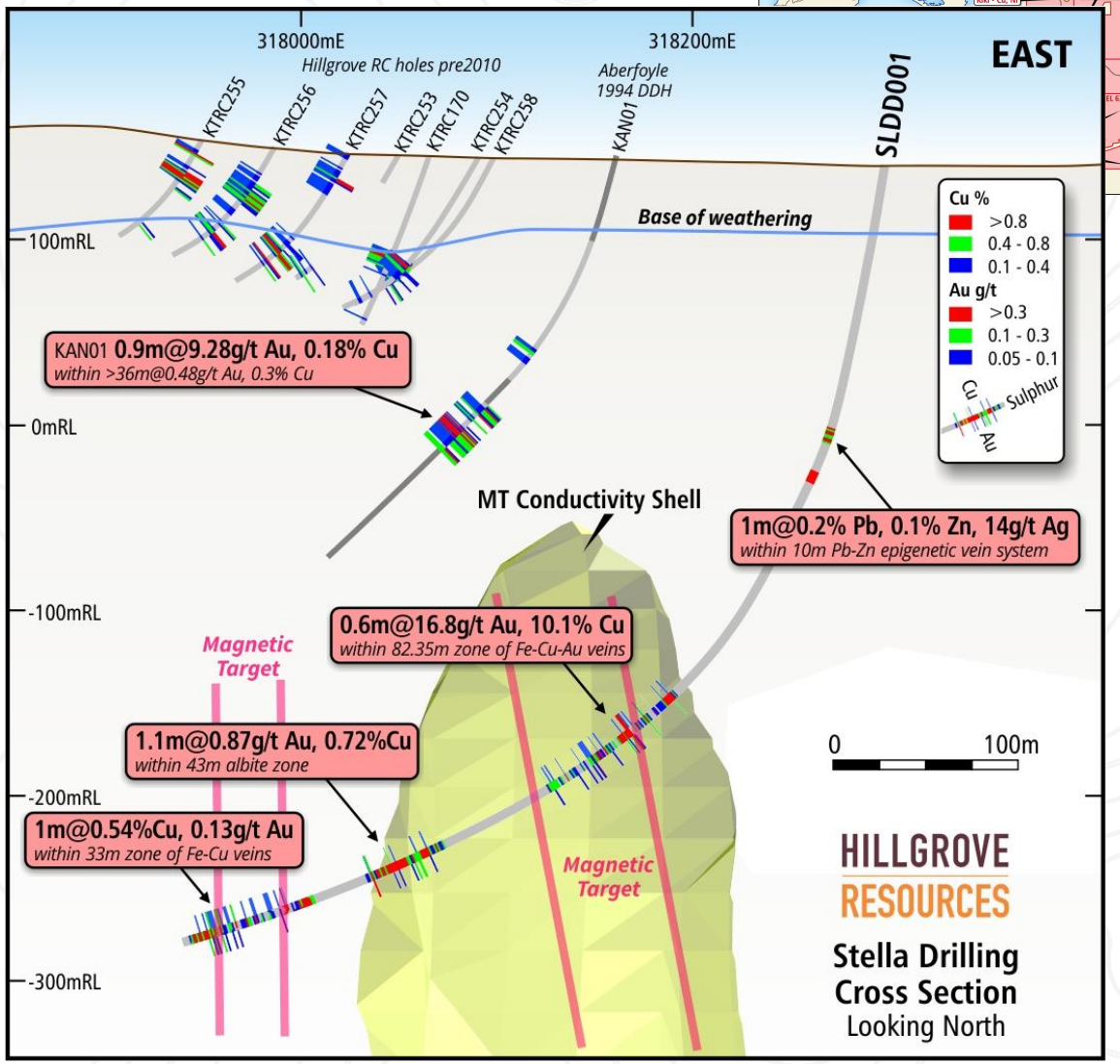


Directly adjacent to Kanmantoo Mining Lease and processing plant

Multiple Au-Cu zones in first Stella hole, including a high-grade gold interval within 82.35m alteration zone in a syn-Delamerian vein breccia – same as for Kanmantoo

0.6m @ 16.8 g/t Au, 10.1% Cu (see Slide 24 for reference)

Ready for follow-up Drilling



Kanmantoo style Fe-Au-Cu-Bi mineralisation in SLDD001 at 344m

Exploration in the South East
Yes, there is a problem with Timing at Stella!

