

ASX and MEDIA RELEASE

11 May 2022



Mines and Wines Geological Presentation

Alkane Resources Limited's Exploration Manager NSW, Mr David Meates, will be presenting at the Mines and Wines Conference - Discoveries in the Tasmanides today.

A copy of Mr Meates' presentation is attached.

This document has been authorised for release to the market by Nic Earner, Managing Director.

ABOUT ALKANE - www.alkane.com.au - ASX: ALK

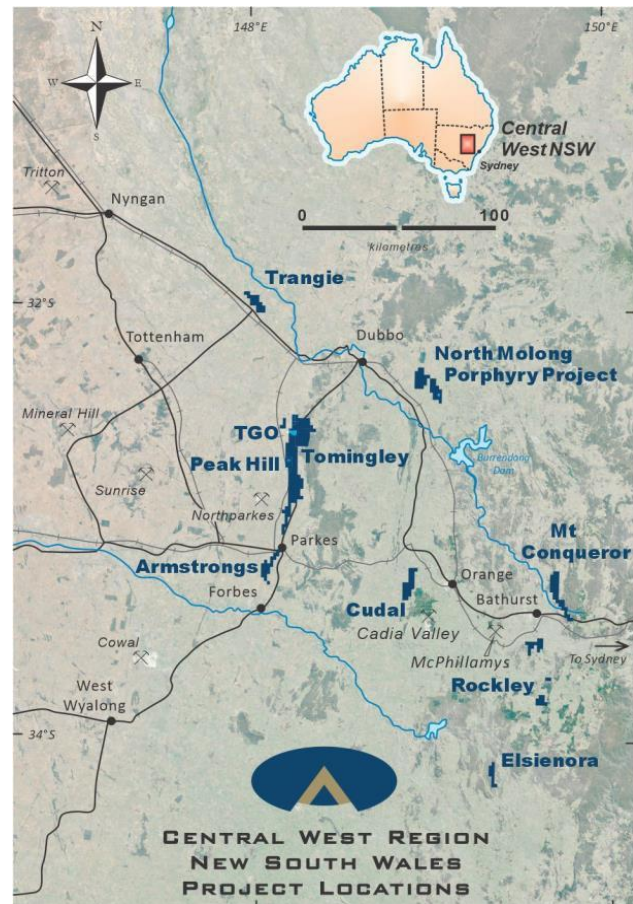
Alkane Resources is poised to become Australia's next multi-mine gold producer.

The Company's current gold production is from the Tomingley Gold Operations in Central West New South Wales, where it has been operating since 2014 and is currently expediting a development pathway to extend the mine's life beyond 2030.

Alkane has an enviable exploration track record and controls several highly prospective gold and copper tenements. Its most advanced exploration projects are in the tenement area between Tomingley and Peak Hill, which have the potential to provide additional ore for Tomingley's operations.

Alkane's exploration success includes the landmark porphyry gold-copper mineralisation discovery at Boda in 2019. With a major drill program ongoing at Boda, Alkane is confident of further consolidating Central West New South Wales' reputation as a significant gold production region.

Alkane's gold interests extend throughout Australia, with strategic investments in other gold exploration and aspiring mining companies, including ~9.7% of Calidus Resources (ASX: CAI).





The Boda Porphyry Discovery

David Meates, Exploration Manager NSW
Rodney Dean, Senior Geologist
Ian Chalmers, Technical Director

MAY 2022

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Disclaimer



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Previously reported information

The information in this report that relates to the combined mineral resources and ore reserves is drawn from the Company's ASX announcement dated 7 September 2021.

The Tomingley Life Of Mine Plan is extracted from the Company's ASX announcement dated 3 June 2021. Exploration results are extracted from the Company's ASX announcements noted in the text of the document and are available to view on the Company's website. The Company confirms that it is not aware of any new information or data that materially affects the information included in the relevant market announcement(s); in the case of estimates of mineral resources or ore reserves, that all material assumptions and technical parameters underpinning the estimates in the relevant market announcement continue to apply and have not materially changed; and that the form and context in which the Competent Person's findings are presented have not been materially altered.

Competent person

Unless otherwise advised above or in the Announcements referenced, the information in this presentation that relates to exploration results, mineral resources and ore reserves is based on information compiled by Mr D I Chalmers, FAusIMM, FAIG, (director of the Company) who 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. Mr Chalmers consents to the inclusion in this presentation of the matters based on his information in the form and context in which it appears.

Acknowledgements

- Alkane employees past and present
- Dr Alan Wilson (GeoAqua Consultants)
- Dr Anthony Crawford (A & A Crawford Geological Research Consultants)



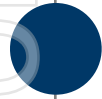
Overview



Background



Geological setting



Prospect geology



Mineralisation



Boda geological model



Implications for exploration



Background

Alkane Active in the Central West for 30 years

- **Peak Hill Gold Mine** operation 1998 – 2002
- **Tomingley** >2Moz Au resources and production since 2014
- **Other Discoveries**
 - Discovery with Newmont of >2Moz Au McPhillamys and subsequent sale to Regis Resources (2012)
 - Resource definition of Galwadgere Cu-Au deposit and sale to Sky Metals (2020)
 - Resource definition; process development of the Dubbo Rare Metal Project. Successful demerger of Australian Strategic Materials in 2020
- **Northern Molong Porphyry Project (NMPP)**
discovery of significant Au-Cu mineralisation at Boda in 2019 and extensive ongoing drilling.



