

## Summary

### Bottletree Copper Prospect (Greenvale)

- Results from BTDD011, BTDD012 and BTDD013 drilled during the 2023 drilling program, were reported on during the Quarter.
- 3D geological and mineralisation modelling.
- Conducting 3D inversion modelling of high-resolution ground gravity survey data.
- The Company was awarded a \$300,000 Collaborative Exploration Initiative (CEI) critical minerals grant for the drilling of two deep holes targeting a modelled porphyry core during the 2024 field season.

### Cockie Creek Porphyry Copper Prospect (Greenvale)

- Results from CCDD007, being the last hole drilled during the 2023 Cockie Creek Prospect drilling program was reported to the market.
- Highly positive results have been returned from each of the holes, including confirmation:
  - that Cockie Creek is a porphyry Cu-Au-Mo system that is potentially of Ordovician age, similar to the Macquarie Arc deposits in NSW;
  - that Cu mineralisation is developed over a significantly greater area than historically understood; and
  - the porphyry Cu mineralisation is of relatively high grade in porphyry deposit terms.
- Current Mineral Resource Estimate: **13MT @ 0.42% Cu** (0.25% Cu cut-off grade) (JORC 2004), based on strike length of 1.2kms and a maximum depth of 250m.
- Two large, intense IP chargeability targets at depth beneath the defined structurally controlled mineralisation corridor, remain to be investigate by drilling.

### Steam Engine Gold Project

- A Processing Options Study was progressed with independent consultants.
- Planning of Resource expansion and exploration drilling programs was conducted.

## Superior Resources Limited

### ASX:SPQ

### Board

Carlos Fernicola – Chairman  
Peter Hwang – Managing Director  
Simon Pooley – Non-Exec Director  
Carlos Fernicola – Company Secretary

### Securities

Ordinary Shares – 2,001,220,418  
Top 20 holders: 33% issued capital

### Summary

Superior Resources Limited is a Brisbane based ASX-listed mineral explorer with a portfolio of large copper exploration projects, including a developing portfolio of nickel-cobalt projects in northern Queensland. The projects also include large targets for Mount Isa style copper and lead-zinc-silver deposits and uranium deposits in northwestern Queensland and exploration projects in northeast Queensland for VMS and porphyry style copper-gold-silver-molybdenum deposits.

### Share Registry

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Brisbane, QLD, 4000

### Web Site

[www.superiorresources.com.au](http://www.superiorresources.com.au)

### Contact

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**PROJECT LOCATIONS**



Figure 1. Location map showing the Company’s current portfolio of projects.

**GREENVALE PROJECT**

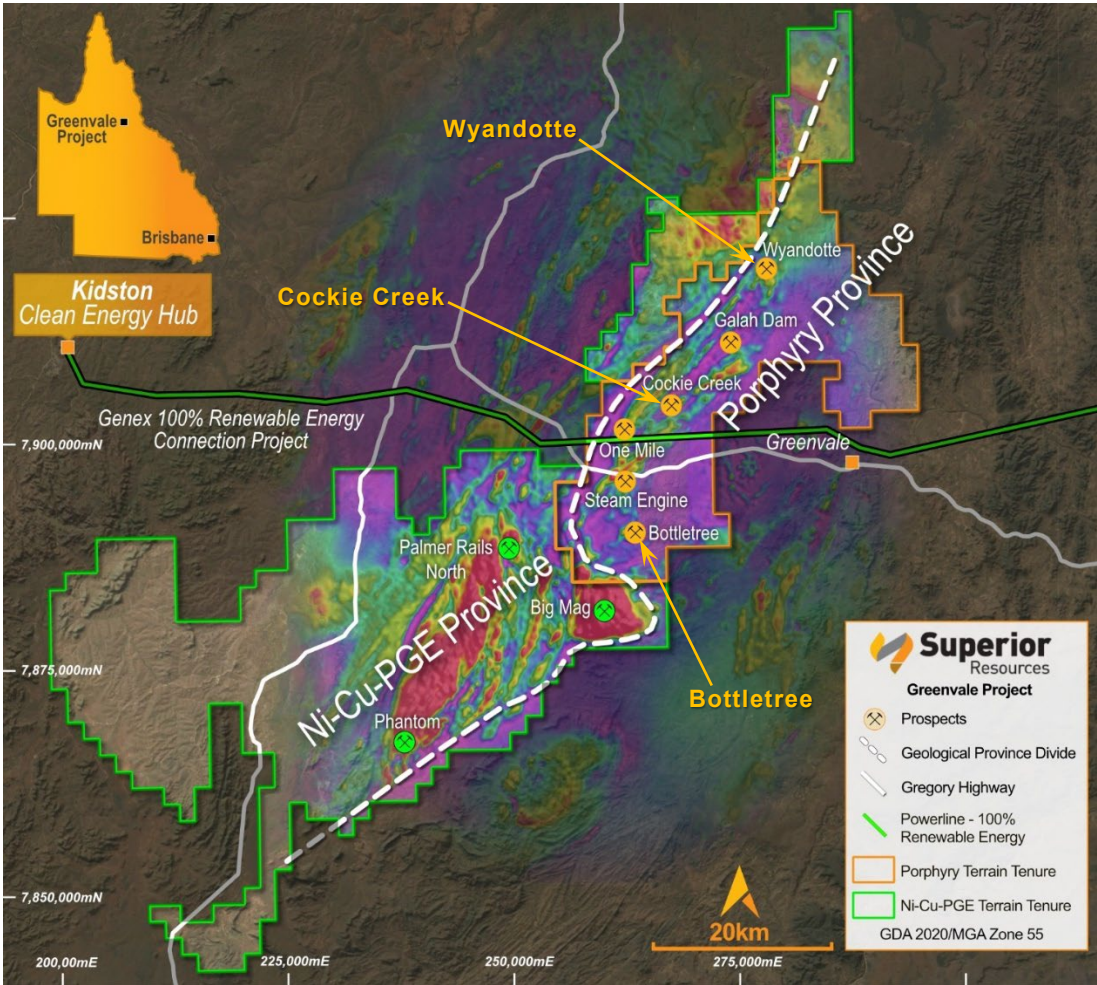


Figure 2. Regional aerial magnetics over the Greenvale Project area showing the newly recognised porphyry province (amber tenements) and the magmatic Ni-Cu-PGE sulphide province (green tenements). The approximate boundary between the two provinces is indicated by the white dashed line.

## **BOTTLETREE (PORPHYRY Cu-Au)**

### **SUMMARY OF ACTIVITIES**

- Exploration results for diamond drill holes **BTDD011**, **BTDD012** and **BTDD013** were reported together during the Quarter (refer ASX announcement, 23 April 2024). These holes were completed at the end of the 2023 field season. Group reporting of the holes was appropriate as they comprise a coordinated program of exploration drilling designed to better understand the 3D geometry of the copper mineralisation associated with the Discovery Outcrop zone in the northeastern part of the prospect.
- The 2023 drilling program was designed to address the following objectives:
  1. **Investigate the extent of wall rock porphyry mineralisation associated with the Discovery Outcrop;** and
  2. **Target a high priority interpreted porphyry core intrusion.**

A total of ten holes were planned based on the above objectives. The planned holes were expected to be drilled during the 2023 and 2024 seasons. Due to insufficient time prior to the onset of the northern monsoon, holes targeting the high priority interpreted porphyry core were not drilled during the 2023 program.

- Results from the 2023 drill holes enabled the development of a new 3D geological and mineralisation model. **The new model confirmed the continuity of mineralisation within a broad zone associated with the Discovery Outcrop gossan. Mineralisation** within this zone has been identified in **BTDD011** and **BTDD012**:
  - **from surface, down to 850m down-dip;**
  - **as approximately 250m in thickness;** and
  - **at least 250m in strike length.** The strike extent of the zone is less well constrained. The Discovery Outcrop gossan has been mapped on surface over a strike length of about 700m.
- **BTDD013** intersected a very broad zone of weak Cu mineralisation with weak to moderate biotite and actinolite alteration (calcic-potassic) and late chlorite-epidote ± carbonate alteration several hundred metres to the southwest of all previous drilling. **BTDD013 is interpreted to have intersected the outer propylitic halo of a porphyry system located to the southwest of BTDD013.**
- **Veins typically associated with porphyry Cu-Au deposits (“A” and “D” veins) are recognised in Bottletree drill core.** These include wormy quartz veins with diffuse vein margins that are similar to porphyry “A veins”, and abundant narrow sulphide veins and veinlets that are analogous to late stage “D veins” in porphyry deposits.
- **The Bottletree system is considered to have formed from relatively reduced magmatic-hydrothermal fluids associated with a reduced I-type volcanic arc magma** (pyrrhotite-bearing and general absence of primary anhydrite, gypsum, and hematite) and is classified as a ‘**reduced porphyry system**’ (as opposed to an ‘oxidised porphyry’).

- **BTDD011 includes:**
  - **463m @ 0.15% Cu, 0.02g/t Au and 9ppm Mo** from 22m
    - incl. **394m @ 0.17% Cu, 0.02g/t Au and 10ppm Mo** from 55m
    - incl. **264m @ 0.20% Cu, 0.02g/t Au and 13ppm Mo** from 126m
    - incl. **40m @ 0.30% Cu, 0.04g/t Au and 5ppm Mo** from 127m
    - incl. **57m @ 0.29% Cu, 0.04g/t Au and 28ppm Mo** from 221m
    - incl. **51m @ 0.28% Cu, 0.03g/t Au and 9ppm Mo** from 339m
- **BTDD012 includes:**
  - **433m @ 0.13% Cu, 0.01g/t Au and 2ppm Mo** from 5m
    - incl. **360m @ 0.15% Cu, 0.01g/t Au and 2ppm Mo** from 77m
    - incl. **32m @ 0.20% Cu, 0.03g/t Au and 2ppm Mo** from 108m
    - incl. **166m @ 0.19% Cu, 0.02 g/t Au and 3ppm Mo** from 201m
    - incl. **36m @ 0.27% Cu, 0.03g/t Au and 1ppm Mo** from 201m
    - incl. **33m @ 0.30% Cu, 0.02g/t Au and 3ppm Mo** from 292m
    - incl. **23m @ 0.36% Cu, 0.03g/t Au and 3ppm Mo** from 302m
- **BTDD013 includes:**
  - **34m @ 0.05% Cu, 0.01g/t Au and 85ppm Mo** from 0m
  - **18m @ 0.05% Cu and 9ppm Mo** from 87m
  - **332m @ 0.06% Cu, 0.01g/t Au and 31ppm Mo** from 194m
    - incl. **31m @ 0.10% Cu, 0.01g/t Au and 8ppm Mo** from 402m
    - incl. **11m @ 0.11% Cu, 0.02g/t Au and 5ppm Mo** from 513m
- **(Earlier Hole) Significant Cu intercepts within the Discovery Outcrop Zone:**  
**BTDD004** (refer ASX announcement, 2 June 2022):
  - **632m @ 0.21% Cu, 0.03g/t Au and 18ppm Mo** from 5m
    - incl. **224m @ 0.40% Cu, 0.05g/t Au and 9.5ppm Mo** from 242m
    - incl. **103m @ 0.53% Cu, 0.05g/t Au and 3.3ppm Mo** from 363m
    - incl. **1m @ 5.25% Cu, 0.31g/t Au and 1.5ppm Mo** from 363m
    - incl. **12m @ 1.01% Cu, 0.07g/t Au and 1.9ppm Mo** from 363m
    - incl. **15m @ 1.19% Cu, 0.15g/t Au and 1.9ppm Mo** from 451m
    - incl. **3m @ 1.12% Cu, 0.14g/t Au and 2.1ppm Mo** from 631m
- **(Earlier Hole) Significant Mo intercepts within the Discovery Outcrop Zone:**  
**BTDD010** (refer ASX announcement, 12 April 2023):
  - **73m @ 0.01% Cu, 0.01g/t Au and 1229.5ppm Mo** from 465m
    - incl. **14m @ 0.02% Cu, 0.01g/t Au and 6000ppm Mo** from 465m
    - incl. **6m @ 0.02% Cu, 0.02g/t Au and 13900.3ppm Mo** from 470m
  - **384m @ 0.21% Cu, 0.08g/t Au, 0.01g/t Au and 33.2ppm Mo** from 676m
    - incl. **99m @ 0.04% Cu, 0.01g/t Au and 121.1ppm Mo** from 650m
    - incl. **12m @ 0.06% Cu, 0.02g/t Au and 662ppm Mo** from 680m

