HILLGROVE RESOURCES

GREAT COLLABORATION LEADS TO DISRUPTIVE GEOLOGY AT KANMANTOO

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7 DECEMBER 2018

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Competent Person's Statement

The information in this release that relates to the Exploration Results and to the Mineral Resource Estimate is based upon 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.

GREAT COLLABORATION LEADS TO DISRUPTIVE GEOLOGY

ISN'T THAT WHAT WE HAVE BEEN DOING FOR 100 YEARS?

KANMANTOO – THE ASSET
THE LOCATION

Hillgrove Resources Ltd (ASX:HGO) operates the Kanmantoo Copper-Gold Open Pit in the south-east of South Australia.

Mineral Resource Estimate of
Meas+Ind 19.6Mt @ 0.6% Cu, 0.1g/t Au
Inf 12.3Mt @ 0.6% Cu, 0.1g/t Au

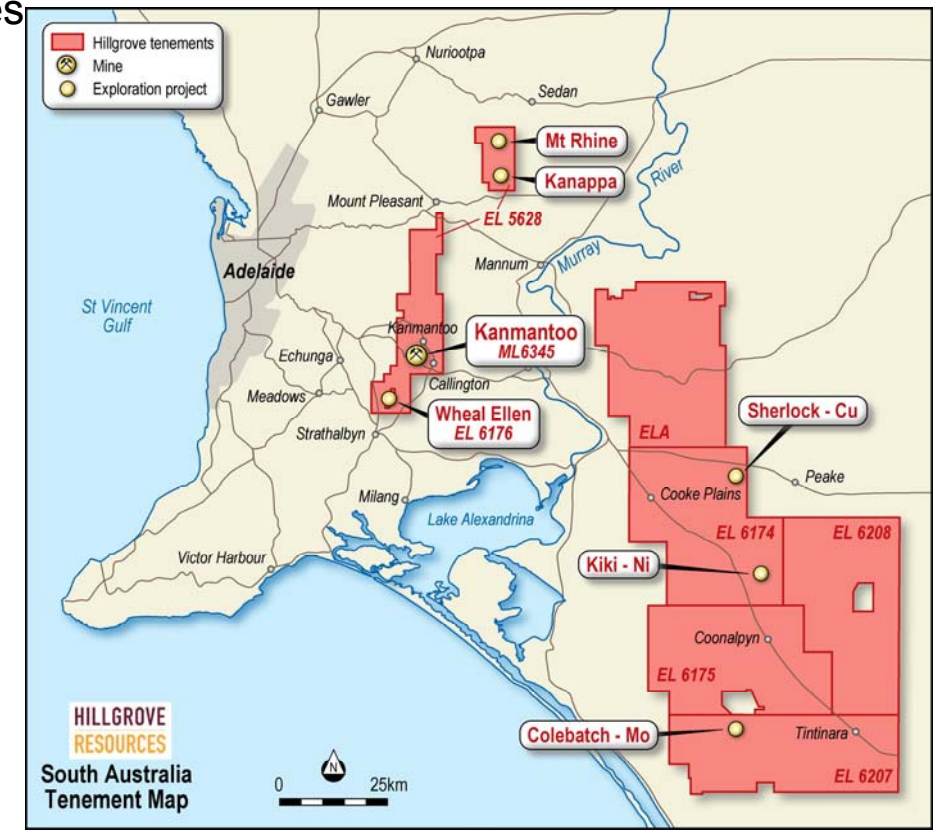
Located approx. 55kms from Adelaide

Grid power, water on site

Local labour force – no FIFO Camp/Travel

Awards for Community Consultation

Leader in Environmental Rehabilitation practises



KEY TAKEAWAYS

- Infrastructure fully operational and permitted
- Ideal location for services and on-site labour

For more info, Refer to HGO's Annual Report of 15 March 2018

KANMANTOO – THE ASSET
THE GEOLOGY

The Kanmantoo Mine extracts
- copper-gold-silver-bismuth
- from a series of structurally controlled
- shears, lodes and breccias

Original host rocks are greywackes, siltstones, sandstones

Cu lode alteration is garnet, chlorite, staurolite

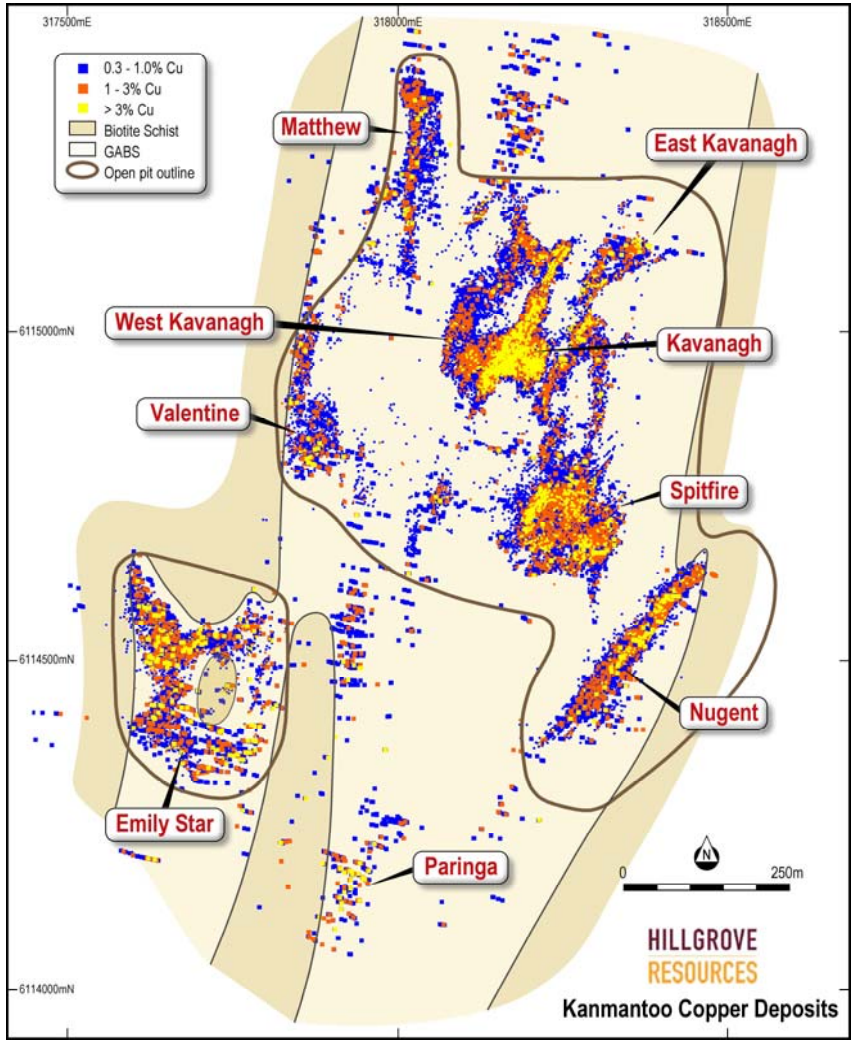
Zone alteration is chlorite, andalusite

Average Gold tenor varies between lodes from

- 0.05g/t Au at West Kavanagh
- Highest grade at Spitfire (5m @ 32g/t Au)
- Most consistent grade at Nugent
  - (12m @ 7.9g/t Au, 2.2% Cu)