Regional Setting



MACQUARIE ARC – ORDOVICIAN VOLCANICS

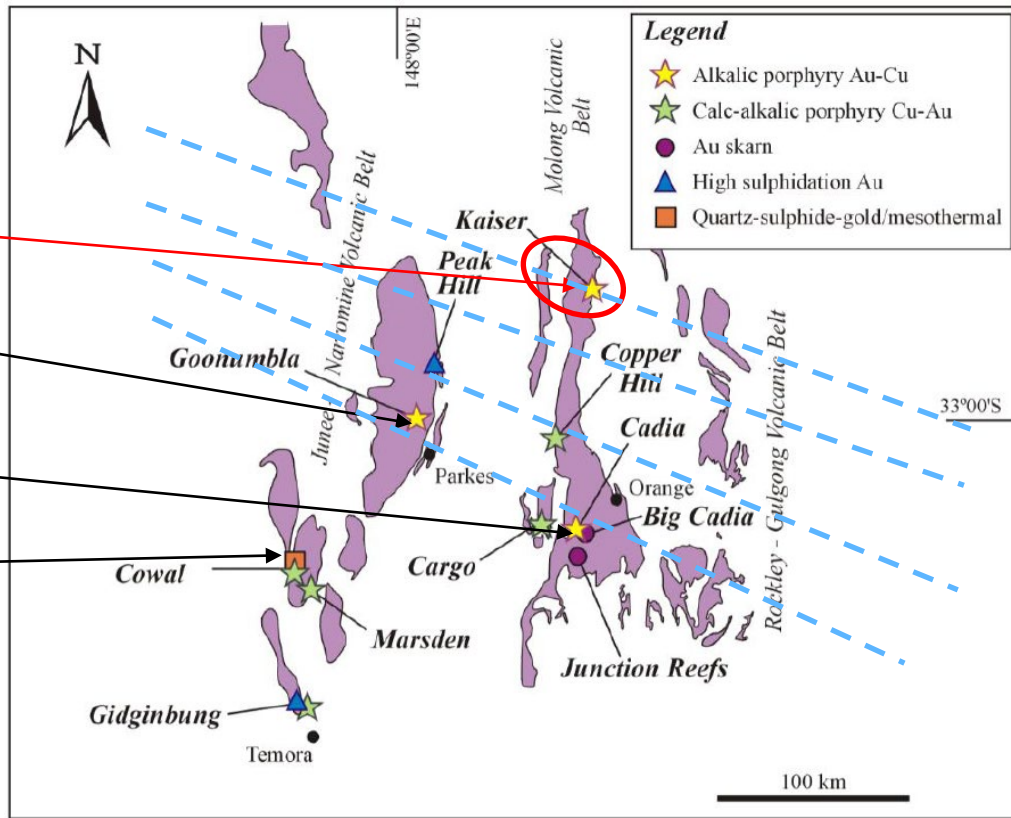
Major Porphyry – Epithermal Deposits:

**Northern Molong Porphyry Project
Boda (resource?)**

Northparkes (5.2Moz Au + 4.4Mt Cu)

Cadia (50Moz Au + 8.7Mt Cu)

Cowal (11Moz Au)



Exploration History

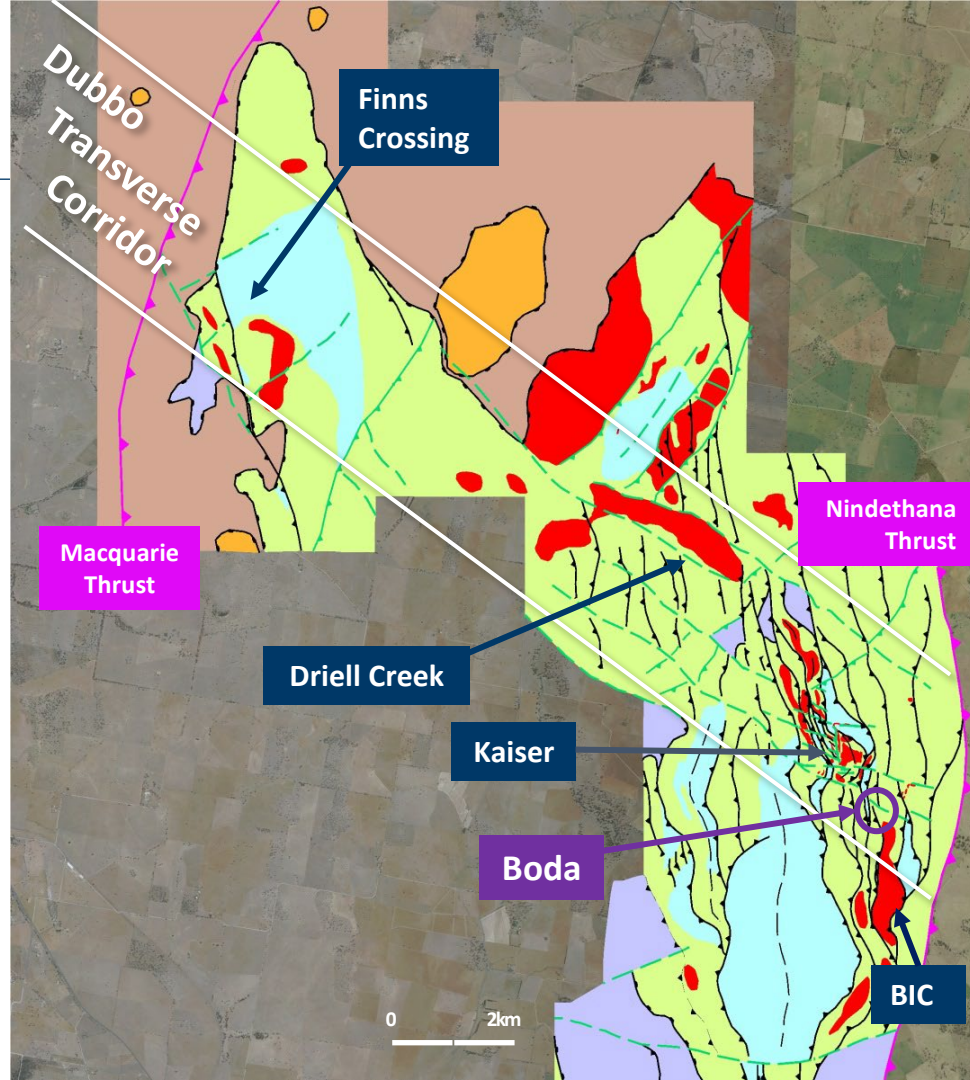
- EL 4022 was acquired from CRAE (Rio Tinto Exploration) in 2004 with the initial interest being the historically mined (70koz) high grade quartz vein at Bodangora (Mitchell's Creek mine).
- Following drill testing of Bodangora by Alkane (with very few interesting results), the company initiated a thorough review of a substantial data base on the whole project area. This work highlighted a number of potential porphyry type targets demonstrated by the outcropping alteration and mineralisation at the small historic workings at Kaiser.
- The Kaiser outcrop area had been extensively drilled by a number of companies over a strike length of about 300m and depth of 90m, and calculated a non-JORC deposit of 403,000 tonnes grading 0.93g/t Au and 0.99% Cu.