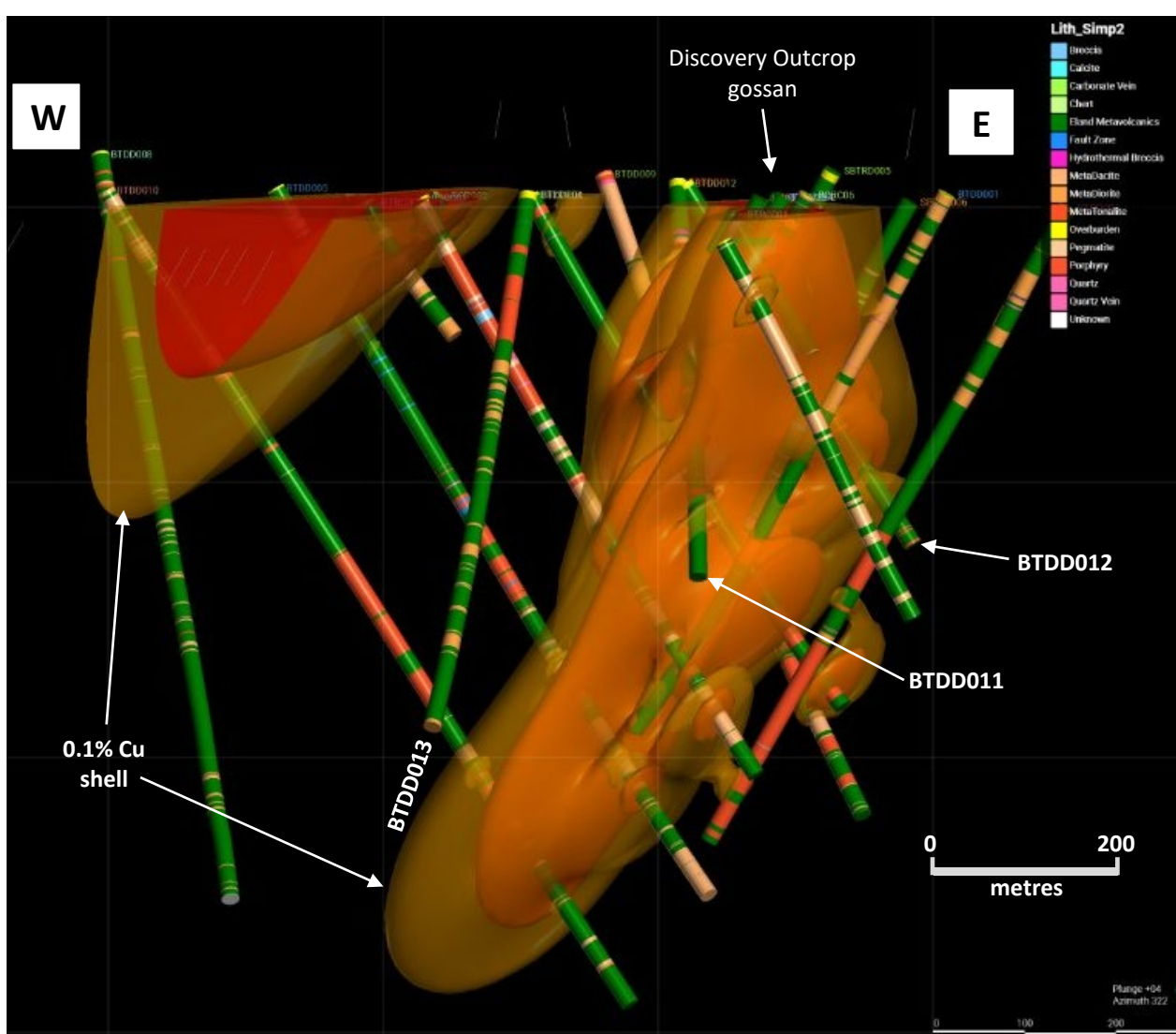


## BTDD011, BTDD012 AND BTDD013 – SUMMARY

### CONTINUITY TESTING

The primary purpose of the 2023 holes was to determine the continuity of mineralisation between earlier drill holes in the Discovery Outcrop zone. Specifically, holes **BTDD011** and **BTDD013** were drilled perpendicular or SSE (138° and 155°, respectively) to the ENE azimuth of earlier diamond drill holes and the local foliation that hosts most of the Cu-Au-Mo mineralisation. In contrast, hole **BTDD012** was drilled ENE (59°) to assess a 70m gap in drill hole coverage between holes **BTDD004** and **SBTRD006**.

3D modelling of mineralisation, alteration and structural observations from all of the holes drilled to date has enabled the development of a better constrained mineralisation model for the mineralisation associated with the Discovery Outcrop zone (**Fig. 3**).

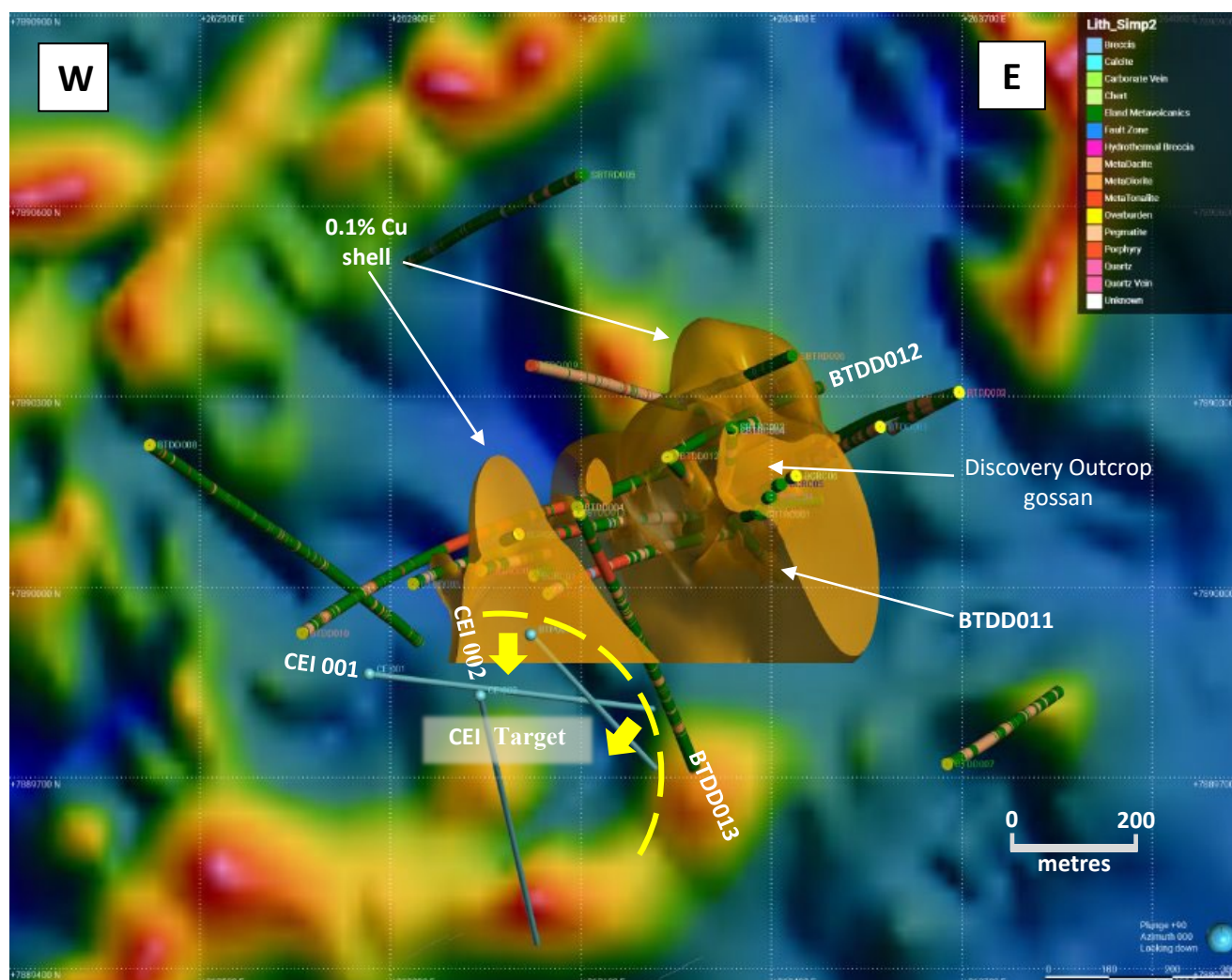


**Figure 3.** Cross section view of 3D model of copper mineralisation associated with the “Discovery Outcrop” zone at the Bottletree porphyry Cu-Au prospect showing the 0.1% Cu and higher grade iso-surfaces (shells), 2023 drill hole traces with logged lithology.

## TOWARDS A PORPHYRY CORE: BTDD013

Drill hole **BTDD013** intersected a very broad zone of weak Cu mineralisation with weak to moderate biotite and actinolite alteration (calcic-potassic) and late chlorite-epidote ± carbonate alteration several hundred metres to the southwest of all previous drilling. This weakly mineralised zone may represent the outer propylitic alteration halo of the porphyry system associated with the Discovery Outcrop zone or possibly the outer propylitic halo of another porphyry system located to the southwest based on aeromagnetic imagery and Cu and Mo-in soil data (**Fig. 4**).

Information from drill hole **BTDD013** together with the new 3D modelling has aided in the modelling of exploration vectors for the Bottletree porphyry system. The interpreted porphyry system in the southwest will be tested by two deep diamond drill holes as part of a successful Collaborative Exploration Initiative (CEI) critical minerals grant to Superior (see announcement, 8 April 2024) (**Fig. 4**).



