

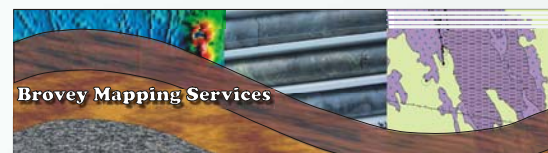
PEEL MINING'S GILGUNNIA PROSPECT:



Mallee Bull Cu-basemetal discovery



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31/5/2012



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New England



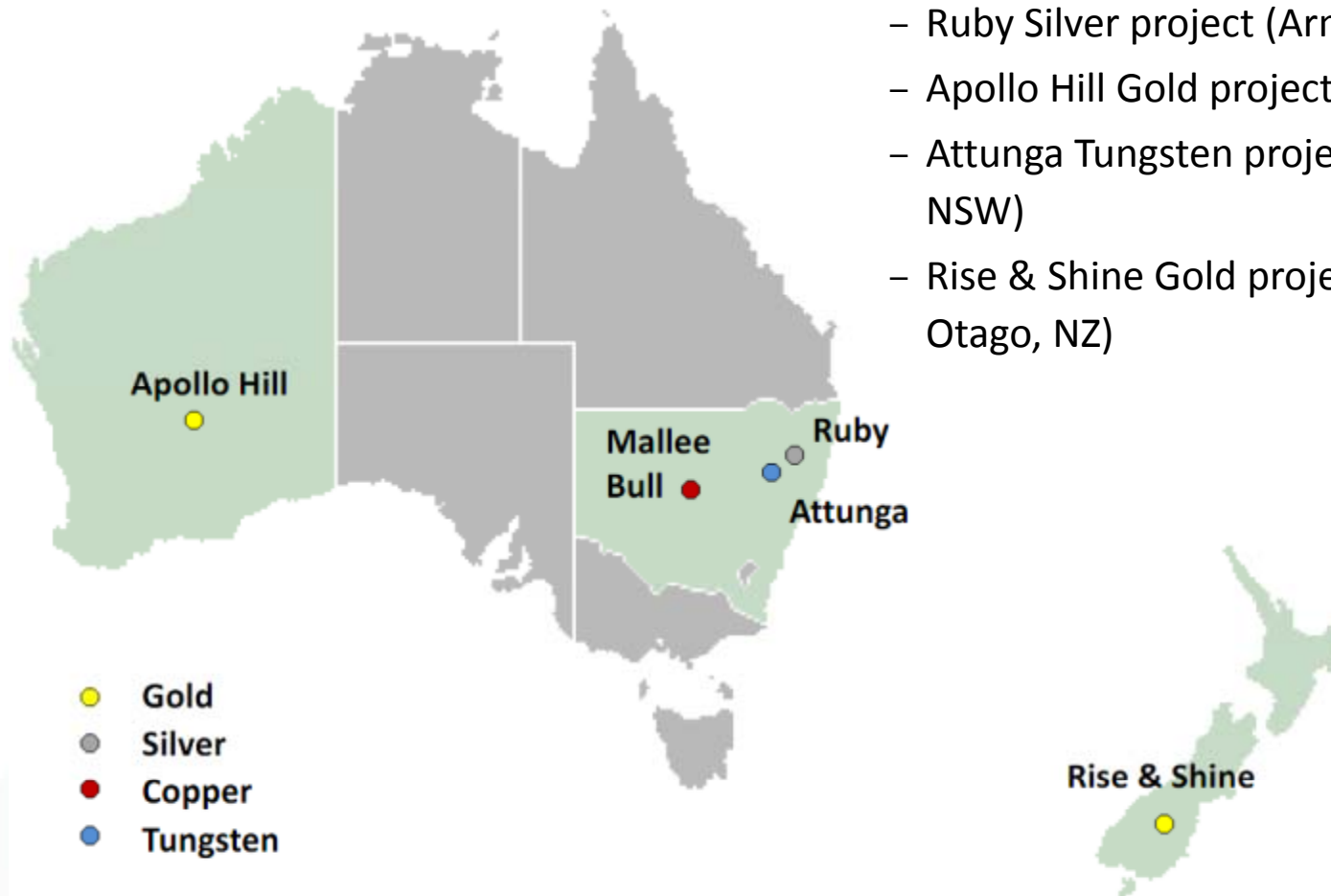
Project Summary

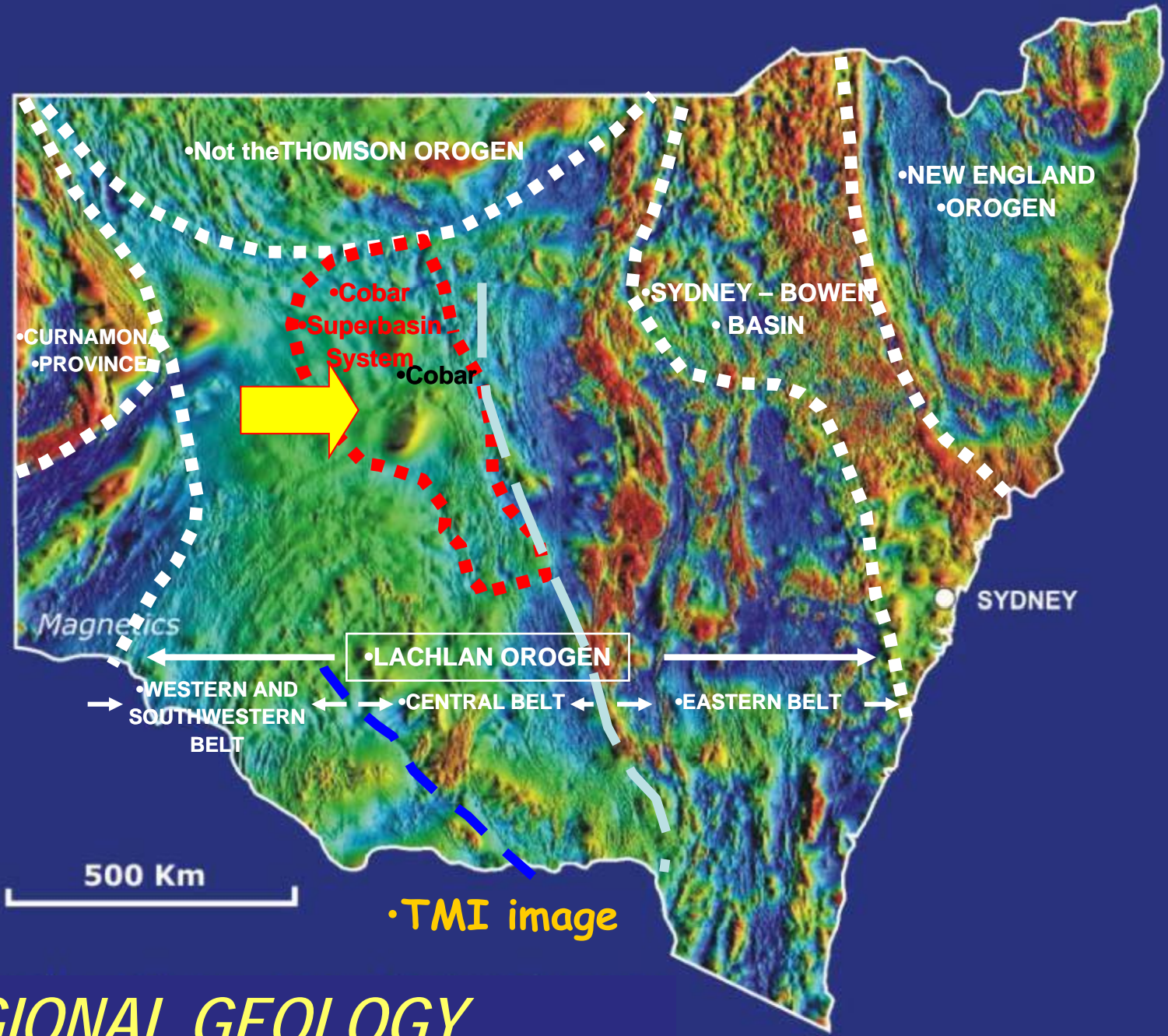


Emerging precious-base metal resources company

- **Key assets:**

- **Mallee Bull Copper-polymetallic Discovery (Gilgunnia, NSW)**
- Ruby Silver project (Armidale, NSW)
- Apollo Hill Gold project (Goldfields WA)
- Attunga Tungsten project (Tamworth, NSW)
- Rise & Shine Gold project (Central Otago, NZ)

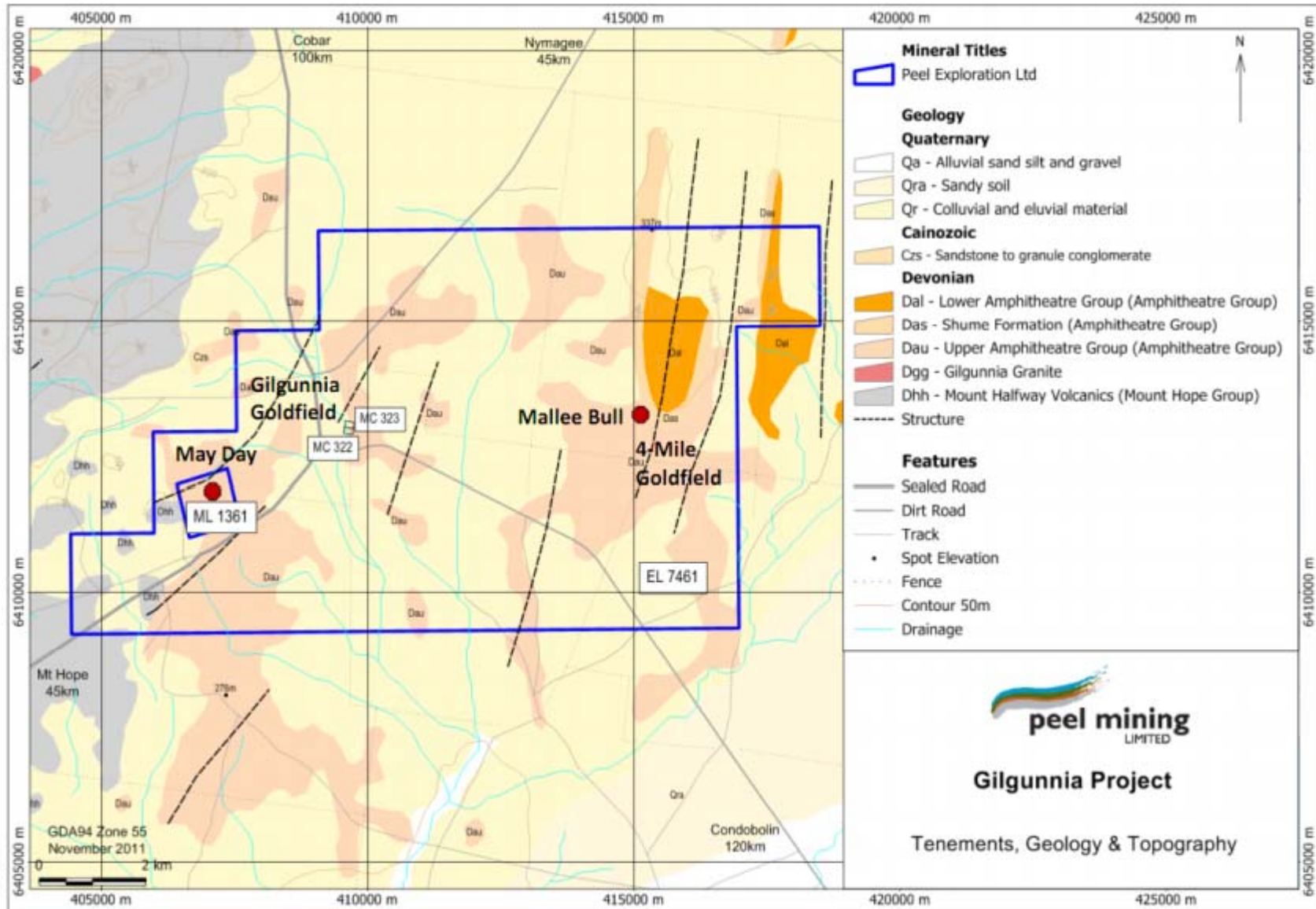




REGIONAL GEOLOGY

•Modified from David (2010)

