Superior Resources | ASX Announcement

30 November 2021

# Bottletree drilling reveals large potential porphyry system as source of extensive copper mineralisation

## HIGHLIGHTS:

- **First two deep diamond drill holes at Superior's Bottletree Copper Prospect targeting large high order MIMDAS IP chargeability anomaly, intersect disseminated and vein sulphide mineralisation, including chalcopyrite (copper sulphide) over broad intervals; awaiting assays**
- **Disseminated and vein sulphide mineralisation significantly more extensive than indicated by chargeability anomaly**
- **First hole drilled to 684.6m from northeast to southwest, penetrates entirely through chargeability anomaly; extensive high grade copper mineralisation intersected at bottom 20m of hole, west of anomaly**
- **Newly planned third diamond hole currently at 260m (down-hole) drilling eastwards from western side of chargeability anomaly intersects veins of quartz-chalcopyrite-molybdenite, indicating source of copper mineralisation likely to be nearby undiscovered Cu-Au-Mo porphyry system**
- **Potential porphyry system located west of chargeability anomaly, as indicated by 1.5km x 1km intense Cu and Au soil anomaly coincident with large oval magnetic and satellite topographic features and supported by observations from first two holes**
- **Third diamond hole testing for porphyry-related mineralisation and alteration west of chargeability anomaly and to more effectively target high grade copper veins similar to those observed in first two holes**
- **Chargeability anomaly likely to represent localised structurally-controlled mineralisation within an outer "shell" surrounding one or more large Cu-Au mineralised porphyry systems**
- **Exploration at Bottletree now focussed on one or more large Cu-Au mineralised porphyry intrusion systems west of chargeability anomaly; evaluation of copper mineralisation at chargeability anomaly and other outcropping areas will continue to define a Mineral Resource**

Superior Resources Limited (**ASX:SPQ**) (**Superior**, the **Company**) announced today significant findings from a 2,300m diamond drilling program currently underway at its Bottletree Copper Prospect. The program is part of the Company's 13,000m drilling campaign at its 100%-owned Greenvale Project, located approximately 210kms west of Townsville, Queensland (Figure 1).

Drilling to date has confirmed that extensive disseminated and vein copper mineralisation highlighted by a large MIMDAS IP chargeability anomaly is likely to be sourced from a large copper-gold porphyry system, located nearby and to the west of the chargeability anomaly. Furthermore, the mineralisation is more extensive than indicated by the chargeability anomaly and crops out at surface. In particular, the mineralisation appears to be structurally localised within an outer zone or "shell" to one or more much larger copper-gold (potentially) porphyry systems.

As a result of observations from the first two diamond drill holes, the Company revised its drilling program and is currently drilling a third "scissor" hole, drilling from southwest to northeast in the opposite direction of the first two holes. Although targeting of the potential porphyry intrusions is yet to be undertaken, the third hole is testing areas to the west of the chargeability anomaly for porphyry-related mineralisation, alteration and porphyry vectors. The hole is also designed to more effectively target high grade copper-mineralised veins that are predominantly aligned sub-parallel to the first two holes, including a hole drilled during 2018, which returned 292m of 0.22% Cu, including 18.7m @ 1.12% Cu (SBTRD006)[1]. The third hole is currently at 260m (down-hole).

Core recovered from the third hole exhibits significantly more intense alteration, veining and mineralisation than observed over the upper sections of the first two holes. Notably, veins of quartz-chalcopyrite-molybdenite which resemble Type-B porphyry veins have been intersected. Porphyry Type-B veins are indicative of a nearby porphyry system.

A porphyry system at Bottletree would likely be located at deeper levels and to the west of the chargeability anomaly. This location is also coincident with the large and intense 1.5km x 1km copper and gold soil anomaly, a large oval potential intrusion centre interpreted from airborne magnetic survey data and a partly coincident oval feature on satellite imagery.

Assay results are yet to be received from the three holes.

**Superior's Managing Director, Peter Hwang commented:**

*"We are very excited with the developments unfolding at Bottletree, which are particularly significant as no more than three meaningful holes have previously been drilled at the prospect.*

*"The IP chargeability anomaly is no longer the "main event", but rather just an outer zone of mineralisation related to a much larger potential porphyry copper-gold system. Although the presence of a large porphyry system has long been suspected to be the cause of the enormous soil copper anomaly that defined Bottletree, we became more convinced as the shape of the program changed and as the third hole progressed.*

*"Bottletree is now the second prospect within the Greenvale Project to exhibit strong evidence for a large porphyry copper-gold system, the other being Cockie Creek.*

*"Porphyry copper deposits are typically dominated by large envelopes of low-grade disseminated sulphide mineralisation, but due to their size-potential, they are by far the largest deposits of copper, large enough to have defined the category of "Supergiant Deposits".*

*"Bottletree represents the first of several opportunities to discover and develop large copper and nickel-copper-PGE deposits within the richly endowed mineralised belts secured by the Company's Greenvale tenements.*

*"Consistent with our philosophy of not only discovering Tier 1 deposits, but also of retaining maximum value through to the mining stage, we are implementing a development strategy at Greenvale that will align with the evolving future commodities booms.*

*"We are expediting new exploration programs at Bottletree that include soil geochemistry surveys, geophysical surveys and drilling. In addition, we are also progressing our other Greenvale copper prospects, including Cockie Creek, where we are targeting a maiden JORC 2012 Mineral Resource Estimate for release by year-end."*

The encouraging results at Bottletree have added to a promising outlook for Superior in 2022, as the Company advances its project pipeline amid strong demand for key global minerals such as copper. Recent drilling at the nearby Steam Engine Gold Project has also shown spectacular intersections of up to 115.2 g/t Au (refer ASX

[1] Refer ASX announcement dated 25 October 2018

releases 18 October and 22 November 2021), with a feasibility study progressing on a low capex operation to generate near-term cashflow for the benefit of shareholders.