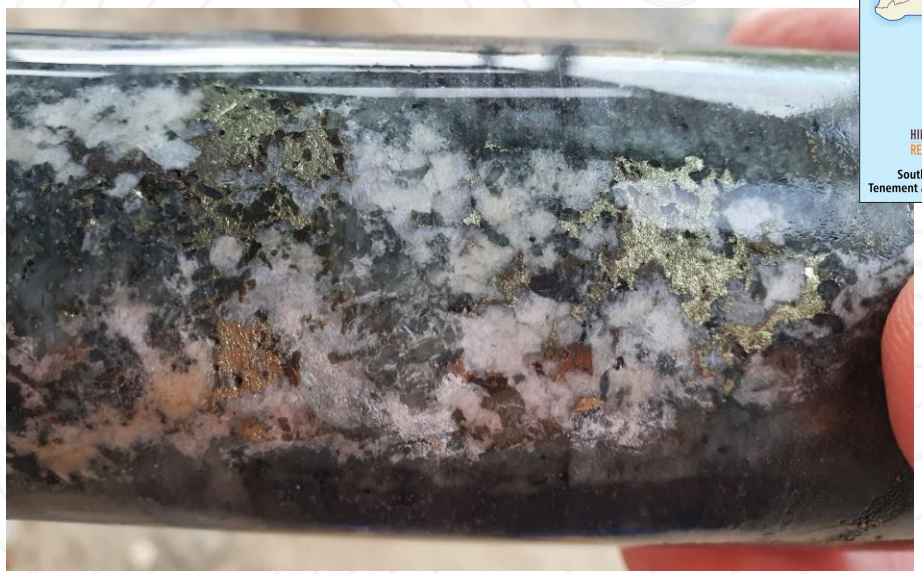
But what are the albite-carbonate-pyrrhotite/pyrite veins with Cu-Au doing?

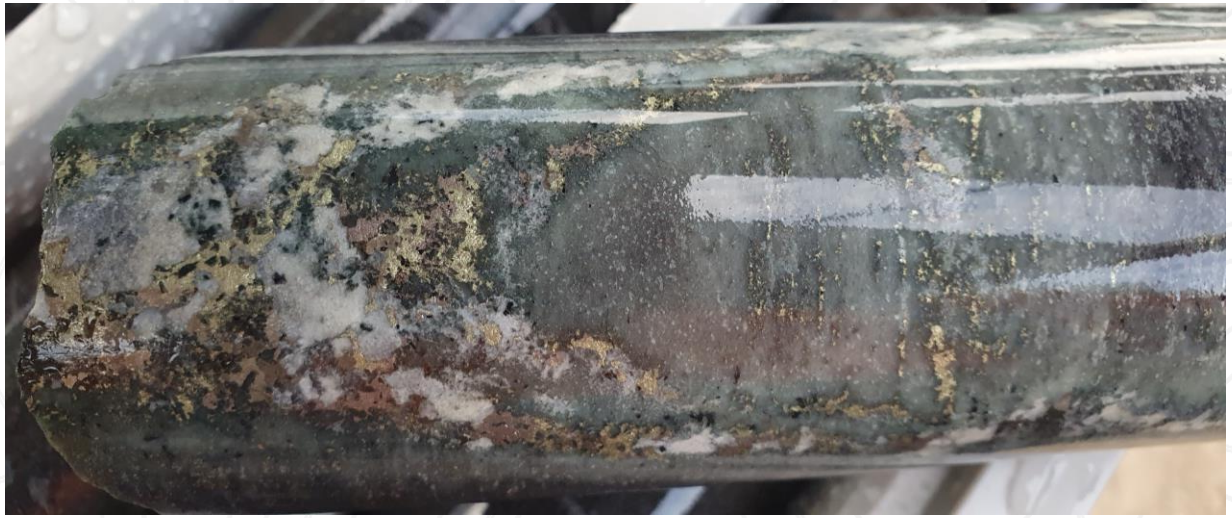
Totally x-cut all Delamerian fabrics and un-deformed

