

## VICTORIA MINERALS ROUNDUP PRESENTATION

Gold and base metals explorer Carawine Resources Limited (“**Carawine**” or “**the Company**”) (ASX:CWX) is pleased to provide a copy of a technical presentation entitled “Jamieson Project – Advancing an exciting gold and base metals district” highlighting the Company’s copper-gold porphyry targets at its Jamieson Project in northeastern Victoria.

The presentation is being given today by the Company’s Exploration Manager Mr Michael Cawood at the Victoria Minerals Roundup 2019 conference in Macedon, Victoria.

**ENDS**

For further information please contact:

David Boyd  
Managing Director  
Tel: +61 8 6319 0400  
[info@carawine.com.au](mailto:info@carawine.com.au)

Media: Paul Ryan  
Citadel-MAGNUS  
Tel: +61 8 6160 4900  
[pryan@citadelmagnus.com](mailto:pryan@citadelmagnus.com)



**Carawine**  
Resources

# **Jamieson Project - Advancing an exciting gold and base metals district**

**VICTORIA MINERALS  
ROUND-UP**

M.Cawood

*Exploration • Gold • Copper • Base Metals*

# Compliance, Disclaimer and Cautionary Statements



These Presentation Materials include information that relates to Exploration Results prepared and first disclosed under the JORC Code (2012). The information was extracted from the Company's previous ASX Announcements as follows:

- Various: "Quarterly Activities Report for the Period Ended 30 September 2019" 31 October 2019
- Paterson: "\$6 million Paterson Farm In With Rio Tinto" 28 October 2019
- Jamieson: "Carawine Targets Copper-Gold Porphyries at its Victorian Jamieson Project" 16 October 2019
- Placement: "Carawine to Raise \$3m to Advance Paterson and Jamieson Projects" 20 September 2019
- Jamieson: "Copper-gold Porphyry Targets at Hill 800" 11 September 2019
- Various: "Quarterly Activities Report For The Period Ended 30 June 2019" 31 July 2019
- Jamieson: "New Gold Prospects Defined at Jamieson" 15 July 2019
- Jamieson: "Gold Zone Extended With Latest Results From Hill 800" 27 May 2019
- Jamieson: "New Drill Holes Confirm High Grade at Hill 800" 3 May 2019
- Various: "Quarterly Activities Report For The Period Ended 31 March 2019" 29 April 2019
- Jamieson: "New Gold Zone Discovered at Hill 800" 5 February 2019
- Jamieson: "Second Round of Diamond Drilling Underway at Hill 800" 28 November 2018

Copies of these are available from the ASX Announcements page of the Company's website: [www.carawine.com.au](http://www.carawine.com.au)

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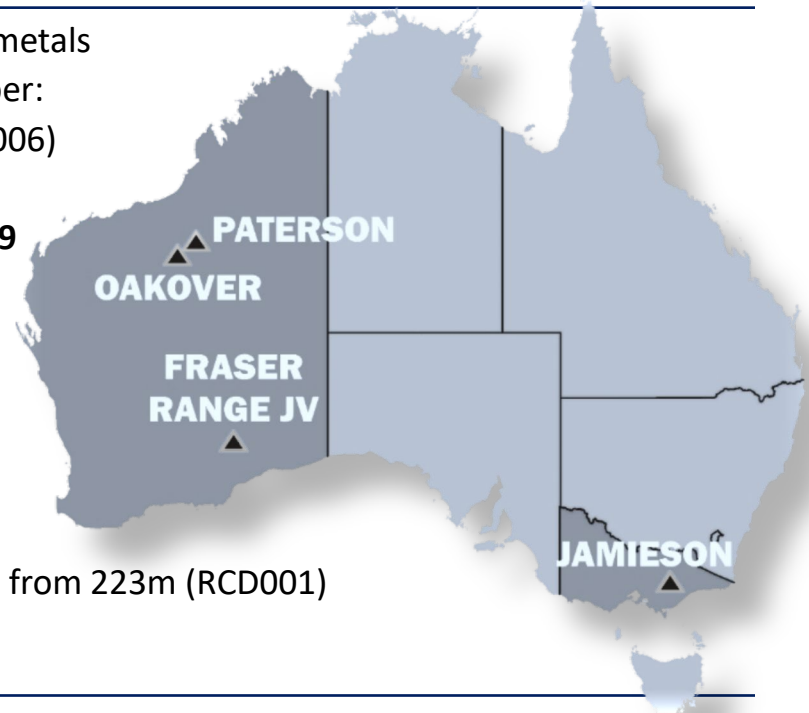
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### Jamieson

- Northeastern Victoria gold, copper, base metals
- **Hill 800** – shallow, high grade gold & copper:
  - 92.7m @ 3.22g/t Au from 2.3m (H8DD006)
  - 43m @ 4.24g/t Au, 0.3% Cu (H8DD002)
  - **Extension drilling commencing Q4 2019**
- **Porphyry copper-gold targets at Hill 800**
  - 200m to 600m below surface
  - **Detailed heli-mag survey complete, results pending**
  - **Drill testing commencing Q1 2020**
- **Rhyolite Creek – zinc & gold VMS**
  - 1.4m @ 15.6% Zn, 7.4g/t Au, 113g/t Ag from 223m (RCD001)
  - **Follow-up drilling Q4 2019 – Q1 2020**



### Paterson

- Paterson Province WA gold and copper – exciting exploration region
  - Major gold & copper discoveries Winu (Rio Tinto) and Havieron (Greatland Gold)
- **\$6 million farm-in and JV with Rio Tinto Exploration commenced October 2019**
- Strategic tenement holding, new tenements added recently

### Fraser Range

- **Southeast WA nickel, copper and cobalt**
- JV with Independence Group (ASX:IGO), IGO 51% earning to 70%
- New magmatic nickel-copper prospect identified by IGO at Big Bullocks

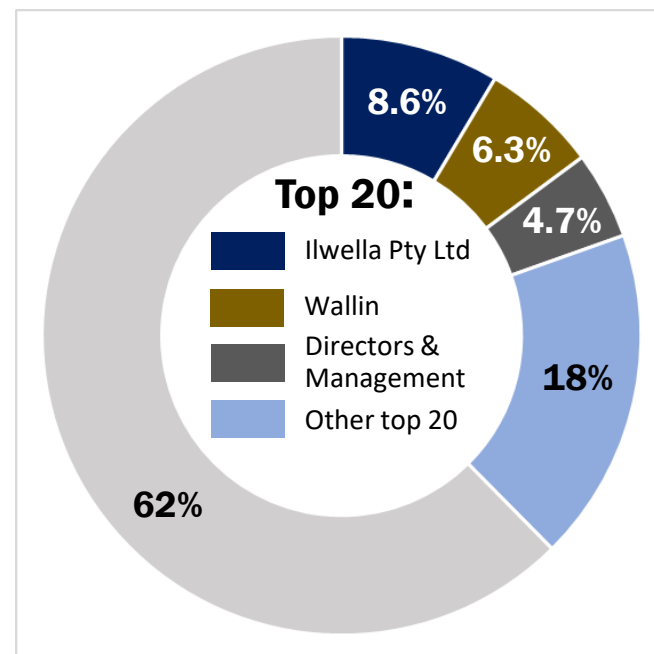
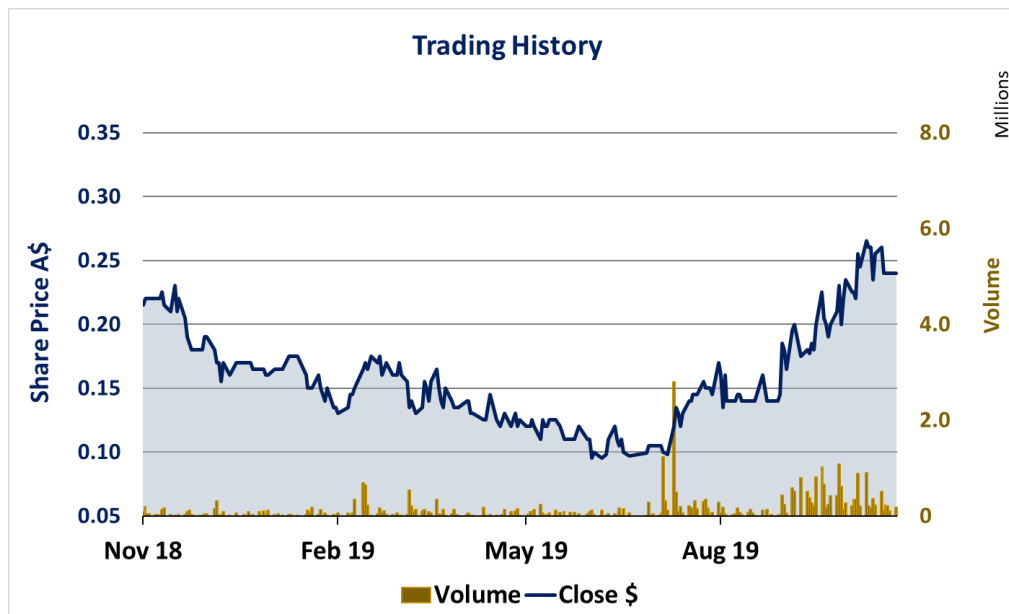
# Carawine Resources