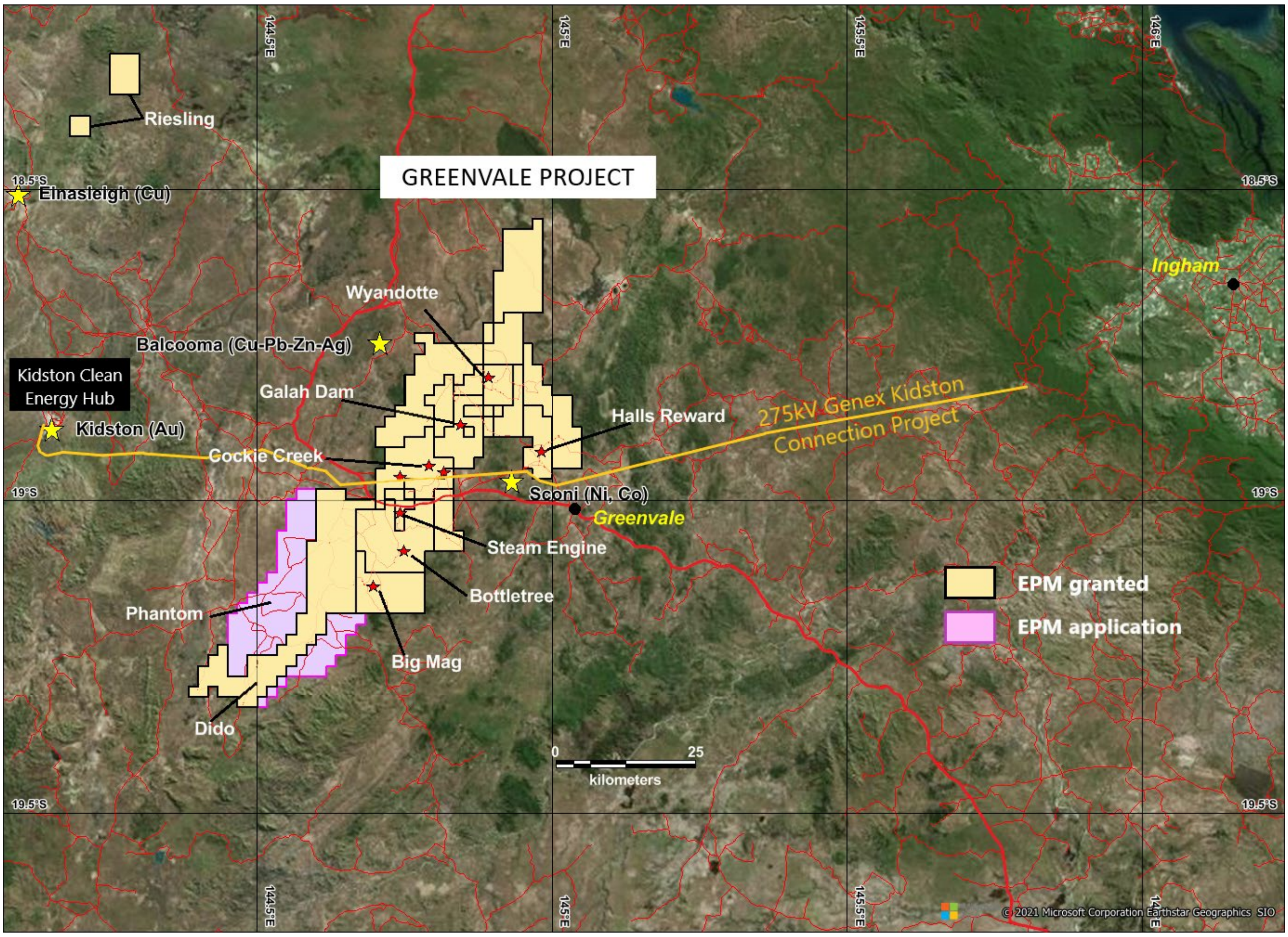


*Figure 1. Location of exploration permits comprising the Greenvale Project. Exploration permit applications are shaded purple. Select prospects are marked with a red star. The Greenvale township and existing historic mines (yellow stars) are also indicated.*

## Background

Superior has long recognised the significance of Bottletree, which is expressed at surface as a large, zoned copper mineralised system that extends over several square kilometres (Figure 2). As a result of the Queensland native title regime during important commodity boom periods, Bottletree (and other areas in Qld) was effectively quarantined from the exploration sector. Apart from a small number of shallow historic drill holes over the anomalous area, Superior conducted the only deep investigation of the area with three drill holes during 2017 and 2018.

During September 2021 the Company announced[2] the commencement of deep drilling of a large high-order 3D-modelled MIMDAS IP chargeability anomaly located adjacent to a regionally distinct 1.5km by 1km copper and gold soil anomaly (Figure 3). Drilling during 2018 intersected the northern edge of the chargeability anomaly, which returned 292m @ 0.22% Cu, including 18.7m @ 1.12% Cu[3].

[2] Refer ASX announcement dated 17 September 2021
[3] Refer ASX announcement dated 25 October 2018

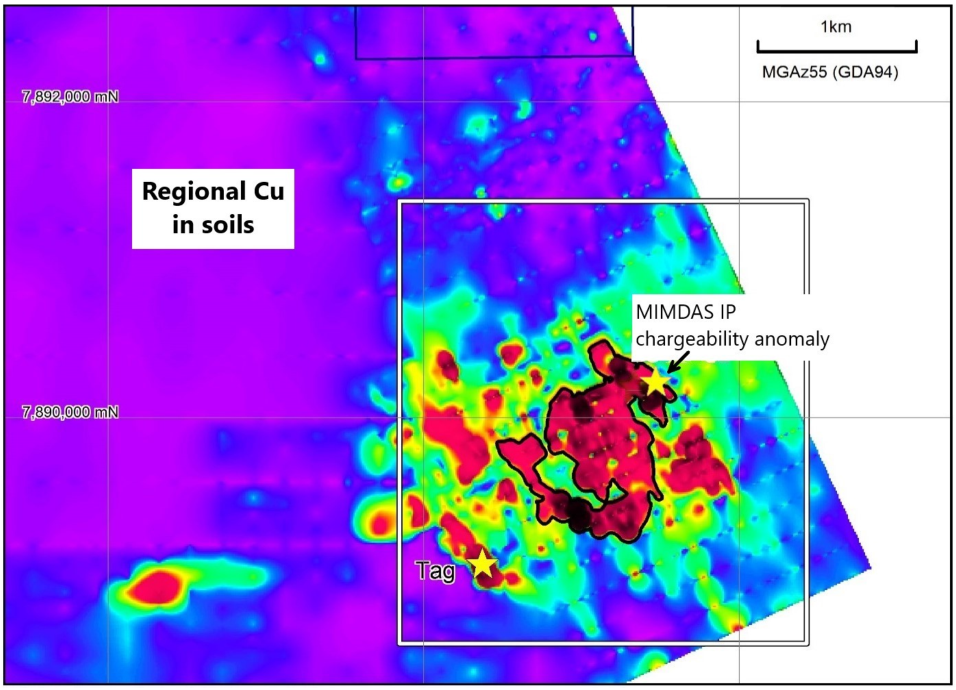


*Figure 2. Regional Cu-in-soil processed image showing the large scale Bottletree copper anomaly and location of the MIMDAS IP chargeability anomaly that has been targeted with drilling in 2021.*

## 2021 Drilling Program

The current 2-stage program commenced with the drilling of two holes (BTDD001 and BTDD003) targeting the modelled centre of the chargeability anomaly at different depth levels (Figure 3). BTDD001 was drilled using NQ rods to 684.6m with a RC pre-collar to about 250m. BTDD003 was cored using HQ diameter rods from surface to an end of hole depth of 807.7m, which was the capability limit of the drill rig. BTDD002, located in the same position as BTDD003, was a RC pre-collar hole that was terminated as a result of exceeding hole deviation limits.