**Figure 4.** Plan view of 3D model of copper mineralisation associated with the “Discovery Outcrop” zone at the Bottletree porphyry Cu-Au prospect showing the modelled potential porphyry intrusion target (labelled “CEI Target”) and the planned CEI program drill holes (CEI 001 and CEI 002). 0.1% Cu iso-surfaces (shells) and 2023 drill hole traces with logged lithology are also shown.

## 2023 PROGRAM OBJECTIVES

The three drill holes completed in the 2023 program specifically addressed the following two objectives:

- **Delineate extent of wall rock porphyry mineralisation at the Discovery Outcrop zone**

Based on 2022 drill holes, the wall rock porphyry zone extends from surface to at least 850m down dip depth, with a thickness of at least 250m. The strike extent of this zone has not yet been determined and remains open along strike and at depth.

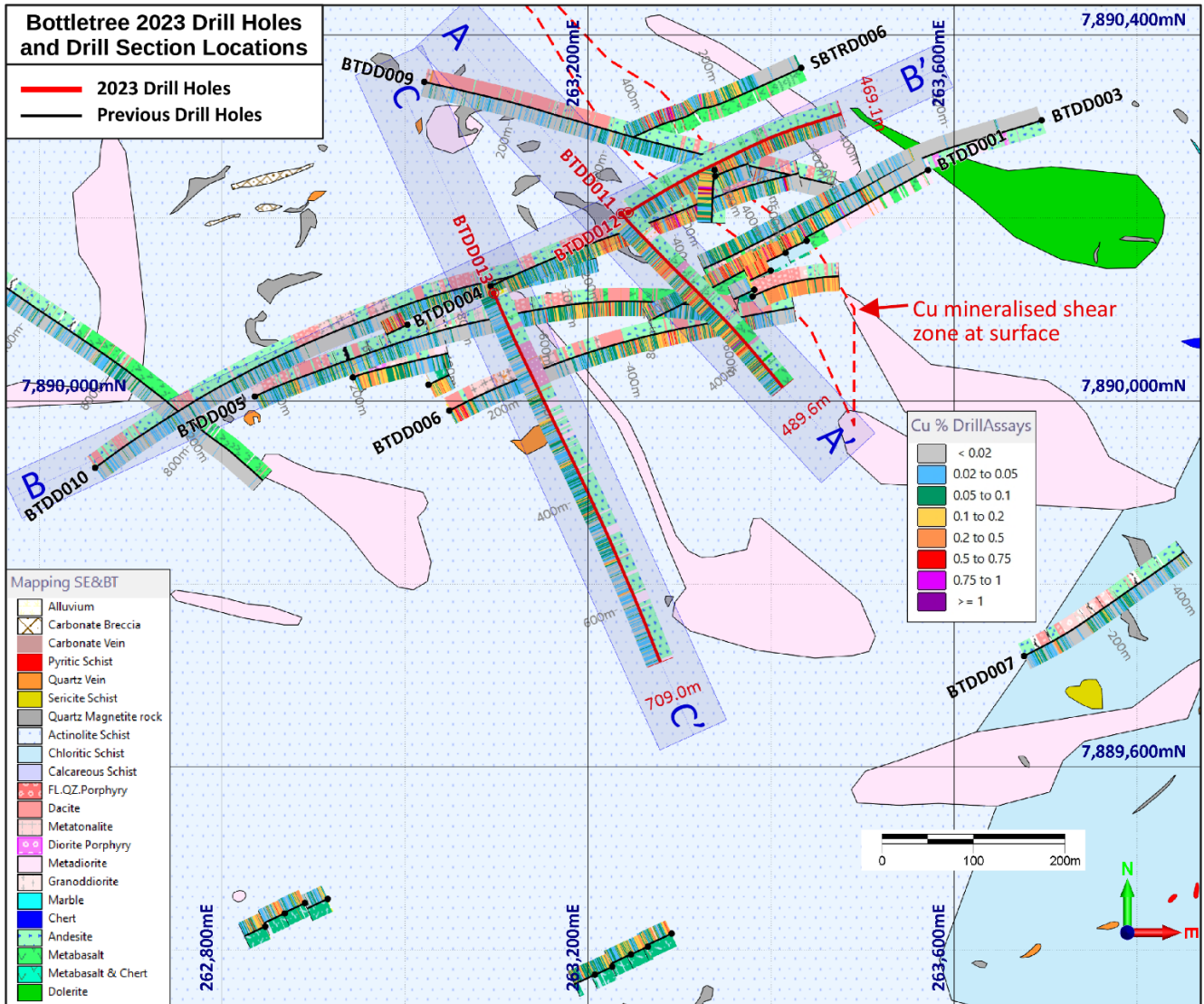
Target “gaps” or areas lacking drill coverage in zones of best developed Cu mineralisation in the northeastern part of the prospect area. Drill hole **BTDD012** covered the intervening gap between **SBTRD006** and **BTDD004**, whereas **BTDD011** was drilled perpendicular to the ENE trend of the main Cu-mineralised zone and local foliations to assess cross-strike continuity of mineralisation (**Fig. 5**); and

- **Target a high priority interpreted potassic porphyry core**

This objective was partially tested by **BTDD013**. This hole was drilled SSE (155°) to a depth of 709 metres and tested the edge of an interpreted potassic porphyry core. Its location was derived primarily from alteration vectoring using drill core and Cu- and Mo-in-soil anomalies.

The 2024 drill program at Bottletree will include two deep CEI-funded diamond drill holes that will target a large untested area located approximately 400 metres to the southwest of all prior drilling conducted between 2021 to 2023 (**Fig. 4**). The new target is characterised by a large magnetic low, a large, multiphase, non-magnetic, ilmenite-bearing, reduced I-type granite interpreted as a possible source of the extensive Cu-Au-Mo mineralisation at the Bottletree prospect.



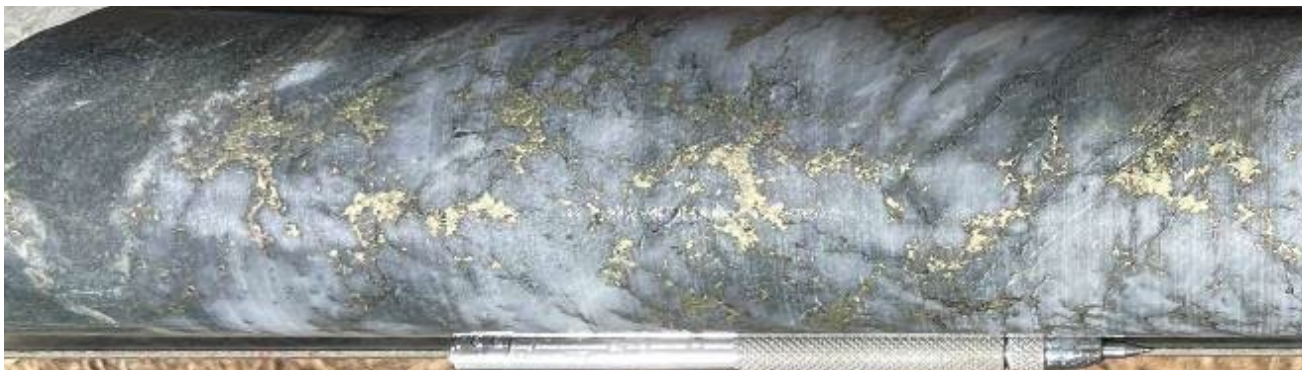


**Figure 5.** Plan geological map of the Bottletree Prospect showing 2023 drill holes (in red) from the current program with new assay data (BTDD011, BTDD012, and BTDD013 labelled in red) and lithologies from core logging. Drill holes from the 2022 program shown as black lines with black labels. Down-hole copper assay values (1m intervals) are represented as grade categories.

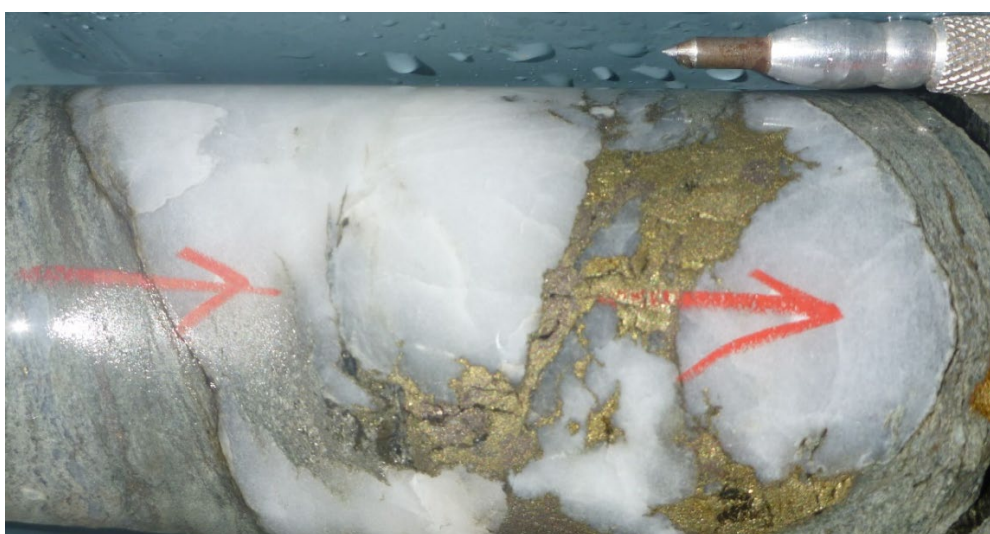


**Figure 6.** Core from BTDD011 (225.5m). Example of the two major types of hydrothermal alteration at Bottletree. Core sample consists of a moderately foliated meta-andesite with strong brown biotite (potassic) and later dark green actinolite (calcic) stages of alteration. Brassy yellow chalcopyrite is preferentially associated with biotite in this zone of "calcic-potassic" alteration. Alteration is preferentially focussed along pre-existing foliations.





**Figure 7.** Core from BTDD011 (277.4m) with a 20 cm wide quartz-chalcopyrite-pyrrhotite-molybdenite vein in strongly foliated and altered meta-andesite. The milky white quartz has been fractured and recrystallised with late sulphides infilling fractures. The vein is surrounded by an intense quartz-sericite alteration selvage consisting of greyish white quartz and pale greenish grey sericite.



**Figure 8.** Core from BTDD012 (422.2m) with a 10 cm wide quartz-chalcopyrite-pyrrhotite-pyrite vein in strongly foliated and altered meta-andesite. The milky white quartz has been fractured and recrystallised with late sulphides infilling the fractures. The vein is surrounded by an intense quartz-sericite alteration selvage consisting of greyish white quartz and pale green sericite.