Directly resulting in albitisation and carbonate alteration of the host quartz-biotite schist with resultant disseminated Cu/Fe sulphides

1.1m @ 0.87 g/t Au, 0.72% Cu (see Slide 24 for reference)

(drill hole orientation high-angle to these vein sets)





A totally new and different Cu-Au mineralising event of unknown extent!

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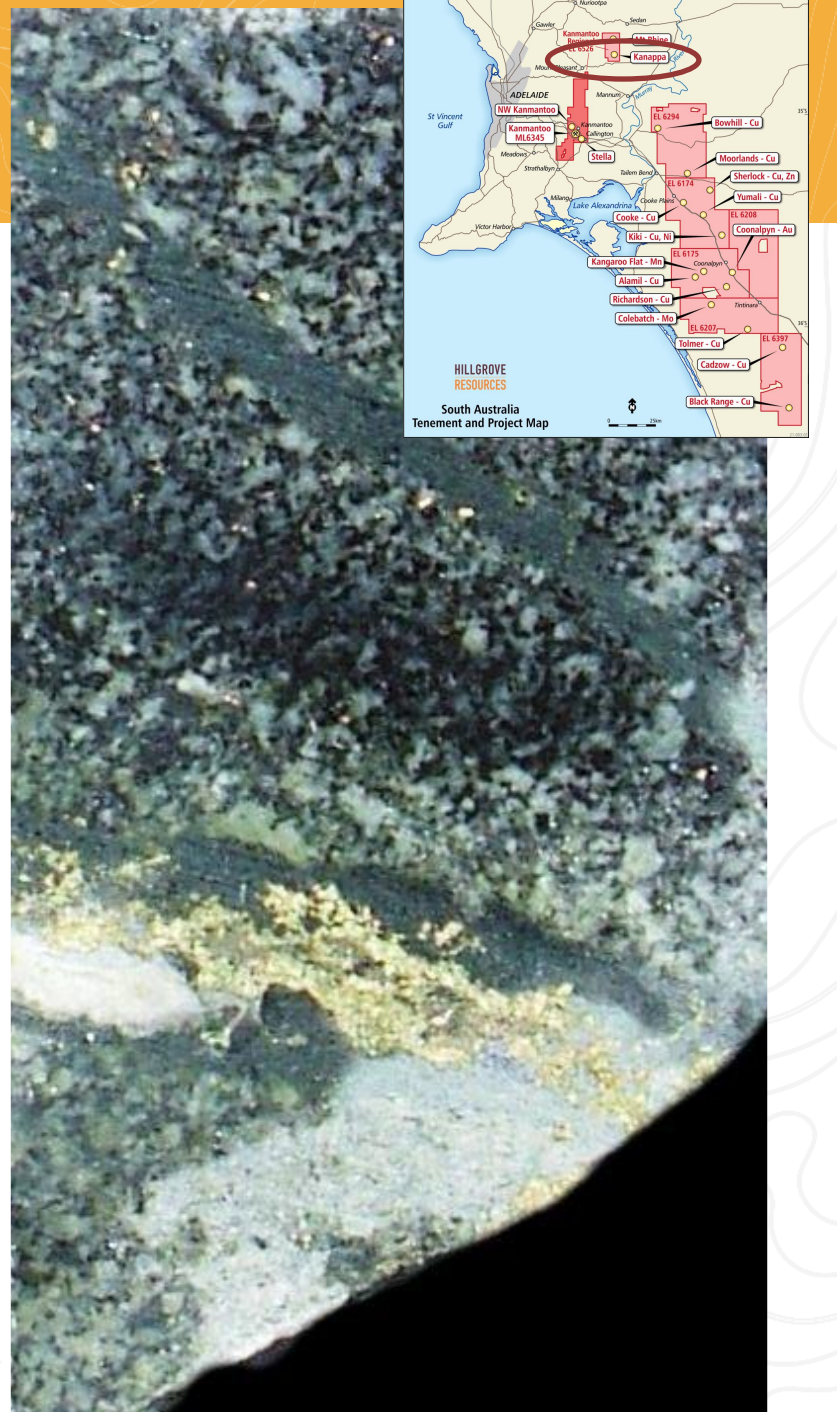
Exploration in the South East a problem of Timing at Kanappa!