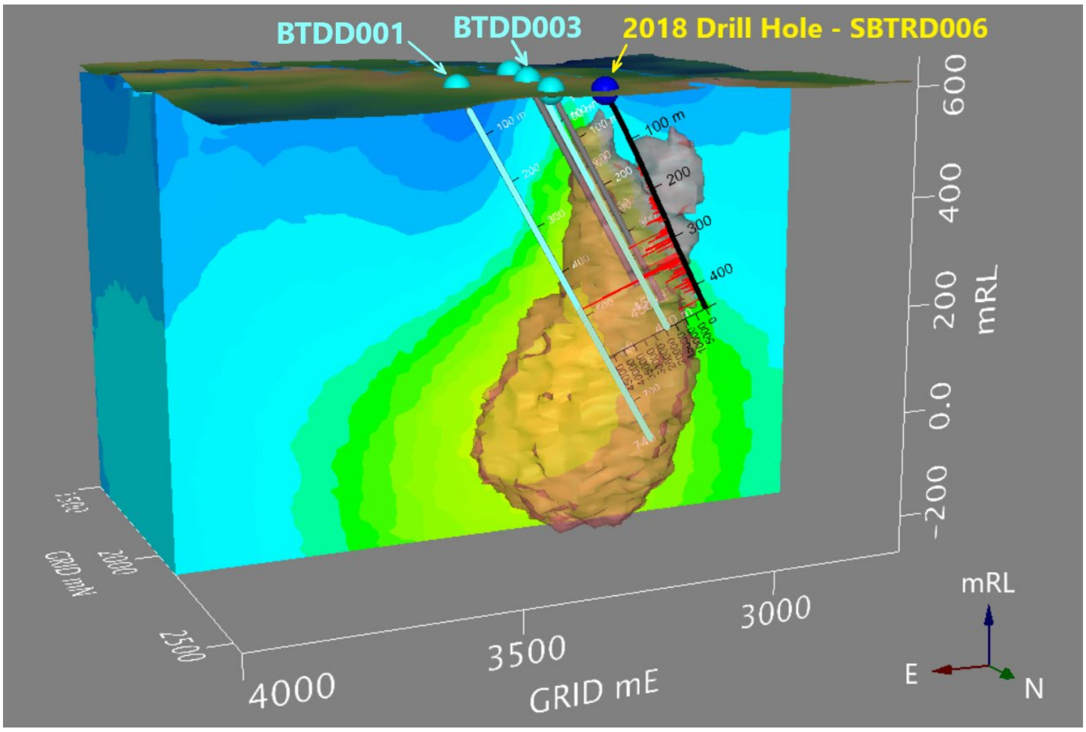


*Figure 3. 3D-modelled MIMDAS IP high chargeability iso-surfaces representing the Bottletree IP chargeability anomaly, viewed looking southwest. Recently drilled BTDD001 and BTDD003 and 2018 drill hole SBTRD006 shown.*

## Key Findings: Drill Core Mineralisation

To date, core from BTDD001 and approximately half of BTDD003 have been accessible for detailed geological inspection. In general, both holes intersected very broad zones of lower grade disseminated sulphide mineralisation, including chalcopyrite within strongly deformed andesitic lavas and volcaniclastics of probable Ordovician age. These broad zones also include numerous zones of more intense mineralisation within and associated with various forms of quartz veining. In addition, BTDD003 intersected altered dykes of diorite and tonalite with minor pyrite, suggesting the potential for mineralised intrusives.

In summary, BTDD001 intersected mainly disseminated chalcopyrite mineralisation in variably broad intervals from 307m to 681m. Individual intervals range from 14m to 101m. Several zones of intensely chalcopyrite mineralised veins were also intersected within the disseminated zones. The disseminated mineralisation was observed to correlate closely with the 3D-modelled outer (50mV/V) isosurface of the IP chargeability model (Figure 4). However, more intense mineralisation was encountered outside and to the west and north of the chargeability model.

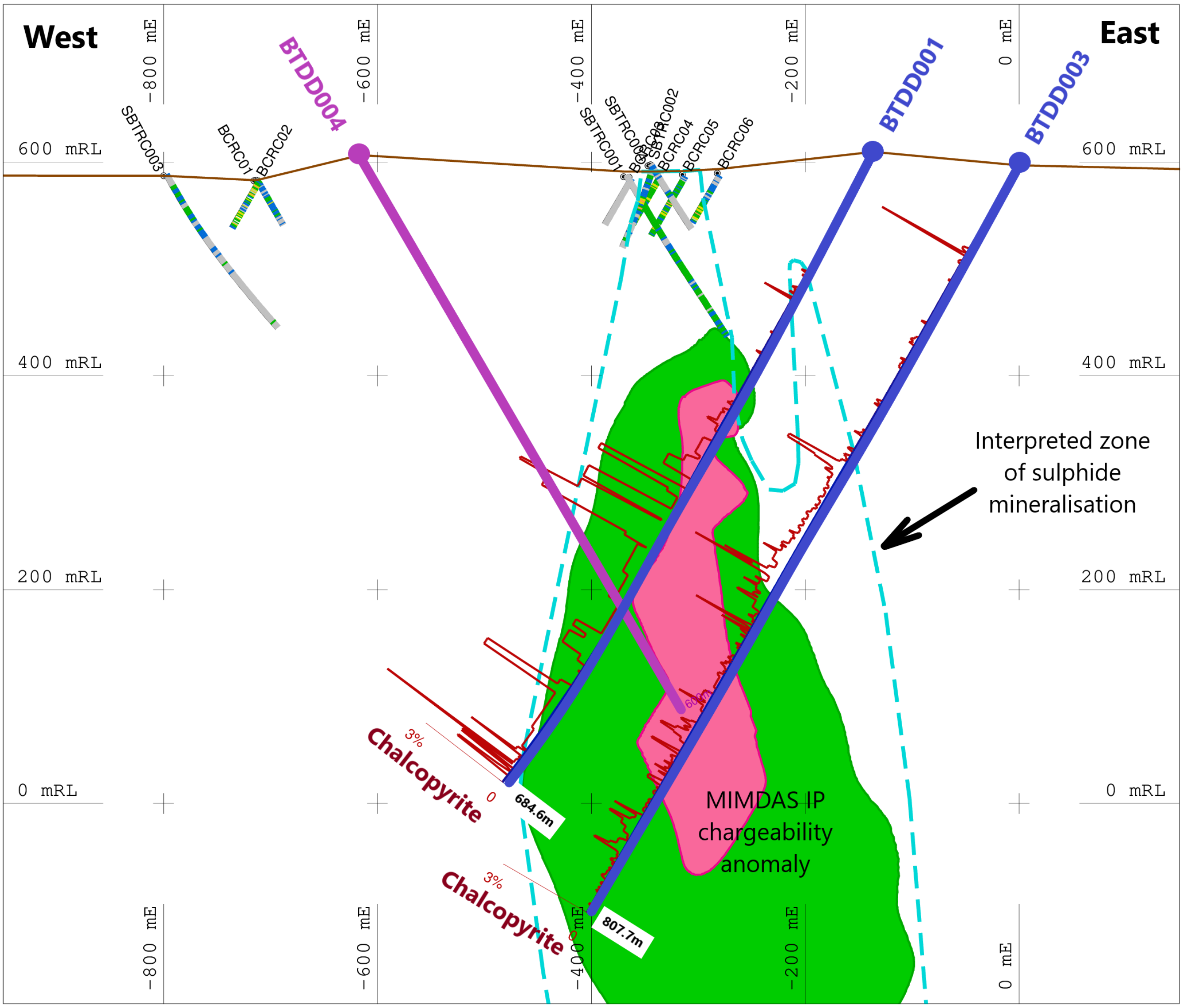


*Figure 4. West-East cross section through MIMDAS IP chargeability anomaly showing current program drill holes, visual estimates of chalcopyrite mineralisation in holes BTDD001 and BTDD003 and interpreted mineralisation envelope.*

Towards the bottom of hole BTDD001, at least 20m of intense vein associated chalcopyrite-pyrrhotite mineralisation was intersected outside and to the west of the chargeability anomaly (Figure 5). Recent geological mapping has shown that areas to the west of the chargeability anomaly have been subjected to intense phyllic alteration and relatively abundant quartz-magnetite alteration and vein sets.