Kaiser workings and leaching vats

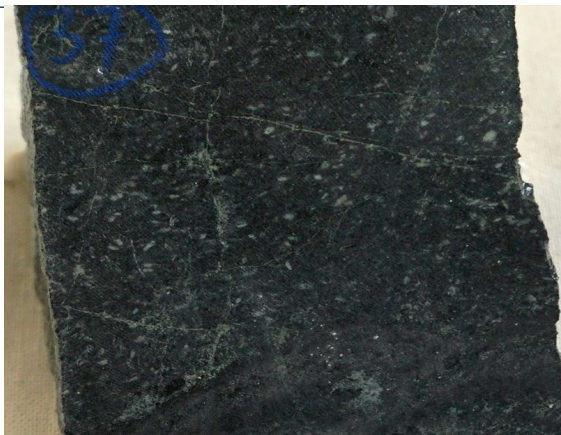
Geological Setting

- Boda and Kaiser located at the intersection of the Arc parallel Nindethana Thrust and northwest 'Dubbo' transverse corridor. Other north-south thrust structures offset the belt to the west (Macquarie Thrust).
- Dilationary intersection and offset provides enhanced environment for monzonite intrusive bodies and focus for large fluid flow.
- Northern Molong Porphyry Project comprises of intrusives, volcanics and volcanoclastics of the Ordovician Cheeseman Creek Formation.



Boda Geology – Country Rocks

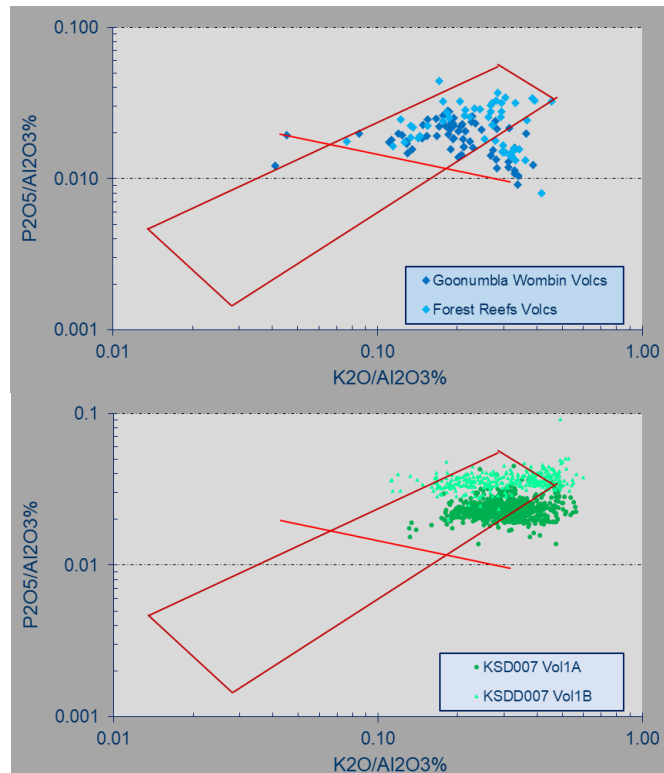
- Boda volcanics are shoshonitic.
- Host Ordovician volcanic package comprises of four litho-geochemically distinct suites.
- Most abundant upper suite correlates with the upper Fairbridge Volcanics.
- Mapping of the volcanic groups suggests stratigraphy at Boda is horizontal to gently east dipping.
- Rare intercalated volcanoclastic units.



KSD007 - 345m (Vol1A) hornblende-augite-plagioclase -phyric basaltic andesite



KSD011 - 916m (Vol1B) hydrothermally brecciated augite - phyric basalt



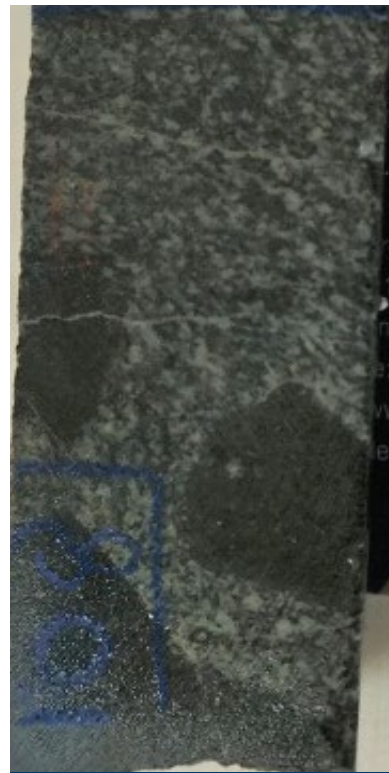
Shoshonitic Boda Cheesemans Creek Formation volcanics (Vol1A + Vol1B) vs Goonumbla and Forest Reefs Volcanics
Crawford et al (2007 AJES Macq Arc Special Edition)

Boda Geology – Intrusive Rocks

- Intrusions comprise of high-K calc-alkaline to shoshonitic monzodiorite and monzonites.
- Monzogabbro and monzodiorite intrusives are feeder dykes and are pre-mineral.
- Monzonite dykes host only late-mineral quartz-chalcopyrite veins suggesting late-mineral timing.
- Post-mineral intrusions comprise of basaltic, andesitic, dacitic and rhyolitic compositions



KSDD007 – 1142m
Augite-plagioclase monzogabbro
porphyry crosscut by
monzodiorite



KSDD009 – 148m Plagioclase-
hornblende monzodiorite
porphyry with cognate inclusion
of hornblende



KSDD019 – 988m
Biotite-quartz monzonite

Boda Geology – Intrusive Breccias

- Magmatic-hydrothermal breccias appear to be the focus of the extensive calc-potassic alteration at Boda.
- Series of NW trending monzodiorite intrusions form a vertical 300m x 500m stock of intrusive breccias central to Boda.
- Intrusive breccias transition to hydrothermal breccias with highest Cu-Au grades
- Brecciation event syn- to post monzodiorite emplacement and is the likely 'causative' to Boda



KSDD001 – 925m
Pink monzodiorite intrusive
breccia of calc-potassic altered
basalt