## COCKIE CREEK (PORPHYRY Cu-Au)

### SUMMARY OF ACTIVITIES

- Exploration results for diamond drill hole **CCDD007** (last hole drilled during 2023 Cockie Creek maiden drilling program) were reported (refer ASX announcement, 29 January 2024).
- **CCDD007** delivered the **broadest width of porphyry copper and gold mineralisation** to date in the western part of the **Cockie Creek Prospect**.
- Maiden drilling program reveals a continuous zone of **copper and gold mineralisation** extending **from surface to a vertical depth of at least 450m in the western zone**.
- New assay results from **CCDD007** and **CCDD003** reveal that the zone of Cu-Au mineralisation widens significantly in the western part of the historical Mineral Resource. Increasing width of the mineralised zone and its development in the footwall meta-andesites indicates a deepening of the mineralising system. **This is consistent with approaching a cupola or “top” of a mineralised porphyry intrusion**.
- **CCDD007 includes:**
  - **320m @ 0.21% Cu, 0.05g/t Au and 31ppm Mo** from 176m
    - incl. **271m @ 0.24% Cu, 0.05g/t Au and 36ppm Mo** from 225m
    - incl. **171m @ 0.32% Cu, 0.07g/t Au and 40ppm Mo** from 225m
    - incl. **69m @ 0.52% Cu, 0.10 g/t Au and 69ppm Mo** from 225m
    - incl. **23m @ 0.70% Cu, 0.12g/t Au and 68ppm Mo** from 265m
    - incl. **13m @ 0.89% Cu, 0.13g/t Au and 79ppm Mo** from 265m
- The broad interval of porphyry copper and gold mineralisation in CCDD007 is approximately three times the length of the mineralised intervals in CCDD001, CCDD002, CCDD004 and CCDD006 in the eastern zone, although it has an overall lower average grade.
- **Sulphide mineral assemblages, alteration styles, mineralisation grades and the presence of porphyry “B veins” and abundant late-stage “D veins” at Cockie Creek are all features typical of porphyry Cu-Au-Mo deposits.**
- **Results from CCDD007 increase the potential for the discovery of a large porphyry Cu-Au-Mo mineralisation system.**

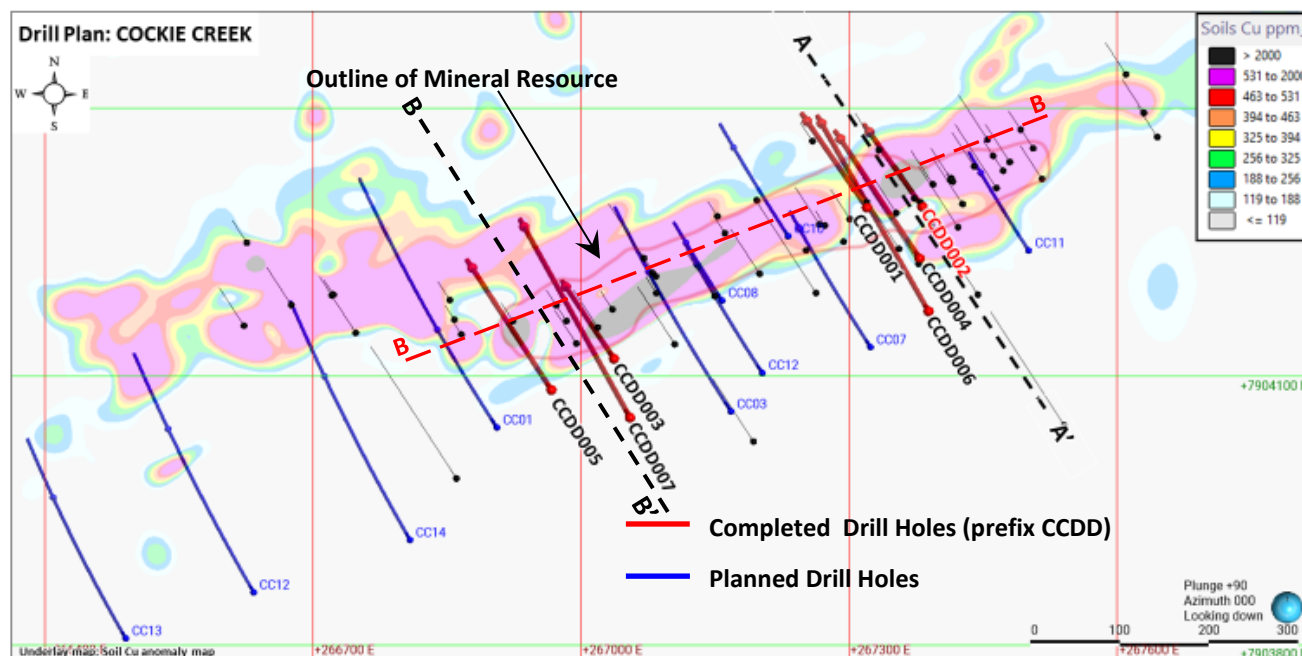
The 2023 program represents the first systematic drilling at Cockie Creek for over thirty years and the first to target the prospect as a porphyry system. The program objectives were to:

- target two high order induced polarisation (IP) chargeability anomalies directly below the Discovery Outcrop. The chargeability anomalies are interpreted to represent the upper zones of a mineralised Cu-Au-Mo porphyry core;
- target interpreted large intrusion centres west of the Discovery Outcrop; and
- establish a JORC (2012)-compliant upgraded Mineral Resource Estimate on the Discovery Outcrop.

Completed drilling to date comprises seven holes for a total of 2,773 metres of core.

## 2023 MAIDEN DRILLING PROGRAM

Drilling commenced on the eastern end of the historical copper zone in early July 2023. A total of 2,773m for seven HQ diamond drill holes (CCDD001 – CCDD007) cored from surface were completed in the maiden program (Figs. 9 to 11).



**Figure 9.** Plan map of the Cockie Creek Discovery Outcrop area showing completed drill holes CCDD001 – CCDD007 (in black), planned but not yet drilled holes (in blue) and historic drill holes (in grey) over gridded Cu soil geochemistry. CCDD002 is labelled in red. Outline of Mineral Resource at surface and cross section A-A' are shown.

## OBSERVATIONS ON GEOLOGY, ALTERATION AND MINERALISATION

Each of the holes drilled to date have intersected a range of porphyritic intrusive rocks, which include quartz diorites, diorites and tonalites. These units have intruded several metavolcanic units.

Medium to coarse grained quartz diorite intrusions have, so far, been identified as the predominant intrusive unit that is mineralised with chalcopyrite. Consistently, this unit has been subjected to biotite and K-feldspar alteration, which is **typical of porphyry-style potassic alteration (Figs. 12 to 14)**.

Copper mineralisation also appears associated with the tonalite and diorite, although to a lesser degree.

**The mineralisation is predominantly disseminated and focussed along strong foliation structures**, although some mineralisation appears to be remobilised out of **quartz vein structures that are possible typical porphyry B-veins**. These are evident within the quartz diorite units.

Other minor styles of mineralisation include fracture fill in brittle deformed quartz veins and vugs in quartz diorites (Fig. 13).



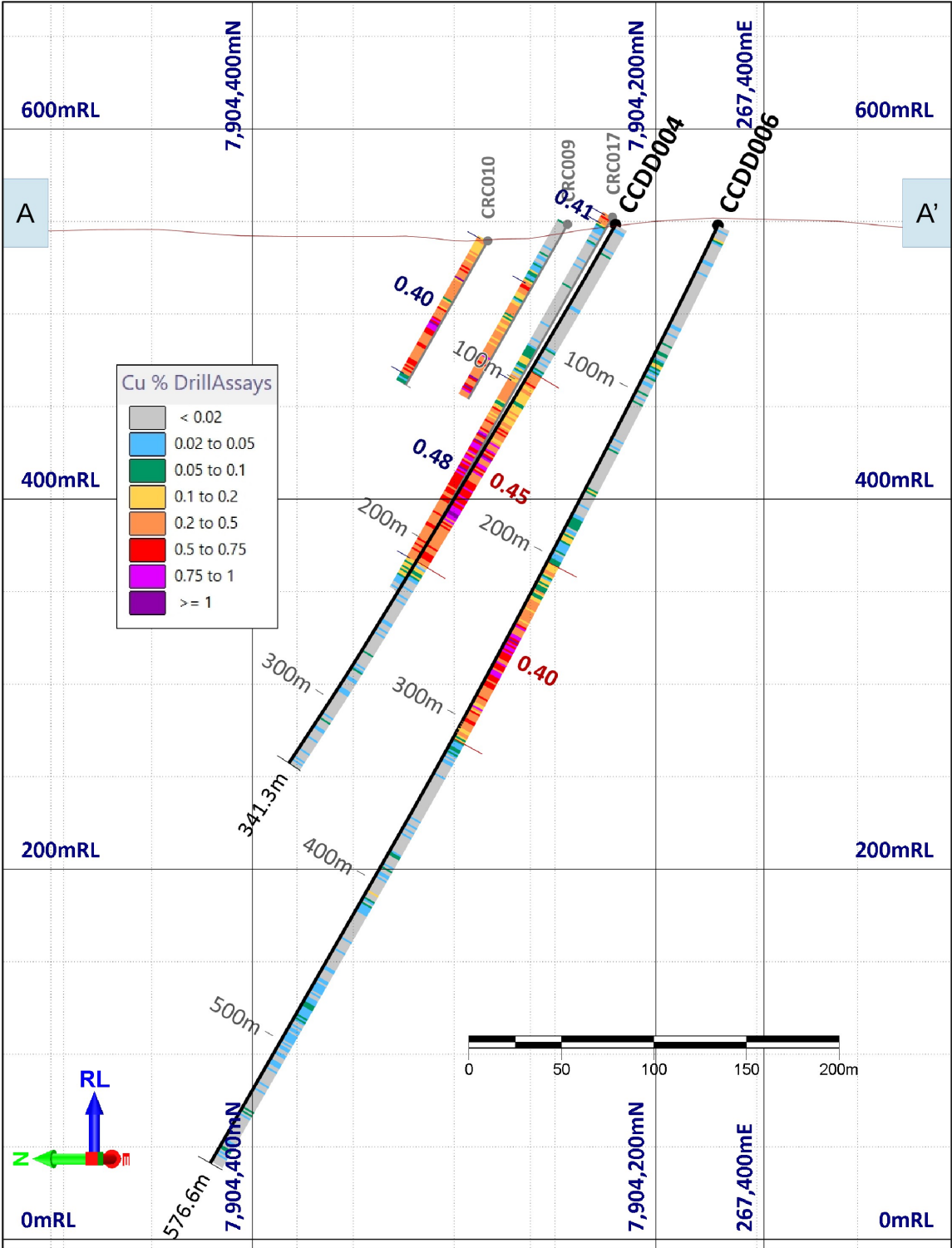


Figure 10. Cross-section (+/- 15m) taken along A-A' (as shown in Figure 7) looking east-northeast showing CCDD004 and CCDD006 plus historic CRC017 (twinned with CCDD004) and proximal historic drill holes CRC009 and CRC010. Down-hole copper assay values (1m intervals) are represented as grade categories (refer ASX announcement 11 December 2023).