Gilgunnia (incl. Mallee Bull Discovery) Project

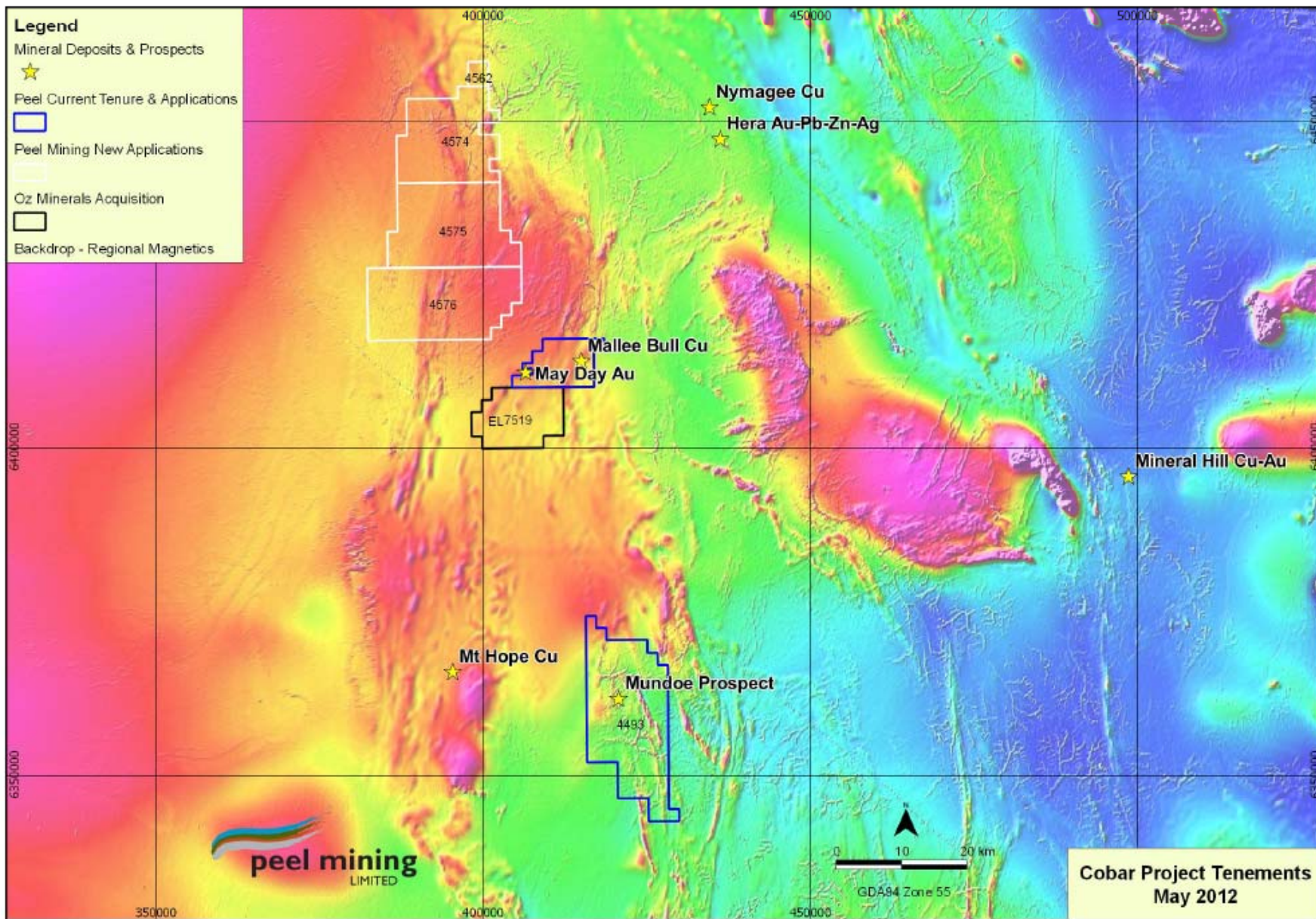


Gilgunnia Project

Tenements, Geology & Topography



Peel's interest in the Cobar Superbasin



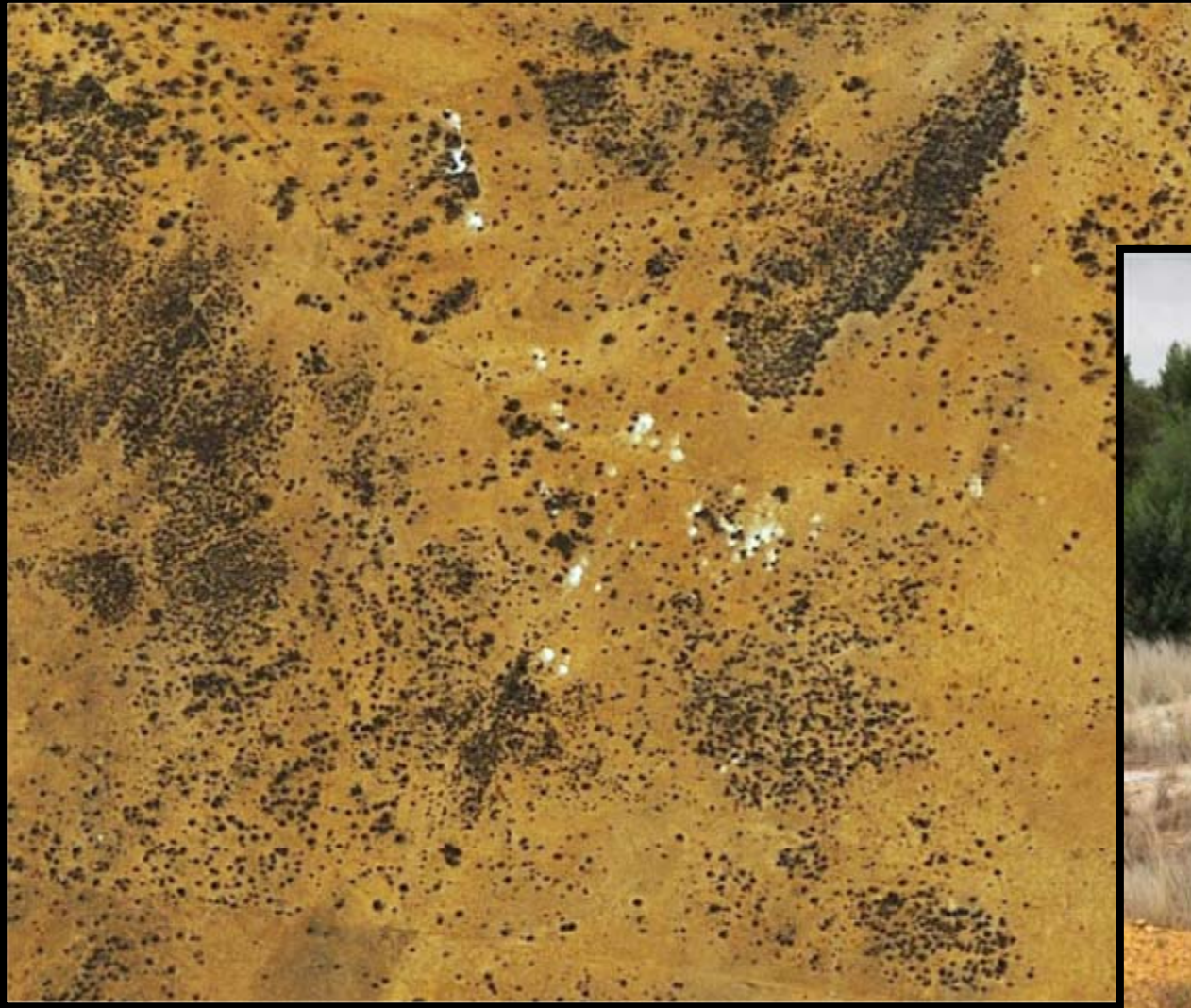


Focus on under-explored regions of significant mineralisation potential

- Explore for deeper targets in an area previously covered by surface exploration methods (mapping, geochemistry, limited geophysics)
- Historic gold workings exist as shafts (4 Mile goldfield)
- Structurally favourable location near Nymagee-Wagga lineament
- Understanding key features of well known Cobar-style deposits in exploration methodology
- Use geophysics (VTEM) and IP to find suitable anomalies at depth
- Understanding the surface geology to interpret drillcore intercepts



4 Mile historic workings



- Scattered clusters and lines of up to 30 deep shafts (Au only)

Mallee Bull Discovery



Follow-up drilling confirms Mallee Bull as a “Cobar-style” discovery

- Initial work comprised heliborne VTEM, shallow RAB drilling and follow up fixed loop EM surveys which identified a strong conductor
- Initial RC drilling intersected weak mineralisation (Pb, Zn, Ag±Cu), and with down-hole EM, refined the location and size of the conductor
- One diamond tail was drilled based on geophysical modeling; intersected high grade base metal mineralisation
- Subsequent diamond and RC drilling confirmed significant base metal mineralisation coincident with the EM/IP anomaly

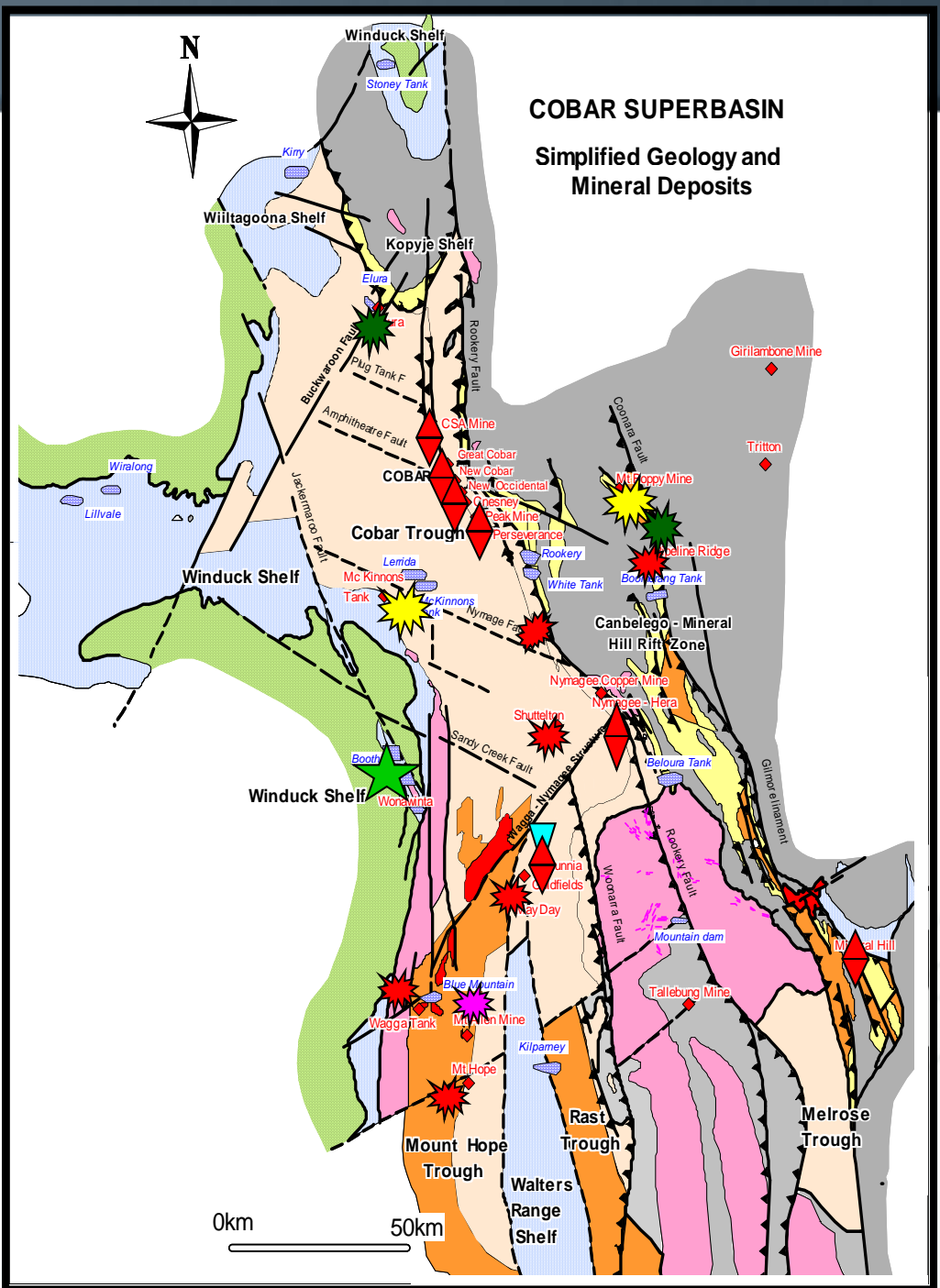


Cobar-style deposits










- Variable metallogeny copper-gold, but also silver, lead and zinc
- Massive to disseminated sulphides, complex metallogeny
- Pyrrhotite abundant – magnetic and/or non-magnetic
- Mineralisation steeply plunging, pipe-like
- Structurally hosted within the Cobar Supergroup near regional structures
- Orebodies can be very large e.g. CSA estimated to hold >1.6Mt copper metal and is open as ore grade averaging 5.5% Cu below 1800m
- Include CSA, New Cobar, Peak, Great Cobar, New Occidental, Chesney, Nymagee, Hera, Mallee Bull