KEY TAKEAWAYS

- Structural control of mineralisation
- Great gold endowment



KANMANTOO – THE ASSET
THE MINE

Strong revenue with increasing Cu Metal

Sept Qtr
C1 cash costs US$2.03/lb Cu

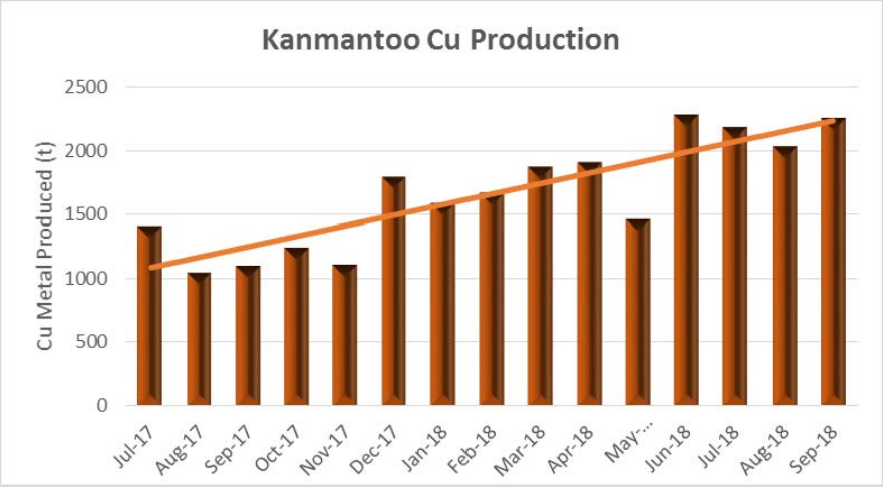
Realised Copper price A$9030/t Cu

Open pit to conclude in Q2 2019

Processing stockpiles to conclude Q3 2020

Assets include:

- Open Pit Shell
- Haul Road to ultimate depth of 350m
- Tailings Facility
- Processing Plant - Mill cost A$8.57/t
- Tenement Holdings with
  - Cu-Au mineralised systems



KEY TAKEAWAYS

- Generating strong cash flows
- Entering Growth Phase utilising current assets

For more info, Refer to HGO's releases 31 July 2018 & 23 August 2018

DISRUPTIVE INNOVATION – NO 1
THE PUMPED HYDRO ENERGY STORAGE

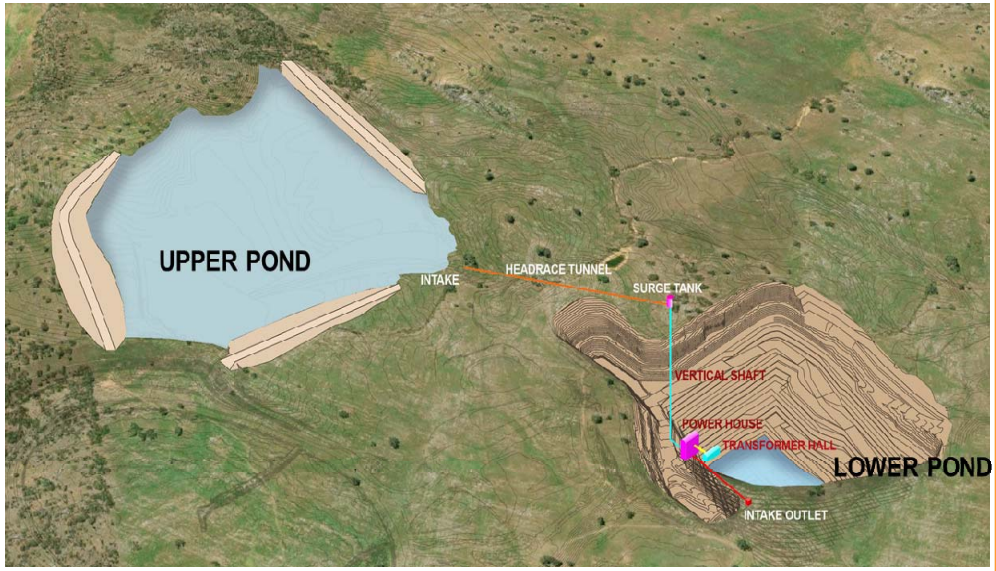
The Pit Shell at end of Mine Life is an Asset

Looking to convert it to income as a PHES

HGO has no desire to become an energy generator and is

- Seeking a partner to take forward
- Open to buy out, or revenue royalty

Formal sale process is underway



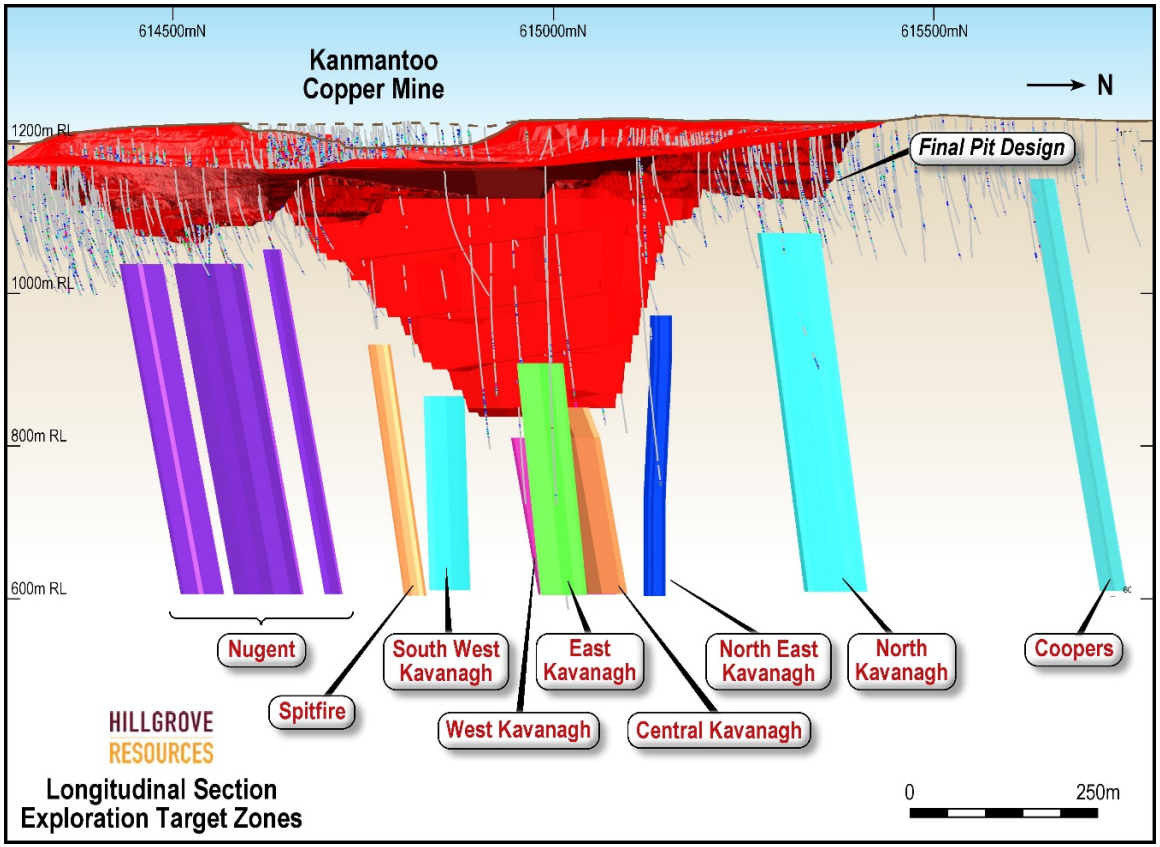
Either the pit shell generates income as a PHES scheme, OR
It's Haul Road is a pseudo-decline to 350m for Cu-Au underground production