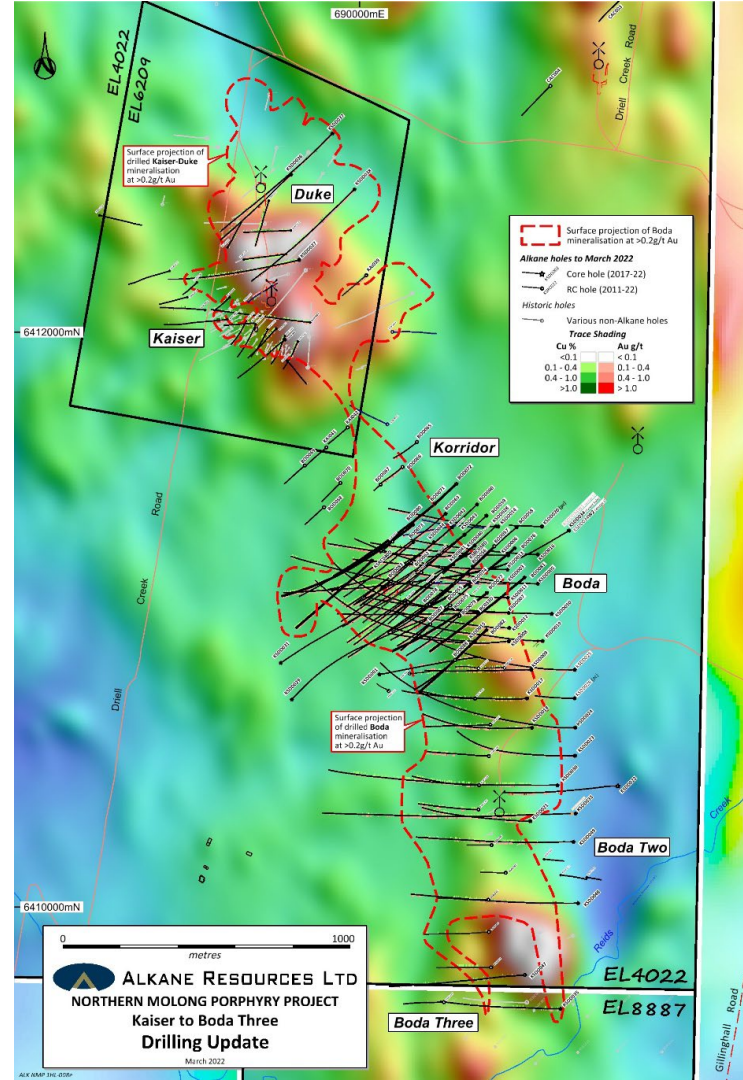
BOD077 – 420m Monzodiorite-hydrothermal
breccia of calc-potassic altered basaltic
andesite with chalcopryite mineralisation

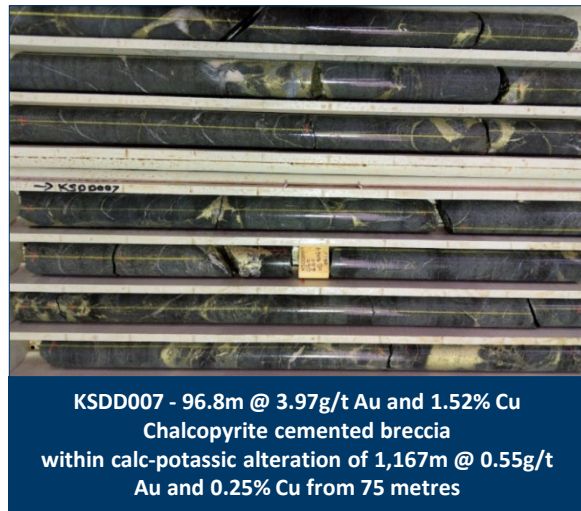


KSDD011 – 916m
Hydrothermally
brecciated augite-
hornblende pyritic basalt

Mineralisation

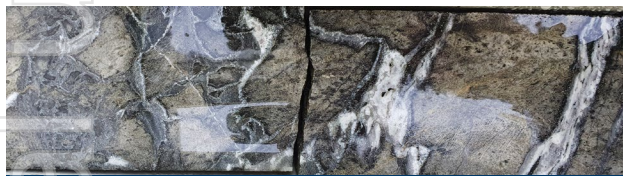
- ~3km of continuous $>0.2\text{g/t}$ gold mineralisation from Kaiser to Boda Three prospects.
- Approximately 60,000 metres of drilling at Boda for the maiden resource estimation.



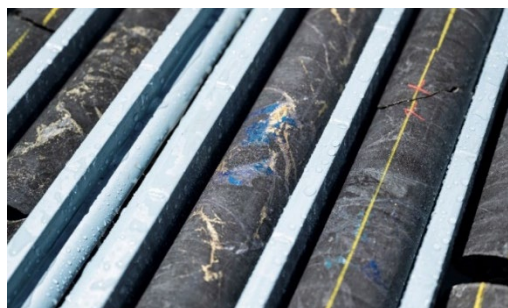
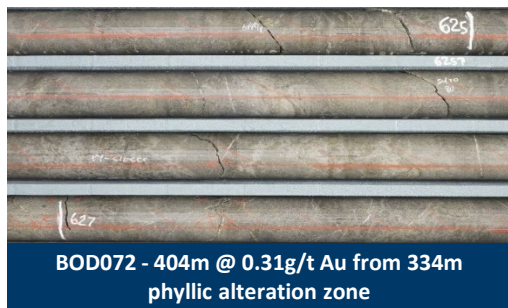
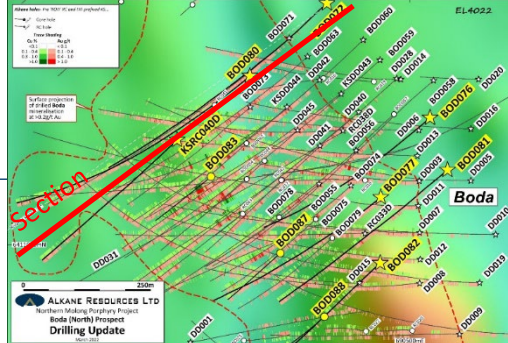