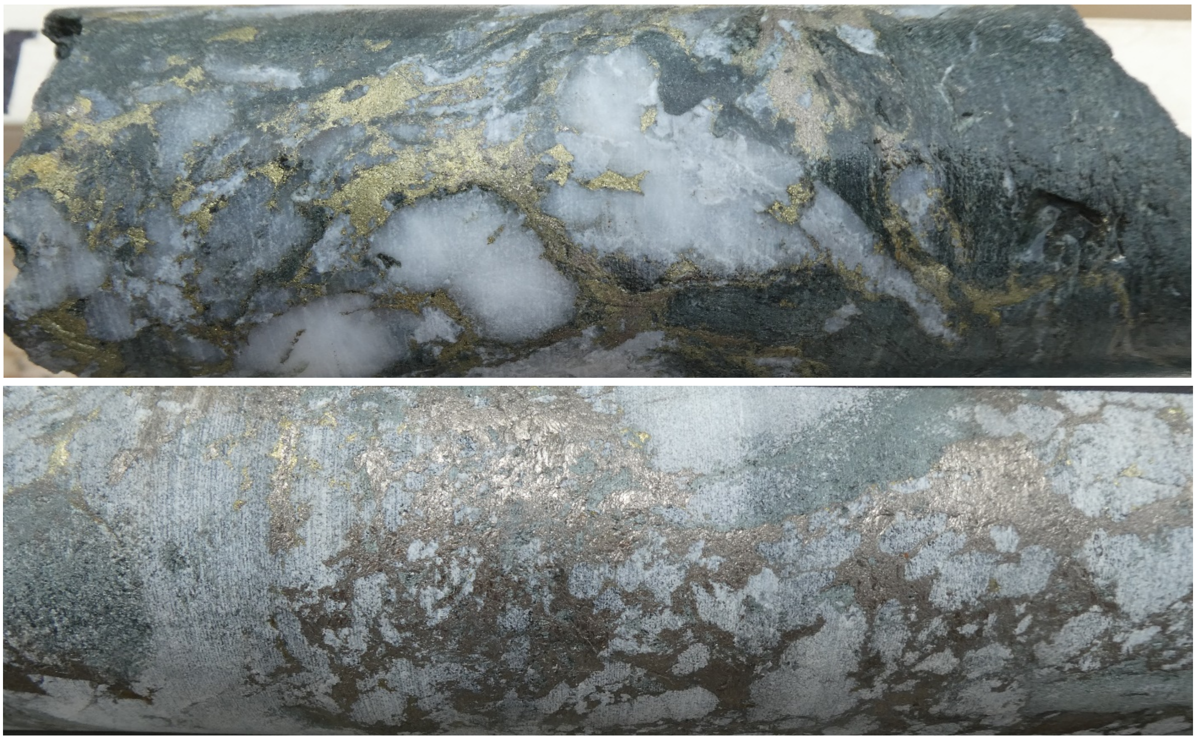

*Figure 5. Top - BTDD001, 667.40m, brecciated buck quartz and associated chalcopyrite-pyrrhotite veining in dark green chloritic shear zone.*

BTDD004, currently being drilled from the western side of the chargeability anomaly, is testing the IP zone from the west, as well as testing magnetite alteration and copper geochemistry within the area of intense phyllic alteration. Of particular interest is the presence of albite-magnetite veins and folded fine grained recrystallised quartz-chalcopyrite-molybdenite veins (Figure 6). The latter are considered to be possible A or B veins in porphyry terminology. Such a finding is significant and suggests reasonable proximity to a porphyry body.


*Figure 6. Deformed granular quartz vein with molybdenite along walls and internal chalcopyrite (BTDD004, 120.3m). Several such veins intersected in BTDD004 are interpreted as possible A or B Type veins within a porphyry system.*

## Key Findings: Magnetic survey data

High quality airborne magnetic survey data relating to the Bottletree area was analysed to aid in the interpretation of the structural setting and the identification of intrusions that may be related to the Bottletree mineralisation. The exercise has identified a large oval area of subdued magnetic response bordered by magnetic andesites to the north and south and also northeast (Figure 7). The oval subdued response feature is interpreted to reflect one or more intrusions at depth, which form part of a large intrusive complex. One large oval zone bordering phyllic alteration zones is interpreted as a buried intrusion, possibly a porphyry. Strong Cu soil anomalism extends to the northeast within and beyond the interpreted intrusion and also encompasses the northwest trending zone of copper that contains the IP chargeability anomaly (Cu contour shown >340ppm). Hole BTDD004 is in progress within part of that wall rock copper anomalism and to date has intersected some interesting quartz-chalcopyrite-molybdenite veins that suggest a possible porphyry link.

A structural corridor setting seems evident from the magnetics. The interpreted porphyry body lies in a dilational zone at the flexure of northeast trending faults (Figure 7). This zone appears to be floored by a large intrusive complex.