## Corporate Snapshot



ASX CODE	ISSUED SHARES <sup>1</sup>	SHARE OPTIONS <sup>2</sup>	SHARE PRICE	MARKET CAP.	CASH (at 30/09/19)	ENTERPRISE VALUE	TOP 20 HOLDERS
<b>CWX</b>	<b>69.8M</b>	<b>12.3M</b>	<b>\$0.26</b>	<b>\$18M</b>	<b>\$2.6M*</b>	<b>\$14.4M</b>	<b>38%</b>

**\*\$1M SECOND TRANCHE OF \$3M CAPITAL RAISING DUE MID-NOVEMBER**

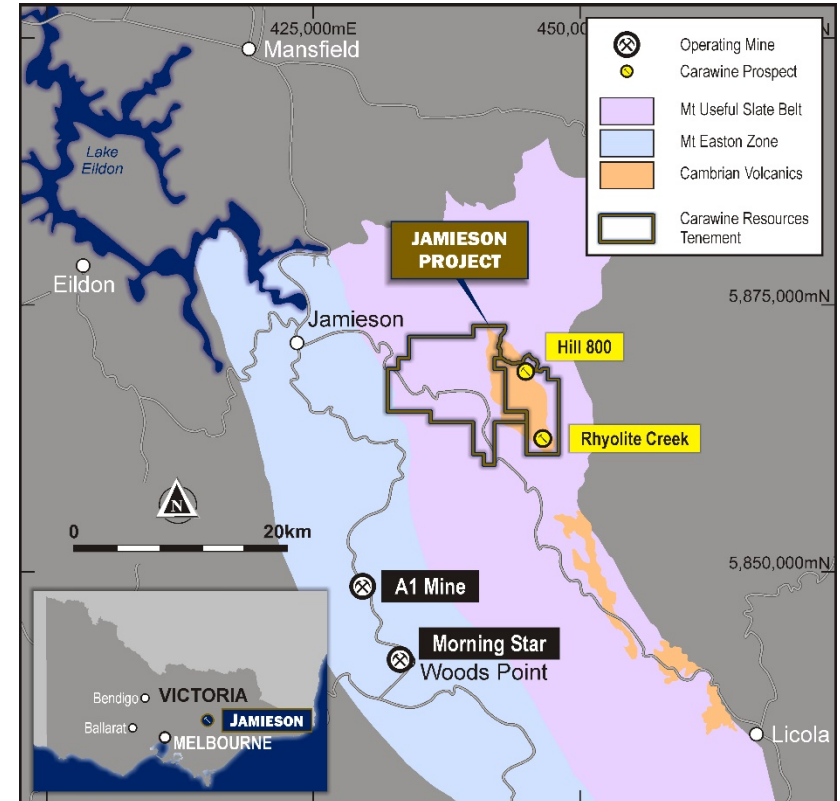


\*Share placement to raise \$3 million in two tranches announced 20 September 2019, first tranche to raise ~\$2 million completed 26 September 2019, included in 30 September 2019 cash balance. Second tranche to raise ~\$1 million subject to shareholder approval at AGM on 14 November 2019.

All figures as at 7-Nov-19 unless stated otherwise. <sup>1</sup> includes 2.3M shares escrowed to December 2019. <sup>2</sup> average exercise price \$0.30 – does not include 1.9M Performance Rights

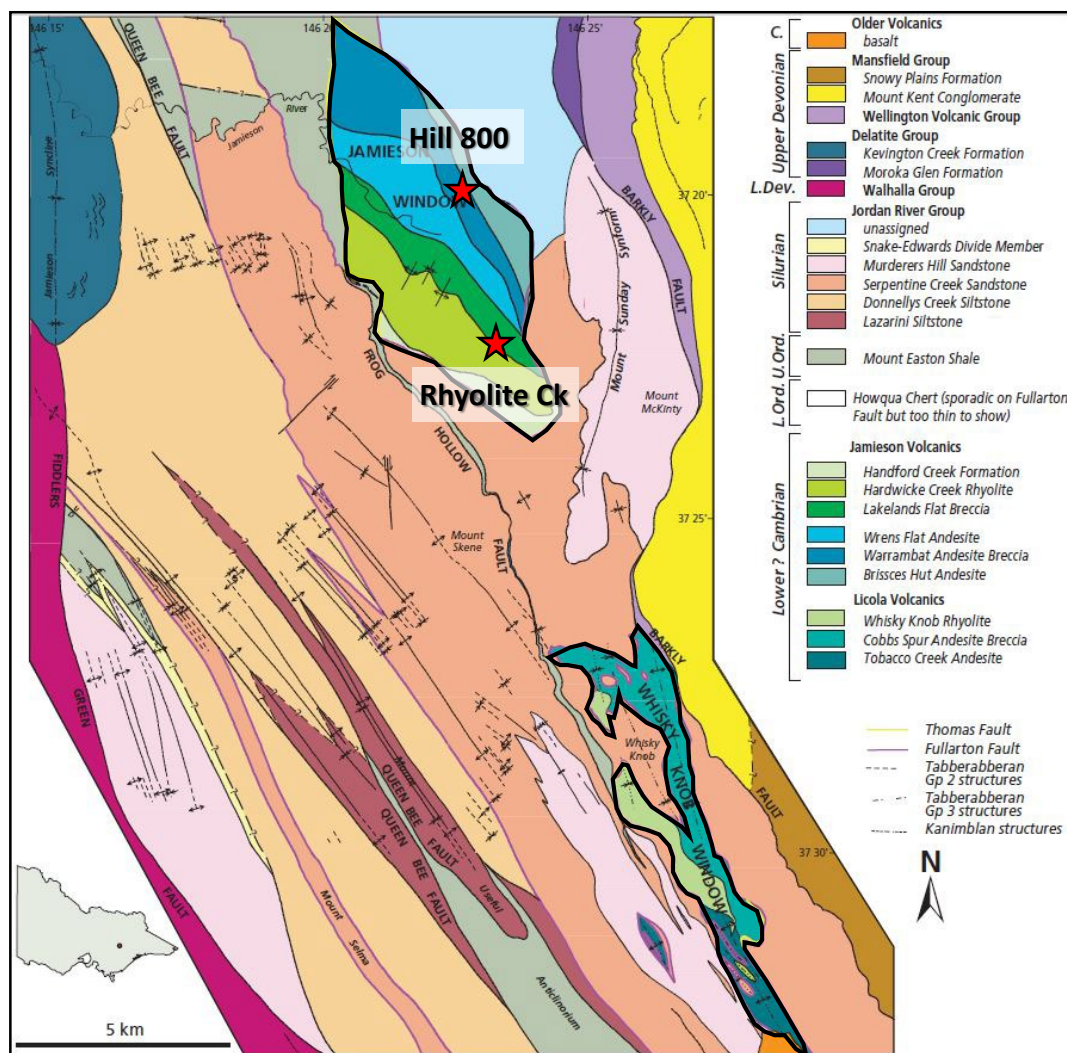


# Jamieson Project Location



- 120km ENE of Melbourne, 20km east of Jamieson
  - State Forest, accessed by logging tracks – not populated
  - Mining active in area (A1 and Morning Star mines)
  - Within Mount Useful Slate Belt – eastern most part of Melbourne Zone