Mineralisation

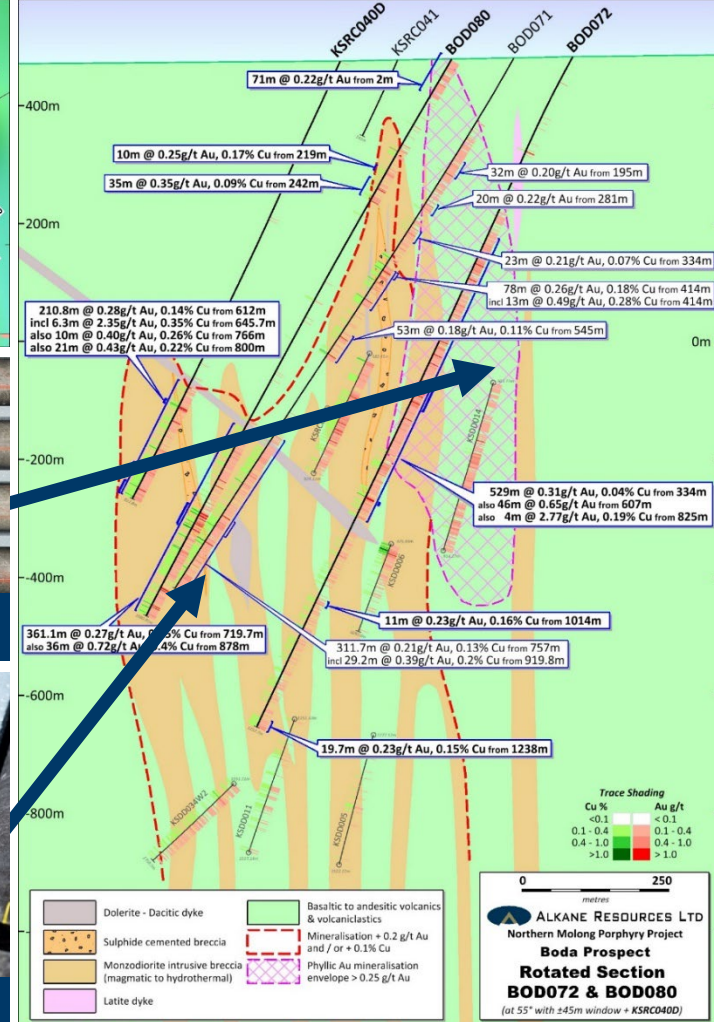
- Bornite-chalcopyrite cemented breccia observed at depth to the northwest. Indicator of the Boda system plunging northwest.
- Overprinting north-east shoulder of Boda is a gold - rich phyllic blanket comprising of sericite-quartz-calcite-albite-pyrite.
- Evidence of epithermal gold mineralisation within the phyllic alteration zone.



KSD006 – 349.5m epithermal veining in phyllic alteration zone



BOD080 - 2m @ 1.01g/t Au and 1.92% Cu bornite-chalcopyrite cemented breccia within 361m @ 0.27g/t Au and 0.15% Cu from 719.7m



North-western drilling section at Boda

Mineralisation – Hydrothermal Breccia Zonation

KSDD040 – pyrite-cemented crackle breccia

1m grading 0.41g/t Au from 250m



KSDD043 – chalcopyrite-cemented crackle breccia

1m grading 14.3g/t Au, 2.80% Cu from 738m



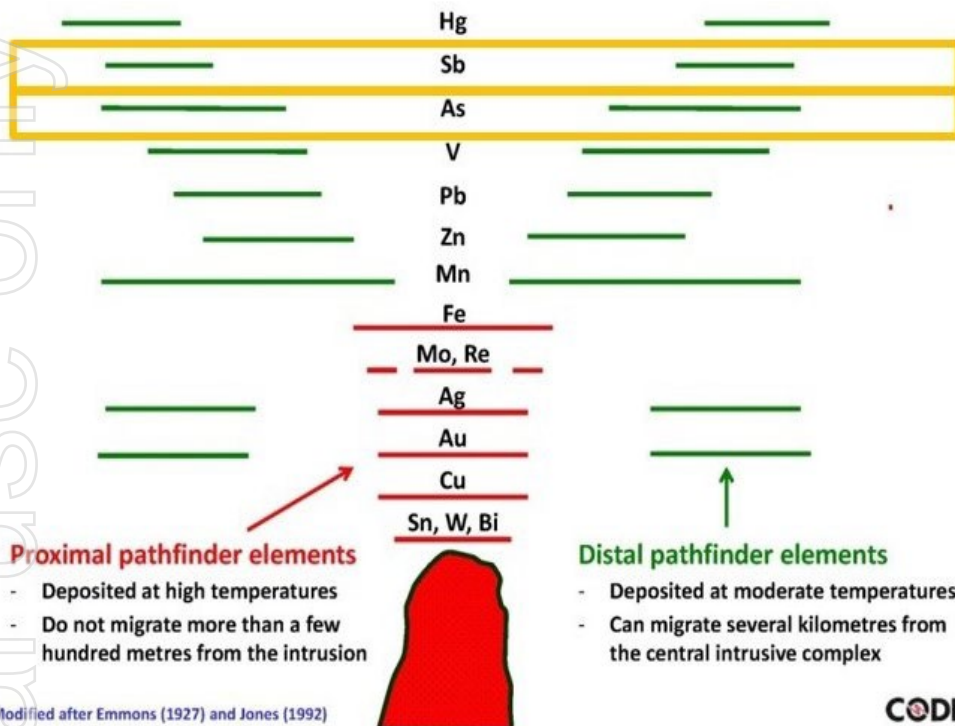
BOD071 – chalcopyrite-bornite crackle breccia