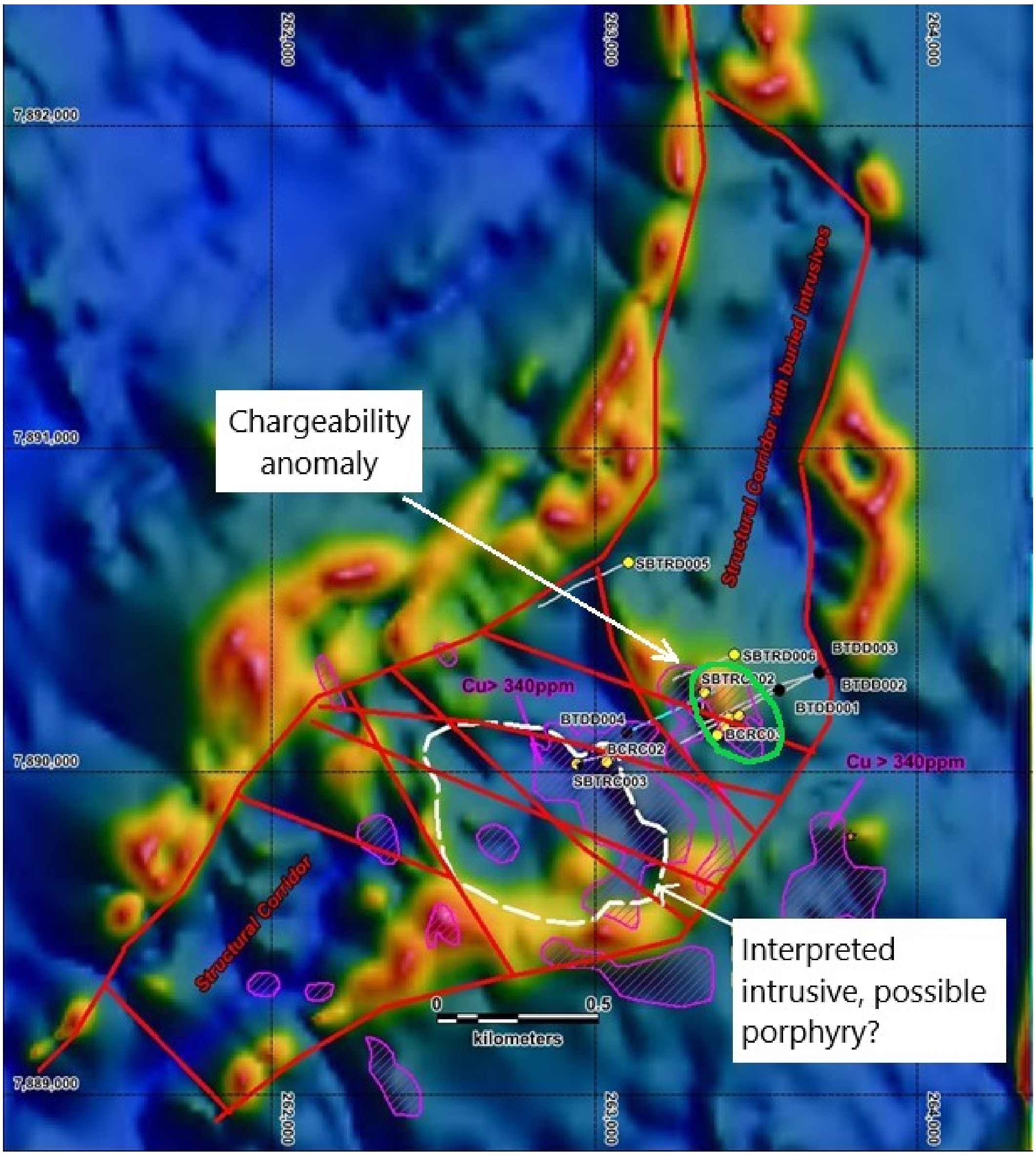


*Figure 7. Colour TDr VI NSSF magnetic image over the Bottletree area showing an interpreted intrusive or porphyry, IP chargeability isosurface and high order soil copper envelopes within a dilational structural flexure.*

## Key Findings: Soil Geochemistry

Historic soil Cu, Au and Zn geochemistry strongly indicates the presence of zoned metal halos in and around the interpreted intrusive centre (Figure 8). The IP chargeability anomaly falls on the outer edge of an oval zone of clustered Cu and Au anomalism.

Au displays a separate, more linear array in the north and also in the northeast that may be related to more structurally controlled gold of later vintage than the Cu-Au in the core of the Bottletree system, or it could reflect a distal zonation to Au. Zn records a classic distal zonation to cooler temperatures distant from the proximal Cu area. This gives credibility to a large zoned mineralised system, typical of many porphyry districts such as Wafi-Golpu in Papua New Guinea (Figure 9).

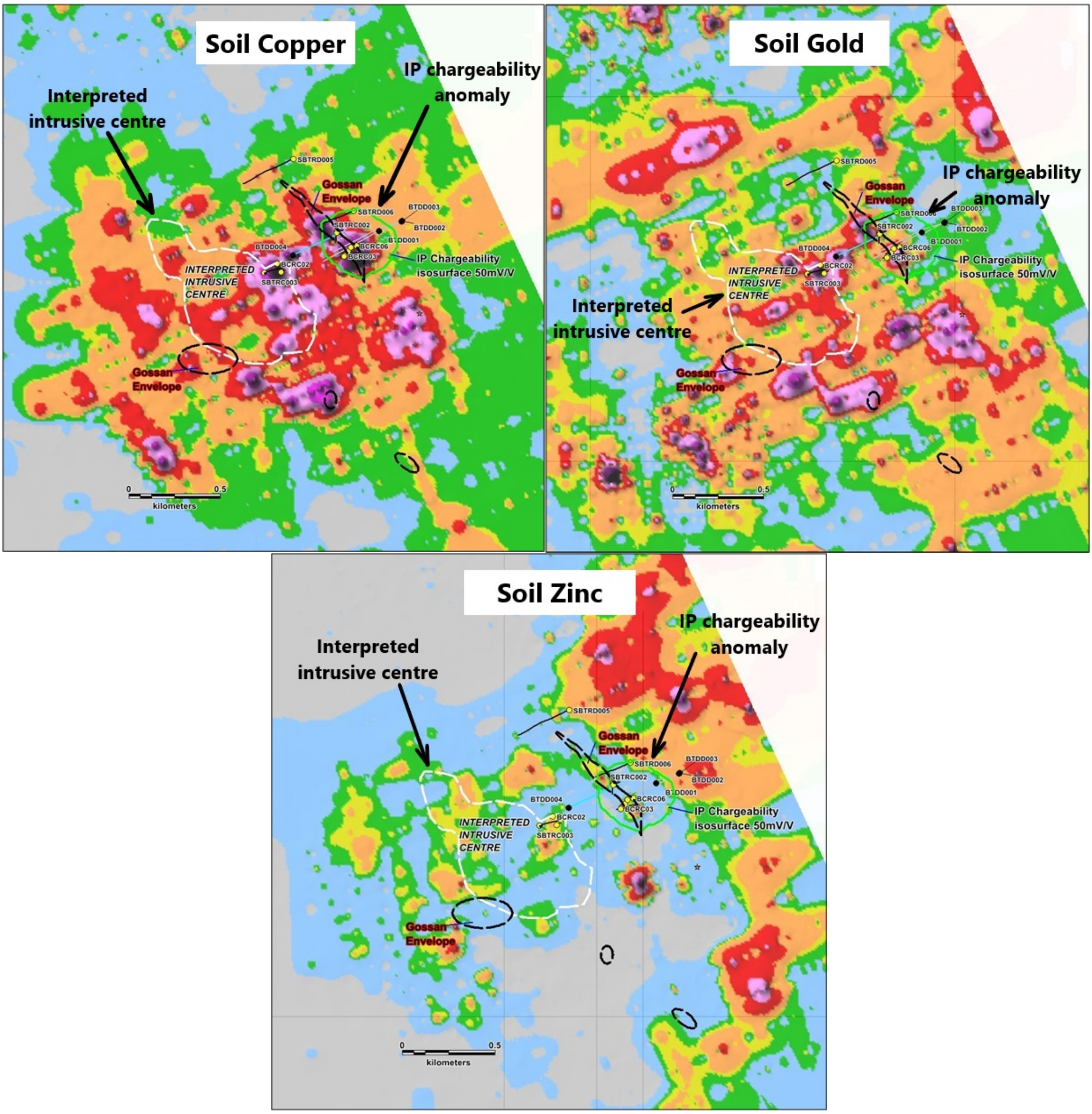


*Figure 8. A comparison between Cu, Au and Zn soil geochemistry over the Bottletree Prospect area, showing zonation patterns around the central zone of anomalous copper and an interpreted intrusive centre.*