# Jamieson Project Geology



- Located in a Cambrian fault slice (Jamieson Window)
- Silurian thrust over Cambrian (Devonian Tabberabberan event)
- Subsurface link likely between Jamieson & Whisky Knob windows
- Hill 800 hosted by med-K calc-alkalic andesites
- Rhyolite Creek hosted by rhyolite and med-K calc-alkalic andesites

Modified from Vandenberg 2003

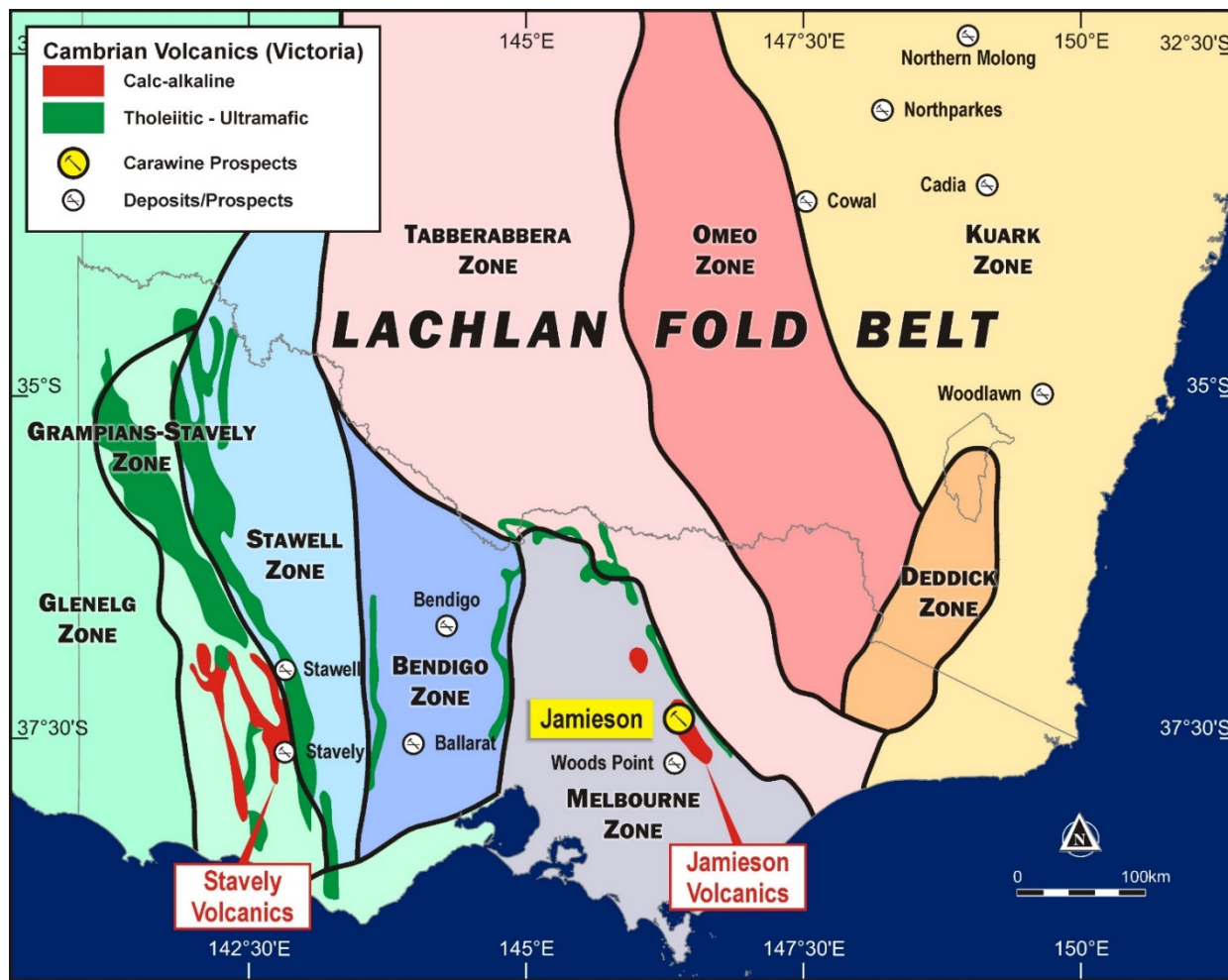
# Jamieson Project Regional Context

Two calc-alkaline volcanic belts in Victoria

- Jamieson Volcanics
- Stavelly Volcanics

Both belts show strong mineral endowment

- Jamieson
  - Hill 800 and Rhyolite Creek
- Stavelly Minerals
  - Thursdays Gossan



Modified from Huston et. al., 2016 & Vandenberg et. al., 2000



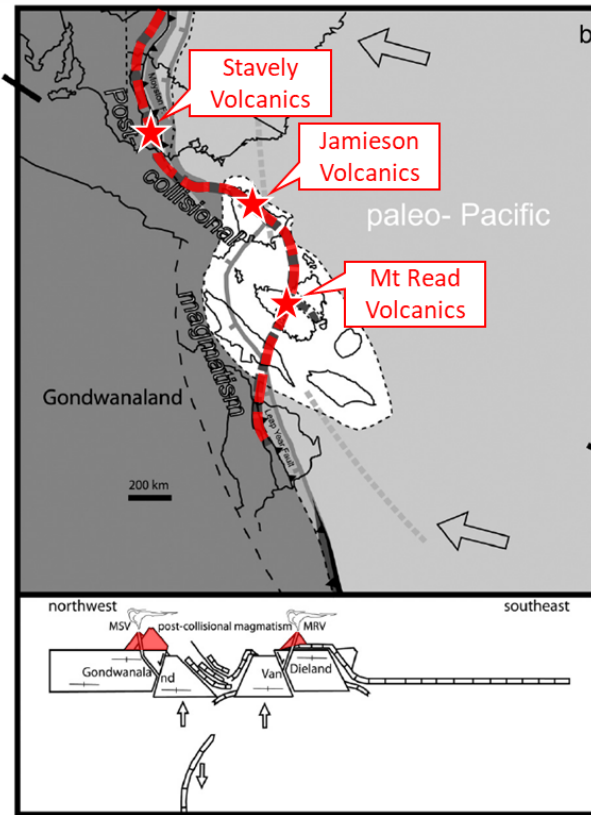
# Jamieson Project

## Tectonic Reconstruction

### Cayley (2011) reconstruction

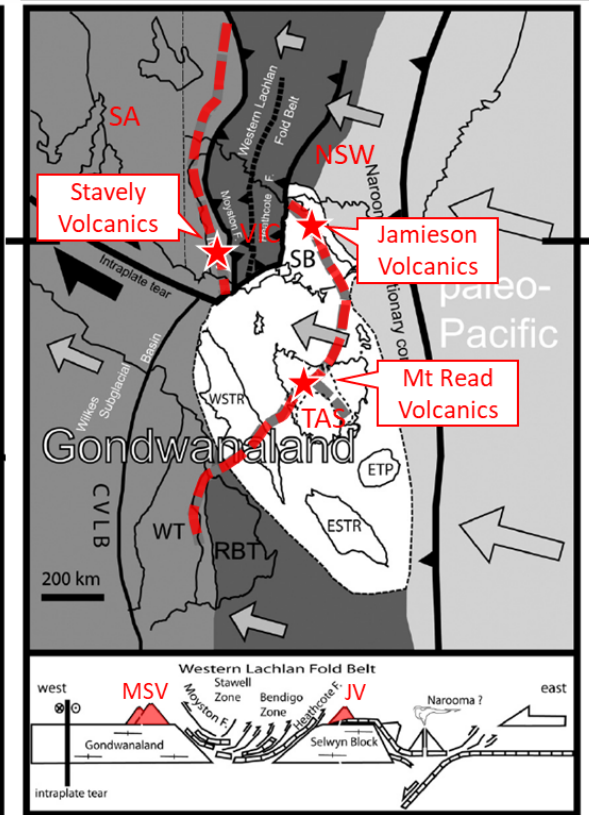
- Late Cambrian - simple continental-directed subduction
- Disrupted by arrival of VanDieland (ends Delamarian orogeny)
- Termination marked by pulse of post-collisional calc-alkaline magmatism – MRV, JV, MSV
- Sinistral offset leads to approximate current position (ends mid-Ordovician)

Pb isotope data discriminates between calc-alkaline volcanic belts. **JV & MSB less radiogenic** than MRV



500–495 Ma

Discrete pulse of post-collisional magmatism intrudes adjacent to the stalled portions of the subduction-zone front, generating (from north to south) the geochemically distinctive Mount Stavelly Volcanics (MSV), Jamieson Volcanics (JV), and Mount Read Volcanics (MRV).