1m grading 2.32g/t Au, 1.46% Cu from 973m

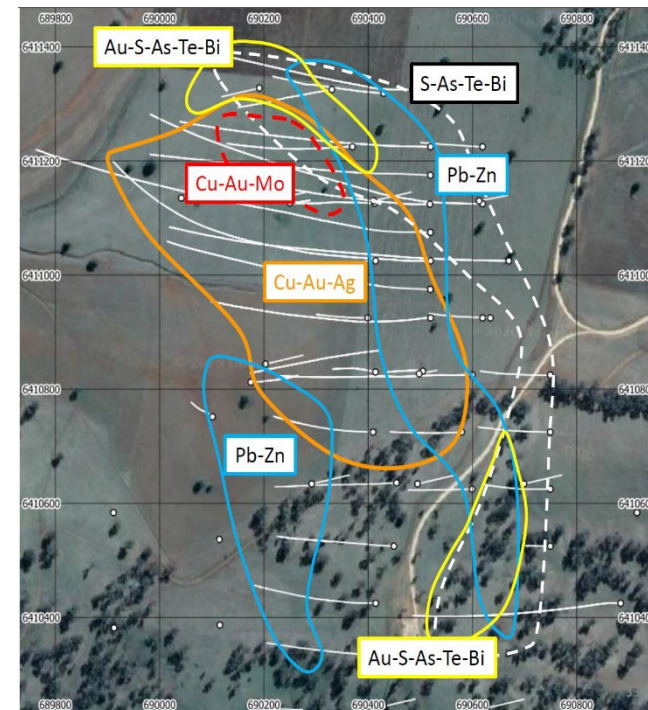


Mineralisation Zonation

MACQUARIE ARC PORPHYRY MODEL



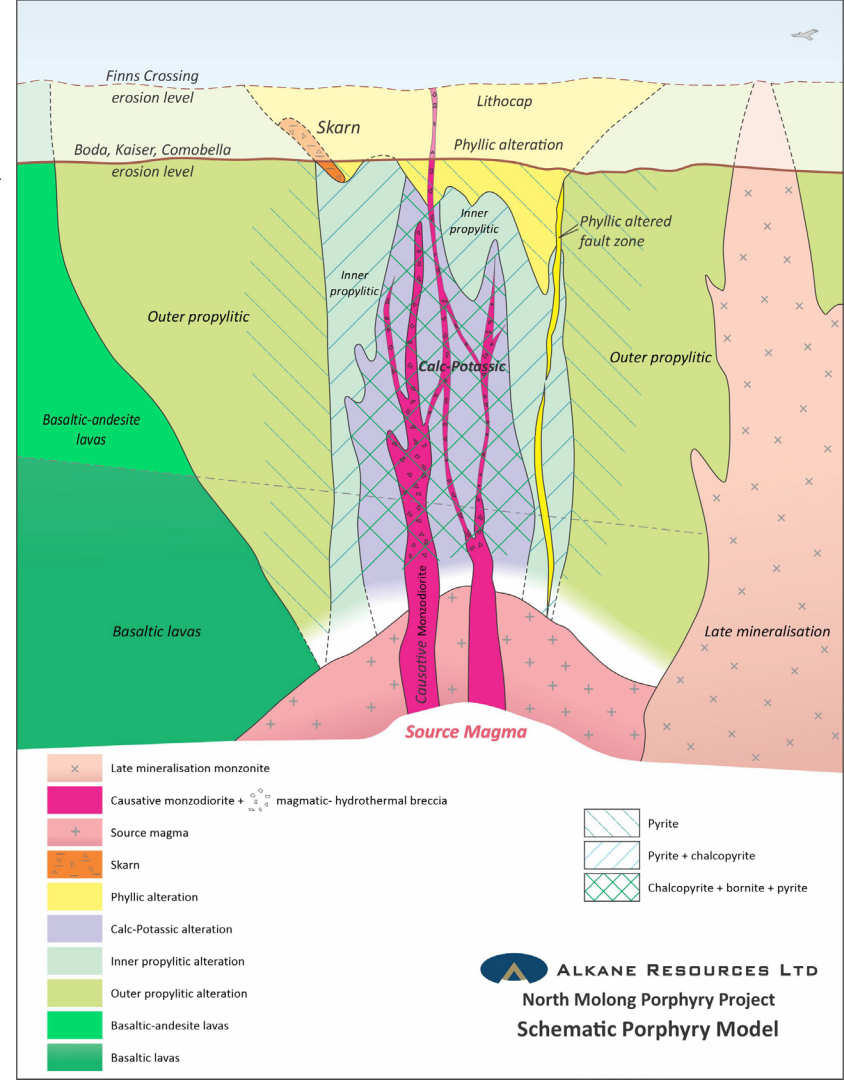
GEOCHEMICAL SIGNATURE



Boda Metal Zonation

Boda Geological Model

- Shallowly east dipping host sequence of shoshonitic basalt to andesite lavas with rare volcanoclastics. The volcanic sequence is cut by near vertical monzogabbro to monzonitic dykes and intrusive breccias.
- Positioned beneath a submarine stratovolcano.
- Alteration of host sequence is extensive calc-potassic with gold-copper mineralisation centred around intrusive breccias, zoning out to inner and outer propylitic alteration overprinted by a significant gold-rich phyllic alteration blanket.
- Metal zonation indicates several separate hydrothermal cells defined within the 5km NW corridor at Boda, Boda Two and Kaiser.
- Lithogeochemistry and age-dating place Boda in Late Ordovician – Early Silurian shoshonitic volcanic - intrusive event (443 – 436Ma) of the Molong Volcanic Belt.



Exploration Implications: Magnetic Intrusive Complexes

15km northwest trending structural corridor with multiple 'fertile' alkalic intrusive complexes.

Finns Crossing

Murga prospect skarn target and separate strong IP chargeability anomaly possible extensive phyllic alteration. Float samples 6.4g/t Au 7.6% Cu; 3.8g/t Au 0.12% Cu

Comobella Intrusive Complex

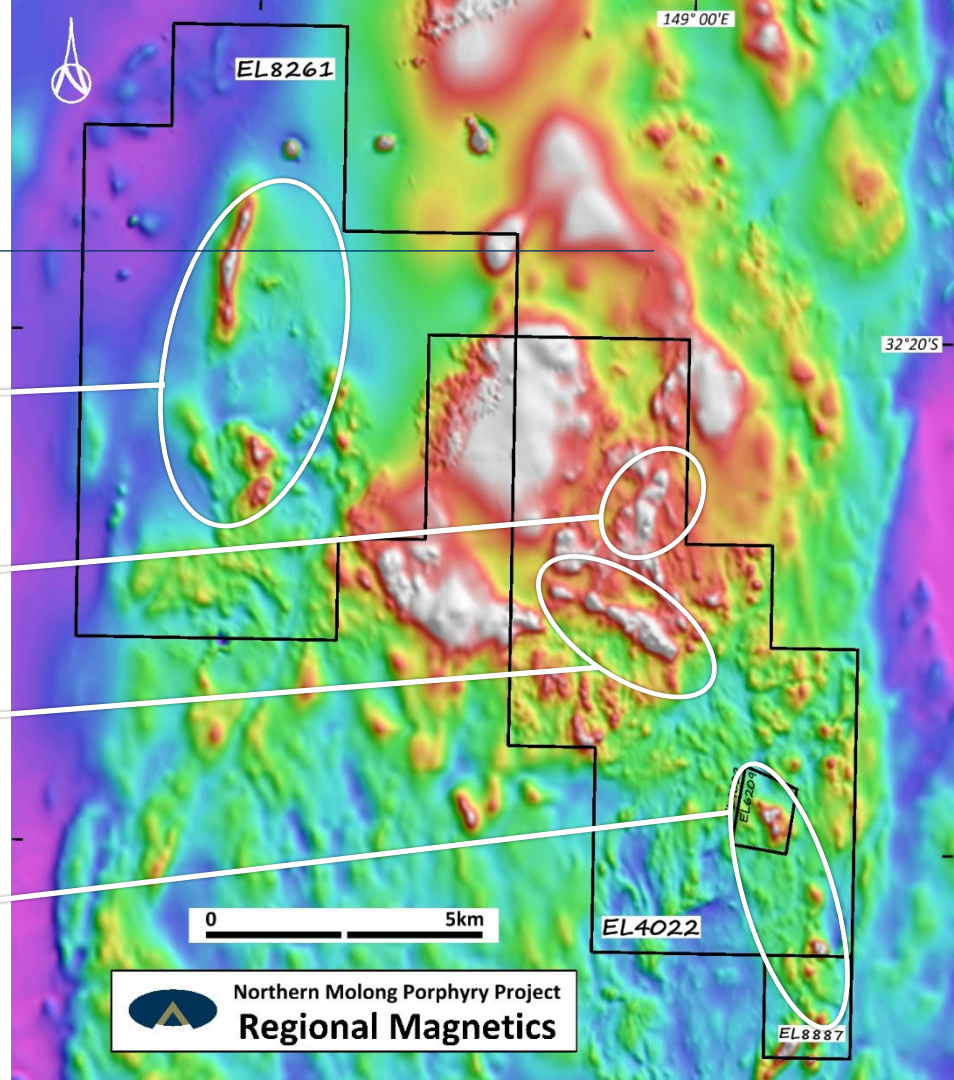
21km² area, several copper-gold intercepts associated with monzonites. Best COMRC009 46m @ 0.9g/t Au and 0.25% Cu.