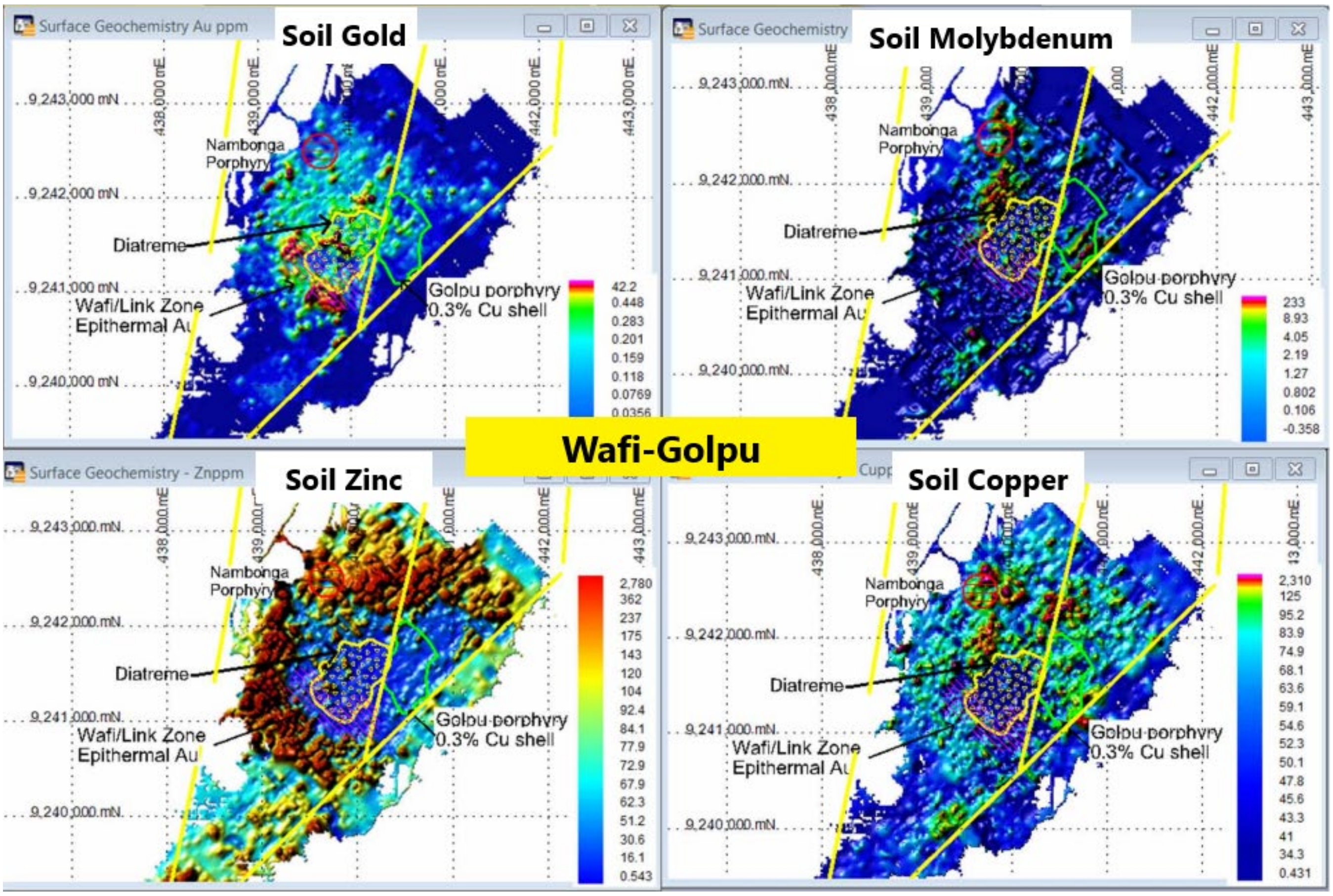


*Figure 9. A comparison between Cu, Au, Mo and Zn soil geochemistry over the Wafi-Golpu porphyry Au-Cu deposit in Papua New Guinea showing positions of porphyries (red and green) and diatreme (yellow) (from Menzies et al., 2013).*

## Next Steps

Work at Bottletree will focus on two main objectives:

- discovering the intrusive source to the Bottletree mineralisation; and
- determining whether financially viable near-surface copper and gold Resources can be delineated within the Bottletree Prospect area.

Specific upcoming activities include:

- completion of drill hole BTDD004 to approximately 600m downhole depth;
- receive and analyse assays from BTDD001, BTDD003 and BTDD004;
- completion of multi-element soil sampling and assaying program;
- plan drill programs targeting potential porphyry intrusions and delineate areas of near-surface copper and gold mineralisation;
- execute next drilling program; and
- conduct geochronological dating on intrusions and molybdenite for age correlation with intrusions in the Macquarie Arc in NSW, which hosts the world class Cadia and North Parkes porphyry Cu-Au deposits.

## About Superior Resources

Superior Resources Limited (ASX:SPQ) is an Australian public company exploring for large lead-zinc-silver, copper, gold and nickel-copper-cobalt-PGE deposits in northern Queensland which have the potential to return maximum value growth for shareholders. The Company is focused on multiple Tier-1 equivalent exploration targets and has a dominant position within the Carpentaria Zinc Province in NW Qld and Ordovician rock belts in NE Qld considered to be equivalents of the NSW Macquarie Arc. For more information, please visit our website at www.superiorresources.com.au.

***Reporting of Exploration Results:*** *The information in this report as it relates to exploration results, geology, geophysical imagery and drilling was compiled by Dr Peter Gregory, who is a Member of the Australasian Institute of Mining and Metallurgy (AusIMM) and an independent consultant to the Company. Dr Gregory does not hold shares or any other interest in the Company. He has not been on the Bottletree Project site, but has reviewed all primary data, inspected drill core located in Townsville and its context, has sufficient experience which is relevant to the style of mineralisation and type of deposit under consideration and to the activity which he is undertaking 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'. Dr Gregory consents to the inclusion in the report of the matters based on the information in the form and context in which it appears.*

***Reliance on previously reported information:*** *In respect of references contained in this report to previously reported Exploration Results or Mineral Resources, Superior 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

# REPORTED DRILL HOLE COLLAR DETAILS

| Hole ID | Easting (m) | Northing (m) | RL (m) | Depth (m) | Dip° | Azimuth° |
|---|---|---|---|---|---|---|
| BTDD001 | 263571.7 | 7890252.3 | 609.5 | 684.6 | -60 | 245 |
| BTDD002 | 263695.7 | 7890306.2 | 597.0 | 250.3 | -60 | 245 |
| BTDD003 | 263695.9 | 7890306.9 | 596.8 | 807.7 | -59 | 250 |
| BTDD004 | 263094 | 7890127 | 607.0 | In progress | -60 | 65 |

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# APPENDIX 2

## JORC Code, 2012 Edition – Table 1

*Section 1 Sampling Techniques and Data*
(Criteria in this section apply to all succeeding sections)

| Criteria | JORC Code explanation | Commentary |
|---|---|---|
| ***Sampling techniques*** | • *Nature and quality of sampling (e.g. cut channels, random chips, or specific specialised industry standard measurement tools appropriate to the minerals under investigation, such as down hole gamma sondes, or handheld XRF instruments, etc.). These examples should not be taken as limiting the broad meaning of sampling.*<br>• *Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.*<br>• *Aspects of the determination of mineralisation that are Material to the Public Report.*<br>• *In cases where 'industry standard' work has been done this would be relatively simple (e.g. 'reverse circulation drilling was used to obtain 1 m samples from which 3 kg was pulverised to produce a 30 g charge for fire assay'). In other cases more explanation may be required, such as where there is coarse gold that has inherent sampling problems. Unusual commodities or mineralisation types (e.g. submarine nodules) may warrant disclosure of detailed information.* | • BTDD001: Drilling from surface comprised reverse circulation (**RC**) drilling of pre-collars followed by NQ diameter diamond core drilling to end of hole.<br>• BTDD003 and BTDD004: Drilling from surface comprised HQ diameter diamond core drilling to end of hole.<br>• Reverse Circulation (**RC**) drill samples are collected as drilled via a riffle splitter attached to the drill rig cyclone and collected as 1m riffle split samples. Approximately 1-3kg of sample was collected over each 1m interval used for assaying.<br>• Diamond core samples were obtained by splitting core in half using a core saw.<br>• The drill bit sizes used in the drilling are considered appropriate to indicate the degree and extent of mineralisation.<br>• 2m representative samples were assayed for base metals, gold, silver and other elements at Intertek laboratories in Townsville.<br>• Assaying for gold was via fire assay of a 50-gram charge.<br>• Sample preparation at Intertek laboratories in Townsville for all samples is considered to be of industry standard. |
| ***Drilling techniques*** | • *Drill type (e.g. core, reverse circulation, open-hole hammer, rotary air blast, auger, Bangka, sonic, etc.) and details (e.g. core diameter, triple or standard tube, depth of diamond tails, face-sampling bit or other type, whether core is oriented and if so, by what method, etc.).* | • Drilling from surface was performed using standard RC and diamond drilling techniques.<br>• Drilling was conducted by AED (Associated Exploration Drillers) using a McCullochs DR 950 drill rig.<br>• All holes were surveyed using a Reflex Gyro north-seeking gyroscopic instrument to obtain accurate down-hole directional data. |