KEY TAKEAWAYS

- Multiple options to convert assets to Company transforming businesses
- PHES scheme is an outstanding opportunity for a sustainable future for the mine site

For more info, Refer to HGO's ASX release 21 March 2018 Kanmantoo Pumped Hydro

DISRUPTIVE INNOVATION - NO 2
THE HAUL ROAD AS A DECLINE



HGO has demonstrated the extension of several high grade copper-gold zones beyond the final pit design e.g.

37m @ 1.1% Cu, 1.9g/t Au

5m @ 32.3g/t Au

12m @ 2.2% Cu, 7.9g/t Au

Resulting in an Exploration Target of

5-10Mt @ 1.7-2.2% Cu, 0.4-1.0g/t Au

To 200m below Pit

Note – lack of drilling at depth

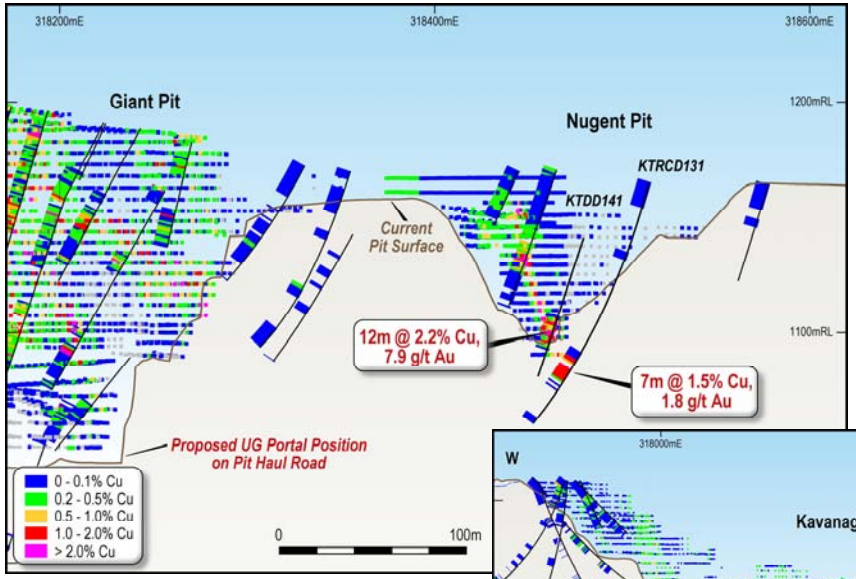
KEY TAKEAWAYS

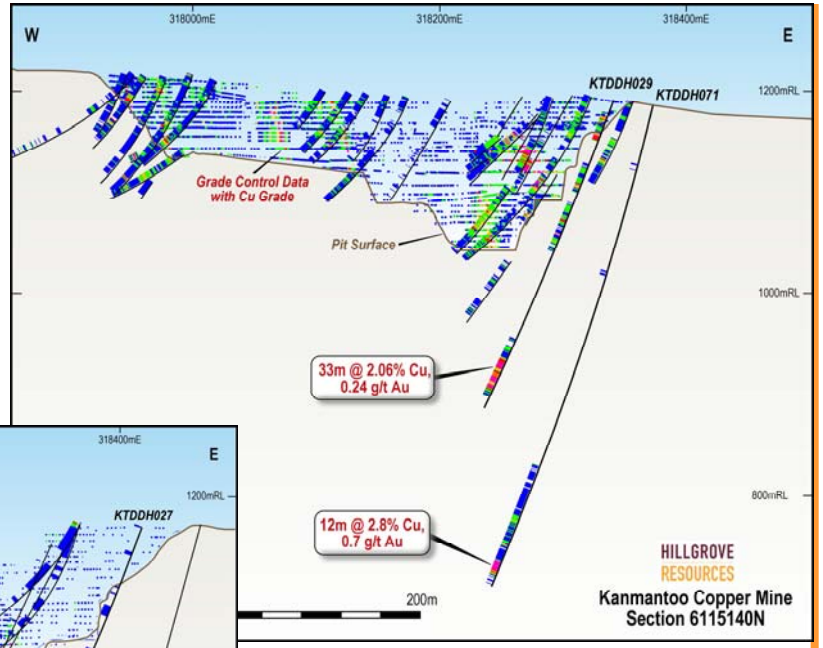
- Significant >1.5% Cu Equiv zones continue beyond open pit

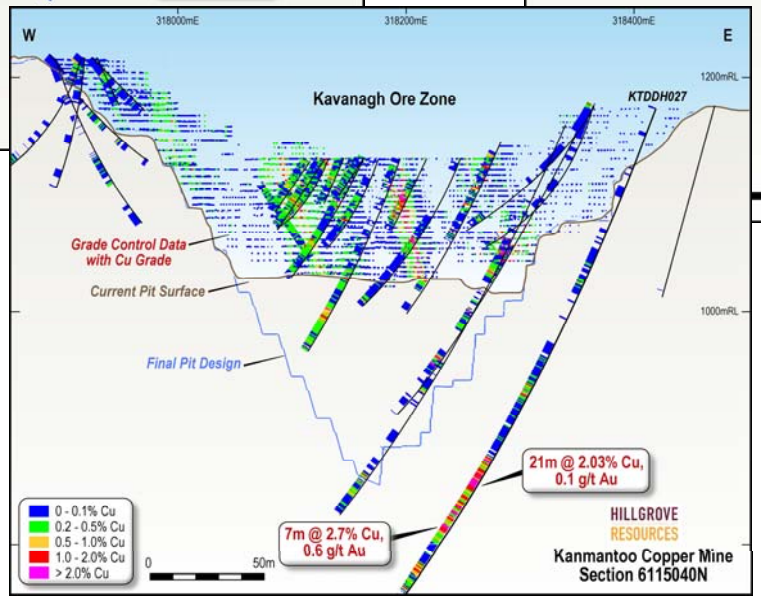
The Exploration Target is conceptual in nature as there has been insufficient exploration to define a Mineral Resource. It is uncertain if further exploration will result in the determination of a Mineral Resource. ASX 25 May 2017