450 Ma

New tectonic model for east Gondwanaland: Late Ordovician–Early Silurian (450–430 Ma) (current Australian State boundaries).

Cayley 2011

# Hill 800

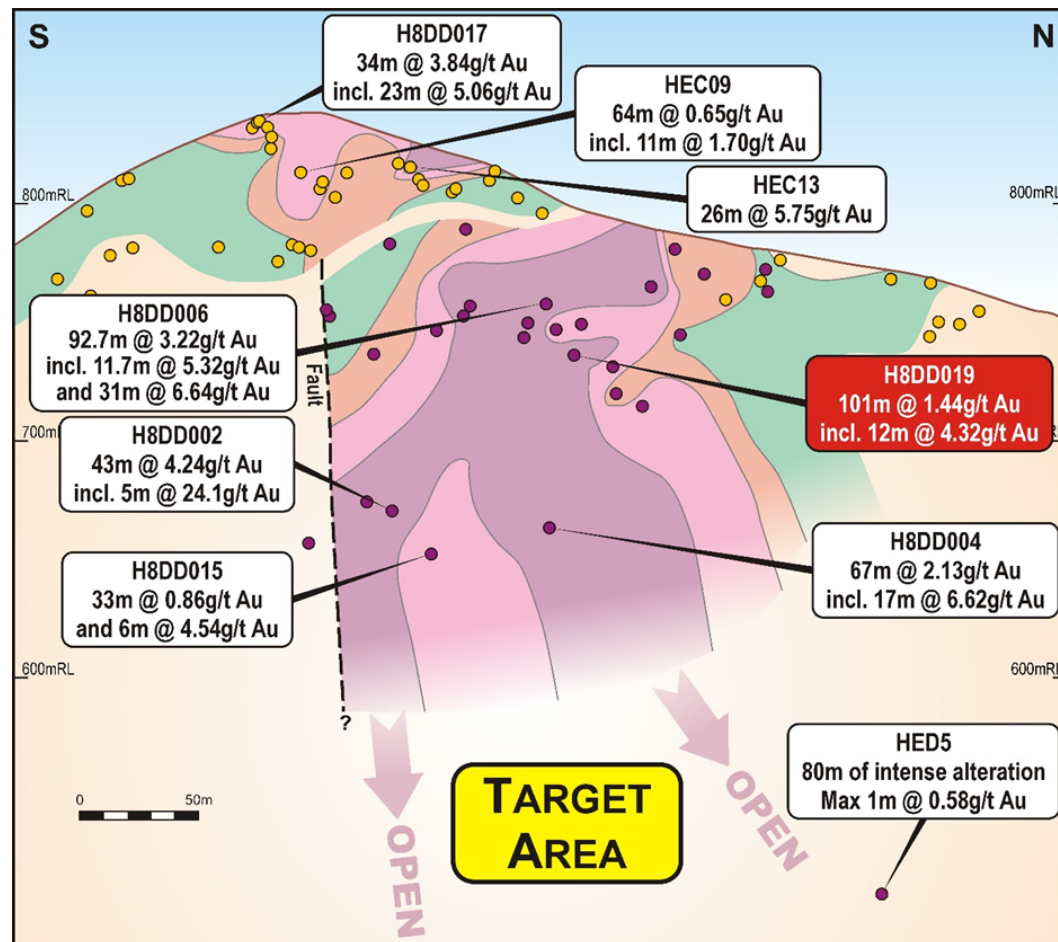
## Mineralisation – current interpretation

### Historic drilling

- 51 RC holes for 4,305m
- 6 diamond holes for 2,003m
- Hole orientations limited by drill method and access

### Carawine drilling

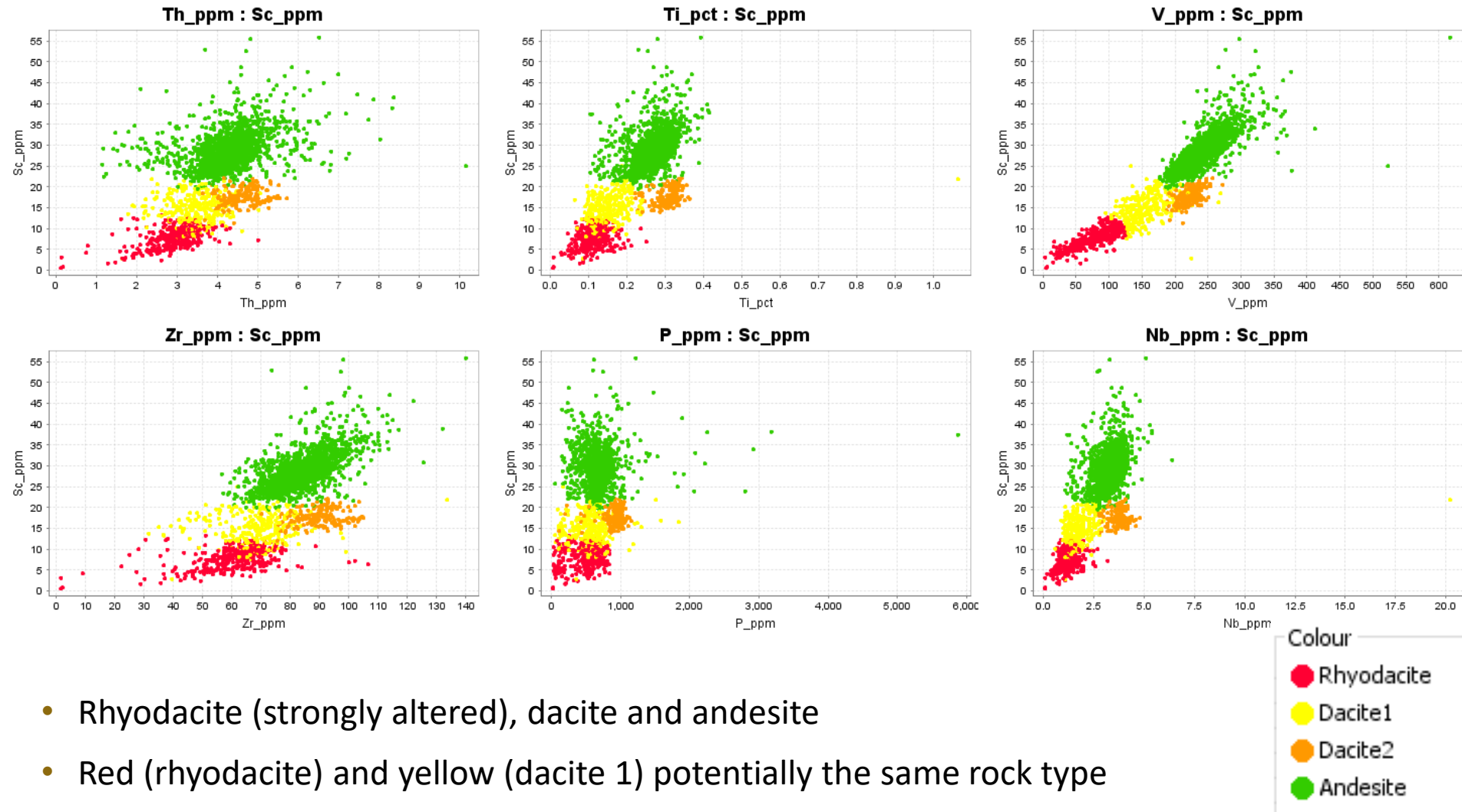
- 19 diamond holes for 3,678m
- Small track mounted diamond rig enabled flexible drilling orientations from existing sites
- Majority of drilling <200m below surface
- 2 zones identified to-date; 800 and Main Zone
- Potential lithological and structural controls
- Best intervals:
  - **92.7m @ 3.22g/t Au** from 2.3m (H8DD006) *incl. 31m @ 6.64g/t Au*
  - **43m @ 4.24g/t Au, 0.3% Cu** from 177m (H8DD002) *incl. 10m @ 5.66g/t Au, 0.9% Cu and 5m @ 24.1g/t Au, 0.4% Cu*