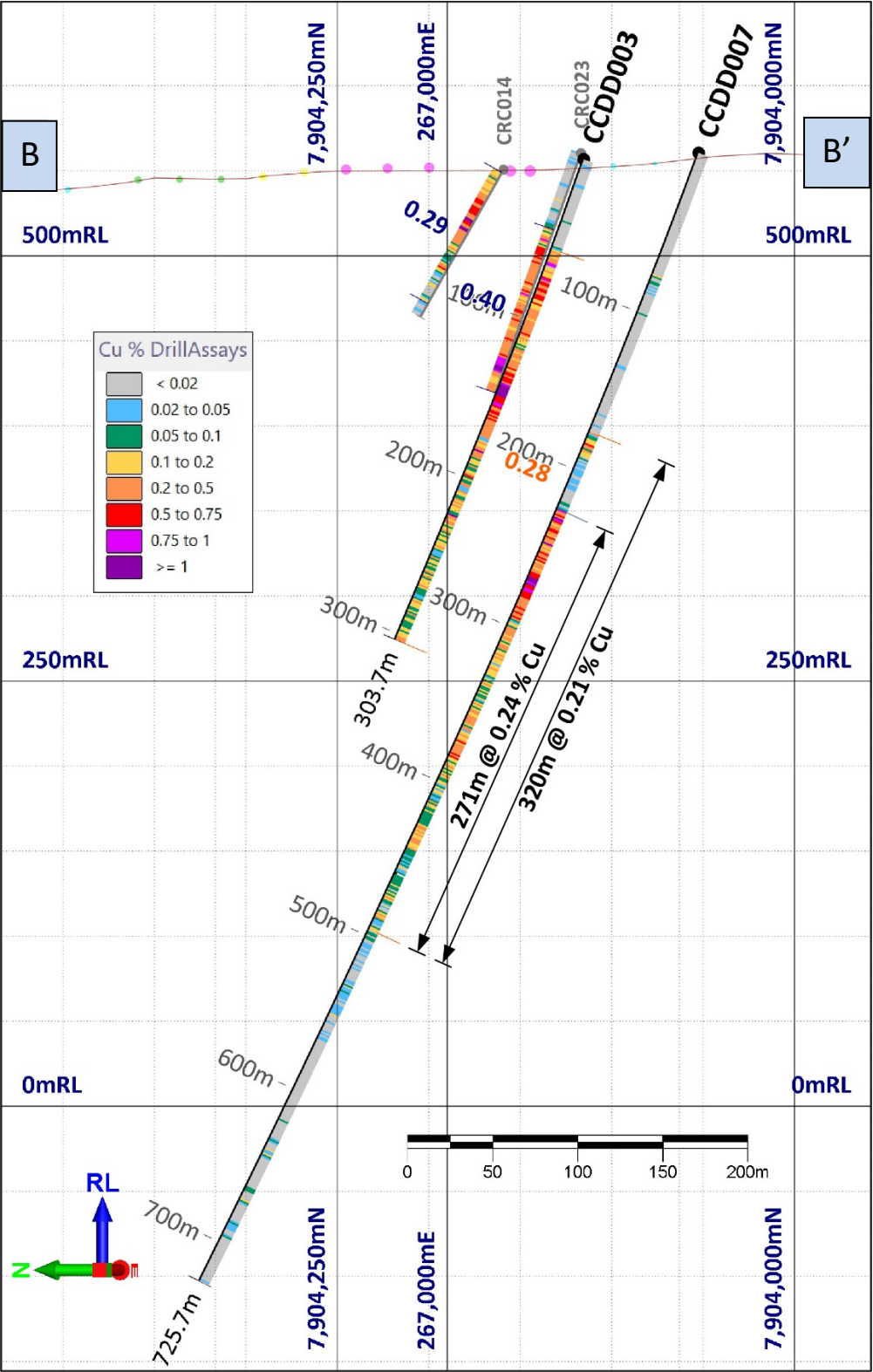
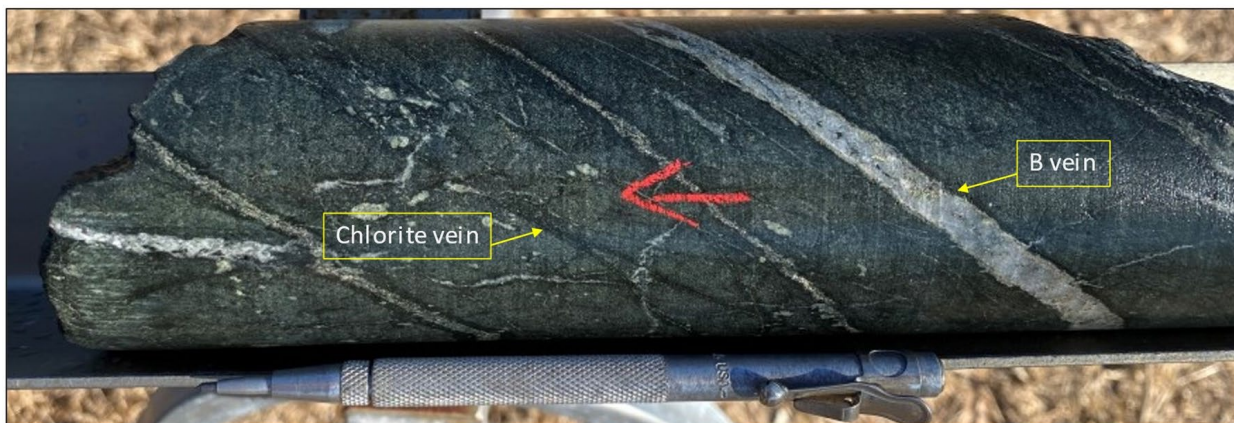
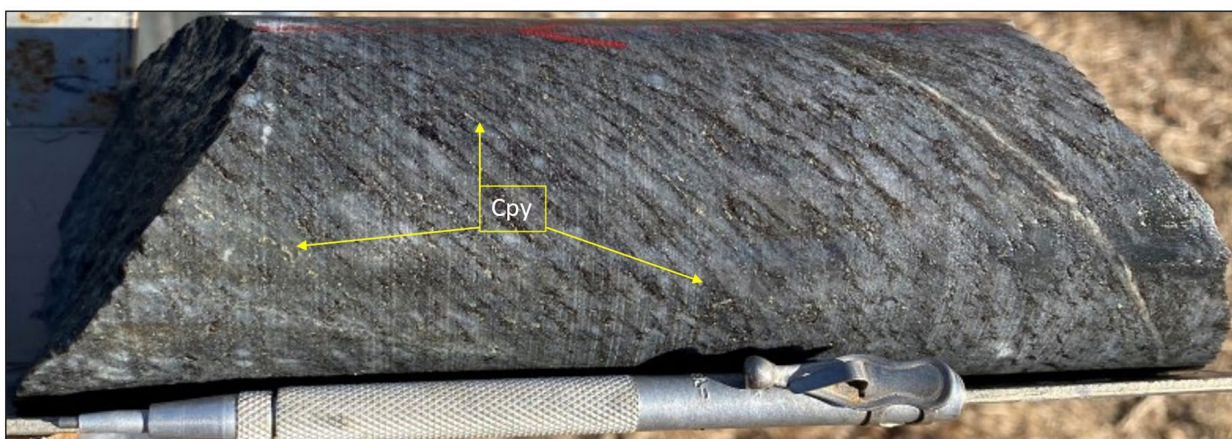


Figure 11. Cross-section (+/- 20m) taken along B-B' (as shown in Figure 7) looking east-northeast showing CCDD007 and CCDD003 and historic CRC023 (twinning by CCDD003), and proximal historic drill hole CRC014. Down-hole copper assay values (1m intervals) are represented as grade categories (refer ASX announcement, 29 January 2024).

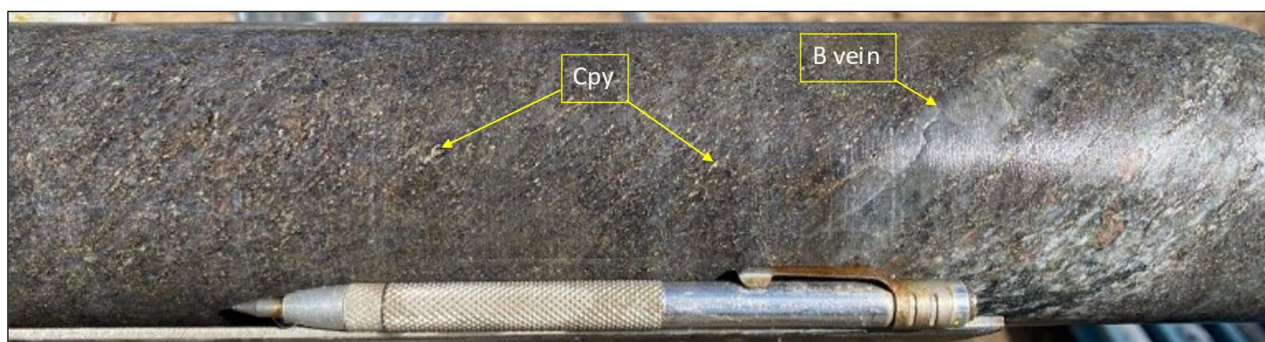




**Figure 12.** Core from CCDD001 (30.25m) showing meta-andesite unit with a porphyry B vein containing quartz, pyrite and chalcopyrite. Fine chlorite veining with patches of epidote alteration also present.

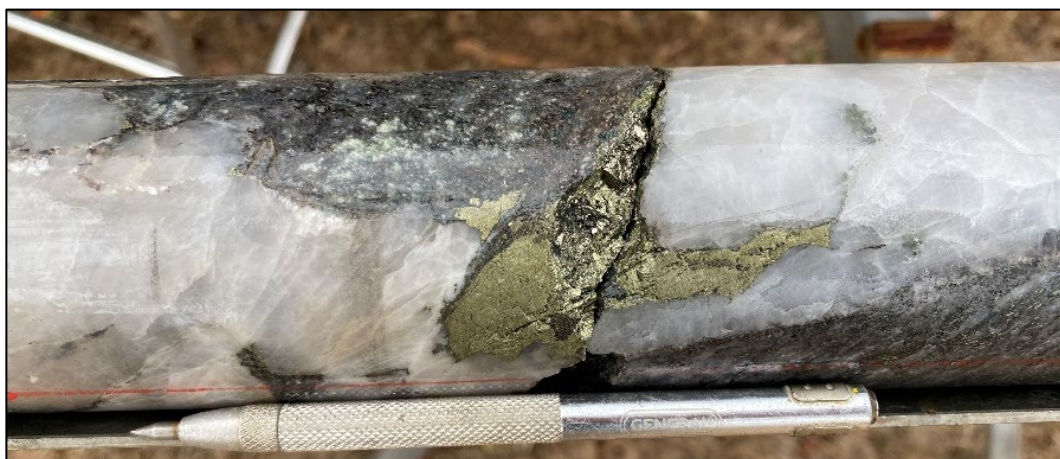


**Figure 13.** Core from CCDD001 (36.2m) showing quartz diorite unit with disseminated pyrite and chalcopyrite mineralisation (0.71% Cu) developed within strong foliation. Alteration includes minor chlorite and K-feldspar.



**Figure 14.** Core from CCDD001 (60m) showing quartz diorite unit with porphyry style B vein and disseminated chalcopyrite and minor pyrite mineralisation (0.57% Cu) within strong foliation. Mineralisation is associated with K-feldspar alteration.





**Figure 15.** Quartz diorite hosting a massive quartz vein with chalcopyrite and pyrite mineralisation, with biotite and minor chlorite and epidote alteration also present (CCDD001, 67m).