DISRUPTIVE INNOVATION - NO 2

DRILL TARGETS ARE WITHIN 200M OF THE HAUL ROAD



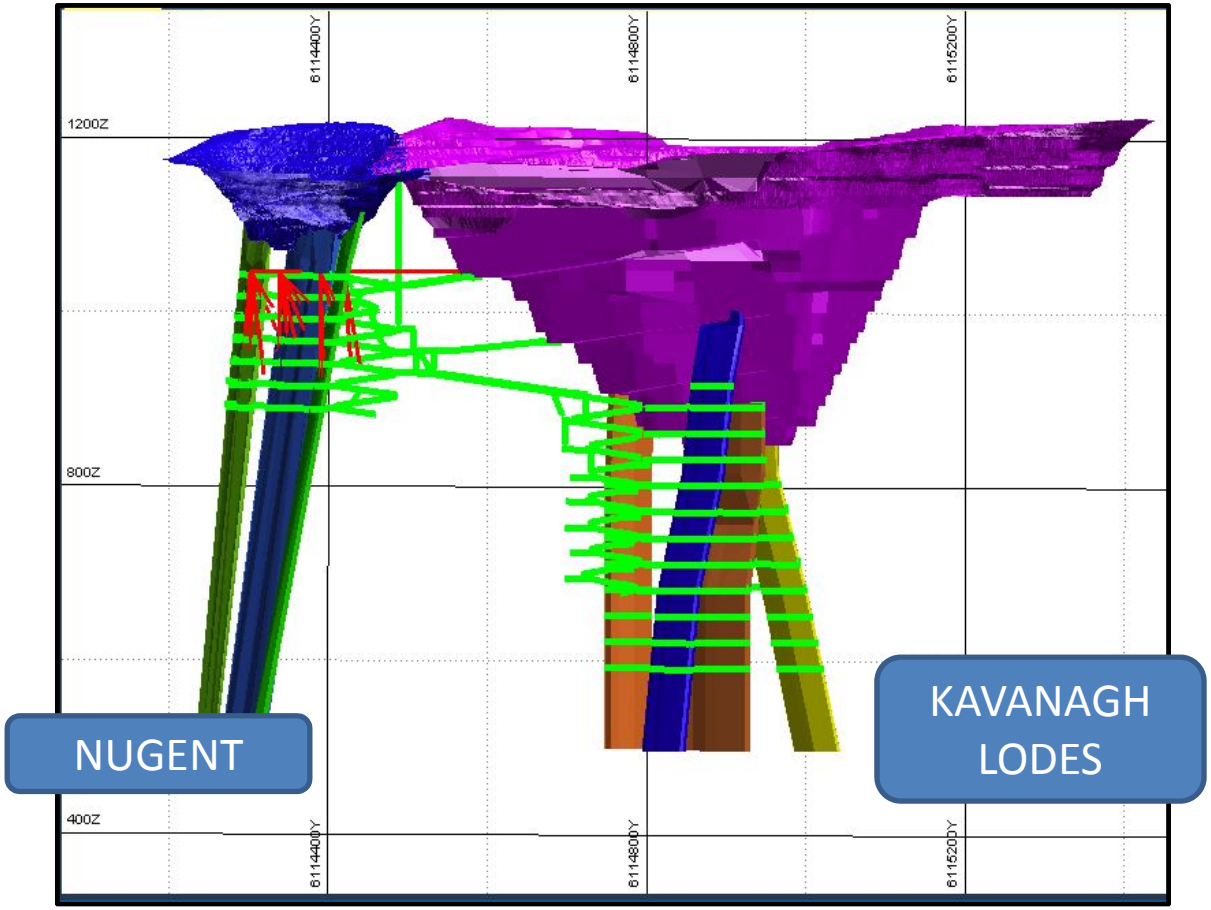




KEY TAKEAWAYS

- Past drilling confirms UG targets that are ready for infill drilling

DISRUPTIVE INNOVATION – NO 2
USING THE HAUL ROAD FOR UG ACCESS



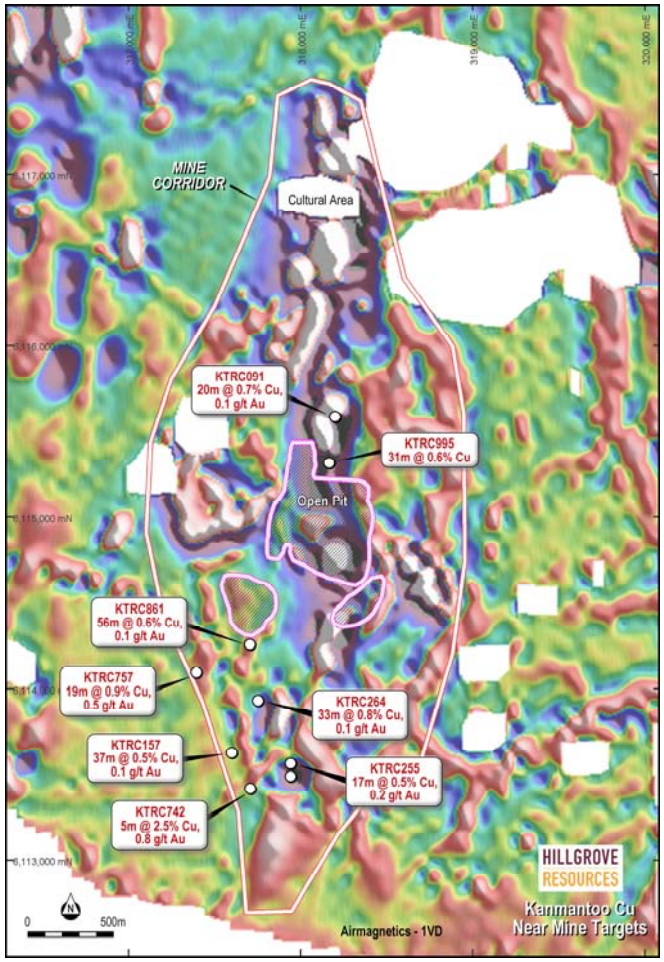
UG access from Giant Pit to Nugent Lodes is now Permitted.

KEY TAKEAWAYS

- Multiple lodes able to be accessed from multiple portals from Pit Haul Road

KANMANTOO – CU-AU ENDOWED CORRIDOR

NO SYSTEMATIC EXPLORATION SINCE 2008



The Mine Corridor has not seen any systematic exploration since 2008 when the focus was on permitting the Kanmantoo open pit operations

The Mine Corridor is ~5kms long AND clearly a large alteration and structural footprint