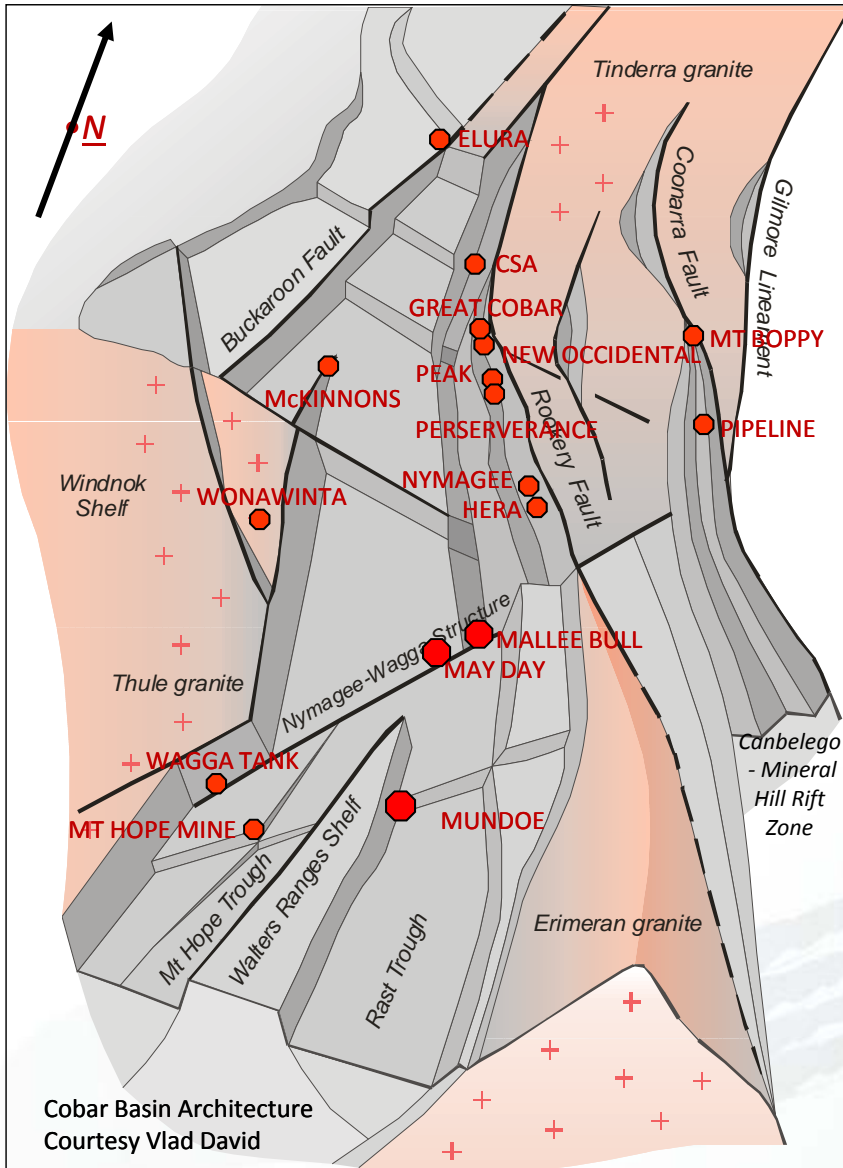


Mineral deposits in the Cobar Superbasin

-  •1. Intrusion related deposits
-  •2. VMS deposits
-  •3. Cobar – style massive sulphide deposits
-  •4. Epithermal Au deposits
-  •5. Massive sulphide base metals deposits -Irish type
-  •6. Carbonate hosted base metal deposits - MVT type
-  •7. Quartz vein hosted gold deposits

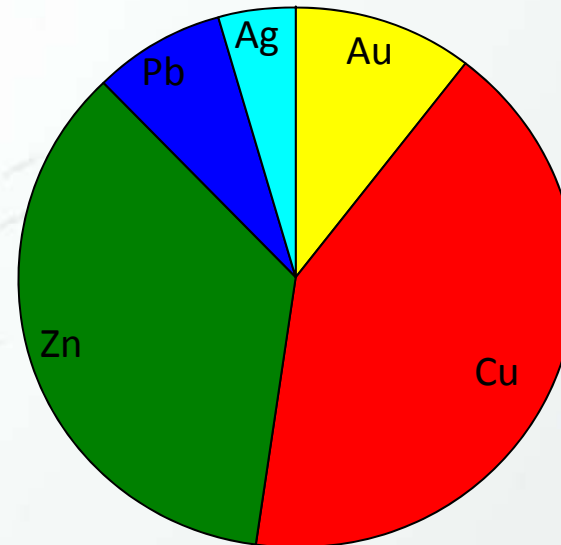
•Modified from David (2010)

Cobar Superbasin is worldclass mineral province

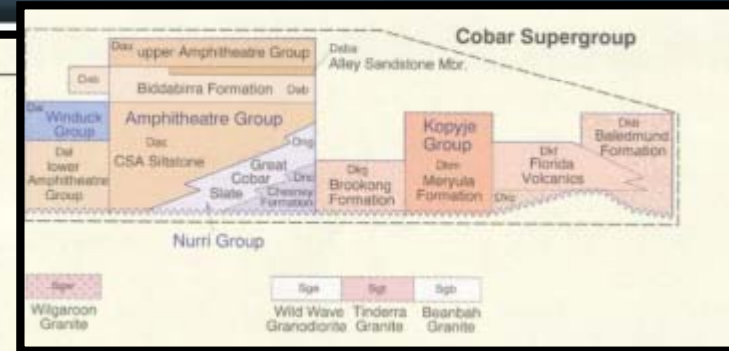
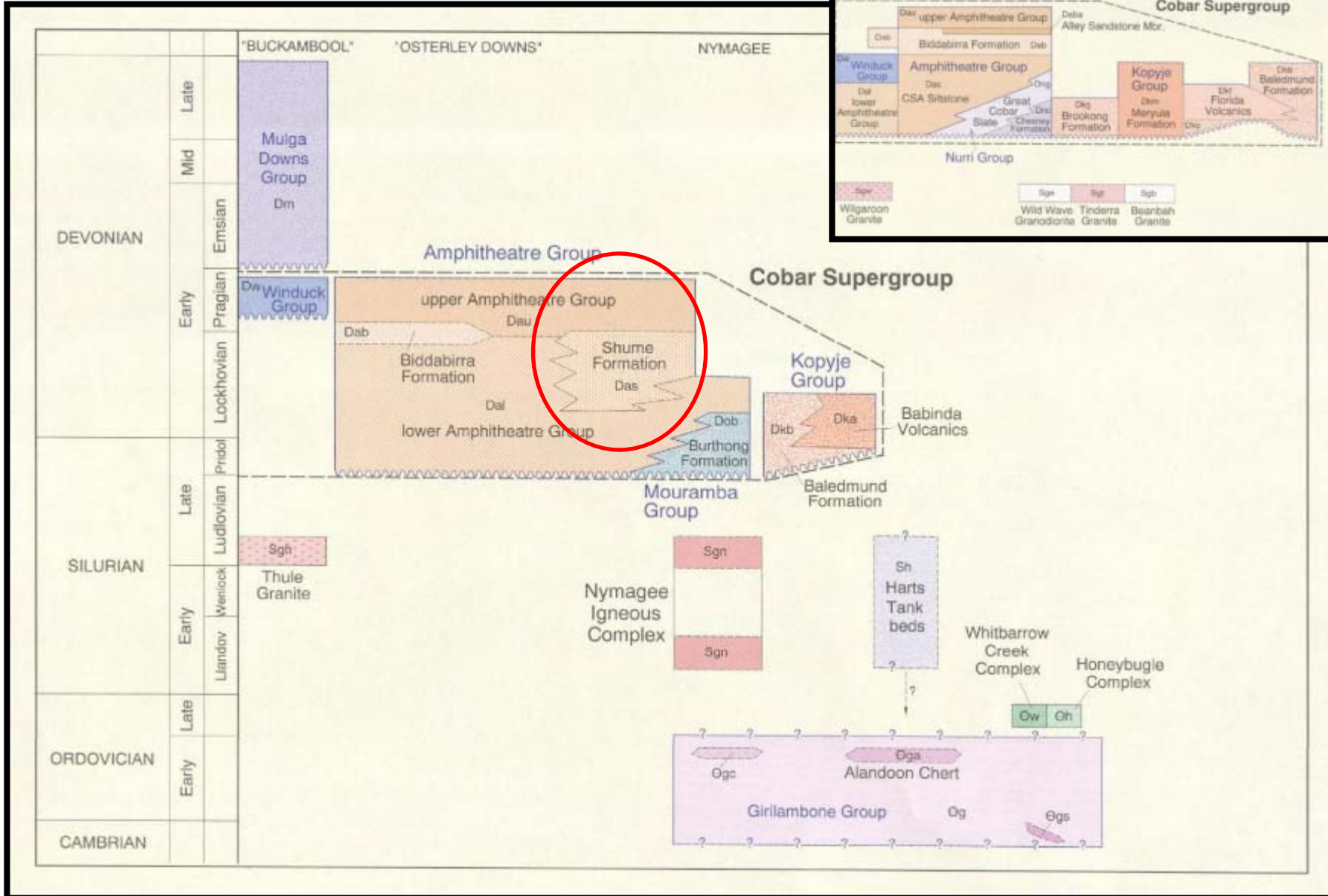


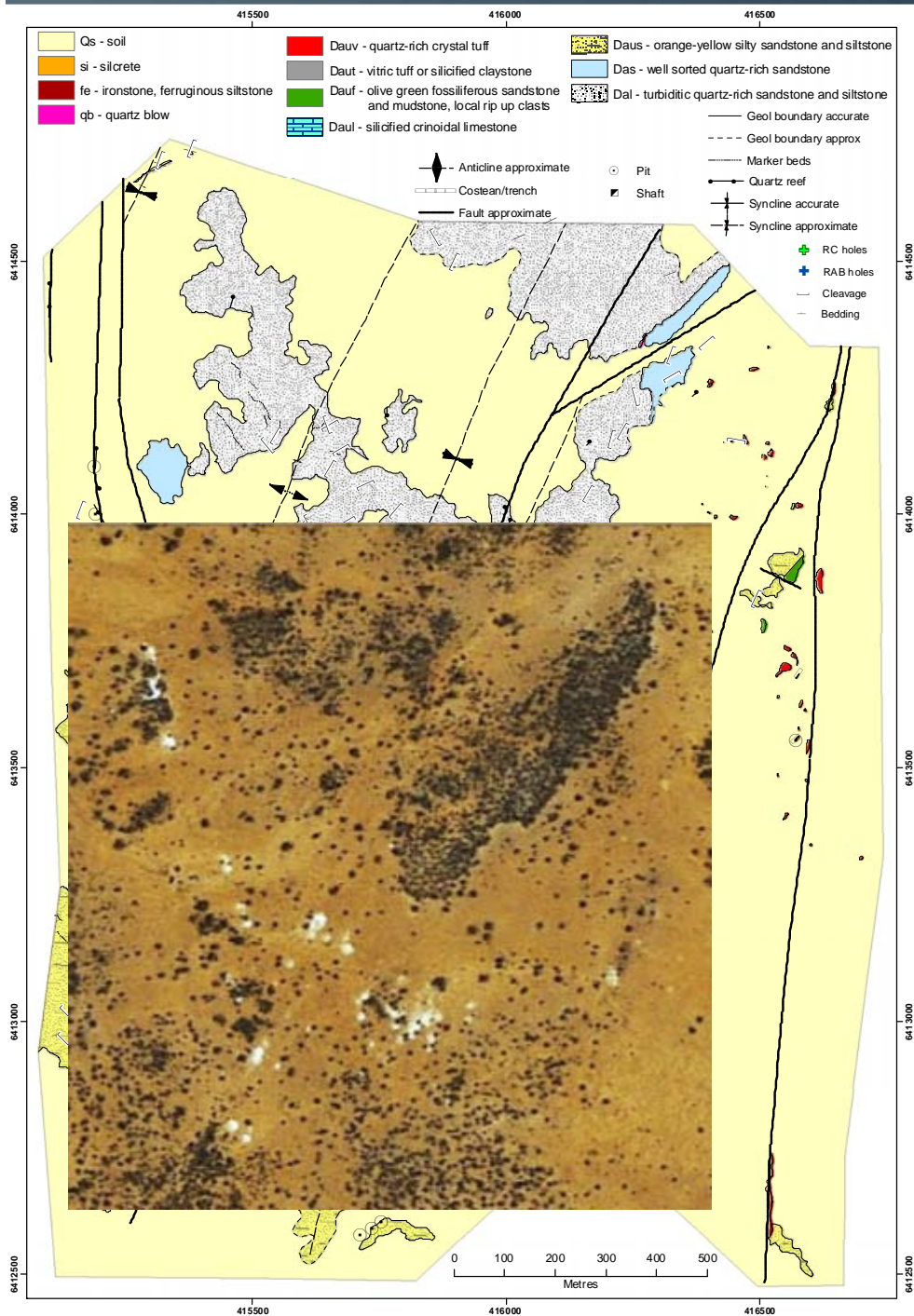
• Cobar Superbasin pre-mining metal inventory:

- >2.2 Mt Cu = US\$18b
- >7 Moz Au = US\$12b
- >4.7 Mt Zn = US\$9.5b
- >2.8 Mt Pb = US\$5.5b
- >145 Moz Ag = US\$4.5b
- Total = US\$50b