### MINERALISATION AND IMPLICATIONS ON COCKIE CREEK PORPHYRY GENESIS

Chalcopyrite mineralisation is predominantly confined within a strong foliation fabric developed within the porphyry intrusions and wall rock meta-andesite and related volcanic rocks. It is associated with pyrite, pyrrhotite and minor molybdenite.

The reduced nature of the sulphide mineral assemblage (pyrrhotite-bearing) and associated hydrothermal alteration (absence of primary anhydrite, gypsum, and hematite) in both intrusions and meta-andesite and related meta-volcanic wall rocks is consistent with Cockie Creek forming from relatively reduced hydrothermal fluids from a reduced I-type arc magma with a weak magnetic character underlying the prospect.

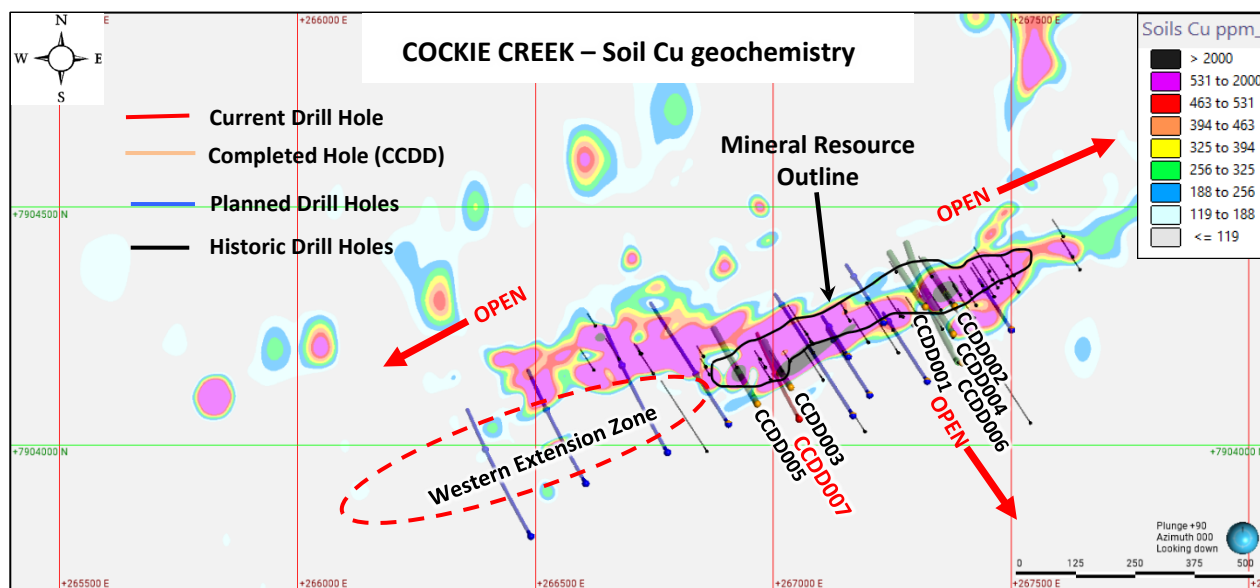
The weak magnetic character of reduced I-type arc magmas is due to the predominance of primary, non-magnetic ilmenite over magnetite in contrast to oxidized I-type arc magmas. Consequently, the large magnetic low associated with the interpreted intrusive complex within which Cockie Creek is located (refer **Fig. 17**) is entirely consistent with a reduced porphyry model. The Bottletree porphyry prospect is also located within a magnetic feature or domain that lacks rocks of high magnetic character.

### WESTERN EXTENSION AREA

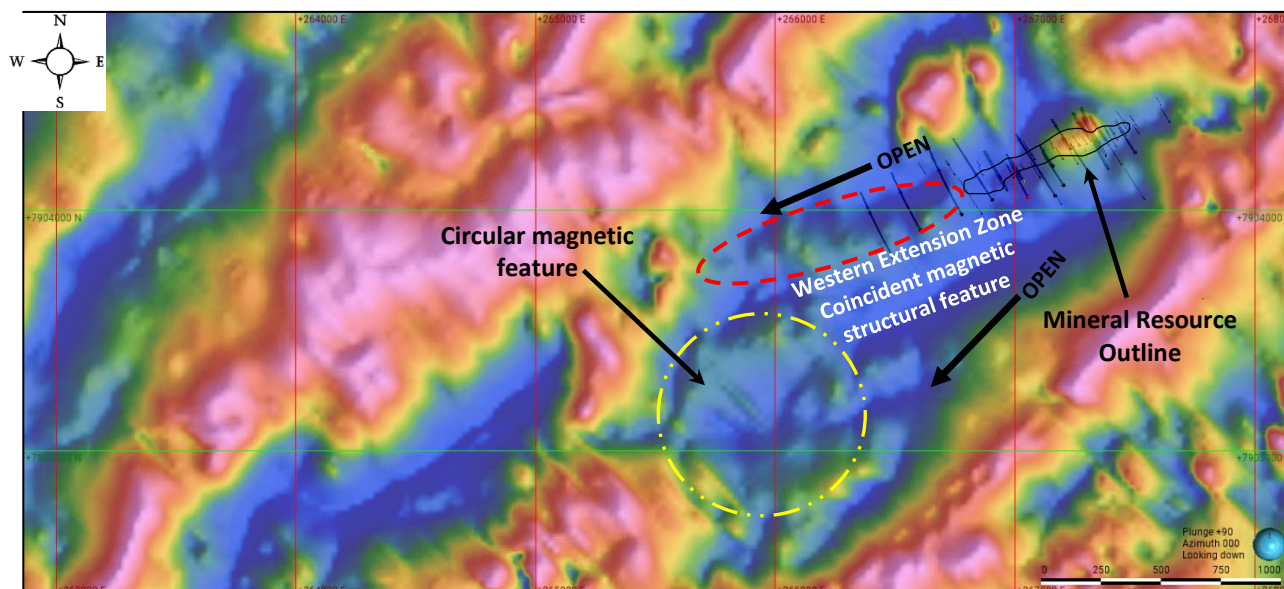
Analysis of core from the current drilling together with the geological and geophysical data has identified significant potential for the continuation of the main copper-mineralised zone westwards from the historical Mineral Resource. The continuation of the main copper zone (and consequently, the Mineral Resource) westwards, is evidenced in one western-most historical drill hole that intersected significant mineralisation at depth and strike of (but outside) the Mineral Resource. The mineralisation in this historical hole does not appear to reach the surface (i.e., a blind zone) and does not show a surface soil geochemistry expression (**Fig. 16**). In addition, aerial magnetic data clearly highlights a continuation of the same structure on which the main copper zone is developed. The Western Extension Zone continues for at least one kilometre and lies adjacent and to the north of a large circular magnetic feature (**Fig. 17**).

3D modelling of IP chargeability data shows substantial broadening of a large high chargeability zone at the western end of the historical Mineral Resource (Fig. 18). The limits of the IP survey prematurely terminates the high chargeability zone at the western and eastern ends of the prospect area. A large-scale modern IP survey is being planned for the Cockie Creek prospect area and surrounds to cover most of the interpreted intrusive complex.

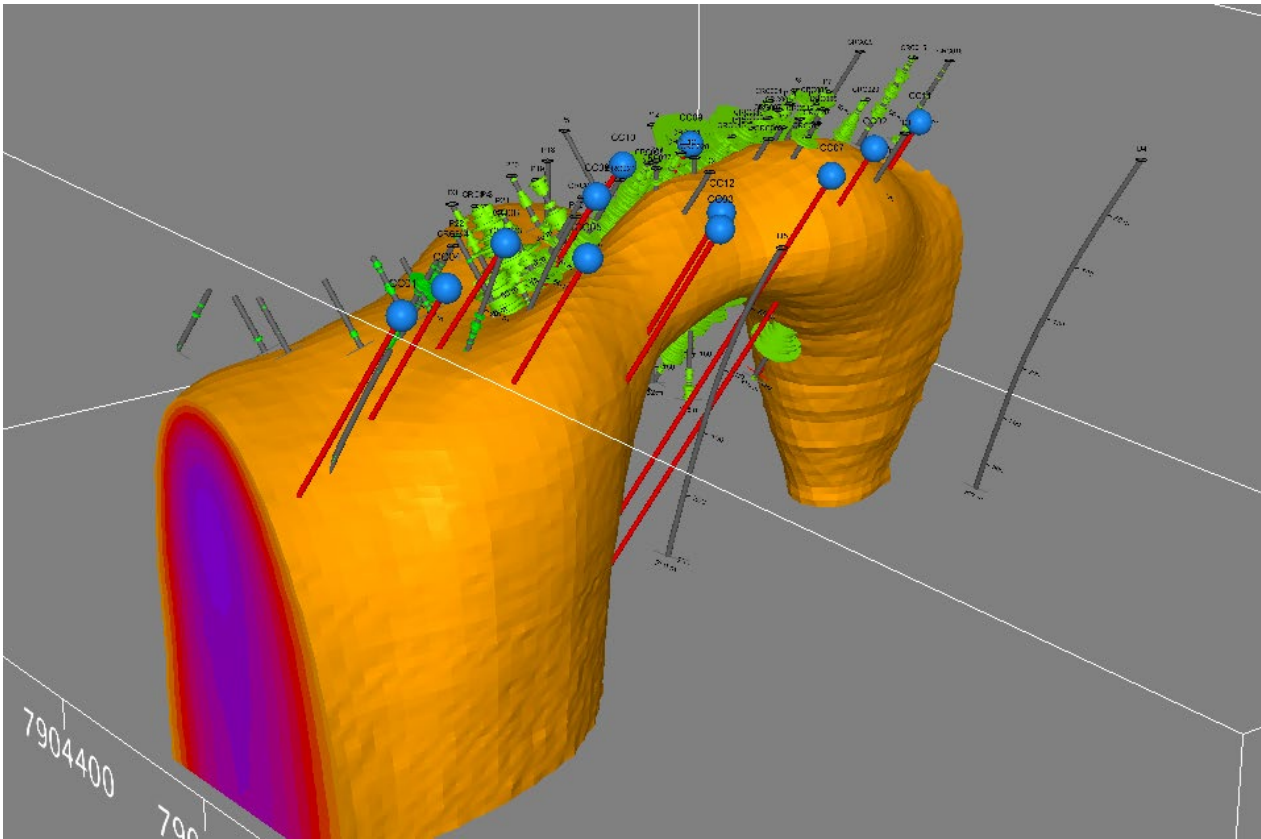
The mineralisation at Cockie Creek remains open in all directions and is surrounded by several significant magnetic features, potentially representing one or more mineralised Cu-Au porphyry system cores.



**Figure 16.** Gridded soil Cu geochemistry of the Cockie Creek area showing the Western Extension Zone, outline of historical Mineral Resource and current program drill holes.



**Figure 17.** Aerial magnetic image (RTP) of the Cockie Creek regional area showing the outline of the historical Mineral Resource and the Western Extension Zone (red polygon) as supported by a linear series of magnetic features. A prominent large circular magnetic feature is located south of the Western Extension Zone (yellow circle).