Significant drill intercepts have not been followed up, including

KTRC742 5m @ 2.5% Cu, 0.8g/t Au

KTRC757 19m @ 0.9% Cu, 0.5g/t Au

KTRC264 33m @ 0.8% Cu, 0.1g/t Au

KTRC255 17m @ 0.5% Cu, 0.2g/t Au

KEY TAKEAWAYS

- Excellent Cu-Au endowment within Mine Corridor for further discoveries

DISRUPTIVE GEOLOGY

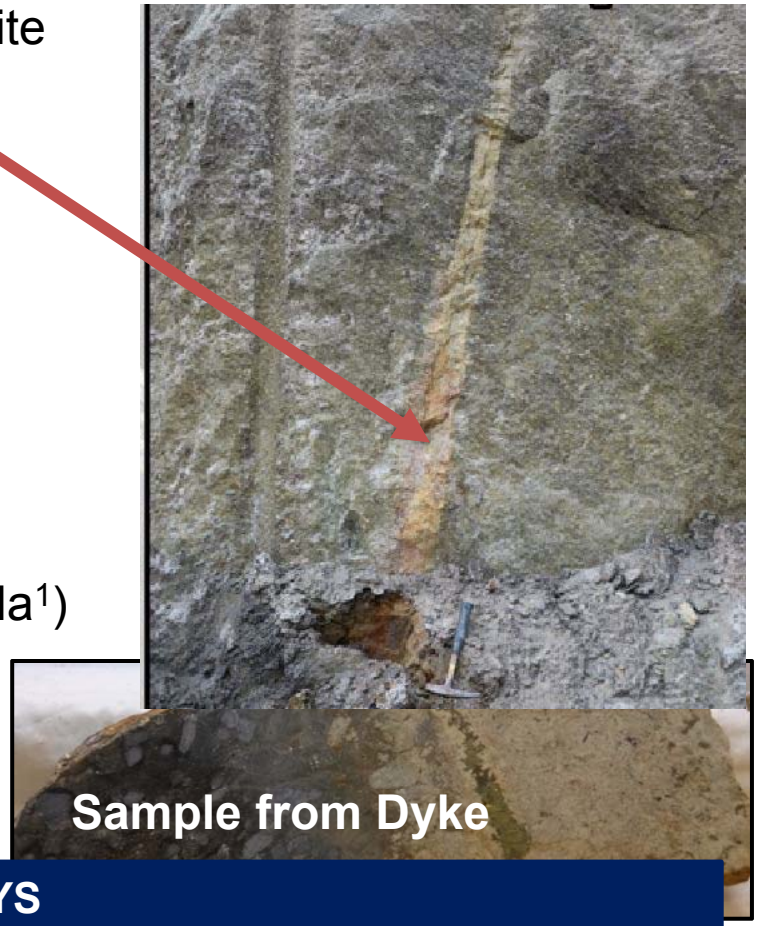
MAGMATIC ACTIVITY IS EVIDENT POST PEAK DEFORMATION

Undeformed alkali feldspar dykes at the mine site are overprinted with Cu & Fe sulphides

Monazite age dating = 483 +/- 2.4 Ma
Uni Adelaide – Dr R. Lilly/B.Kimpton

These dykes are syenites, monzonites to granodiorites and are Cu mineralised

These dykes are;
Post main Cu-Ag mineralising event (492+/-9 Ma[1])
Post Orogenic deformation (515-490Ma)



KEY TAKEAWAYS

- Post Deformation magmatic activity, with Cu sulphides, is evident in the Mine Corridor – A new Target

1 Wilson, 2009 (Monazite in garnet, within main mineralisation)

DISRUPTIVE GEOLOGY
PORPHYRITIC DYKES ET AL

Jon Standing of Model Earth 2006 – "The porphyry has large (1cm) sericitised feldspar phenocrysts set in a medium-grained feldspathic matrix …. The dyke cuts all fabrics,… but contains evidence of hypogene copper."

K-feldspar +/- albite vein
483.7 +/- 4.4 Ma monazite
Po & Cpy later than feldspars
B.Kimpton - 2018

KEY TAKEAWAYS

- Multiple evidence of post-deformation porphyry dykes with Cu sulphides

DISRUPTIVE GEOLOGY
MAGMATIC ACTIVITY IS EVIDENT DURING OROGEN

Early igneous activity within the mine area are altered
alkali feldspar granite dykes

These are pre or syn-mineralisation – U-Pb age dating of monazite 500.5 +/- 4.6 Ma
(Dr R. Lilly/B.Kimpton)

Dykes of highly chloritized
Albite, K-feldspar, biotite, quartz

To put into context –
the Kanmantoo mineralisation is dated at 492 +/-9 Ma

KEY TAKEAWAYS

- Magmatic activity is also evident during Delamerian Orogen and syn-mineralisation

DISRUPTIVE METALLURGY
GOLD AND BISMUTH LATE

Bismuth overprints all other minerals

Gold overprints magnetite, et al

Gold can be as inclusions in Chalco, or as 0.5mm native gold

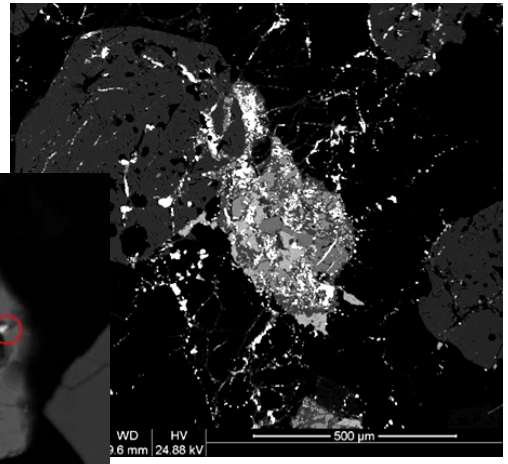
Gold and Bismuth often complexed

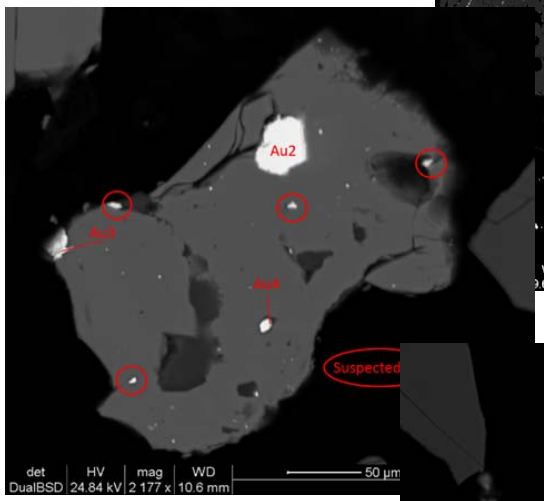
Laser mapping of gold grains shows high Ag, Bi, Hg