| Criteria | JORC Code explanation | Commentary |
|---|---|---|
| ***Drill sample recovery*** | • *Method of recording and assessing core and chip sample recoveries and results assessed.*<br>• *Measures taken to maximise sample recovery and ensure representative nature of the samples.*<br>• *Whether a relationship exists between sample recovery and grade and whether sample bias may have occurred due to preferential loss/gain of fine/coarse material.* | • Sample recovery was performed and monitored by Terra Search contractor and Superior Resources' representatives.<br>• The volume of sample collected for assay is considered to be representative of each 2m interval.<br>• The RC drill rod string delivered the sample to the rig-mounted cyclone which is sealed at the completion of each 1m interval. The riffle splitter is cleaned with compressed air at the end of each 1m interval and at the completion of each drill hole.<br>• Diamond drill core recovery was logged. Recovery overall was close to 100%. |
| ***Logging*** | • *Whether core and chip samples have been geologically and geotechnically logged to a level of detail to support appropriate Mineral Resource estimation, mining studies and metallurgical studies.*<br>• *Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc.) photography.*<br>• *The total length and percentage of the relevant intersections logged.* | • Geological logging was conducted during the drilling of each hole by a Terra Search geologist having sufficient qualification and experience for the mineralisation style expected and observed at each hole.<br>• All holes were logged in their entirety at 1m intervals.<br>• All logging data is digitally compiled and validated before entry into the Superior database.<br>• The level of logging detail is considered appropriate for resource drilling.<br>• The RC Chip trays were photographed.<br>• Magnetic susceptibility data for each 1m sample interval was collected in the field.<br>• All core was logged for structure with structures being recorded in relation to a bottom line marked on the core and established using Reflex equipment. Logging included both and Alpha and Beta angles. Data from structural logging of planar features was converted to grid dips and dip directions as well as plan parameters to allow structures to be plotted on sections and allow structures to be projected to the ground surface by software. |
| ***Sub-sampling techniques and sample preparation*** | • *If core, whether cut or sawn and whether quarter, half or all core taken.*<br>• *If non-core, whether riffled, tube sampled, rotary split, etc. and whether sampled wet or dry.*<br>• *For all sample types, the nature, quality and appropriateness* | • The sample collection methodology is considered appropriate for RC and diamond drilling and was conducted in accordance with standard industry practice.<br>• The RC drill hole samples are split with a riffle splitter at 1m intervals as drilled. Split 1 metre samples are regarded as reliable and representative. |

| Criteria | JORC Code explanation | Commentary |
|---|---|---|
| | *of the sample preparation technique.*<br>• *Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.*<br>• *Measures taken to ensure that the sampling is representative of the in situ material collected, including for instance results for field duplicate/second-half sampling.*<br>• *Whether sample sizes are appropriate to the grain size of the material being sampled.* | • Approximately 1-3kg of sample was collected over each 1m interval.<br>• Samples were collected as dry samples.<br>• Diamond drill core was split in half using a diamond saw with half of the sample being sent for assay and the remainder retained for reference. Core halving was done along the bottom line marked on the core for structural logging.<br>• The sample sizes are considered appropriate to the style of mineralisation being assessed.<br>• Quality Assurance (**QA**)/Quality Control (**QC**) protocols were instigated such that they conform to mineral industry standards and are compliant with the JORC code.<br>• (QA) processes with respect to chemical analysis of mineral exploration samples includes the addition of blanks, standards and duplicates to each batch so that checks can be done after they are analysed. As part of the (QC) process, checks of the resultant assay data against known or previously determined assays to determine the quality of the analysed batch of samples. An assessment is made on the data and a report on the quality of the data is compiled.<br>• Quality control included determinations of duplicate samples every 50 samples or so to check for representative samples. There was a conscious effort on behalf of the samplers to ensure consistent weights for each sample. Comparison of assays of duplicates shows good reproducibility of results.<br>• The above techniques are considered to be of a high quality and appropriate for the nature of mineralisation anticipated. The 2-3kg sample size is appropriate for the rock being sampled. |
| ***Quality of assay data and laboratory tests*** | • *The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total.*<br>• *For geophysical tools, spectrometers, handheld XRF instruments, etc., the parameters used in determining the analysis including instrument make and model, reading times, calibrations factors applied and their derivation, etc.*<br>• *Nature of quality control procedures adopted (e.g. standards,* | • All samples were submitted to Intertek laboratories in Townsville for gold and multi-element analysis.<br>• Samples were crushed, pulverised to ensure a minimum of 85% pulp material passing through 75 microns, then analysed for gold by fire assay method FA50/OE04 using a 50 gram sample.<br>• Multi-element analyses were conducted using a four acid digestion followed by an OES finish using method 4A/OE33 for the following 33 elements: Ag, Al, As, Ba, Bi, Ca, Cd, |

| Criteria | JORC Code explanation | Commentary |
|---|---|---|
| | *blanks, duplicates, external laboratory checks) and whether acceptable levels of accuracy (i.e. lack of bias) and precision have been established.* | Ce, Co, Cr, Cu, Fe, K, La, Li, Mg, Mn, Mo, Na, Ni, P, Pb, S, Sb, Sc, Sn, Sr, Te, Ti, Tl, V, W, Zn.<br>• Certified gold, multi-element standards and blanks were included in the samples submitted to the laboratory for QA/QC.<br>• Additionally, Intertek used a series of its own standards, blanks, and duplicates for the QC of the elements assayed. |
| ***Verification of sampling and assaying*** | • *The verification of significant intersections by either independent or alternative company personnel.*<br>• *The use of twinned holes.*<br>• *Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.*<br>• *Discuss any adjustment to assay data.* | • No holes were twinned.<br>• Logs were recorded by Terra Search field geologists on hard copy sampling sheets which were entered into spreadsheets for merging into a central database.<br>• Laboratory assay files were merged directly into the database.<br>• The data is routinely validated when loading into the database.<br>• No adjustments to assay data were undertaken. |
| ***Location of data points*** | • *Accuracy and quality of surveys used to locate drill holes (collar and down-hole surveys), trenches, mine workings and other locations used in Mineral Resource estimation.*<br>• *Specification of the grid system used.*<br>• *Quality and adequacy of topographic control.* | • Drill hole collars have been recorded in the field using handheld GPS with three metre or better accuracy.  The collar locations have been further defined using DGPS to give sub-one metre accuracy.<br>• The area is located within MGA Zone 55.<br>• Topographic control is currently from DGPS point data that has been merged with RL-adjusted contours. |
| ***Data spacing and distribution*** | • *Data spacing for reporting of Exploration Results.*<br>• *Whether the data spacing and distribution is sufficient to establish the degree of geological and grade continuity appropriate for the Mineral Resource and Ore Reserve estimation procedure(s) and classifications applied.*<br>• *Whether sample compositing has been applied.* | • Further drilling is necessary to establish a Mineral Resource. |
| ***Orientation of data in relation to*** | • *Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type.*<br>• *If the relationship between the drilling orientation and the* | • The majority of holes have been designed to drill normal to interpreted mineralisation trends. However, there has been insufficient drilling and geological interpretation to determine if there is a bias to sampling as a result of drilling oblique to or down dip on mineralised structures. |