Stratigraphy of the southern Cobar Superbasin





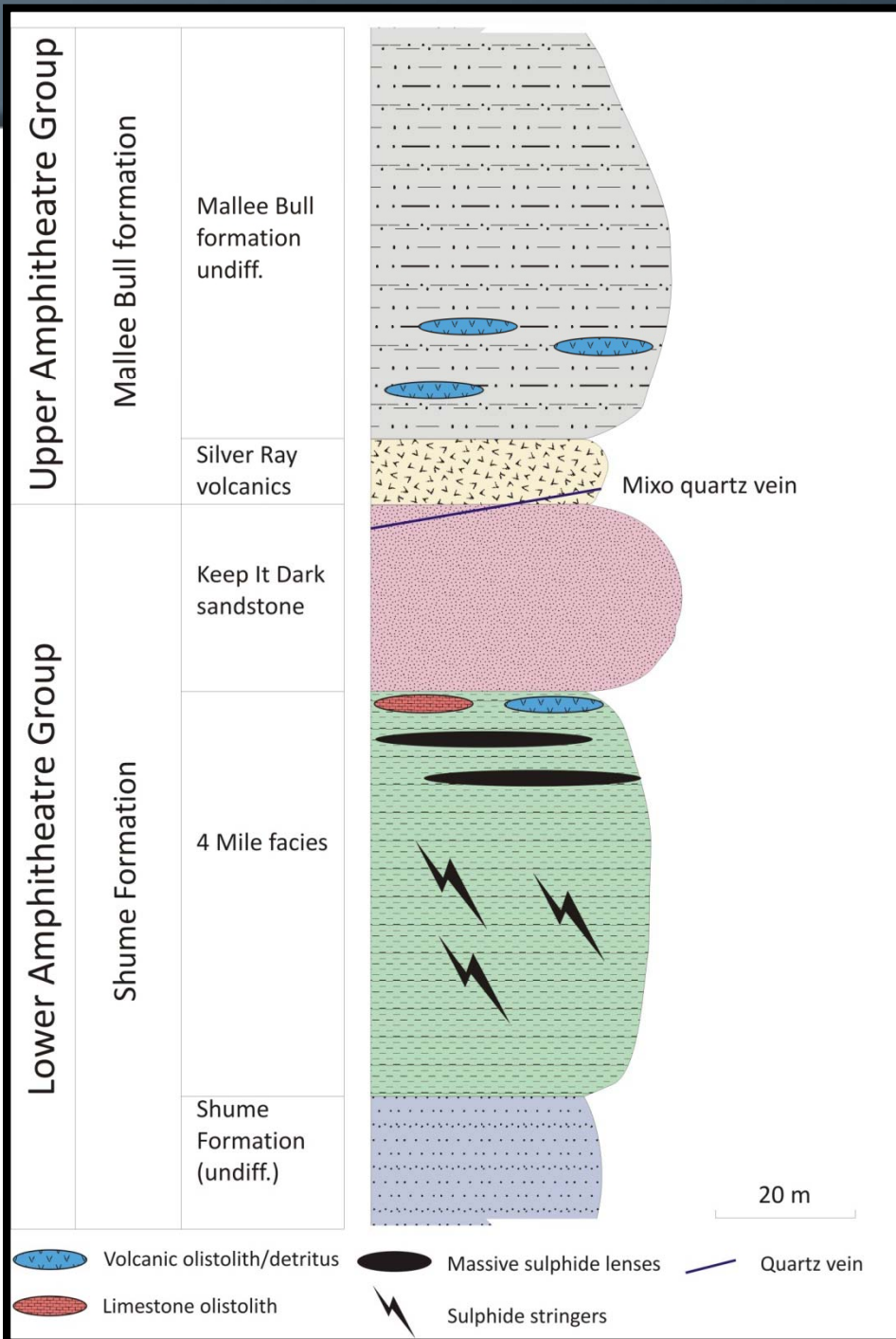
Host sequence

- Local stratigraphy correlates to the Shume Formation and overlying Upper Amphitheatre Group.
- The sequence at Mallee Bull has been folded and faulted.
- A broad anticlinorium is interpreted. The western margin comprises thinly bedded turbidites (mudstone to sandstone) with minor volcanoclastic units.
- On the eastern margin shallow marine sandstones are glauconitic and contain dismembered trilobites
- On surface, significant historic gold workings are scattered with shafts



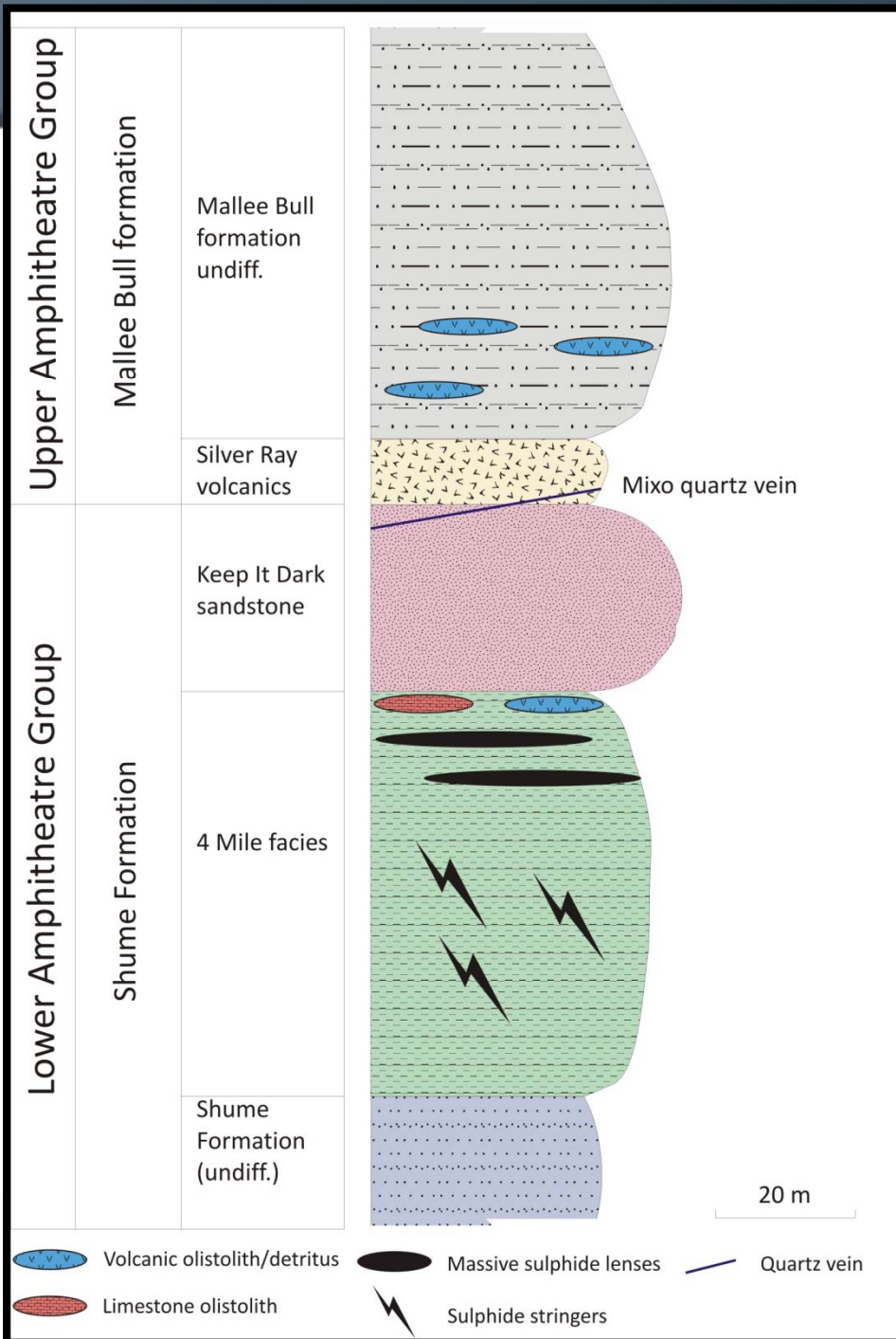
Host sequence

- Mallee Bull fm (inf.) comprises well bedded turbidites dominantly of mudstones and siltstones
- Lower portions have distinct volcanic detritus and scattered olistoliths
- The basal unit is a volcanoclastic/epiclastic sequence of felsic volcanics (SRV)
- Highly variable in texture, fabric and width

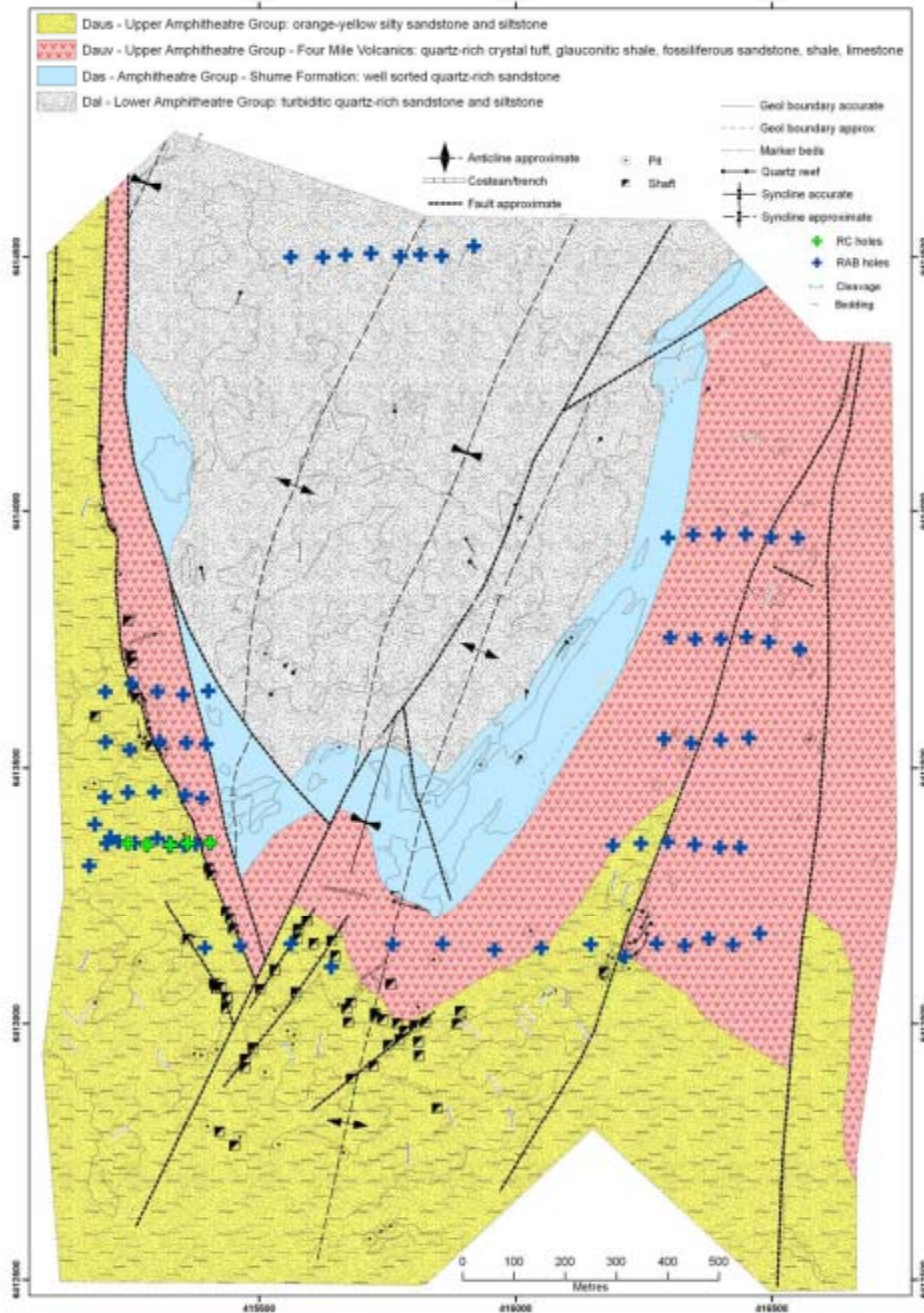


Host sequence

- The top of the Shume Fm is a marker unit (Keep It Dark sandstone). Forms raised rounded massive outcrops
- Supermature massive quartz sandstone
- Beneath this interval is the 4 Mile facies (inf.) hosting mineralisation
- This unit passes into coarser facies turbidites of the Shume Fm.