Hill 800 long section (+/- 60m), looking west with selected intervals labelled

# Hill 800

## Geochemical Analysis- Scott Halley



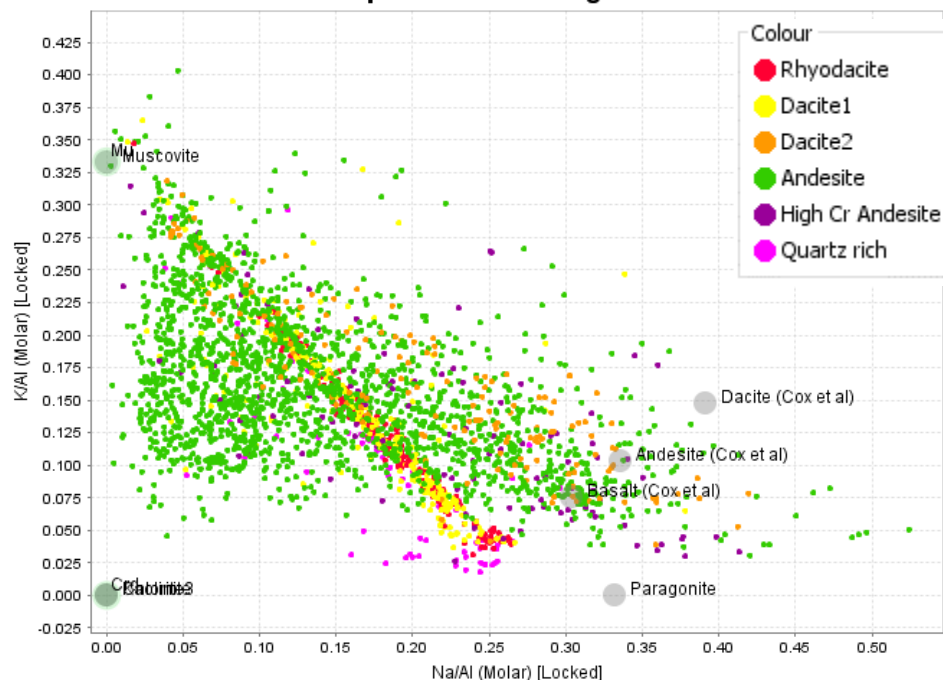
- Rhyodacite (strongly altered), dacite and andesite
- Red (rhyodacite) and yellow (dacite 1) potentially the same rock type

# Hill 800

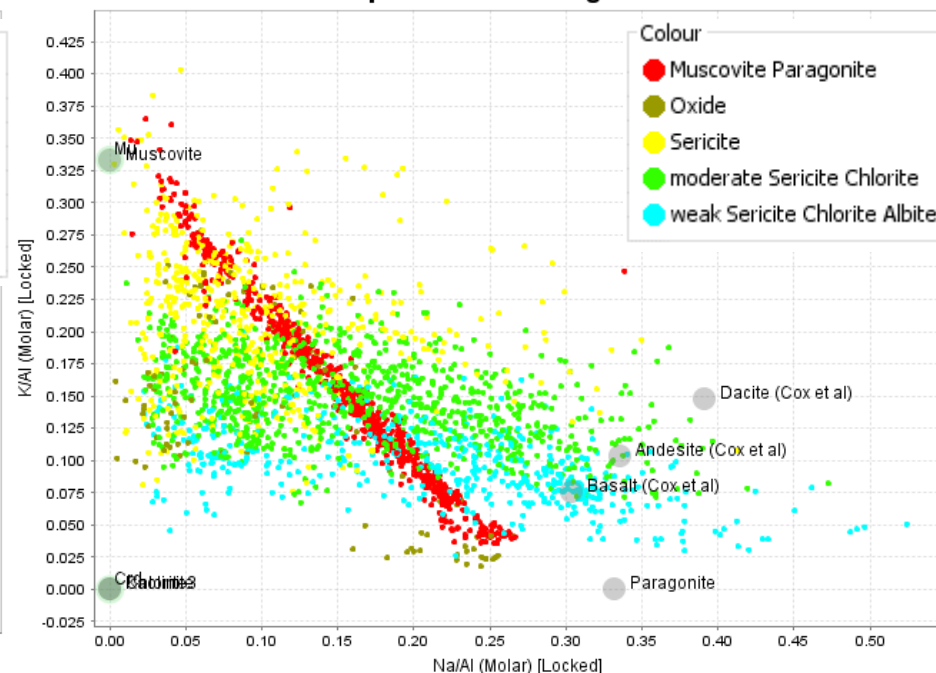
## Alteration mineralogy

- Altered rocks contain a mixture of muscovite (potassic) and paragonite (sodic)
- Paragonite likely to come from dehydration of smectite (Tabberaberan orogenic event?)
- Metamorphic water released from smectite → paragonite potentially remobilised gold (coarse gold in andesites)