Driell Creek Intrusive Complex

6km² area positioned within NW corridor. Driell Creek prospect (magnetic low) is a significant sized upper level phyllic zone alteration (Au poor).

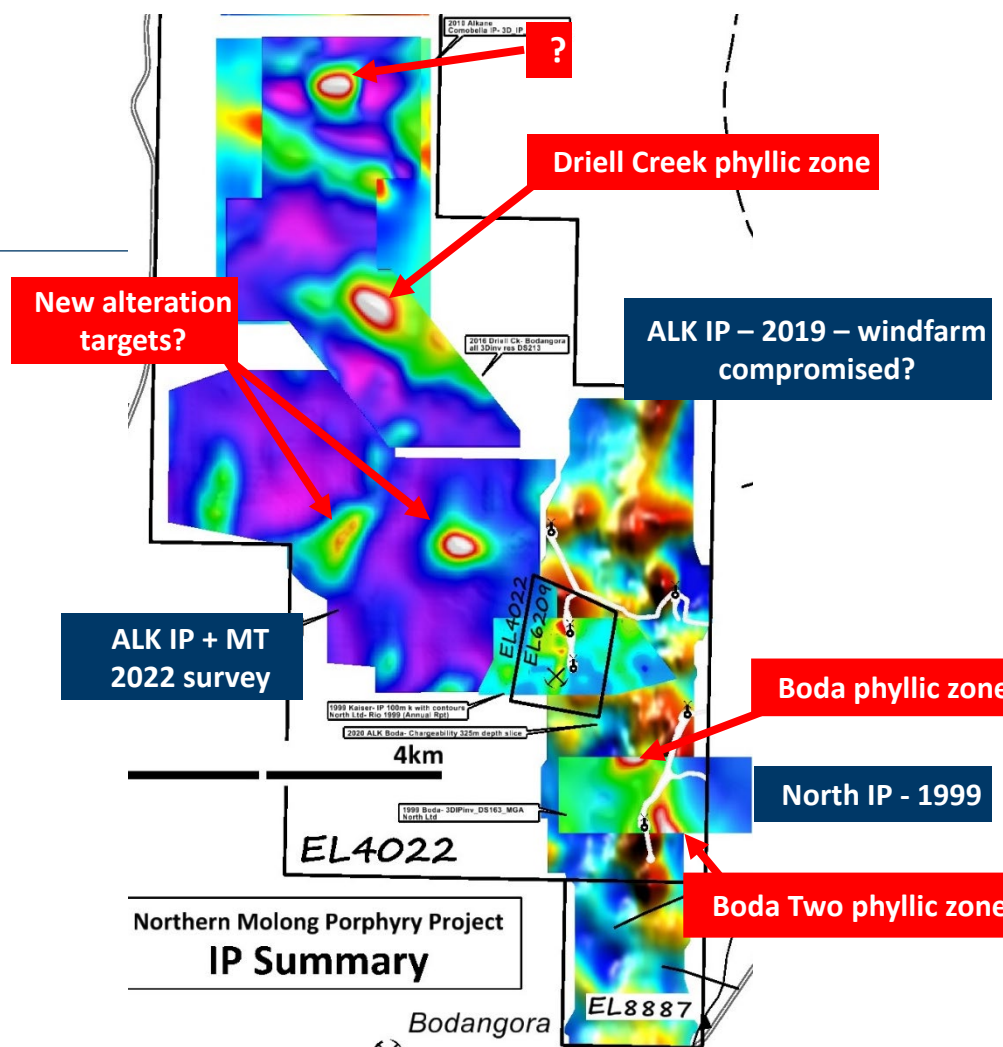
Boda and Kaiser Intrusive Complexes

5km long Kaiser-Boda, 1km wide corridor, of intrusives, extensive propylitic to magnetic potassic alteration with gold and copper mineralisation.