Which is a thermal contrast to the garnet-sillimanite alteration

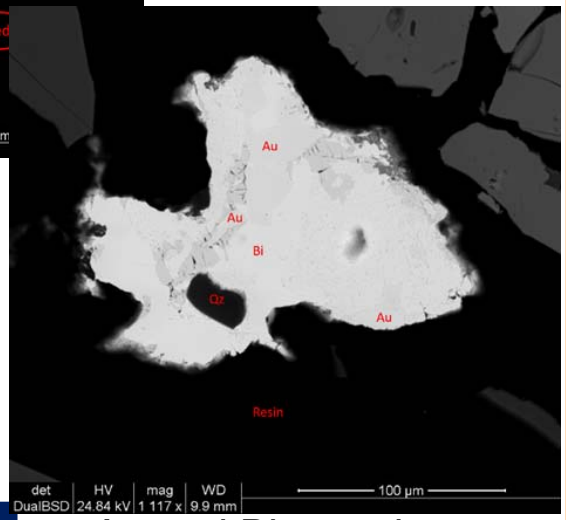
R.Lilly/M.Booth Uni Adelaide

Bi overprints Chlorite





Au overprints magnetite



Au and Bi complex

KEY TAKEAWAYS

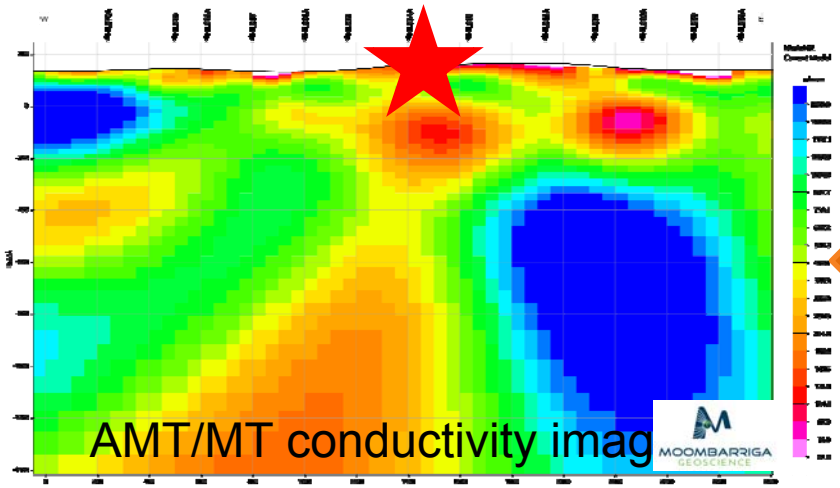
- Gold is late in mineralisation paragenesis – different fluid?

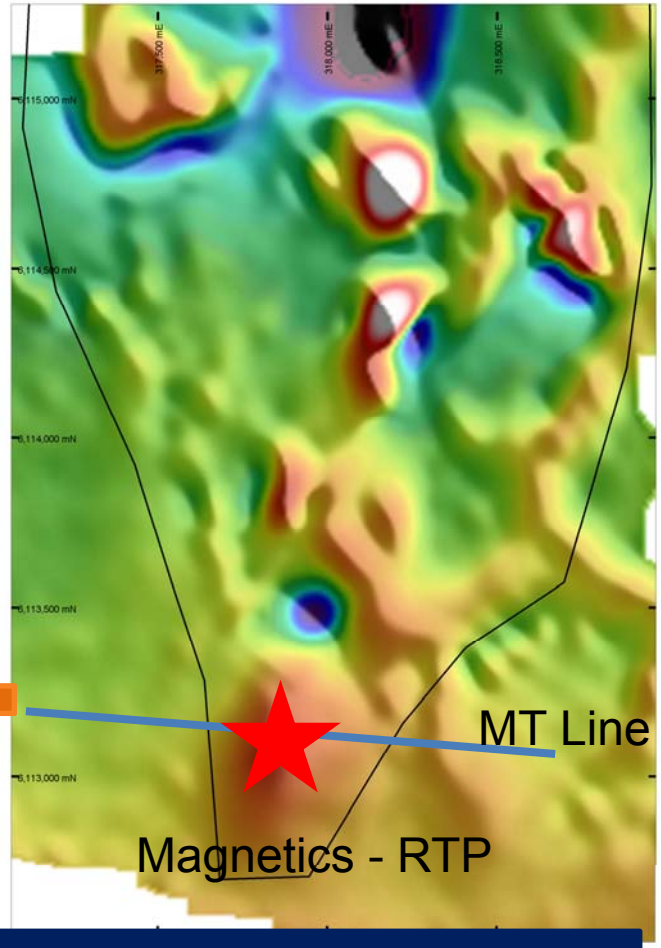
DISRUPTIVE GEOLOGY
DEEP SEATED CONDUCTIVE STRUCTURAL CONTROL?

<3 kms SE of Process Plant

Coincident MT Conductivity
Magnetic RTP High
Geochem Cu – Au

Further work to define depth to target and scale





KEY TAKEAWAYS

- Is the regional control a deep-seated conductivity zone with magnetic anomalism?

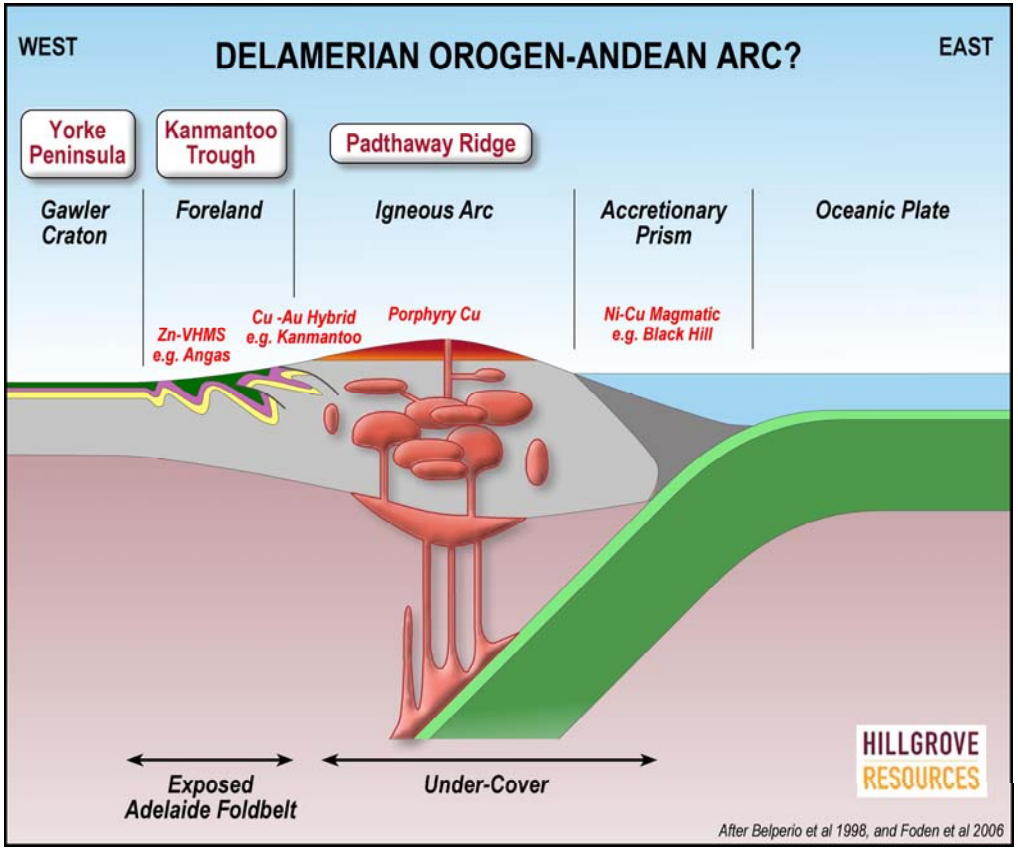
DELAMERIAN OROGEN
ANDEAN TYPE TECTONICS?

Here is an interpretation of the Delamerian Orogen in south-east South Australia
(after Belperio et al, 1998 and Foden et al, 2006)

Kanmantoo is located in the rift basin – the Kanmantoo Trough

And the Kanappa – Mt Rhine projects are located at the margin of the Magmatic Arc and the Kanmantoo Trough

The Delamerian orogen continues through western Victoria (Stavely Belt) to Western Tasmania (Mt Lyell, Henty, Roseberry, et al)



KEY TAKEAWAYS

- Where's the seismic – AusLAMP MT data to assist?