**Figure 18.** 3D IP chargeability model showing moderate to high chargeability zone. Historical drill holes (grey traces) and copper mineralisation (green) with 2023 planned drill holes in red. Viewed looking northeast.



## STEAM ENGINE GOLD PROJECT

The Company continues to evaluate the potential to realise revenue generation as presented by the Steam Engine Mineral Resource Estimate, which is currently up to **196,000 oz Au @ 1.5 g/t Au (Table 2)**<sup>1</sup> (Figs. 19 and 20).

**Table 2. Steam Engine Gold Project updated JORC, 2012 Mineral Resource Estimates**

Model	Classification	Tonnes	Grade (g/t Au)	Ounces (Au)
<b>OWNER OPERATOR MODEL</b> (0.25 g/t Au block grade cut-off)	MEASURED	800,000	2.1	53,000
	INDICATED	1,420,000	1.5	68,000
	INFERRED	1,960,000	1.2	75,000
<b>TOTAL</b>		<b>4,180,000</b>	<b>1.5</b>	<b>196,000</b>
<b>TOLL TREATMENT MODEL</b> (1.0 g/t Au block grade cut-off)	MEASURED	590,000	2.6	49,000
	INDICATED	1,020,000	1.9	62,000
	INFERRED	1,110,000	1.7	60,000
<b>TOTAL</b>		<b>2,720,000</b>	<b>2.0</b>	<b>171,000</b>

During 2022, the Company was conducting a pre-feasibility study process on the basis of a haulage and toll treatment operation. However, as a result of fluctuating cost base assumptions at the time, the study was put on hold. After further strategic review, METS Engineering Group Pty Ltd was engaged during mid-2023 to undertake a **Process Options Study**.

The objective of the Process Options Study is to compare the available options for gold recovery processing methods for the Steam Engine Project. The processing options considered to be potentially applicable are:

1. Toll milling;
2. CIP plant on site;
3. Vat leach on site;
4. Float a concentrate to ship off site;
5. In situ leaching; and
6. Beneficiate the ore and ship off site.

Aspects of the study will be reported on shortly.

<sup>1</sup> Refer ASX announcement dated 11 April 2022

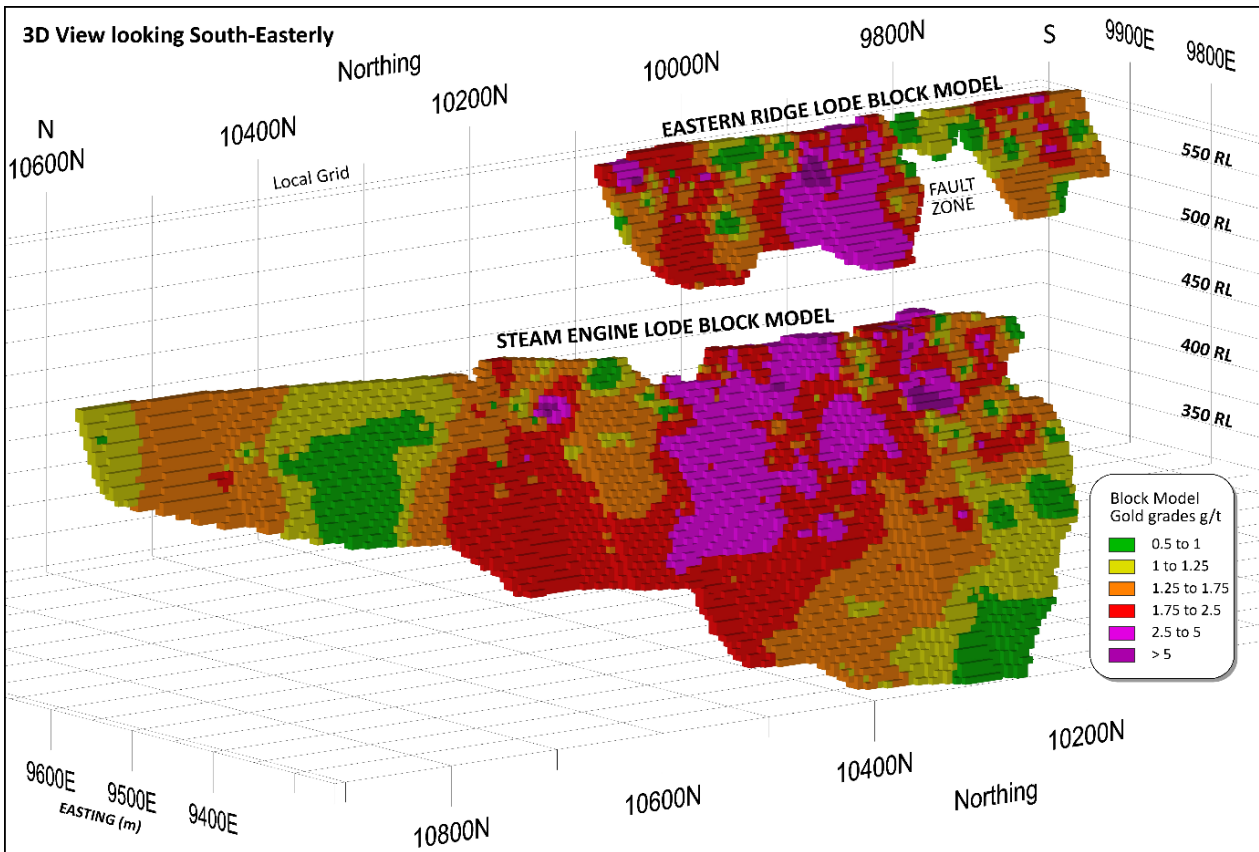


Figure 19. Oblique 3D view (from above GL) of the Steam Engine and Eastern Ridge lode high-grade block models (1.0 g/t Au cut-off) viewed towards grid south easterly showing block grade categories.

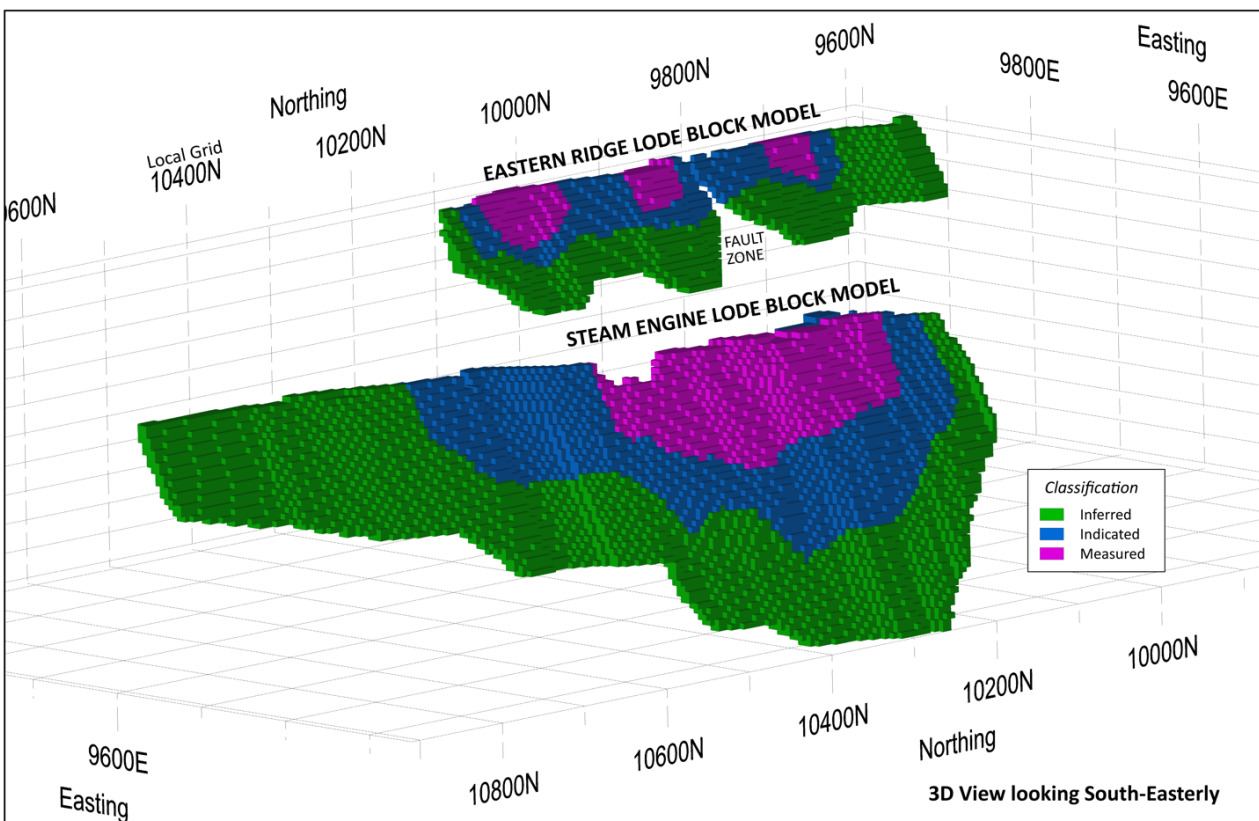
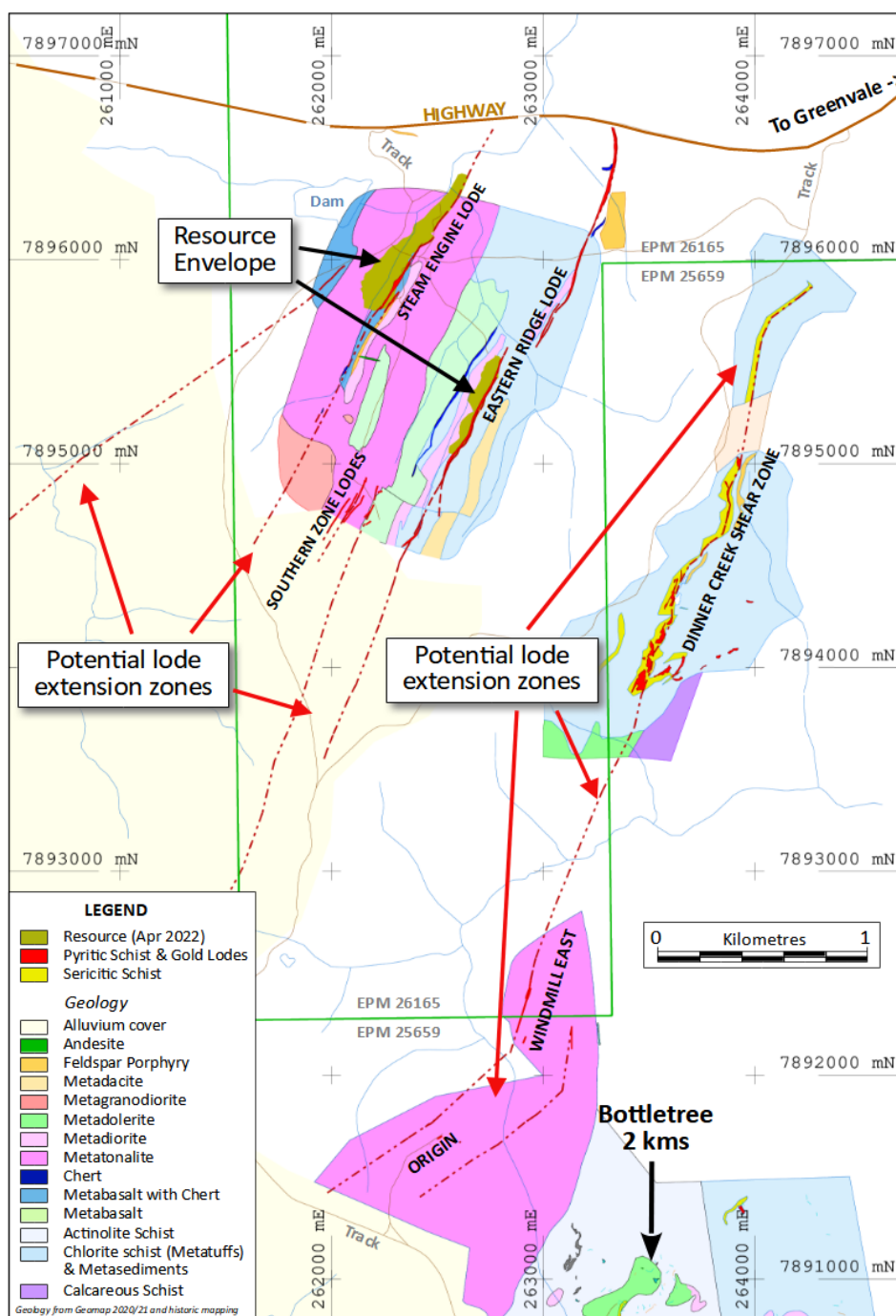