Feldspar Na-K GER Diagram



Feldspar Na-K GER Diagram





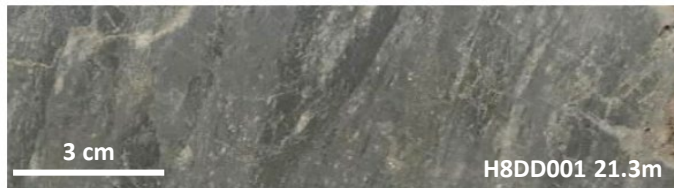
# Hill 800

## Rhyodacite & Dacite – Strongly altered

Sericite dominant



Increasing silica  
↓



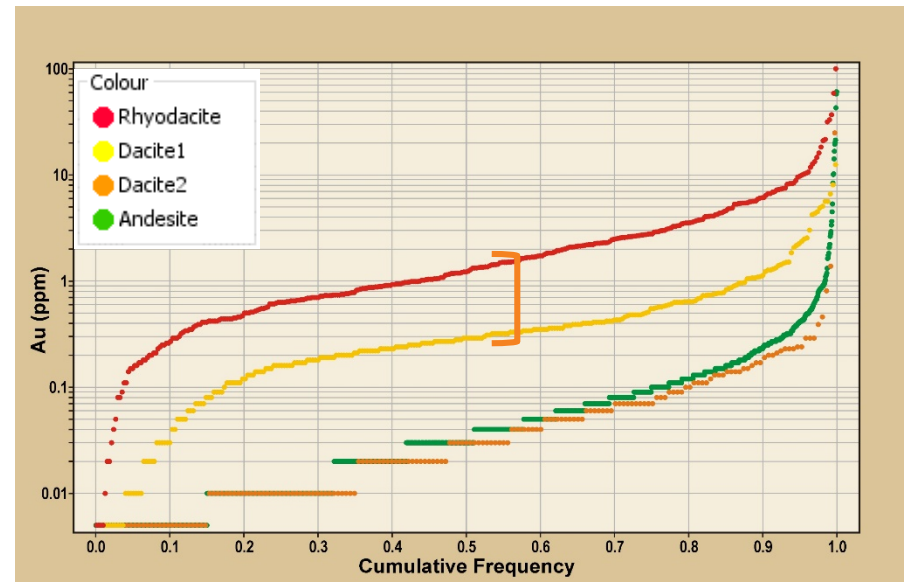
Chlorite-sericite-silica



Silica dominant

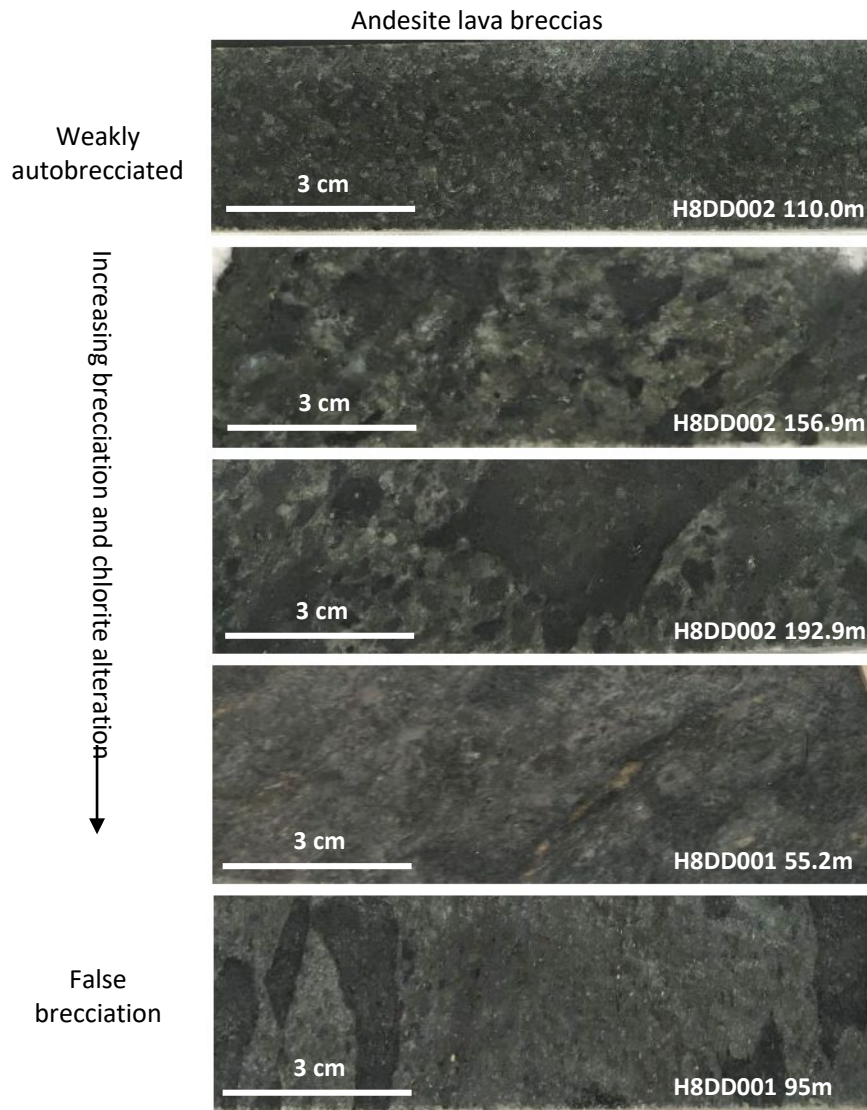


- Core of mineralised system dominated by early silica-sericite-pyrite altered rhyodacite and dacite
- Strongly lithological control on mineralisation – Upper region



Majority of gold occurs in rhyodacite

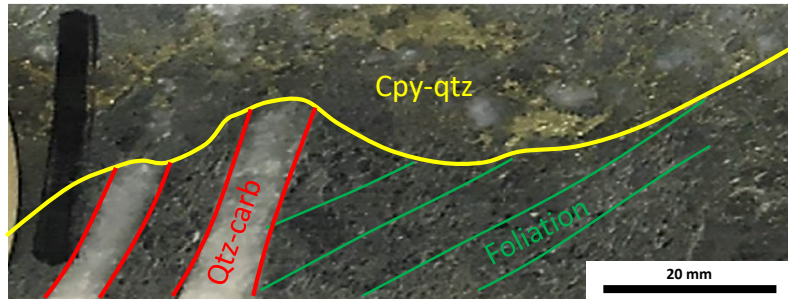
# Hill 800 Andesites



- Autobrecciated andesite lavas
  - Plagioclase +/- pyroxene phryic
  - Glassy aphyric
- Monomictic andesite volcaniclastics
- Minor polymictic volcaniclastics
  - Minor rhyolite and dacite component
- Rare interbedded clastic sediments

# Hill 800

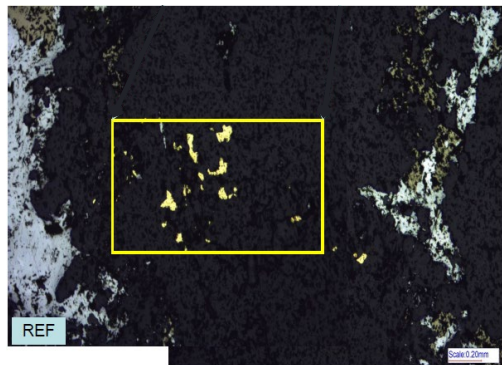
## Alteration – Andesite Remobilised Zone



Hand specimen – qtz-carb vein cutting foliation, cut by stringer



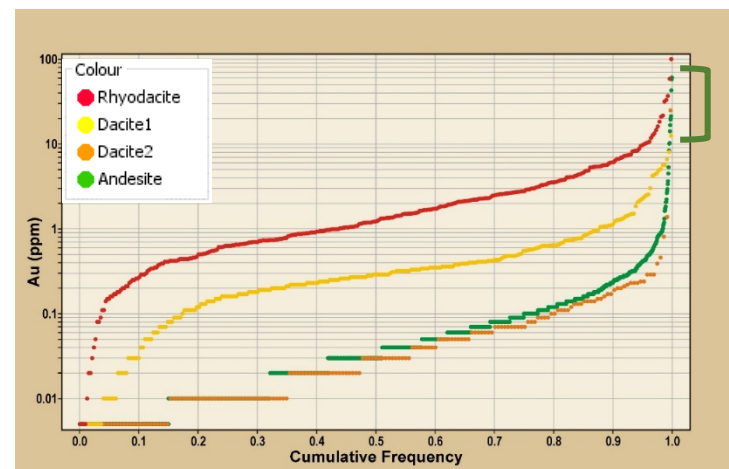
Thin section – sericitic selvage to qtz-cpy-asp vein (XPL)



Thin section – gold in quartz (REF)

All images from H8DD002 – 191.7m

- Host rock is chlorite altered andesite lava breccia
- Mineralisation within chalcopyrite-quartz veins
- Associated minerals include minor arsenopyrite and galena
- Sericite selvage common
- “Free” gold detected
- Mineralised veins cut foliated andesite, and late planar quartz-carbonate veins
- *Potentially remobilised by metamorphic water – smectite to paragonite*