DELAMERIAN OROGEN
A COPPER GOLD ENRICHED PROVINCE

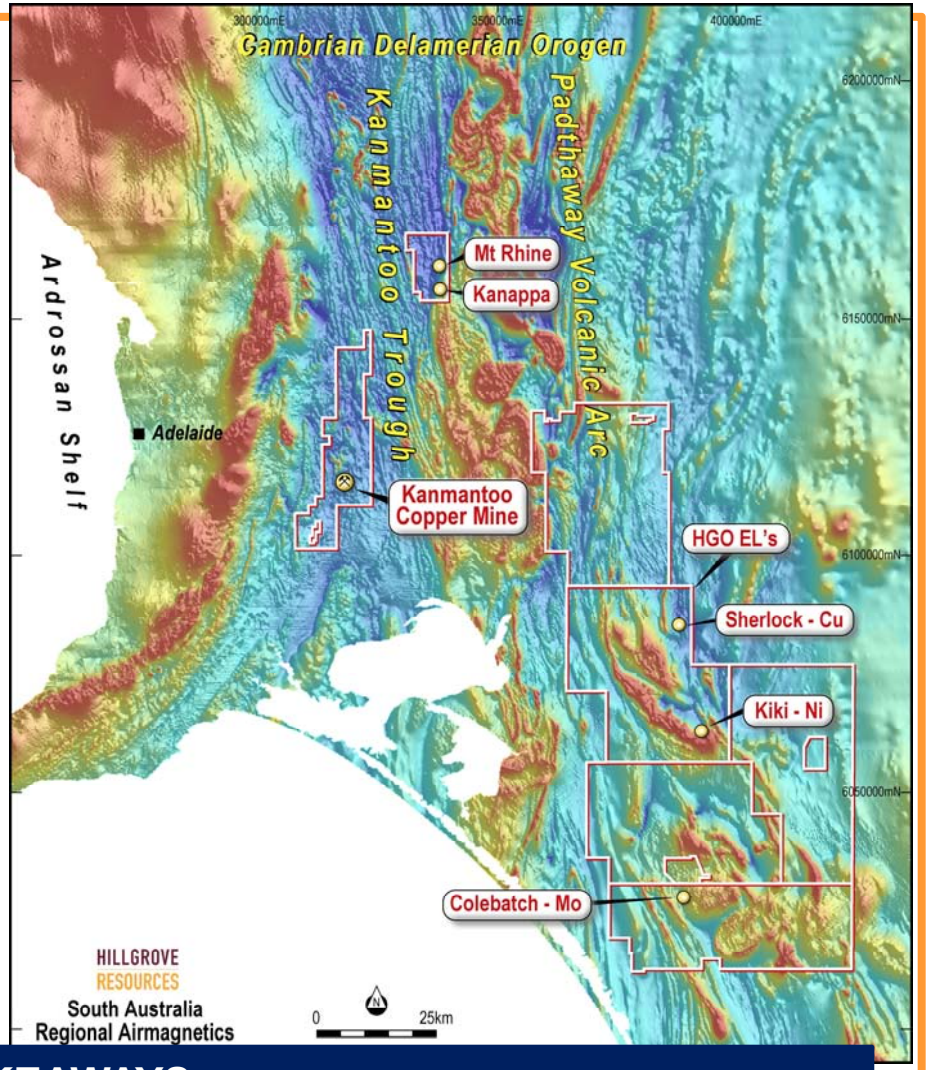
The regional magnetics clearly show the Kanmantoo Trough sedimentary basin and the magmatic arc (Padthaway Ridge) to the east

Significant projects for Hillgrove within the Delamerian Orogen include

Kanmantoo Cu - Au

Kanappa Cu - Au

Mt Rhine Cu – Au



KEY TAKEAWAYS

- Strong Cu-Au endowment in Delamerian terrain
- Voluminous magmatic activity

REGIONAL EXPLORATION PROJECTS
KANAPPA CU-AU

The Kanappa Cu-Au zone is 50kms from Kanmantoo

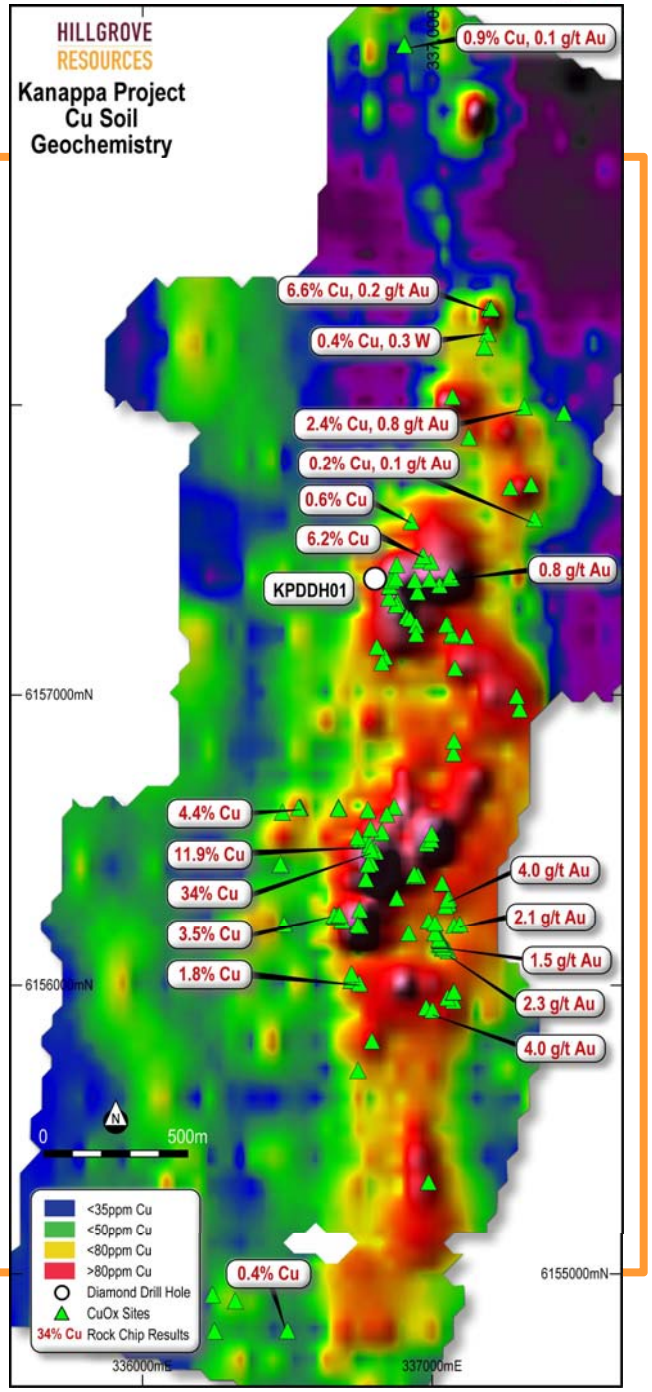
A series of pegmatites, **diorites** and aplites intrude into a sequence of Fe and potassic altered schists and carbonates