Figure 20. Oblique 3D view (from above GL) of the Steam Engine and Eastern Ridge lode high-grade block models (1.0 g/t Au cut-off) looking towards grid south easterly showing JORC, 2012 Measured, Indicated and Inferred confidence categories.

## POTENTIAL TO INCREASE TOTAL MINERAL RESOURCES

The Company considers that considerable potential exists at Steam Engine to rapidly increase the total gold Resource inventory from the Steam Engine and Eastern Ridge Lodes as well as the yet to be tested lode structures (Figs. 21 and 22).

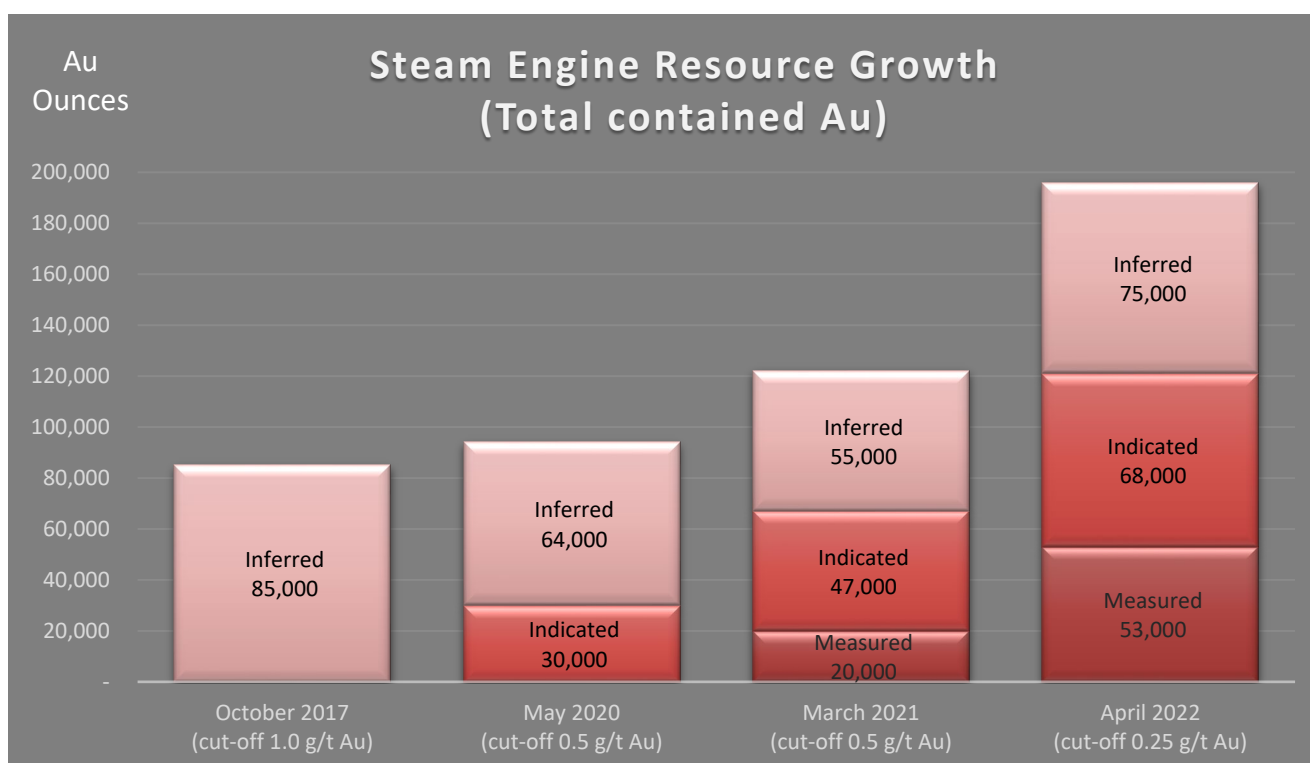
The current Mineral Resource envelope is only developed to shallow depths (average vertical depth of less than 100 metres) and along 1.3 kms of total lode strike length. A total of at least 14 kms of additional lode potential along the known lode structures has been identified by recent studies<sup>2</sup>.



**Figure 21.** Geology plan showing outcropping gold lodes, Steam Engine and Eastern Ridge Resource envelopes (green polygons) and lode extension corridors as supported by soil geochemistry, historic workings or outcropping lodes.

<sup>2</sup> Refer ASX announcement dated 11 April 2022





**Figure 22.** Chart showing growth of total contained Au metal from a series of Resource Estimations modelled on the Steam Engine Gold Project.

## CORPORATE AND COMMERCIAL

### Investments

Superior maintains an exposure in relation to ASX listed entity, Deep Yellow Limited (ASX:DYL).

As at 31 March 2024, the Company held 74,244 DYL shares with a closing value of \$99,115.74.

### Related Party Matters

Payments to Directors of the Company and related parties during the December 2023 Quarter totalled \$142,608.

### ASX Listing Rule 5.3.3

Appendix 1 sets out information that is required under ASX Listing Rule 5.3.3 (for exploration entities).

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Managing Director

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**Reporting of Results:** *The Exploration Results, Mineral Resource Estimations and exploration interpretations contained in this report reflect information that has been reported in ASX market announcements as noted within this report.*

*Information in this report that relates to the Bottletree Project were originally announced on the ASX Market Announcements Platform on 2 June 2022, 12 April 2023, 28 April 2023 and 23 April 2024.*

*Information in this report that relates to the Cockie Creek Copper Project were originally announced to the ASX Market Announcements Platform on 25 September 2023, 16 October 2023, 6 November 2023, 11 December 2023 and 29 January 2024.*

*Information in this report that relates to the Cockie Creek Copper Project Mineral Resource Estimate were originally announced to the ASX Market Announcements Platform on 27 March 2013.*

*Information in this report that relates to the Steam Engine Gold Project Mineral Resource Estimate were originally announced to the ASX Market Announcements Platform on 11 April 2022*

**Reliance on previously reported information:** *In respect of references contained in this report to previously reported Exploration Results, Mineral Resources or Exploration Targets, the Company confirms that it is not aware of any new information or data that materially affects the information, results or conclusions contained in the original reported document. In respect of previously reported Mineral Resource estimates, all originally reported material assumptions and technical parameters underpinning the estimates continue to apply and have not been materially changed or qualified. The form and context in which the relevant Competent Person's findings are presented have not been materially modified from the original document.*

**Forward looking statements:** *This document may contain forward looking statements. Forward looking statements are often, but not always, identified by the use of words such as "seek", "indicate", "target", "anticipate", "forecast", "believe", "plan", "estimate", "expect" and "intend" and statements that an event or result "may", "will", "should", "could" or "might" occur or be achieved and other similar expressions. Indications of, and interpretations on, future expected exploration results or technical outcomes, production, earnings, financial position and performance are also forward-looking statements. The forward-looking statements in this presentation are based on current interpretations, expectations, estimates, assumptions, forecasts and projections about Superior, Superior's projects and assets and the industry in which it operates as well as other factors that management believes to be relevant and reasonable in the circumstances at the date that such statements are made. The forward-looking statements are subject to technical, business, economic, competitive, political and social uncertainties and contingencies and may involve known and unknown risks and uncertainties. The forward-looking statements may prove to be incorrect. Many known and unknown factors could cause actual events or results to differ materially from the estimated or anticipated events or results expressed or implied by any forward-looking statements. All forward-looking statements made in this presentation are qualified by the foregoing cautionary statements.*

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## Appendix 1

### DISCLOSURES REQUIRED UNDER ASX LISTING RULE 5.3.3

- Mining tenements held at the end of the quarter and their location

State	Tenement Name	Tenement ID	Location	Interest	Holder	Comments
QLD	Hedleys 2	EPM15670	Nicholson	100%	SPQ	Granted
QLD	Hedleys South	EPM18203	Nicholson	100%	SPQ	Granted
QLD	Tots Creek	EPM19097	Victor	100%	SPQ	Granted
QLD	Scrubby Creek	EPM19214	Victor	100%	SPQ	Granted
QLD	Cockie Creek	EPM18987	Greenvale	100%	SPQ	Granted
QLD	Cassidy Creek	EPM19247	Greenvale	100%	SPQ	Granted
QLD	Dinner Creek	EPM25659	Greenvale	100%	SPQ	Granted
QLD	Wyandotte	EPM25691	Greenvale	100%	SPQ	Granted
QLD	Cockie South	EPM26165	Greenvale	100%	SPQ	Granted
QLD	Victor Extended	EPM26720	Victor	100%	SPQ	Granted
QLD	Twelve Mile Creek	EPM26751	Greenvale	100%	SPQ	Granted
QLD	Dido	EPM27754	Greenvale	100%	SPQ	Granted
QLD	Arthur Range	EPM27755	Greenvale	100%	SPQ	Granted
QLD	Phantom Creek	EPM27932	Greenvale	100%	SPQ	Granted
QLD	Six Mile Creek	EPM28630	Greenvale	100%	SPQ	Application
QLD	Lyndhurst	EPM28632	Greenvale	100%	SPQ	Application
QLD	Middle Creek	EPM28633	Greenvale	100%	SPQ	Granted

- Mining tenements acquired and disposed of during the end of the quarter and their location

State	Tenement Name	Tenement ID	Location	Interest	Holder	Comments

- Beneficial percentage interests held in farm-in or farm-out agreements at end of the quarter

State	Project Name	Agreement Type	Parties	Interest held at end of quarter by exploration entity or child entity	Comments

Abbreviations:

EPM Exploration Permit for Minerals, Queensland

SPQ Superior Resources Limited