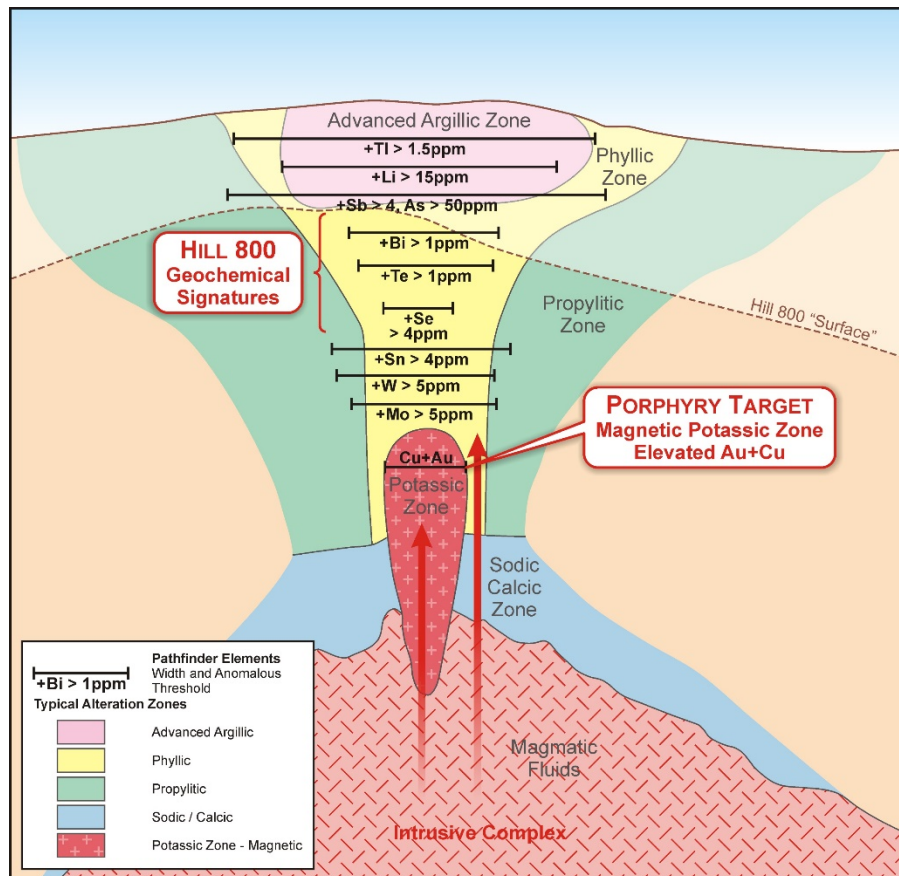




# Hill 800

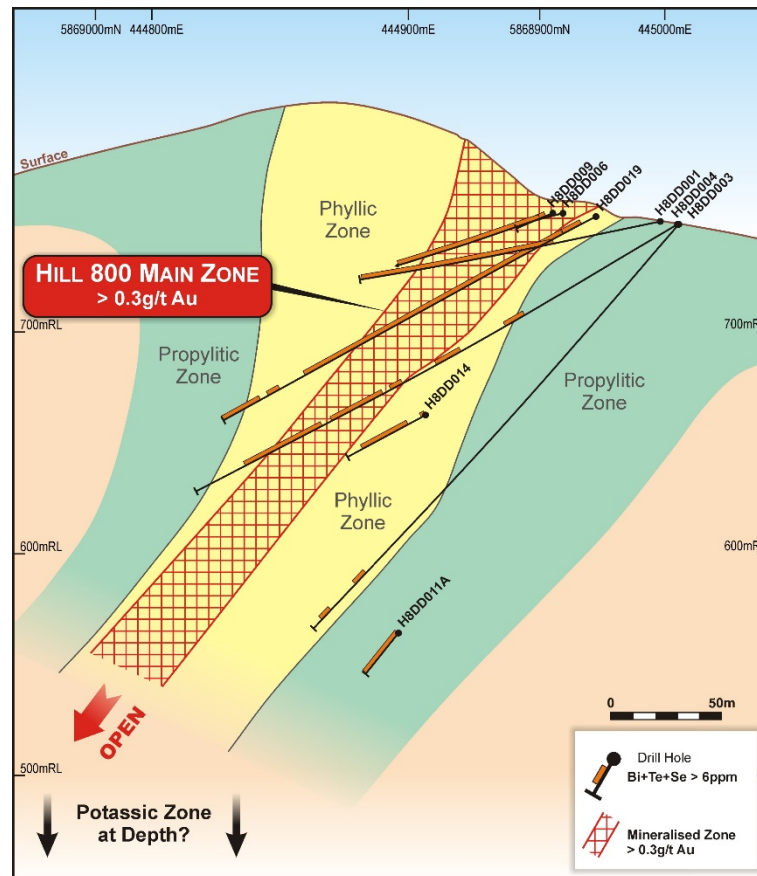
## Porphyry Signature – Pathfinder Elements

### Schematic alteration and geochemical vector relationships



Modified from; Halley SW, Dilles JH, Tosdal RM (2015) Footprints: hydrothermal alteration and geochemical dispersion around porphyry copper deposits. SEG Newsletter 100(1):12–17

### Hill 800 Cross Section – Bi + Te + Se > 6ppm defines phyllic zone



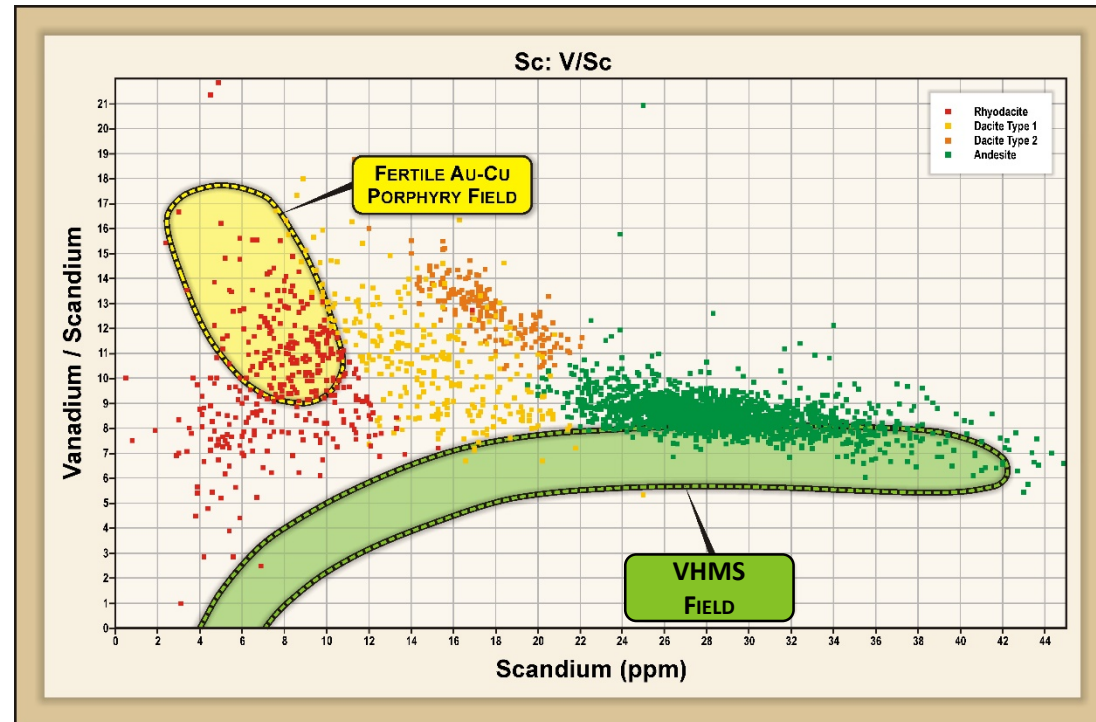
- Pathfinder elements Bi, Se and Te are elevated – consistent with fertile porphyry source
- H8DD006: 92.7m @ 3.22g/t Au, **43ppm Te, 1.1ppm Bi & 22ppm Se**



# Hill 800

## Evidence for Deep Crustal Melt

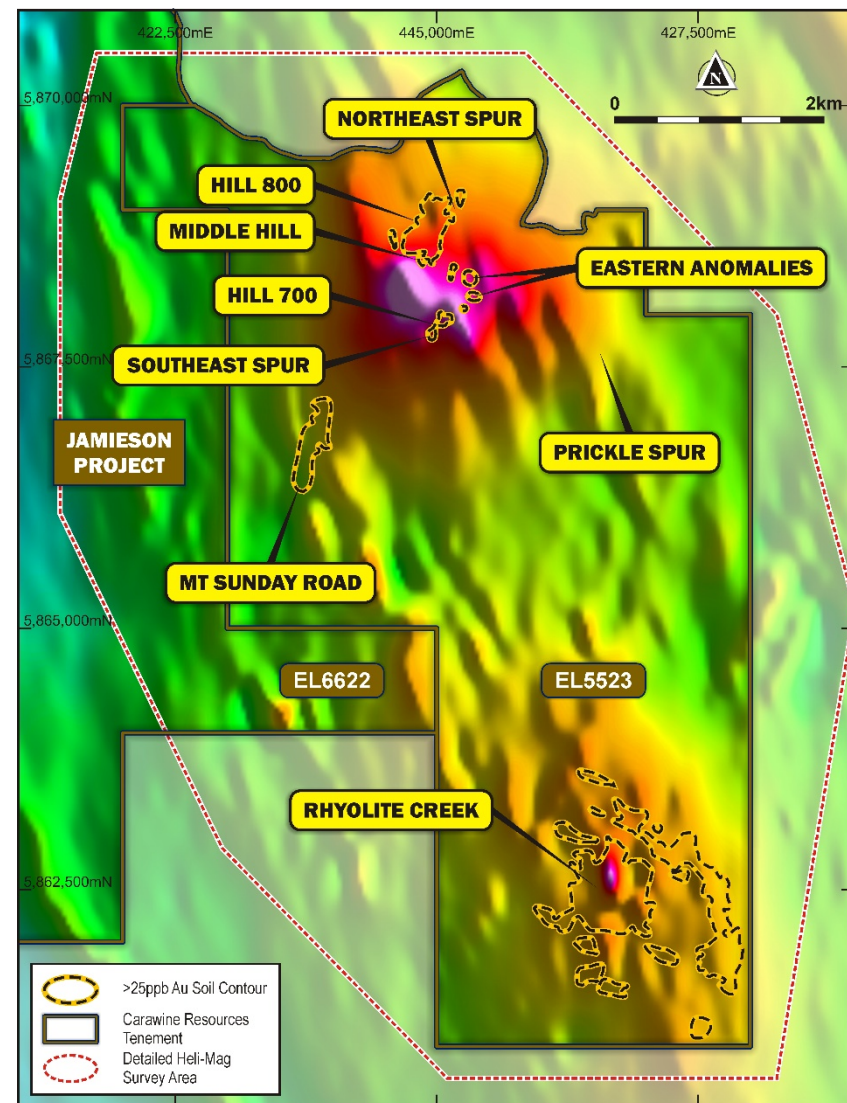
- Porphyry Cu-Au form from deep crustal - high pressure oxidised hornblende bearing melts
- VHMS environments form from mid crustal - lower pressure magnetite bearing melts
- Magnetite fractionation leads to V depletion
- At Hill 800, high V content indicates fractionation of hornblende
- The most felsic Hill 800 rocks have a porphyry magma signature