Four Mile Area Stratigraphic Interpretation Map



Local geology

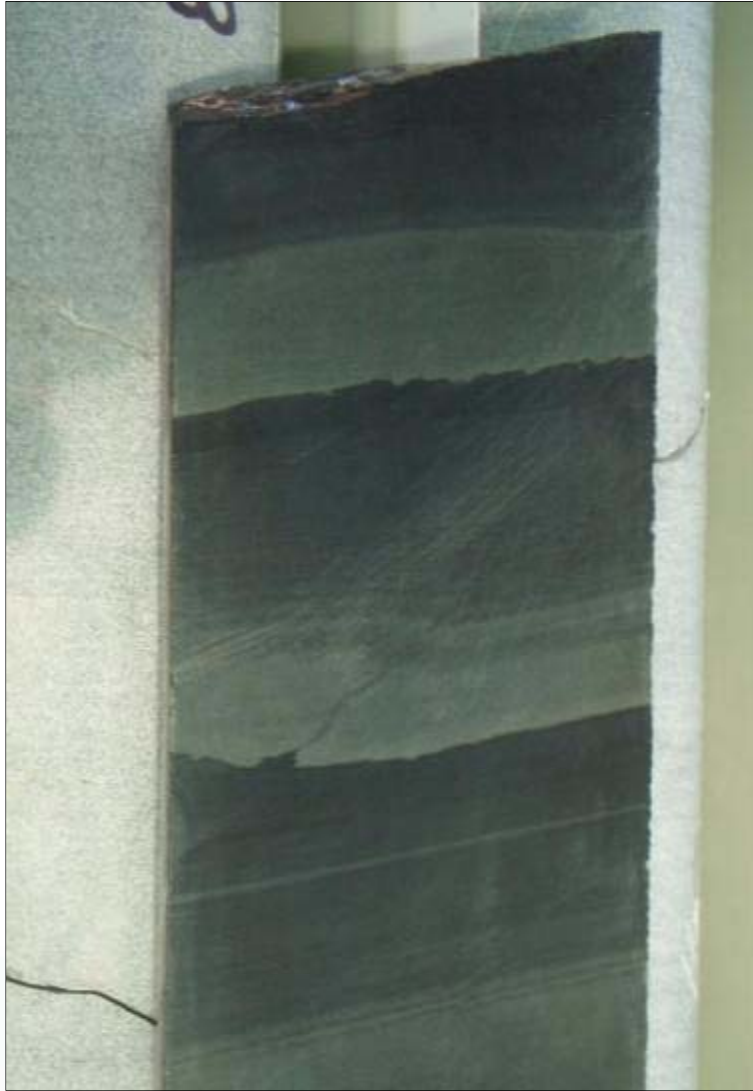
- The lower stratigraphy is correlated to the Shume Fm
- Comprises poorly to well bedded mudstone/siltstone and sandstone-dominated turbidites
- The Shume Fm is divided informally on the basis of facies
- The uppermost portions of the Shume Fm hosts mineralisation (the 4 Mile facies)



Local geology



- **Deep water turbiditic sediments**

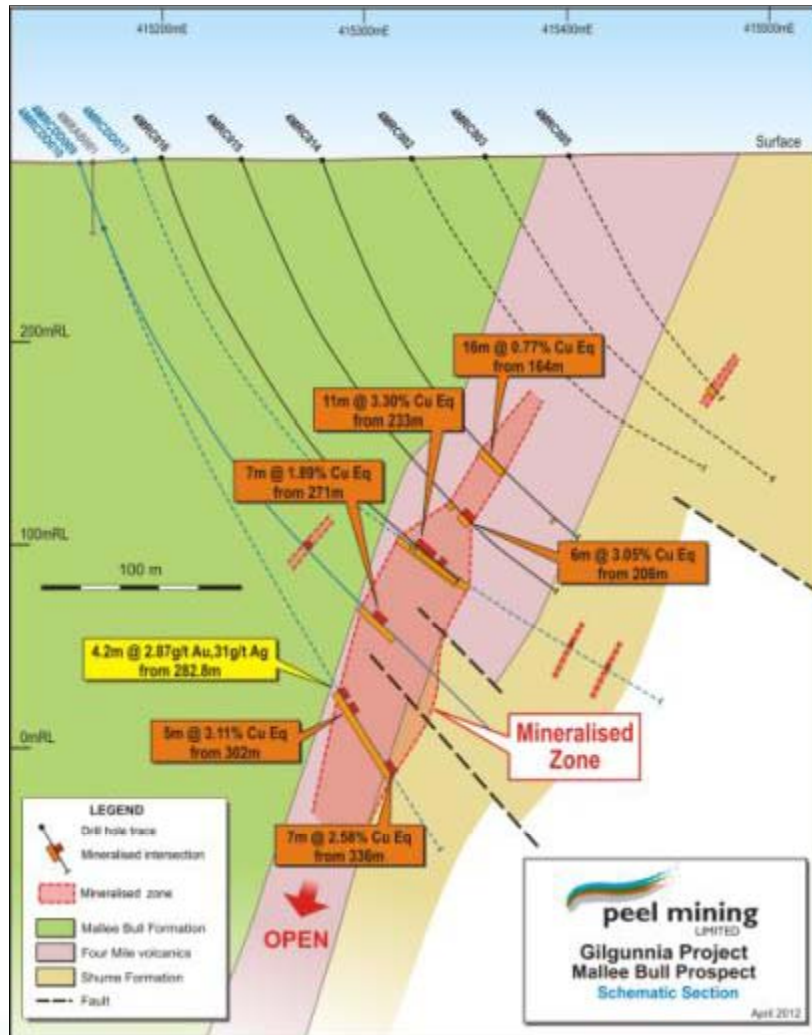




- Silver Ray volcanic member of the Mallee Bull Fm (Upper Amphitheatre Group)
- Dominantly epiclastic, with clasts of coherent felsic volcanics and aphanitic lithic material



Local geology



- On the western limb the stratigraphy dips steeply to the west
- Mineralisation occurs below the Keep It Dark sandstone in the Shume Fm
- The Keep It Dark sandstone is a persistent marker bed at the top of the Shume Fm
- Volcaniclastic rocks occur in the Mallee Bull Fm as olistoliths and the basal Silver Ray volcanics.
- Rare volcanic detritus also present in the 4 Mile facies underneath the Keep It Dark sandstone

Previous exploration



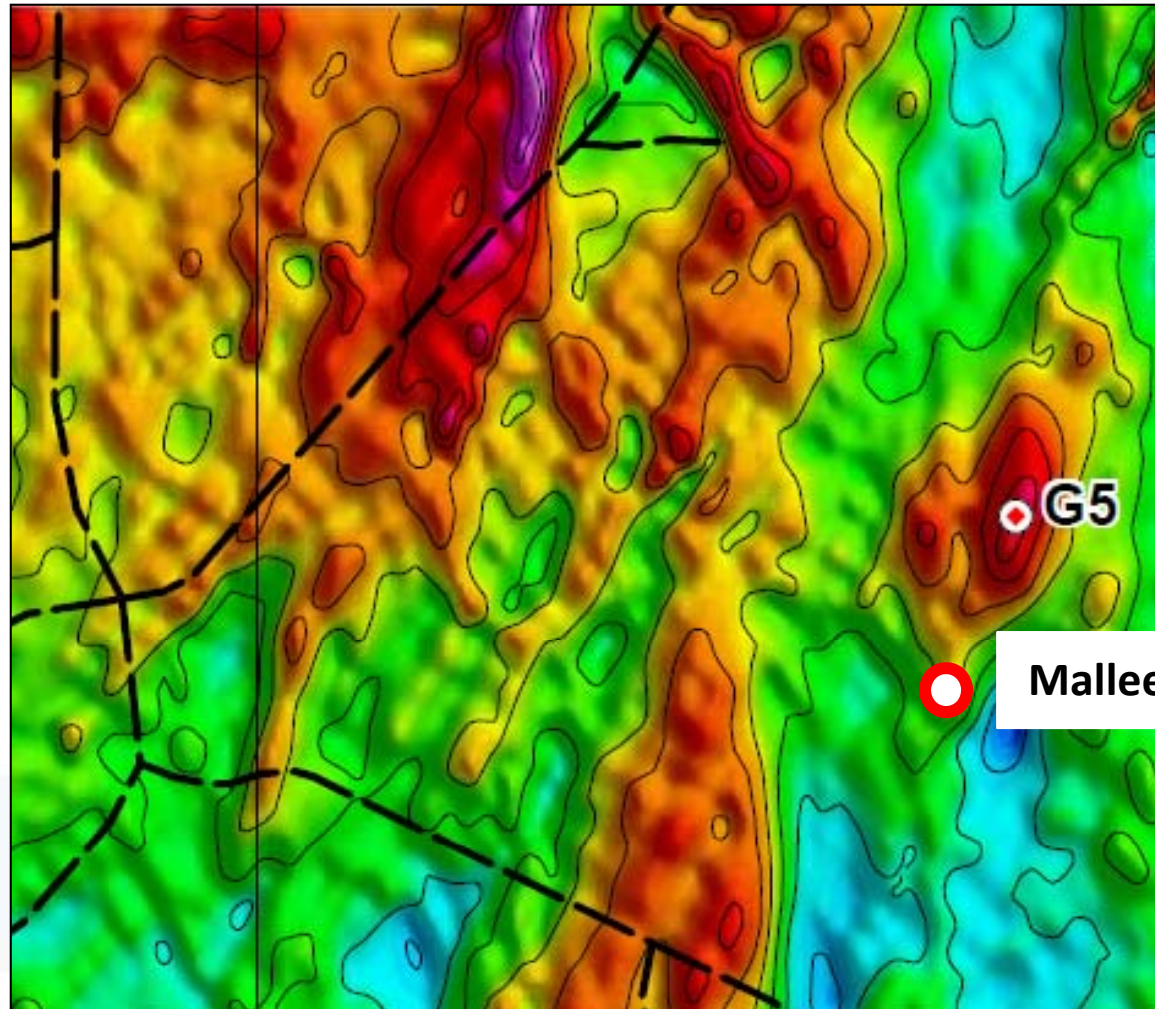
No prior drilling, surface exploration only

EXPLORER	YEARS	METHODS	COMMENTS
Mount Hope Minerals	1970-1973	Mapping, airborne magnetic-radiometric-EM survey	Modern style exploration but focus on outcropping or shallow targets
Union Corporation	1976-1978	Airborne and ground magnetics, mapping, auger geochem	Modern style exploration but focus on outcropping or shallow targets
Newmont	1984-1986	Geochemistry	Focus on shallow or outcropping targets
Shell Minerals	1981-82	RAB/chip sampling	Focus on shallow or outcropping targets
Pasminco/Triako	2000-2009	Identification and modelling of magnetic anomalies	Modern exploration for Cobalt-style deposits. No follow up on anomaly G5 – Mallee Bull

Exploration by Peel



- Focus on historic 4 Mile gold field due to presence of G5 magnetic anomaly



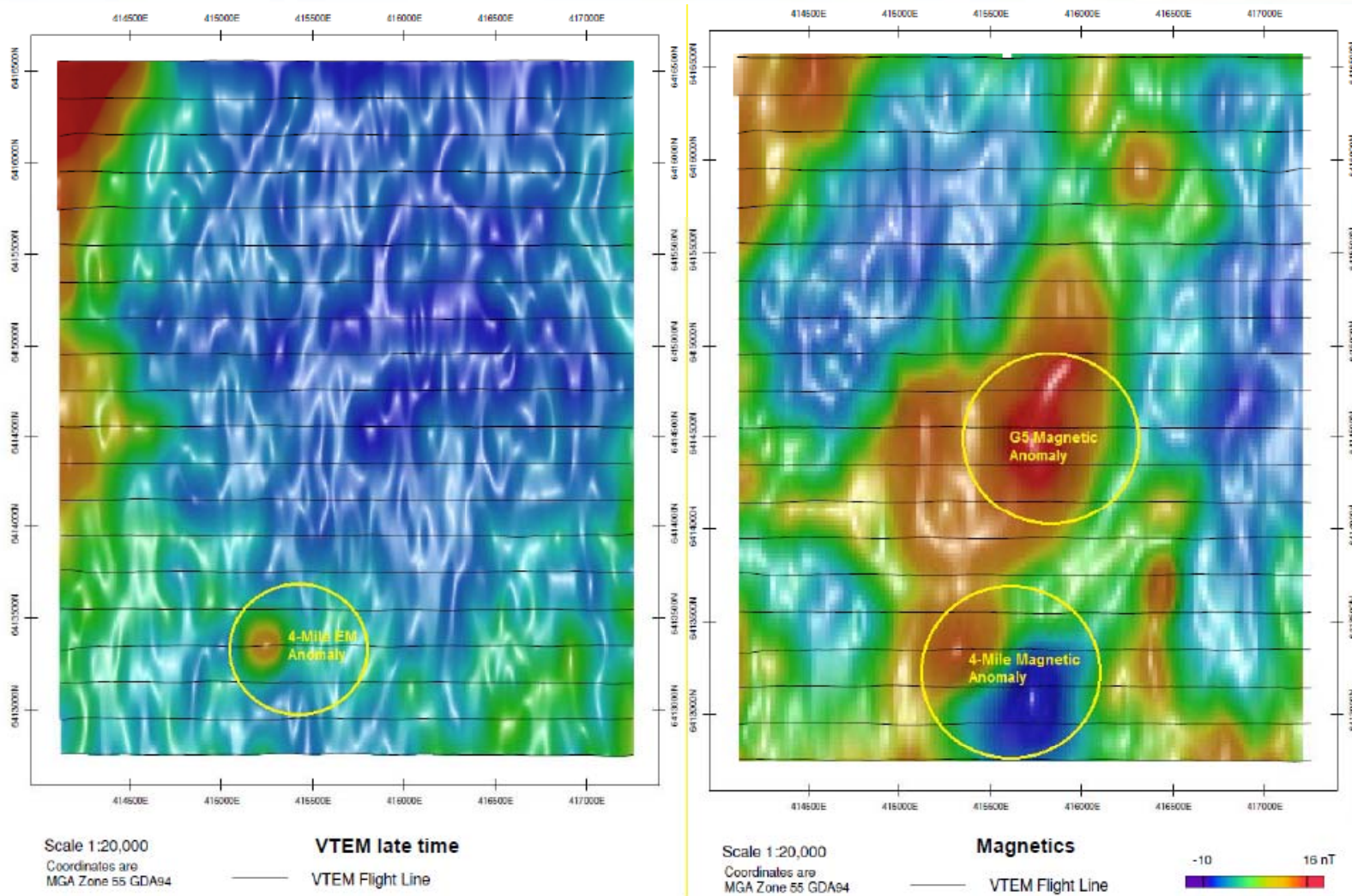
Exploration by Peel



- VTEM survey with follow-up fixed loop EM and downhole IP
- Detailed geological mapping and previous exploration compilation
- 60 Rab, 27 RC and 9 diamond holes