| Criteria | JORC Code explanation | Commentary |
|---|---|---|
| ***geological structure*** | *orientation of key mineralised structures is considered to have introduced a sampling bias, this should be assessed and reported if material.* | • No orientation sample bias has been identified at this stage. |
| ***Sample security*** | • *The measures taken to ensure sample security.* | • Sub-samples selected for assaying were collected in heavy-duty polyweave bags which were immediately sealed.<br>• These bags were delivered directly to the Intertek assay laboratory in Townsville by Terra Search or Superior Resources' employees.<br>• Sample security measures within the Intertek laboratories are considered adequate. |
| ***Audits or reviews*** | • *The results of any audits or reviews of sampling techniques and data.* | • No audits or reviews of the sampling techniques and data have been undertaken to date. |

## *Section 2 Reporting of Exploration Results*

(Criteria listed in the preceding section also apply to this section)

| Criteria | JORC Code explanation | Commentary |
|---|---|---|
| ***Mineral tenement and land tenure status*** | • *Type, reference name/number, location and ownership including agreements or material issues with third parties such as joint ventures, partnerships, overriding royalties, native title interests, historical sites, wilderness or national park and environmental settings.*<br>• *The security of the tenure held at the time of reporting along with any known impediments to obtaining a licence to operate in the area.* | • The areas reported for the Bottletree Prospect lie within Exploration Permit for Minerals 25659, which is held 100% by Superior Resources.<br>• Superior Resources holds much of the surrounding area under granted exploration permits.<br>• Superior has agreements or other appropriate arrangements in place with landholders and native title parties with respect to work in the area.<br>• No regulatory impediments affect the relevant tenements or the ability of Superior Resources to operate on the tenements. |
| ***Exploration done by other parties*** | • *Acknowledgment and appraisal of exploration by other parties.* | • All historical drilling reported in this report has been completed and reported in accordance with their current regulatory regime.<br>• Previous work on the prospect has been completed by Pancontinental Mining.<br>• Soil geochemical survey data compiled by Pancontinental Mining was used in this report for the purpose of part characterising the Bottletree mineralisation. |

| Criteria | JORC Code explanation | Commentary |
|---|---|---|
| | | • Compilation in digital form and interpretation of the results of that work in digital form has been completed by a Competent Person. |
| ***Geology*** | • *Deposit type, geological setting and style of mineralisation.* | • The Bottletree Prospect is hosted in Lower Palaeozoic deformed mafic meta-volcanic lavas and volcaniclastics.<br>• Mineralisation style is disseminated and vein sulphide of probable intrusion-related hydrothermal origin.<br>• On the basis of observations made in holes BTDD001, BTDD003 and BTDD004, the mineralisation at the Bottletree Prospect is considered to be intrusive-related. More geological, geochemical and drill data is required to fully understand the mineralisation setting. |
| ***Drill hole Information*** | • *A summary of all information material to the understanding of the exploration results including a tabulation of the following information for all Material drill holes:*<br>○ *easting and northing of the drill hole collar*<br>○ *elevation or RL (Reduced Level) of the drill hole collar*<br>○ *dip and azimuth of the hole*<br>○ *down hole length and interception depth*<br>○ *hole length.*<br>• *If the exclusion of this information is justified on the basis that the information is not Material and this exclusion does not detract from the understanding of the report, the Competent Person should clearly explain why this is the case.* | • A drill hole collar table is included in the main body of the report. |
| ***Data aggregation methods*** | • *In reporting Exploration Results, weighting averaging techniques, maximum and/or minimum grade truncations (e.g. cutting of high grades) and cut-off grades are usually Material and should be stated.*<br>• *Where aggregate intercepts incorporate short lengths of high grade results and longer lengths of low grade results, the procedure used for such aggregation should be stated and some typical examples of such aggregations should be shown in detail.*<br>• *The assumptions used for any reporting of metal equivalent values should be clearly stated.* | • Exploration results are yet to be received from the reported drill holes. |

| Criteria | JORC Code explanation | Commentary |
|---|---|---|
| ***Relationship between mineralisation widths and intercept lengths*** | • *These relationships are particularly important in the reporting of Exploration Results.*<br>• *If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported.*<br>• *If it is not known and only the down hole lengths are reported, there should be a clear statement to this effect (e.g. 'down hole length, true width not known').* | • Downhole length, true width not known until further drilling provides more information on the nature of the mineralised body.<br>• Detailed drill sections are not available until assay results have been received from the laboratory. |
| ***Diagrams*** | • *Appropriate maps and sections (with scales) and tabulations of intercepts should be included for any significant discovery being reported These should include, but not be limited to a plan view of drill hole collar locations and appropriate sectional views.* | • Included. |
| ***Balanced reporting*** | • *Where comprehensive reporting of all Exploration Results is not practicable, representative reporting of both low and high grades and/or widths should be practiced to avoid misleading reporting of Exploration Results.* | • N/A. |
| ***Other substantive exploration data*** | • *Other exploration data, if meaningful and material, should be reported including (but not limited to): geological observations; geophysical survey results; geochemical survey results; bulk samples – size and method of treatment; metallurgical test results; bulk density, groundwater, geotechnical and rock characteristics; potential deleterious or contaminating substances.* | • Publicly available and historic soil geochemical data and airborne magnetic survey data was compiled, examined and interpreted to aid in the interpretation of geological observations made from the available drill core.<br>• Images from an advanced 3D model of a MIMDAS IP survey are included in the report to allow an appreciation of the relationship of the mineralised intervals with the 3D modelling results. |
| ***Further work*** | • *The nature and scale of planned further work (e.g. tests for lateral extensions or depth extensions or large-scale step-out drilling).*<br>• *Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.* | Specific upcoming activities include:<br>• completion of drill hole BTDD004 to approximately 600m downhole depth;<br>• receive and analyse assays from BTDD001, BTDD003 and BTDD004;<br>• completion of multi-element soil sampling and assaying program;<br>• plan drill programs targeting potential porphyry intrusions and to delineate areas of near-surface copper and gold mineralisation;<br>• execute next drilling program; and |

Superior Resources

| Criteria | JORC Code explanation | Commentary |
|---|---|---|
| | | • conduct geochronological dating on intrusions and molybdenite for age correlation with intrusions in the Macquarie Arc in NSW, which hosts the world class Cadia and North Parkes porphyry Cu-Au deposits. |