- Diamond drilling intersected an undeformed monzonite
- Age dating has dated titanite at 487-478 Ma
- With disseminated pyrrhotite throughout
- Chalcopyrite pyrite carbonate quartz veins
- Skarn mineralisation in adjacent carbonates
- Monzonite exhibits strong fractionation indexes and is a positive Cu Fertile Porphyry by all measures
- Peak Cu and Au at Kanappa and Mt Rhine include:
  - 49g/t Au 13.1% Cu in rock chips at Mt Rhine
  - 2.5% Cu, 0.8g/t Au 0.3% W, 0.02% Mo, in DDH at Kanappa

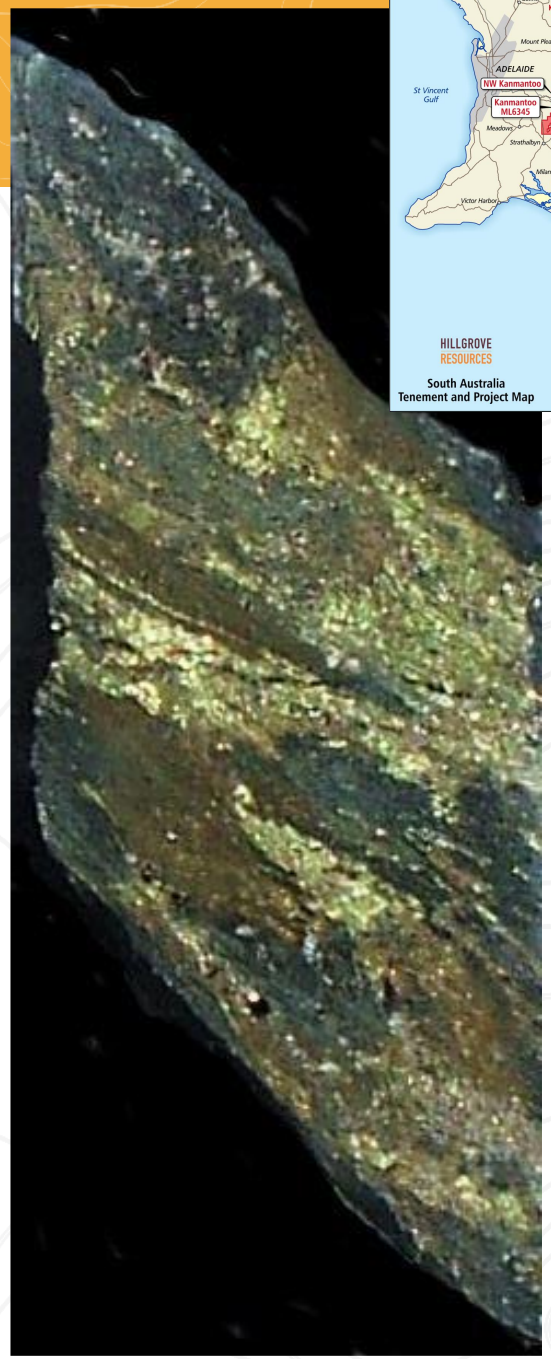
High grade Copper-Gold ready for Drilling