Geophysical surveys



- A coincident magnetic/EM anomaly was identified in the 4 Mile area. Follow-up fixed loop EM and downhole IP further defined this



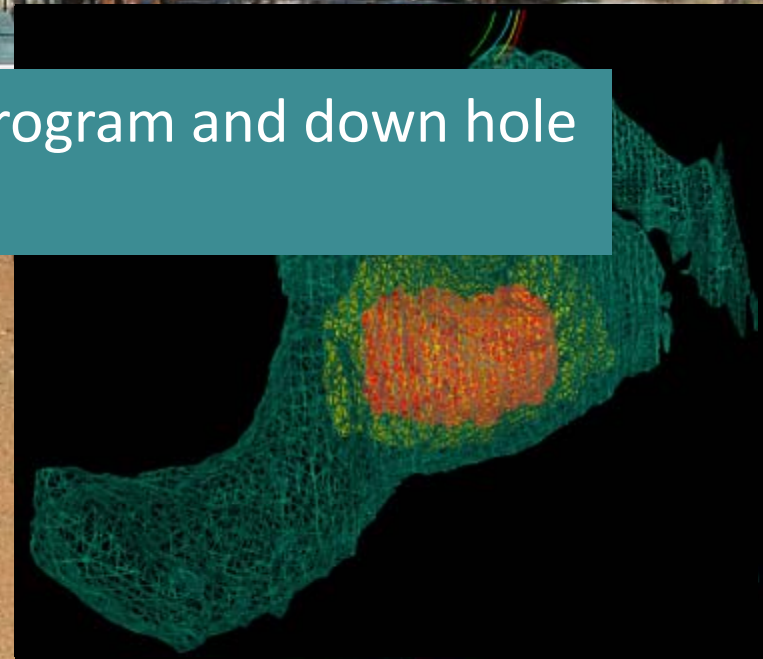
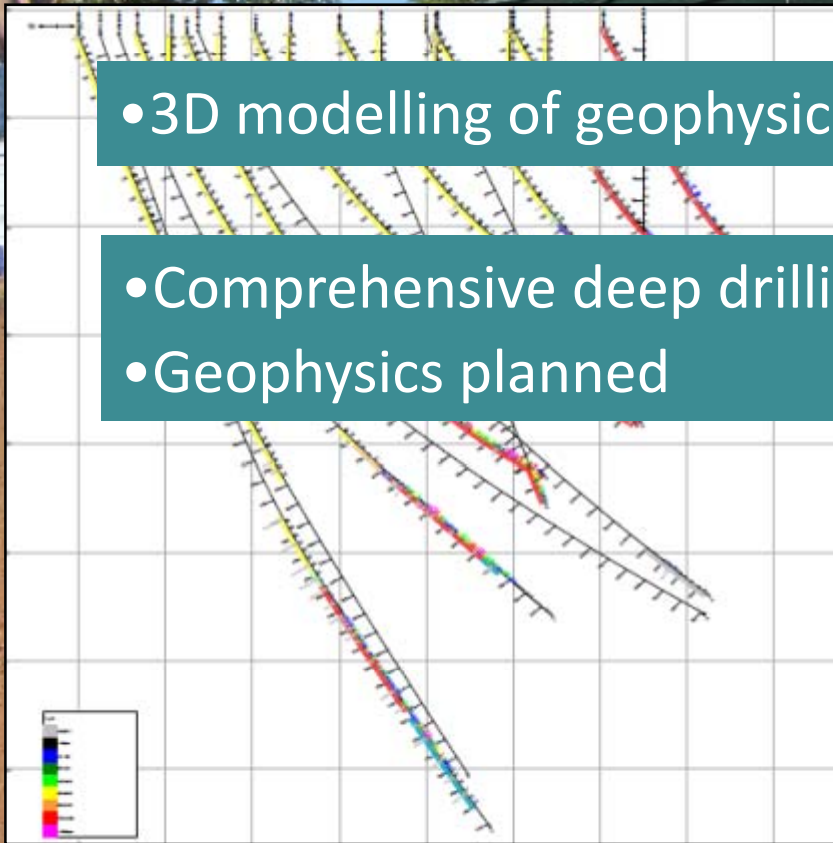
Exploration by Peel Mining

- Thorough logging of core and chips, field Niton and ALS assaying of chips and core

- Integration of all data to produce drill sections

- 3D modelling of geophysics and drill sections (in progress)

- Comprehensive deep drilling program and down hole
- Geophysics planned



Mallee Bull Discovery



- Results to date

- *Mallee Bull Cobar-style discovery better results to date include:*

10m @ 9.01% Pb, 11.00% Zn, 41 g/t Ag, 0.77 g/t Au

6.65m @ 3.10% Cu, 34 g/t Ag, 0.93 g/t Au

9.3m @ 1.20% Cu, 19 g/t Ag, 0.14 g/t Au

10m @ 1.70% Cu, 46 g/t Ag, 0.27 g/t Au

5m @ 2.40% Cu, 28 g/t Ag, 0.60 g/t Au

7m @ 2.32% Cu, 14 g/t Ag, 0.15 g/t Au

7m @ 1.31% Cu, 19 g/t Ag, 0.56 g/t Au

6m @ 2.01% Cu, 64 g/t Ag, 0.43 g/t Au

11m @ 2.71% Cu, 36 g/t Ag, 0.26 g/t Au

10m @ 2.66% Cu, 41 g/t Ag, 0.51 g/t Au

5m @ 2.14% Cu, 41 g/t Ag, 1.29 g/t Au

10m @ 2.22% Cu, 33 g/t Ag, 0.44 g/t Au

- *Strike of mineralisation = >120m*
 - *Steeply dipping to the west and stratabound*
 - *Shallowest intercept to date = 150m below surface*
 - *Deepest intercept to date = 310m below surface*
 - *Mineralisation open in multiple directions, including down-dip*



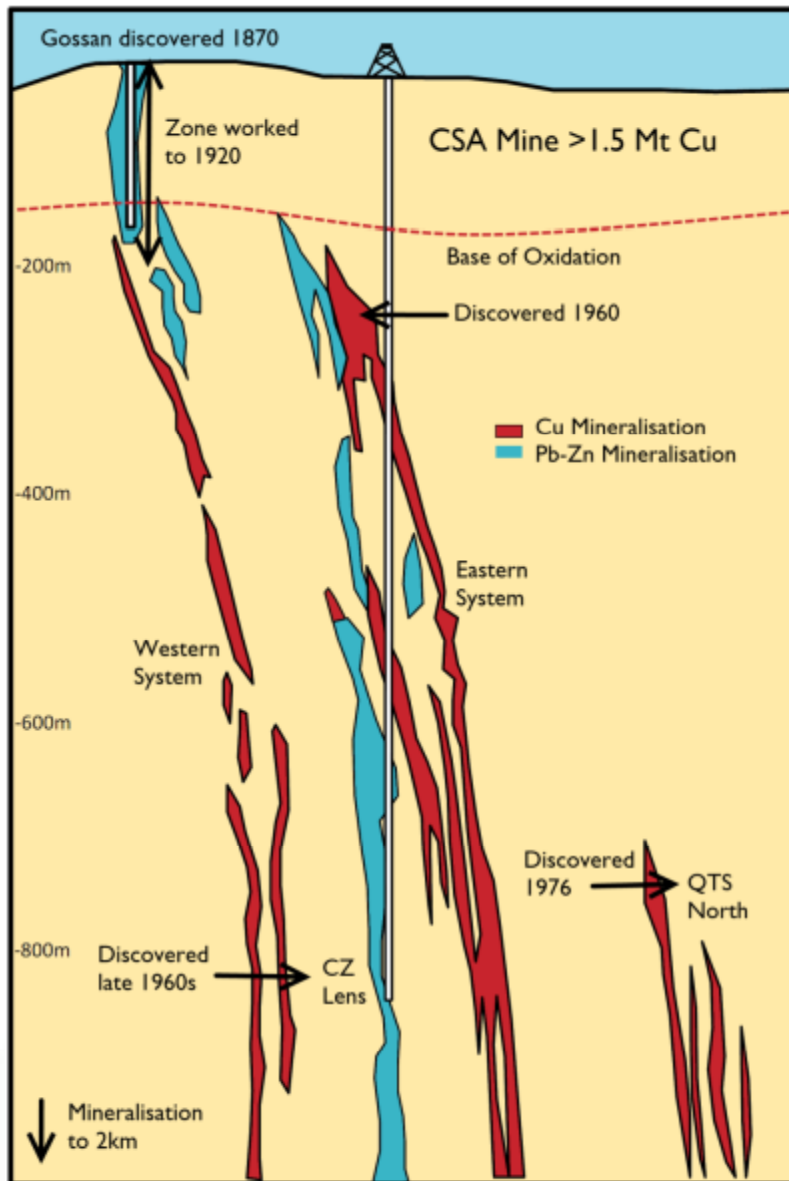


- **Mineralisation/geology characteristics**

- Broad alteration/mineralisation containing multiple intervals of massive sulphide and stringer mineralisation, including chalcopyrite, sphalerite, galena, pyrrhotite, arsenopyrite, pyrite
- Geology comprises package of structurally deformed turbidite sequence sediments (including volcanoclastics)
- Shoot-like structure dipping west and plunging to south?
- Favourable geological and structural position, sited on the “nose” of an anticline – a suitable high-stress environment
- Multiple additional coincident geochem/magnetic anomalies
- Large proximal magnetic anomaly to north (Butcher’s Dog) still unexplained
- Mineralisation hosted within the Lower Amphitheatre Group
- Similarities to other Cobar-style deposits such as CSA, Shuttleton and Nymagee-Hera



“Cobar –style” deposits vs Mallee Bull Discovery



Attribute

Polymetallic (Cu-Ag-Au-Pb-Zn)

Proximity to major structures
(growth/transfer faults)

Shear-hosted

Strong geophysical response

Chlorite and silica alteration

Facies and rock competency contrasts

Moderate to high strain zone

Short strike length (<200m)

Narrow widths (5-20m)

Vertical continuity (>400m)

Generally occur as clustered/stacked
lenses

Mallee Bull

✓

✓

✓

✓

✓

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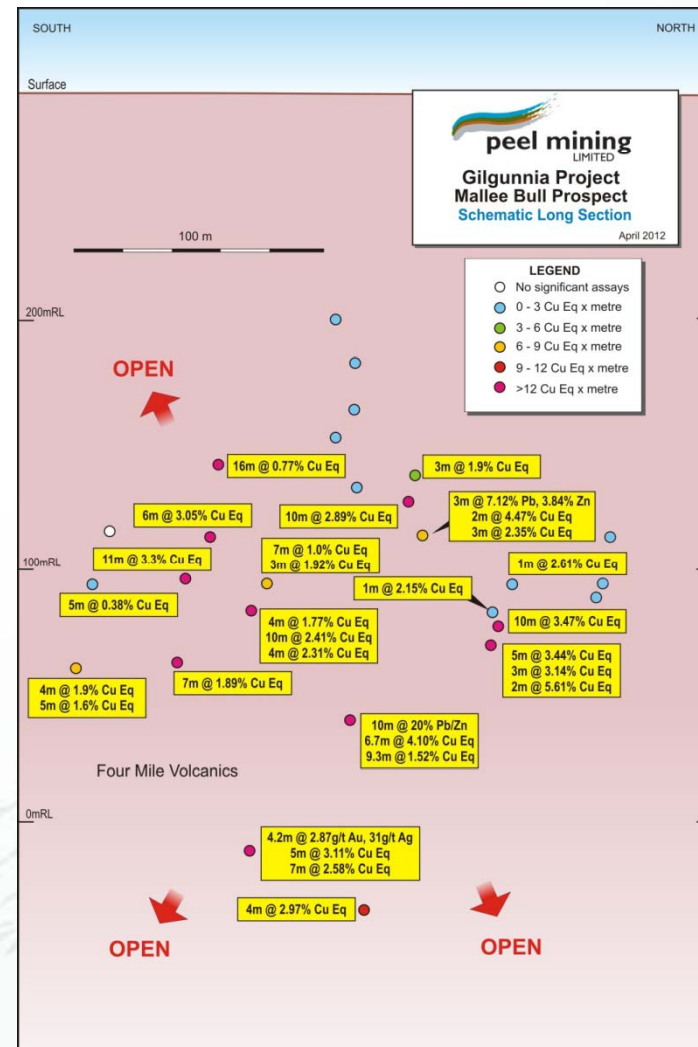
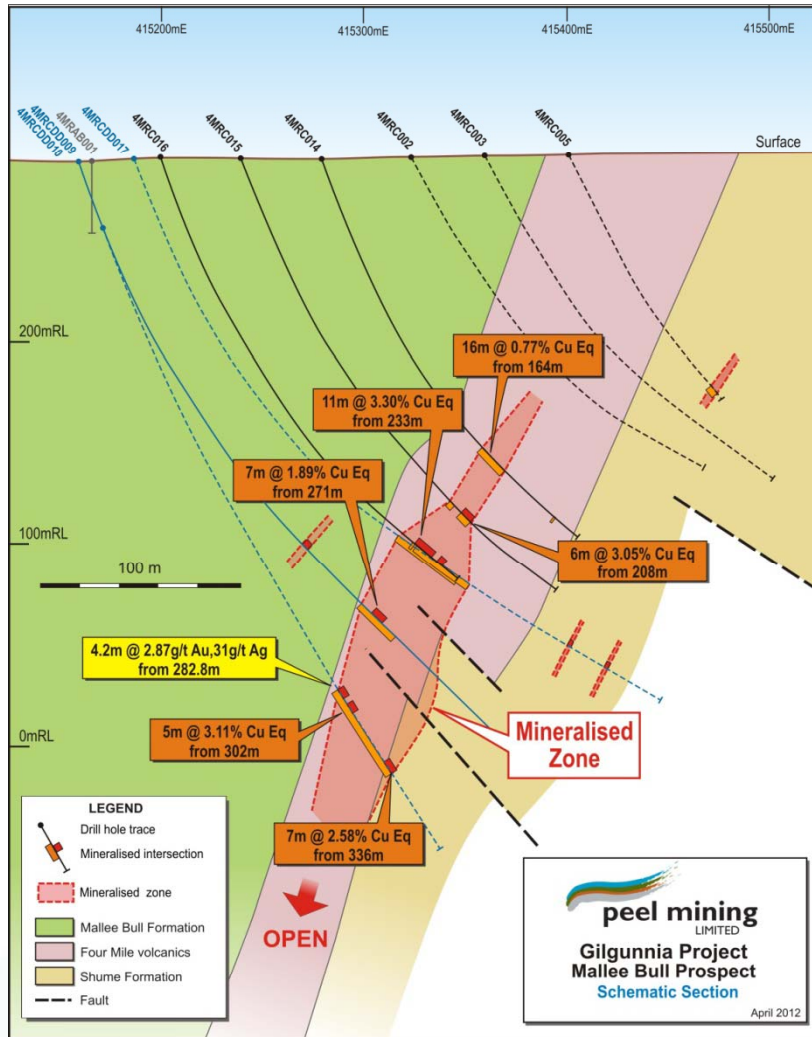
Mallee Bull Discovery