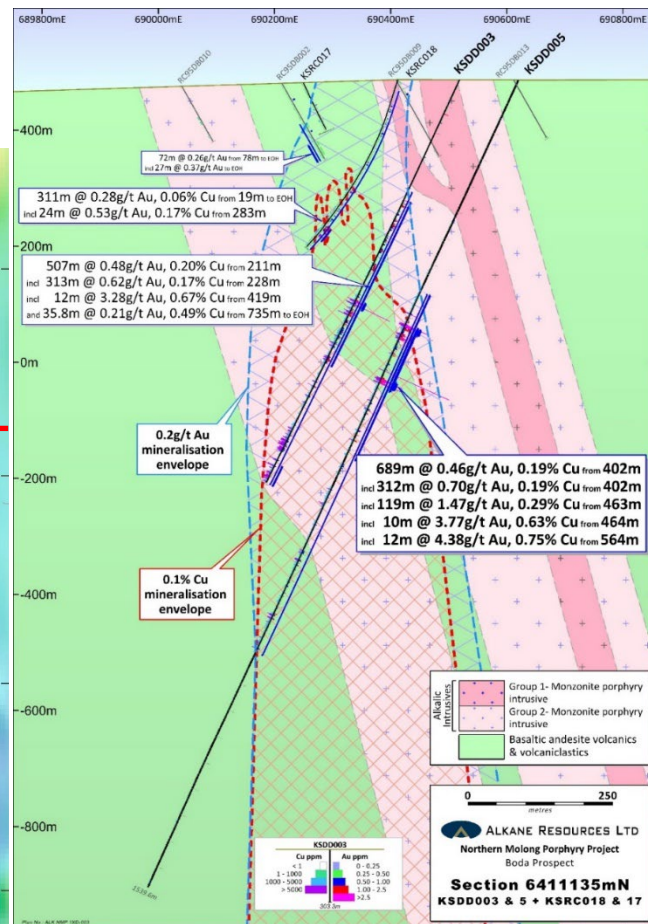
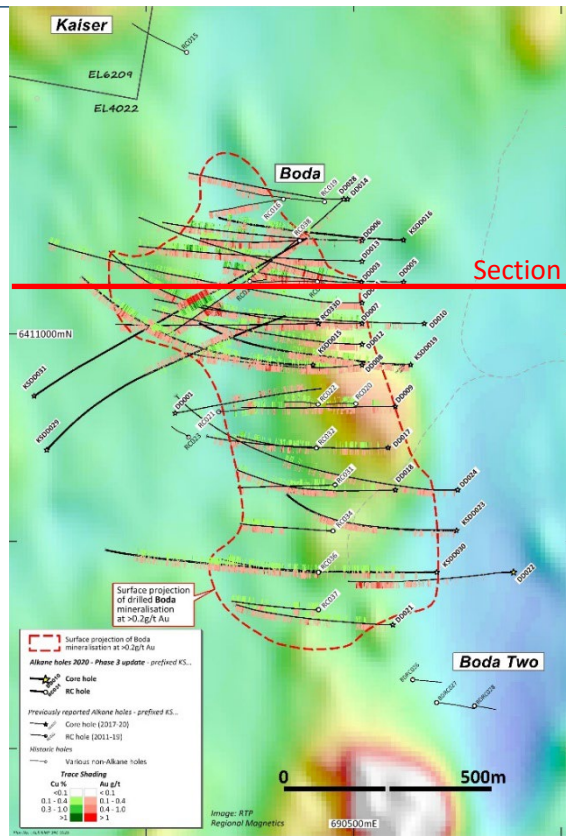
Exploration Implications: Electrical Geophysics

- Seven IP surveys completed since 1999 including three small programs completed by North.
- Bodangora Wind Farm was constructed from 2017 – 2019 and exploration ceased. Alkane completed an IP survey in 2019 immediately after Boda was discovered. The survey is compromised by the wind farm infrastructure.
- IP has identified four significant chargeability highs associated with porphyry alteration zones. Including a gold-poor but extensive phyllic alteration at Driell Creek, Au-Cu mineralisation at Kaiser and two gold-rich phyllic zones at Boda and Boda Two with intercepts of KSRC018 – 311m @ 0.28g/t Au from 19m and KSDD022 – 292m @ 0.66g/t Au from 867m respectively.
- In 2022 a IP + MT survey over the Driell Creek Magnetic Complex has highlighted a new chargeable high, with a resistive halo, ~2km northwest of Kaiser.



Exploration Implications: Discovery Drilling Section

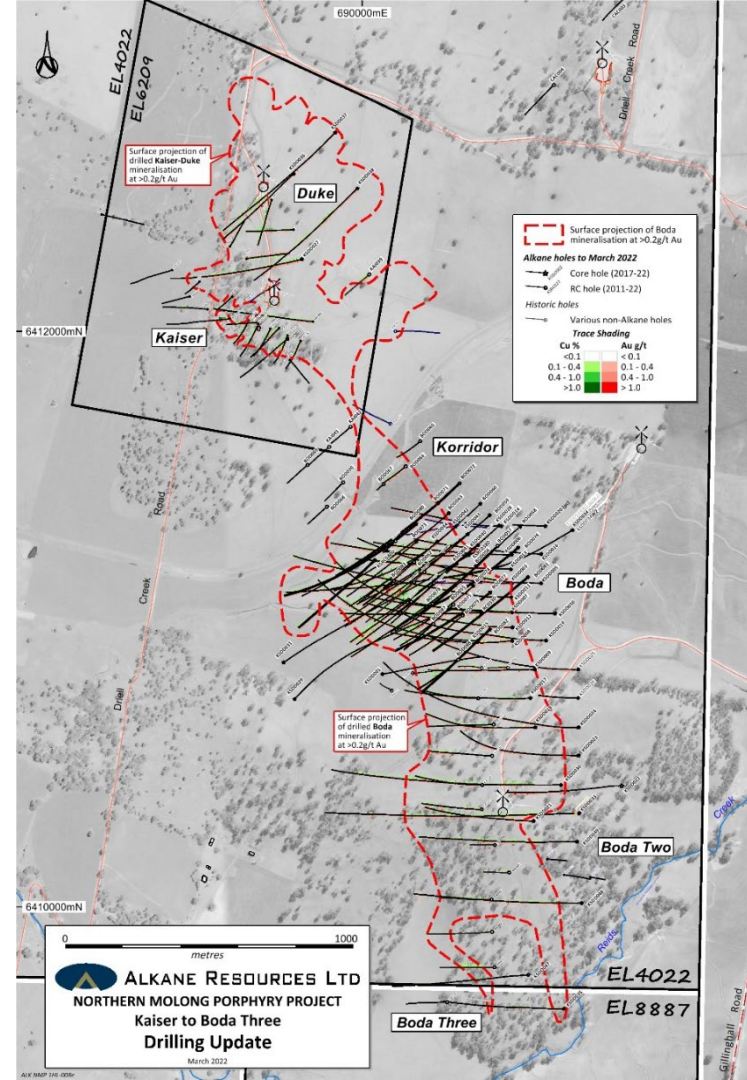
- Initial RC drilling in conducted by CRAE in 1995 outlined 600m x 200m zone of shallow low-grade mineralisation.
- In 2016 Alkane targeted the Boda mineralisation and a co-incident IP chargeable high with deep RC hole KSRC018 intersecting 311m @ 0.28g/t Au from 19m in mostly phyllic alteration. A zone of potassic alteration near end of hole returned 24m @ 0.53g/t Au, 0.17% Cu from 283m.
- In 2019 diamond drill hole KSDD003 intersected 507m @ 0.48g/t Au, 0.20% Cu from 211m demonstrating lateral and vertical metal and alteration zonation of a significant Au-Cu porphyry system.



Discovery Hole - KSDD003

Summary

- Boda is a Au-Cu alkalic porphyry system associated with intrusive-hydrothermal breccias of a host sequence of basaltic -andesites. Boda represents a probable unique style of significant Au-Cu porphyry mineralisation for the Macquarie Arc.
- Exploration work continuing at Boda Two, Kaiser, Korridor and the Driell Creek Intrusive Complex. As well as distal skarn targets such as Finns Crossing.
- Boda maiden resource estimation is due for release later this month and should confirm it as a state significant greenfields discovery for NSW.





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