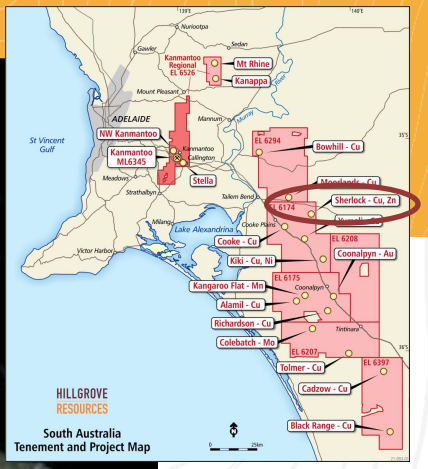


Exploration in the South East a problem of Timing at Sherlock!

- Diamond drilling intersected 11% Cu at Sherlock[1]
- Veins syn-dominant foliation or x-cut Delamerian foliation
- Alteration and veining is post-metamorphic
- Felsic albite-quartz intrusives x-cut by pyrite-chalco-pyrr veins
- General location of mineralisation is intersection of shear zone and marble unit
- Zone over 4km in length

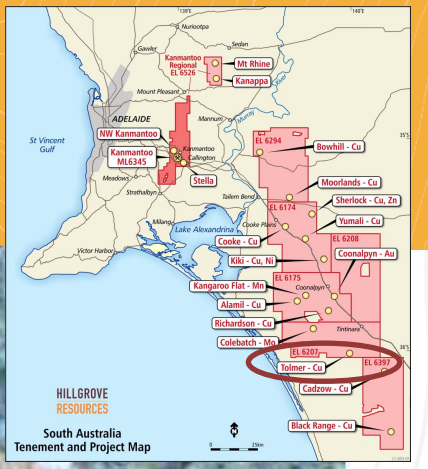
Strong view that mineralisation is a late stage shear related magmatic hydrothermal system ready for drilling





Assay value from 1998 public report by Pasminco SARIG ENV9015

Exploration in the South East a problem of Timing at Tolmer!



- Diamond drilling intersected a monzodiorite
- Intrusive is undeformed but age unknown (mapped as EOd25 by GSSA i.e. post Delamerian)
- Altered by K-spar potassic alteration
- Cross-cut by epidote veins containing pyrite/chalcopyrite
- Geochemistry suggests affiliation with Intrusive Related Cu-Au mineralisation

Ready for follow-up detailed magnetics and sampling for next target

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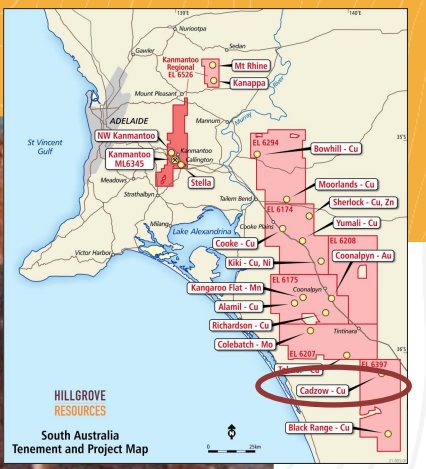
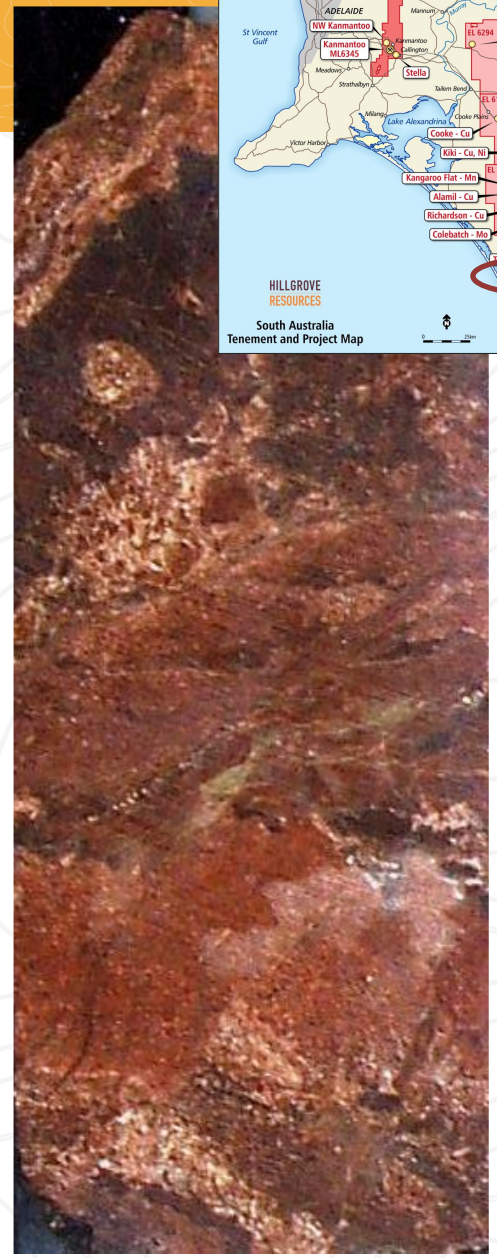
Exploration in the South East a problem of Timing for Gold!