- Deposit Drillcore comparison – Mallee Bull (left) vs Nymagee (right)



Mallee Bull Discovery



Mallee Bull mineralisation



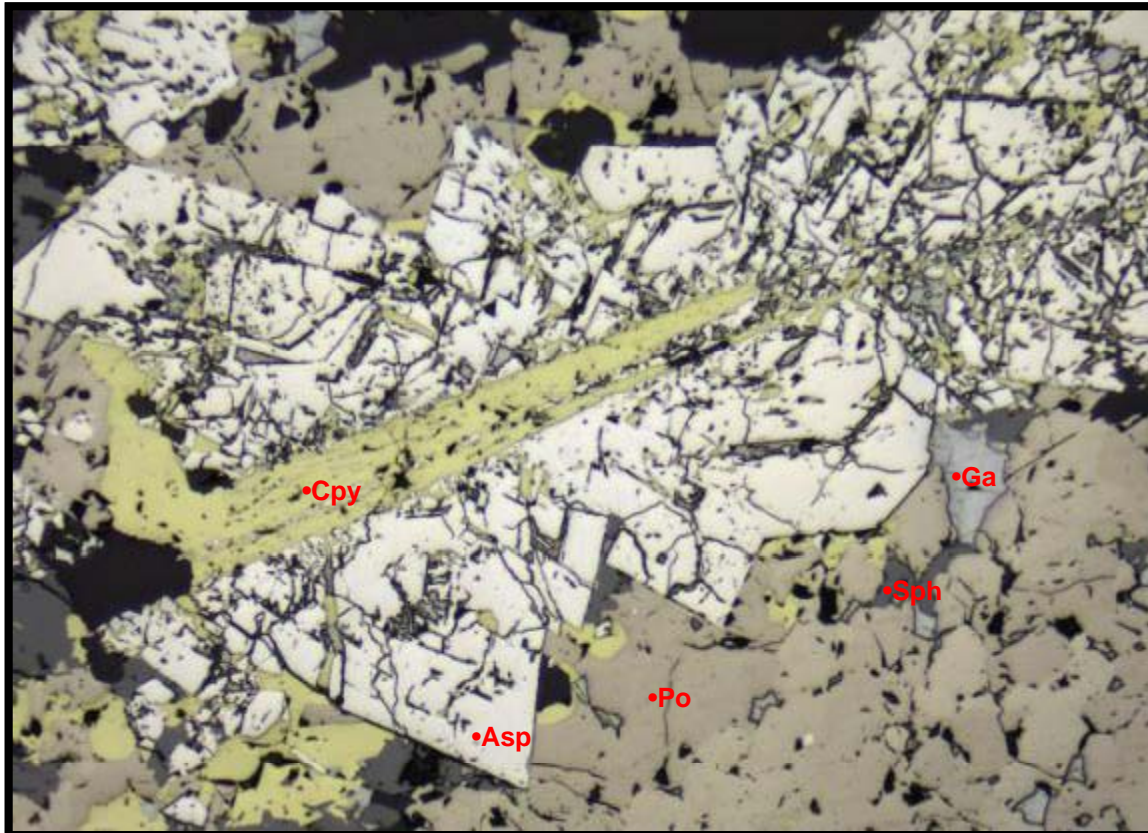
Metal inventory and ore textures at Mallee Bull



- Cu, Zn, Pb, Ag, As, Sb, Bi, Au and Co
- Ore mineralogy comprises chalcopyrite, pyrite, pyrrhotite, sphalerite, galena, arsenopyrite, tetrahedrite, boulangerite ($5\text{PbS}\cdot 2\text{Sb}_2\text{S}_3$) and Pb, Sb, Bi sulphosalts, very minor electrum
- Complex timing relationships with early (diagenetic) pyrite, later arsenopyrite, pyrrhotite and pyrite, then later base metal sulphides and sulphosalts
- There are multiple generations of pyrite and pyrrhotite
- Sphalerite and chalcopyrite show evidence of remobilisation



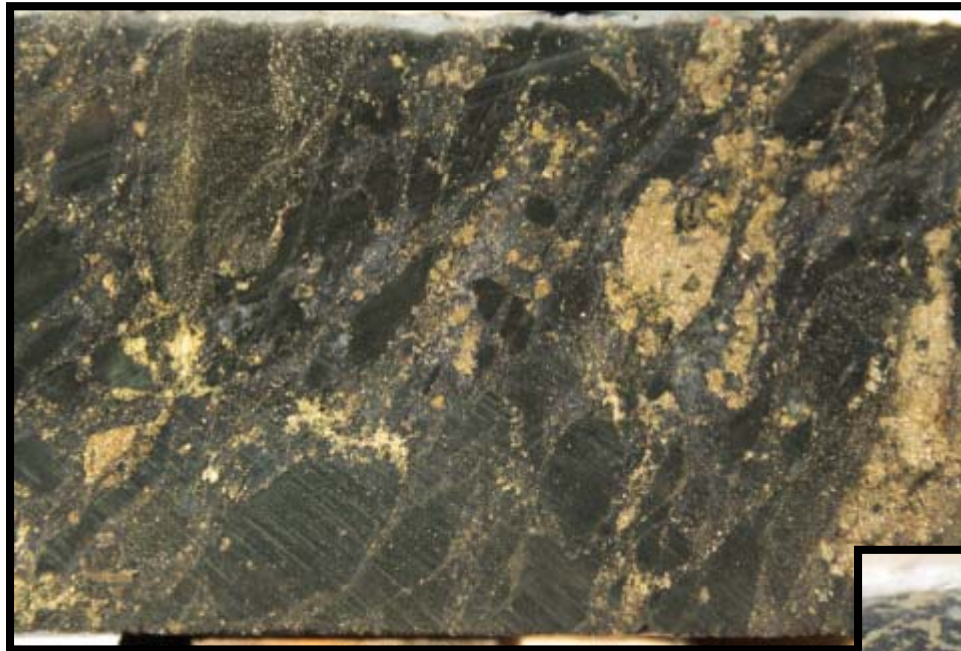
Mallee Bull mineralisation



- Early formed arsenopyrite, brittily deformed, overprinted and partially replaced by galena, chalcopyrite and pyrrhotite

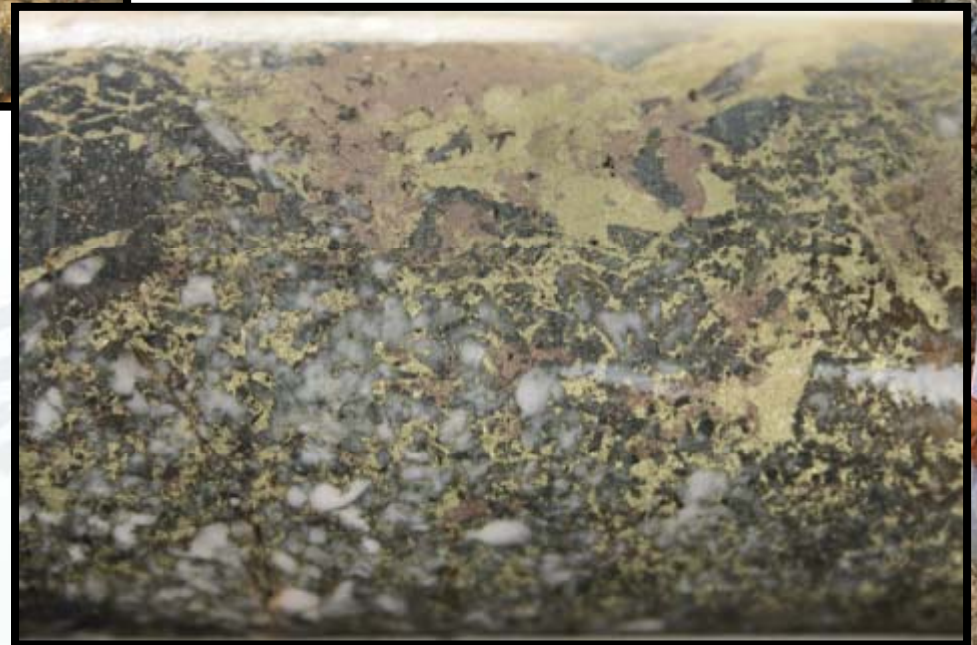


Ore textures



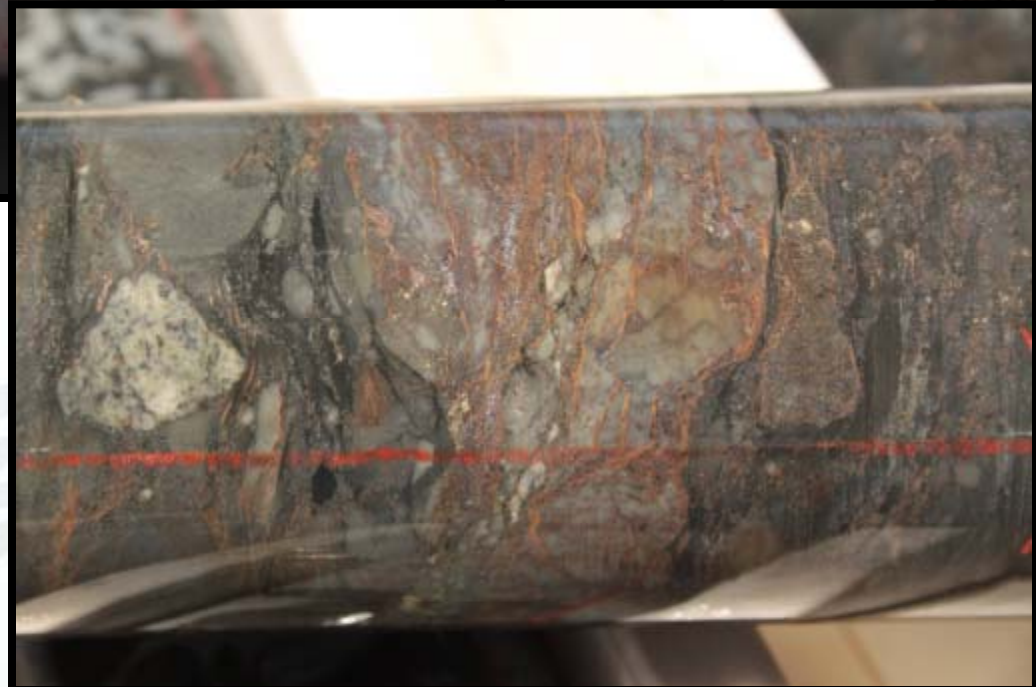
- Replacement textures, evidence of deformation of some sulphides
- Structural control along fractures and within veins

- Sulphides occupy matrix between more competent clasts
- Note distinct green chlorite alteration





- Section from the top of the 4 Mile facies, note volcanic clasts
- Silicification and black chlorite development