Soil copper zone 4.4kms long

Geochemical zonation from west to east

Cu-Zn => Cu-Bi => Cu-Au => Au => W

Peak rock chips of 34% Cu 4.0g/t Au (separate samples)

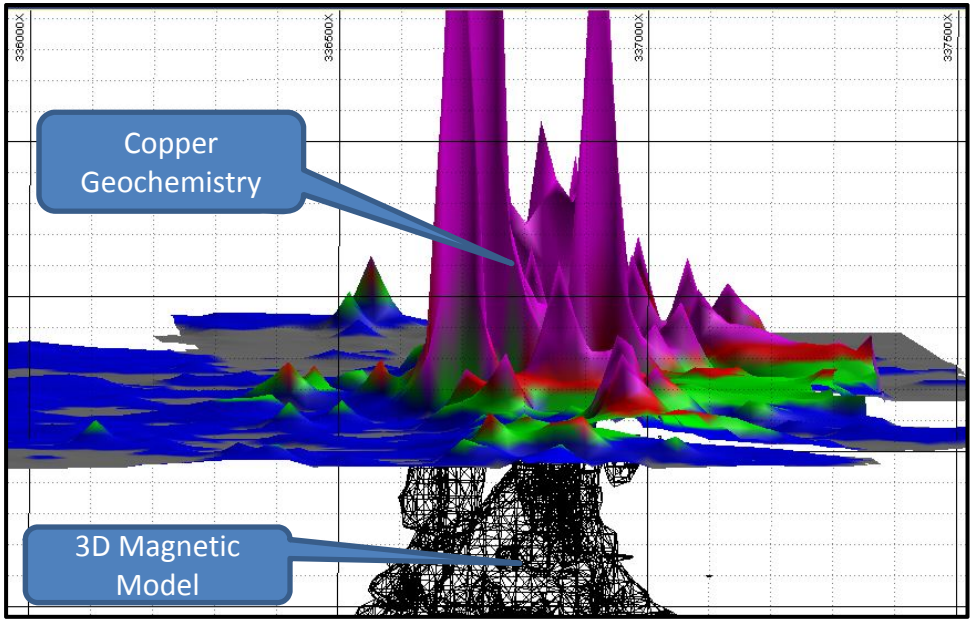


KEY TAKEAWAYS

- Large hydrothermal alteration and Cu-Au mineralised system at Kanappa

REGIONAL EXPLORATION PROJECTS

KANAPPA – ISOMETRIC VIEW OF COPPER GEOCHEMISTRY & MAGS



Drilling now completed – assay results expected next month

KEY TAKEAWAYS

- Best magnetic zones are correlated with the best geochemistry over 2km strike length

REGIONAL EXPLORATION PROJECTS
MT RHINE CU-AU

The Mt Rhine copper-gold zone is 10kms from Kanappa

Soil copper zone **1.7kms** long

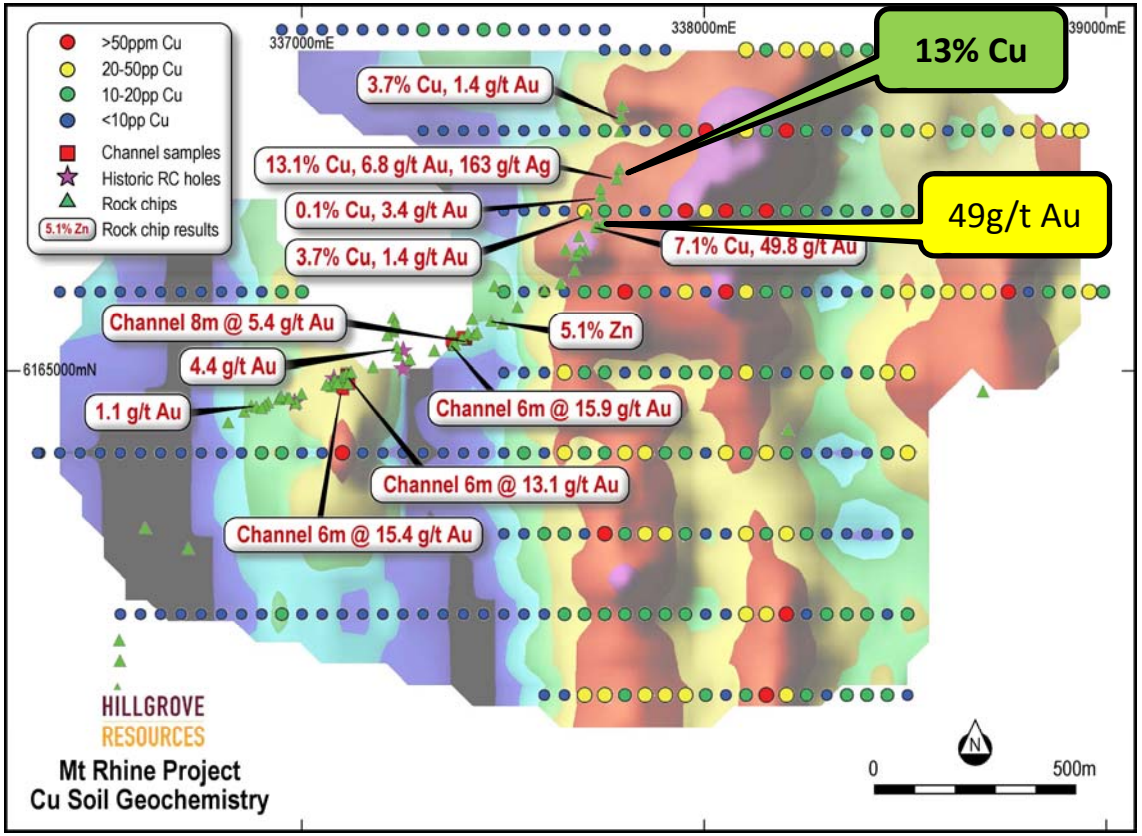
Peak rock chips of **13% Cu**

49.8g/t Au (separate samples)

Peak Channel Sampling of 6m @ 15.9g/t Au

Much higher gold tenor cf Kanappa

Also completed soils, mags, IP



KEY TAKEAWAYS

- Large scale alteration system at Mt Rhine with
- Zone of Cu, IP and magnetic anomalism over 1.7kms long and 500m wide

UNCOVERING A NEW CU-AU PROVINCE

MOVING FORWARD

COMPETITIVE ADVANTAGE

- Fully owned Process Plant and permitted Tailings Facility
- Fully owned Pit as
  - Pseudo-decline or
  - Pumped Hydro Scheme
- Cu-Au endowed tenements with access rights

GROWTH COPPER-GOLD PROJECTS

- Kavanagh-Nugent Cu-Au underground targets
- Kanmantoo near mine Cu-Au underground targets
- Kanappa and Mt Rhine Cu-Au 4km long target
- Evaluation of Magmatic Cu-Au systems

USING SCIENCE TO WORK FROM KNOWN TO THE UNKNOWN

Kanmantoo is located within a significant copper-gold province
Which is being systematically uncovered by Hillgrove Resources

GREAT COLLABORATION LEADS TO DISRUPTIVE GEOLOGY

THANK YOU FOR LISTENING

At Kanmantoo we are
Utilising existing infrastructure and cash flow to create Company transforming mining projects