- One Diamond hole at Cadzow intersected a highly altered and gossanous basalt in contact with an alkali-syenite, both undeformed
- Strong sericite and carbonate alteration and veining
- Magmatics show strong Cu Porphyry fertility Indexes
- Petrology suggested fine gold
- QEMSCAN with SEM-LA identified numerous gold particles in the gossanous basalt and in the overlying unconformable Permian gravels

This is a new Gold occurrence in the South East!

Ready for follow up magnetics and drilling

QEMSCAN and LA by Bureau Veritas, petrology by Dr R. Taylor

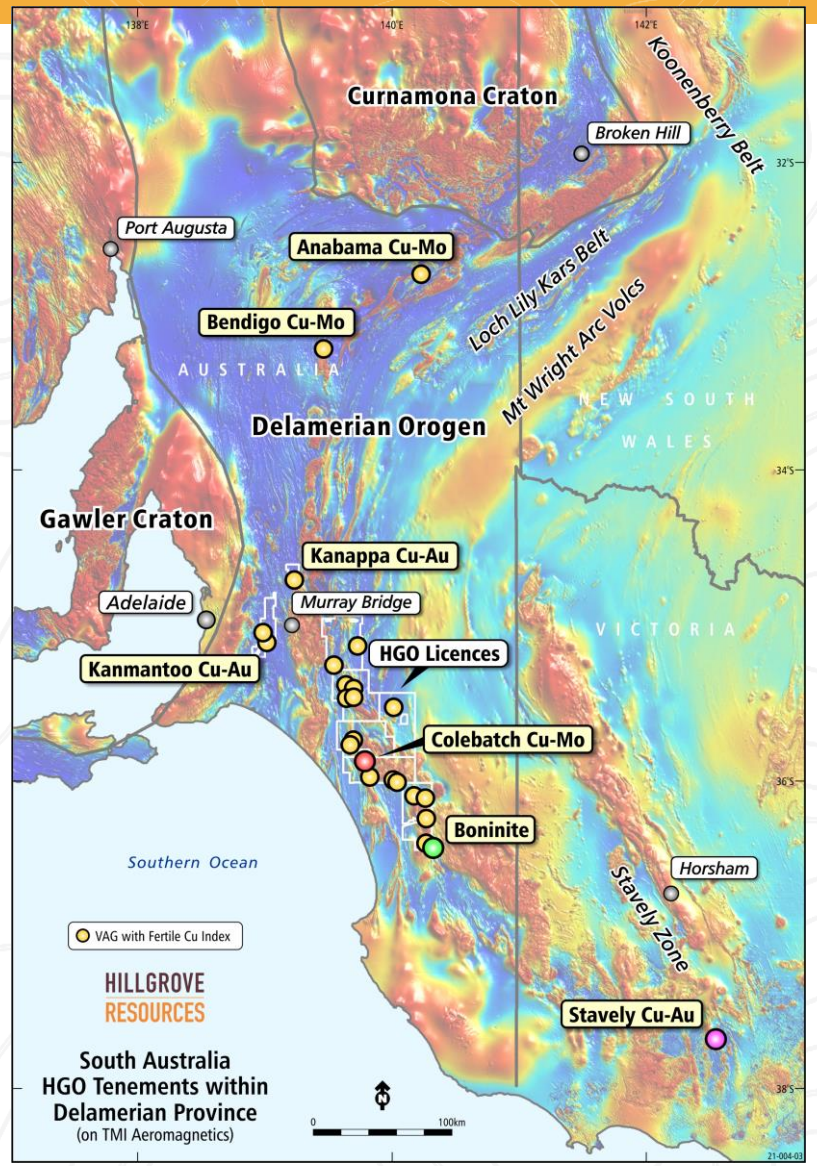
Hillgrove is driving forward the geologic foundations for the discovery of a new Tier 1 Cu-Au deposit in the South East