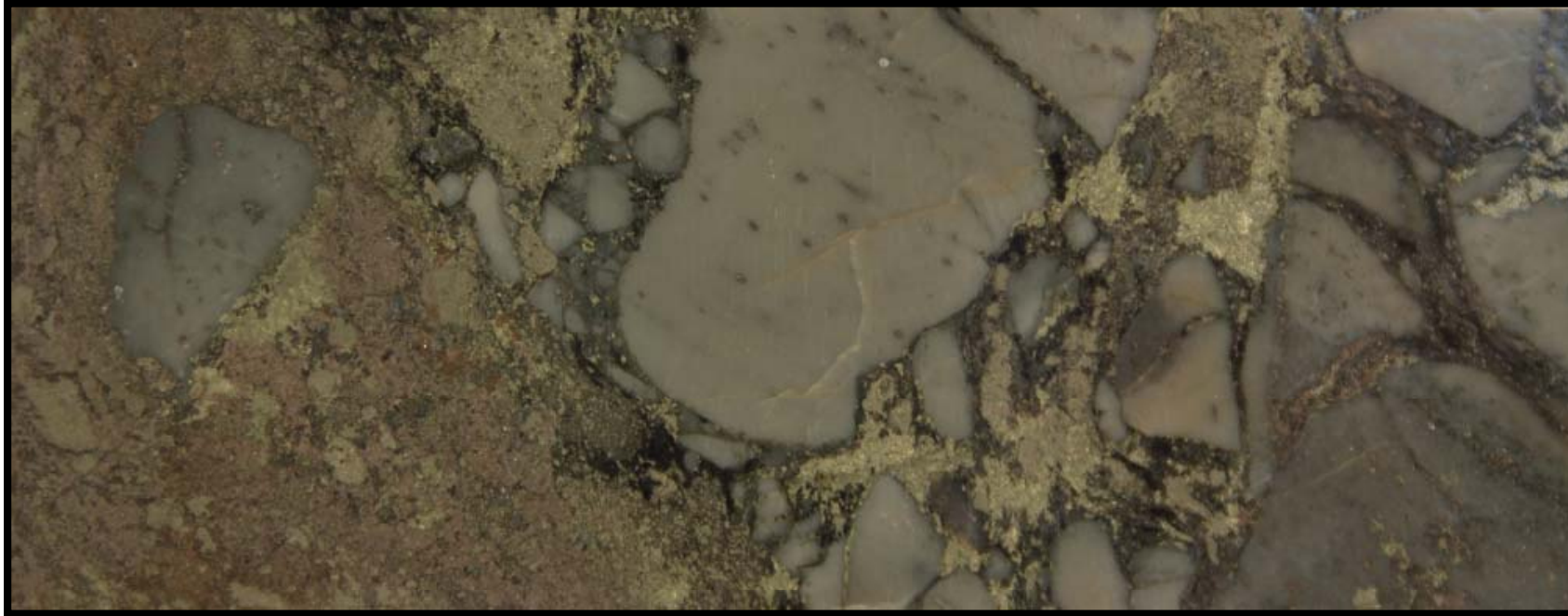
- Sphalerite and galena precipitating in favourable sites including in and around the margins of clasts

Ore textures



- Early pyrite (diagenetic) with later anastomosing bands of sphalerite, pyrrhotite, lesser pyrite, galena and rare arsenopyrite
- Dark chlorite altered mudstone host. Fragments are ripped up into the massive sulphide horizon

Ore textures



- “elvan” type alteration (cf CSA)
- Strongly siliceous clasts of mudstone.
- Matrix replacement by chalcopyrite, black chlorite, lesser pyrrhotite and sphalerite.
- Some clasts contain fine trails of sulphides or disseminated grains



Ore textures



- Early sulphide minerals are deformed or show evidence of textural modification
- Arsenopyrite grains are fractured and later infilled by sphalerite, pyrrhotite, galena and chalcopyrite
- Early pyrite grains are also fractured and heavily included
- Early pyrrhotite is completely recrystallised in some sections. In others it is a late mineral
- Galena grains are bent in some sections and show ductile deformation



Metal zonation



- Early days, but a vague metal zonation is evident downhole (ie vertically).
- The shallow intersections of sulphides are commonly pyrite-pyrrhotite, with minor sphalerite and galena. These are commonly massive and may exceed 2m in width
- Pyrrhotite is dominant downhole, pyrite is minor to absent at depth
- Downhole chalcopyrite is more abundant, with pyrrhotite and lesser pyrite, rarely massive, mostly in stringers and veins and fractures
- Arsenopyrite is a minor sulphide mineral throughout and unusually cited. It is more abundant in the lower mineralised zones
- Possible remobilisation of some sulphide minerals, in particular sphalerite and chalcopyrite, rarely galena



Hydrothermal alteration characteristics



- Characterised by locally intense chlorite alteration and silicification
- Green chlorite alteration of the hosting mudstones is intimately associated with sphalerite and chalcopyrite stringer zones
- Black chloritic alteration of the hosting sediments occurs in the uppermost sulphide zones with more abundant pyrite and pyrrhotite
- Carbonate veins are relatively early and typically recrystallised
- Gangue minerals proximal to sulphide horizons are coarser grained and commonly recrystallised (green chlorite and quartz, in particular)



Timing relationships - preliminary



- Metamorphic conditions attained greenschist facies. Peak biotite grains replaced by chlorite and stilpnomelane
- Early recrystallised carbonate veins have stilpnomelane selvages
- Metamorphic biotite possibly replaced by hydrothermal chlorite
- Sulphide formation is pre-syn deformation and possibly syn-post metamorphism (though overprinting by a later retrograde event is possible)
- Multiple generations of sulphide formation

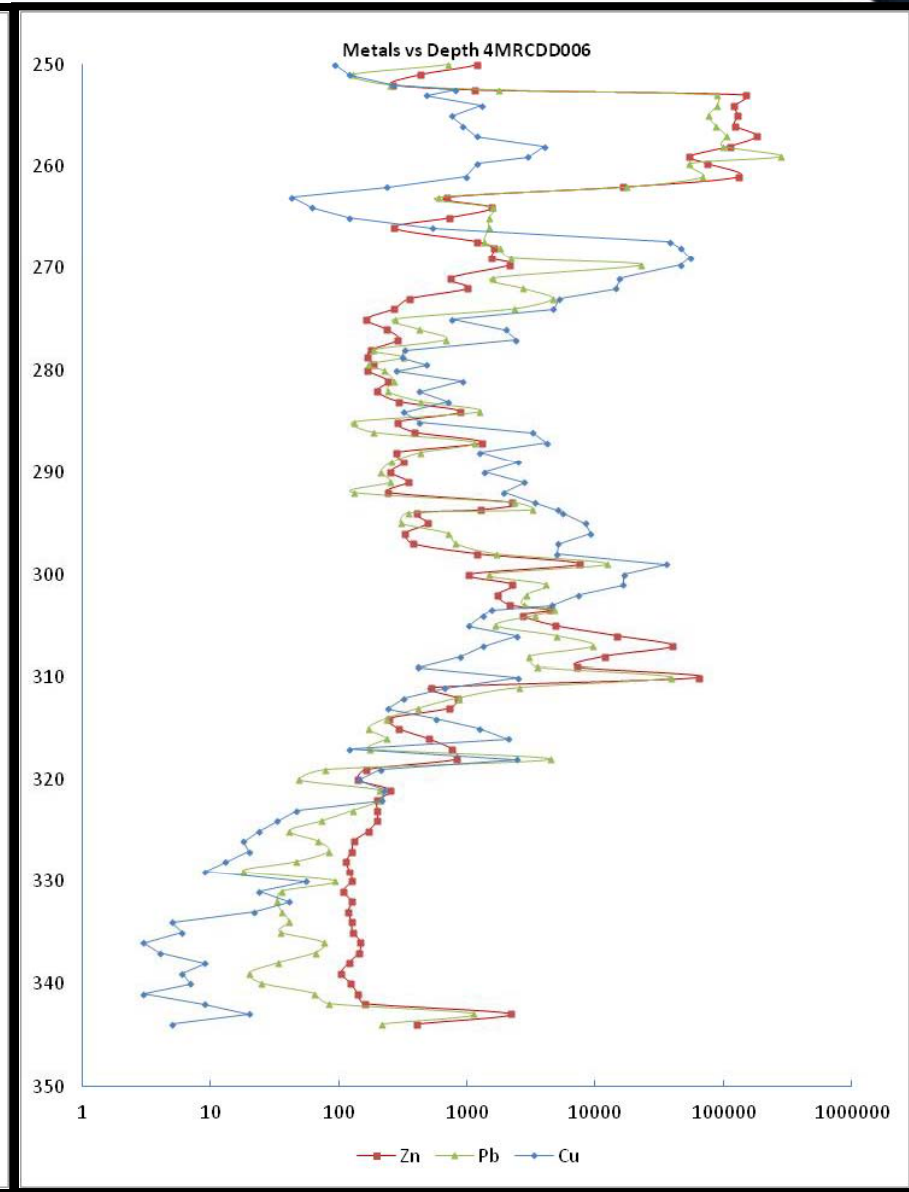
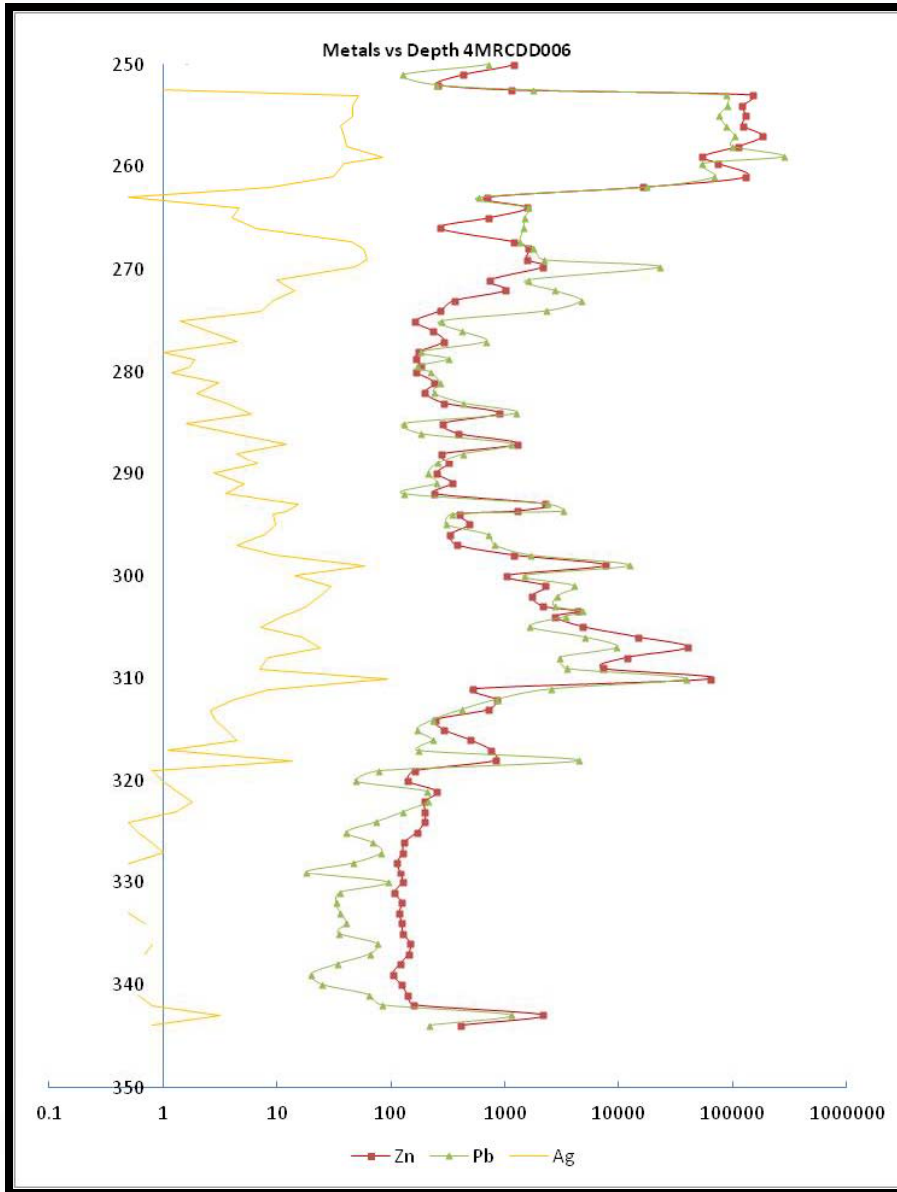




- Matrix correlations of key metals in selected drillhole intersections reveal the following:
 - *Overall poor correlation between most metals except Zn/Cd*
 - *Cu correlates moderately well (0.7-0.8) in some intersections with Bi, Co, Sb*
 - *Au/Ag generally well correlated, but not always*
 - *As does not correlate well, except with gold, rarely*
 - *Zn/Pb generally correlate well*
- This data indicates the involvement of multiple fluid stages plus the effects of local remobilisation (particularly of Zn and Cu)



Downhole geochemistry





- Mallee Bull Cu-Ag-Au-Pb-Zn-Co Discovery
 - 8km east of May Day Au-Ag-Pb-Zn-Cu deposit; adjacent to historic 4-Mile goldfield
 - Coincident EM and magnetic geophysical anomalies
 - Favourable geological position in volcanoclastic turbidite sequence age in the Lower Amphitheatre Group
 - Favourable structural position located on “nose” of anticline; high strain environment
 - Ease of access, 3 km off major road
 - Perseverance required; several rounds of drilling necessary
 - High-grade massive sulphides intercepted in July/August 2011
 - Complex multigeneration base metal deposit with significant Ag and Au
 - Mineralisation is pre-syn deformation and possibly metamorphism
 - Deposit located near the Nymagee-Wagga lineament
 - Similar to other Cobar-style deposits such as Chesney, CSA and Shuttleton
 - Early stages of exploration and drilling