# Hill 800

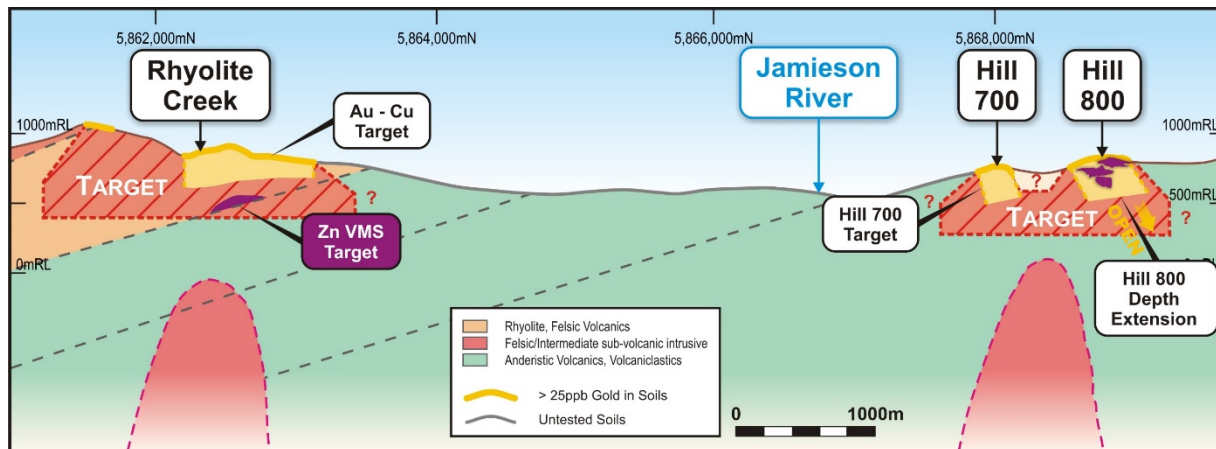
## Magnetics Highlight Potential Potassic Zone

- Primary porphyry Cu-Au magmas are magnetic
- The magnetic anomalies below Hill 800 and Rhyolite Creek are likely highlighting the source of the shallow mineralisation drilled to date
- The target associated with the magnetic anomaly at Hill 800 is potentially porphyry Cu-Au-Mo rather than Au-Te-Bi intersected near surface
- The magnetic anomalies are high priority targets
- Detailed 50m-line spaced helicopter-borne magnetic & radiometric survey to increase detail - survey complete, results pending



*Volcanic-hosted, semi-massive sulphide deposit formed in a sub-seafloor environment above a fertile porphyry intrusive system*

- Alteration consistent with epithermal/porphyry model
- Te-Bi-Se association
- $\delta^{34}\text{S} = -5.58$  to  $0.82\%$  (cf. Cambrian VHMS  $\delta^{34}\text{S} = 6$  to  $17\%$ )<sup>1</sup>. Magmatic input
- Magnetic anomaly at depth (likely associated with porphyry-potassic alteration)



Schematic model for Hill 800 and Rhyolite Creek prospects

1. Ropli R., 2018. Age and paragenesis of the Hill 800 Prospect, Victoria. BSc(Hons) thesis, UTAustralia (Unpublished)

## Mineralisation Models

- Volcanogenic Hosted Massive Sulphide (VHMS) Zn-Au-Ag
- Porphyry/Epithermal related Au-Cu

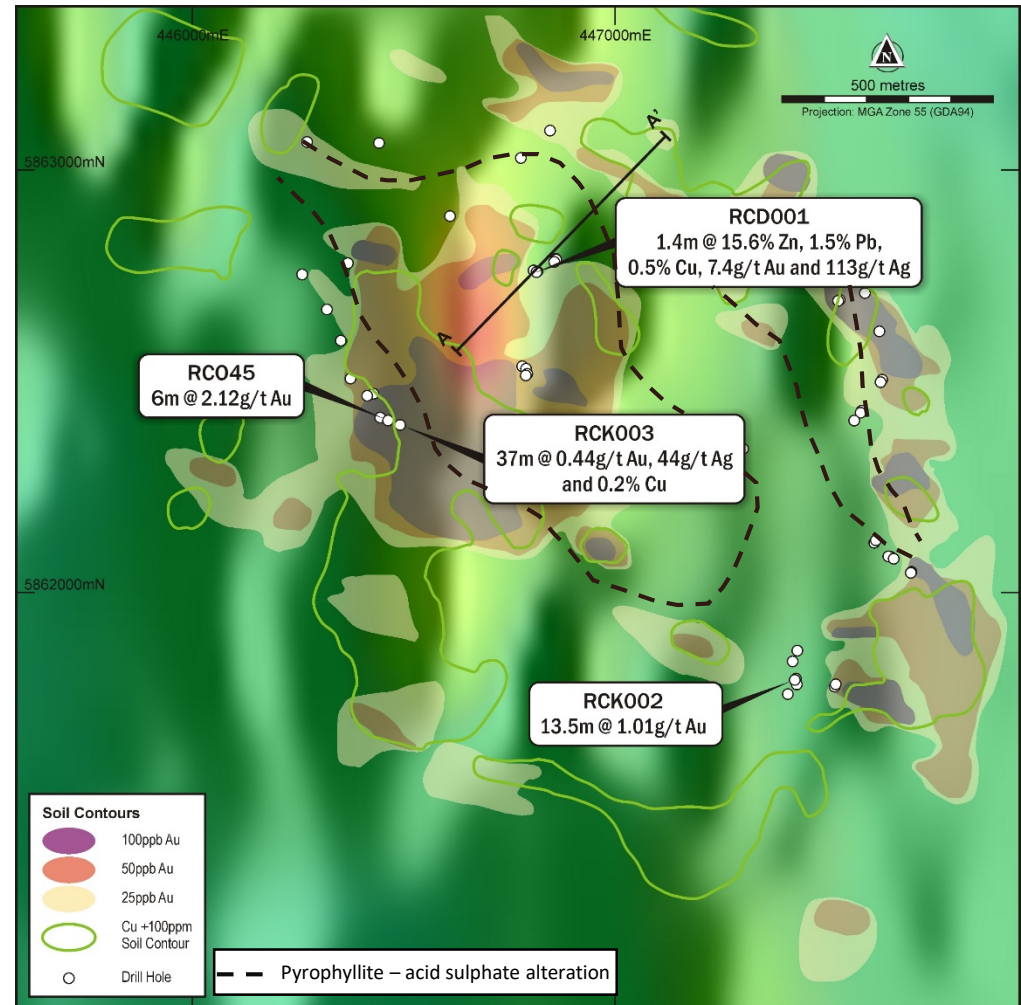
## VHMS seafloor position

- **1.4m @ 15.6% Zn, 7.4g/t Au, 113g/t Ag** from 223m1 (RCD001)
- Occurs above a 59m zone averaging 0.5% Zn

## Large, low grade, near surface porphyry / epithermal system

- Au-Cu Soil anomalism over 1km x 1km area
- **37m @ 0.44g/t Au, 0.2% Cu, 44g/t Ag** from 67.5m (RCK003)

## Sparse, shallow drilling to date







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**THANK YOU!**

For further details, please contact:  
Michael Cawood  
Exploration Manager  
Tel: +61 8 6319 0400  
[info@carawine.com.au](mailto:info@carawine.com.au)  
[www.carawine.com.au](http://www.carawine.com.au)

*Exploration • Gold • Copper • Base Metals*

# Jamieson Project

## Time – Space Diagram