In Conclusion

The Macquarie Arc Porphyry Cu-Au systems started during the Cambrian in eastern South Australia, Western Vic & Western NSW. HGO's tenements cover part of this Cambrian Arc province in South Australia.

In addition, there is strong evidence of Paterson Province (Winu, Havieron) style Cu-Au mineralisation within HGO's tenements in South Australia.

And the belt is under-explored!



Hillgrove is driving forward the geologic foundations for the discovery of a new Tier 1 Cu-Au deposit in the South East

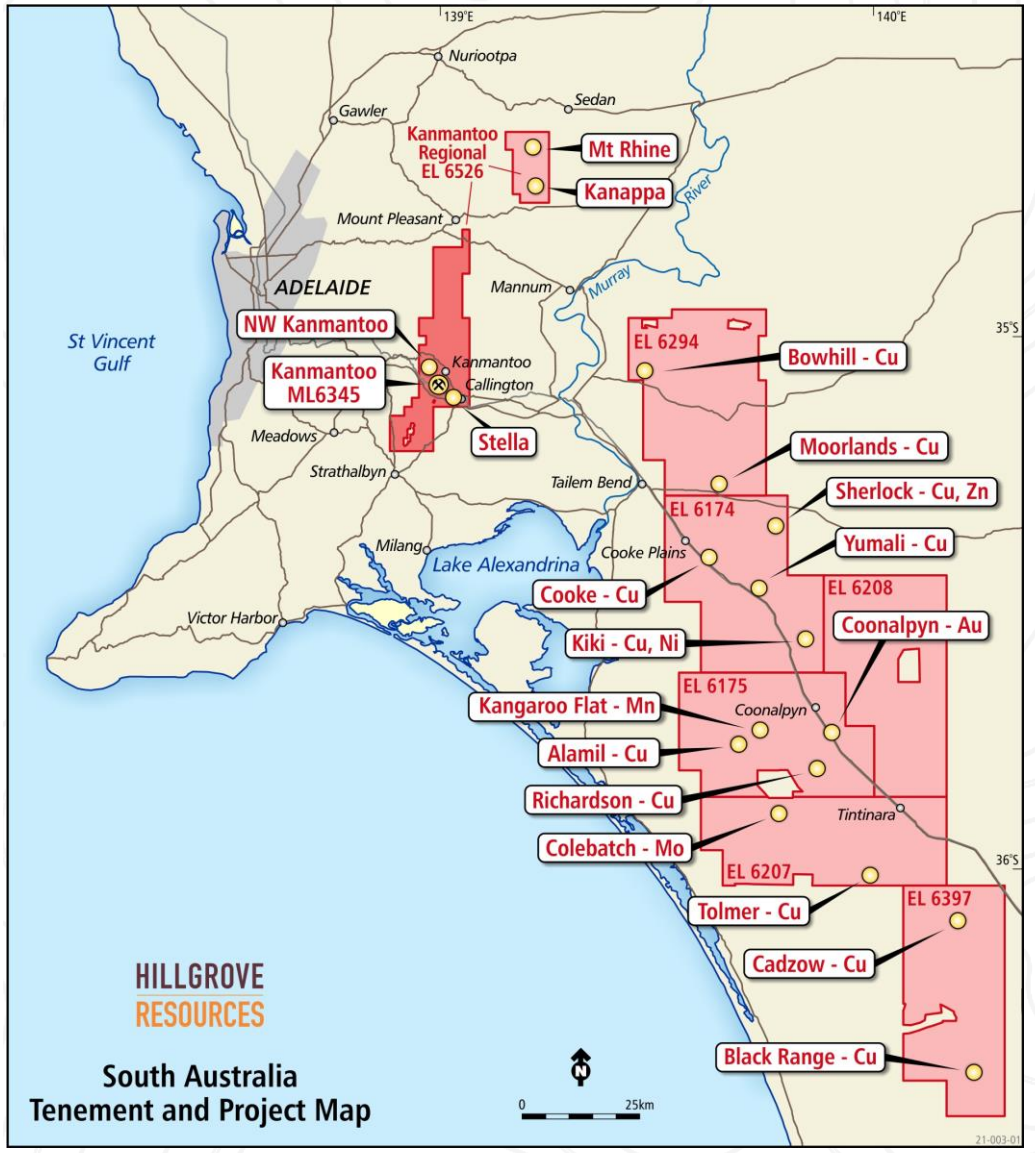
The lack of work by explorers and research over the past 30 years has resulted in many unknowns about this Cambro-Ordovician Cu-Au mineralised belt.

However, the level of data and knowledge is now rapidly changing! (see Discovery Day 2021 presentations)

And Exploration tools are also evolving!

This represents a major opportunity for an early mover into this space.

And HGO have over 6000 sq kms of this belt with known Cu-Au endowment!



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Exploration in the South East

WITH THANKS

- David, Keryn, Dale & Mark at the Tonsley Core Library
- Stacey, Tom, Wolfgang at the GSSA
- Roger Taylor - petrology
- Jayson and John at Resource Potentials
- The great team at Hillgrove incl Caitlin, Aidan, Brett, Darren, Henry, John, John, Josh, Peter, Rick, Sonya, Steve, Tyson
- The Board of Hillgrove for their support for the expense and time for regional exploration

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Exploration in the South East

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Competent Person's Statement

The information in this release that relates to Exploration Results, Exploration Targets and Mineral Resource Estimates is based on information compiled by Mr Peter Rolley, who is a Member of The Australian Institute of Geoscientists. Mr Rolley is a full-time employee of Hillgrove Resources Limited and has sufficient experience relevant to the styles of mineralisation and type of deposit under consideration 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)'. Mr Rolley has consented to the inclusion in the release of the matters based on their information in the form and context in which it appears. All exploration drill results, soil sampling images, and rock chip results have previously been reported to the ASX by Competent Person at the time.

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Exploration in the South East

Past ASX releases

Date	ASX Release
2004-11-23	Quarterly Report - Kanappa Results
2005-02-09	Quarterly Report -Mt Rhine Results
2006-12-14	Mt Rhine Channel Results
2017-05-25	High grade Copper Gold at Kanappa
2017-10-20	Kanappa Soil geochemistry
2017-10-25	Mt Rhine soil geochemistry
2018-12-07	SAEMC Conference presentation
2019-01-31	Kanappa Drilling Results
2019-04-29	Cu-Au and Cu-Mo Exploration Results
2019-05-09	RIU Resources RoundUp
2019-11-29	SAEMC Conference presentation
2021-08-26	Stella Drilling Results