MAKING A DIFFERENCE

The Andromeda Zn-Cu prospect in the Albany-Fraser Orogenic belt: A HT SQUID discovery

Polito, P., Crawford, A., Worthington, T., Whitford, M., Sheppard, S.

AEGC 2019

5th September, 2019

Cautionary Statements & Disclaimers

- This presentation has been prepared by Independence Group NL ("IGO") (ABN 46 092 786 304). It should not be considered as an offer or invitation to subscribe for or purchase any securities in IGO or as an inducement to make an offer or invitation with respect to those securities in any jurisdiction.
- This presentation contains general summary information about IGO. The information, opinions or conclusions expressed in the course of this presentation should be read in conjunction with IGO's other periodic and continuous disclosure announcements lodged with the ASX, which are available on the IGO website. No representation or warranty, express or implied, is made in relation to the fairness, accuracy or completeness of the information, opinions and conclusions expressed in this presentation.
- This presentation includes forward looking information regarding future events, conditions, circumstances and the future financial performance of IGO. Often, but not always, forward looking statements can be identified by the use of forward looking words such as "may", "will", "expect", "intend", "plan", "estimate", "anticipate", "continue" and "guidance", or other similar words and may include statements regarding plans, strategies and objectives of management, anticipated production or construction commencement dates and expected costs or production outputs. Such forecasts, projections and information are not a guarantee of future performance and involve unknown risks and uncertainties, many of which are beyond IGO's control, which may cause actual results and developments to differ materially from those expressed or implied. Further details of these risks are set out below. All references to future production and production guidance made in relation to IGO are subject to the completion of all necessary feasibility studies, permit applications and approvals, construction, financing arrangements and access to the necessary infrastructure. Where such a reference is made, it should be read subject to this paragraph and in conjunction with further information about the Mineral Resources and Ore Reserves, as well as any Competent Persons' Statements included in periodic and continuous disclosure announcements lodged with the ASX. Forward looking statements in this presentation only apply at the date of issue. Subject to any continuing obligations under applicable law or any relevant stock exchange listing rules, in providing this information IGO does not undertake any obligation to publicly update or revise any of the forward looking statements or to advise of any change in events, conditions or circumstances on which any such statement is based.
- There are a number of risks specific to IGO and of a general nature which may affect the future operating and financial performance of IGO and the value of an investment in IGO including and not limited to economic conditions, stock market fluctuations, commodity demand and price movements, access to infrastructure, timing of environmental approvals, regulatory risks, operational risks, reliance on key personnel, reserve and resource estimations, native title and title risks, foreign currency fluctuations and mining development, construction and commissioning risk.
- The information in this presentation that relates to Exploration Results is extracted from the ASX announcement dated 23rd March 2016 and entitled "Geophysical Survey results enhance Bumblebee Prospect", the announcement dated 20th December 2016 and entitled "Exploration update-Grapple Prospect drill intersections" and the announcement "More Copper and Cobalt intersected at the Lake Mackay" dated 17th July 2019 and for which Competent Person's consents were obtained.
- The Company confirms that it is not aware of any new information or data that materially affects the information included in the original ASX announcements released on 23rd March 2016 and 20th December 2016 and 17th July 2019 and, (i) the Competent Person's consents remain in place for subsequent releases by the Company of the same information in the same form and context, until the consent is withdrawn or replaced by a subsequent report and accompanying consent, and (ii) the form and context in which the Competent Person's findings are presented have not been materially modified from the original ASX announcement.

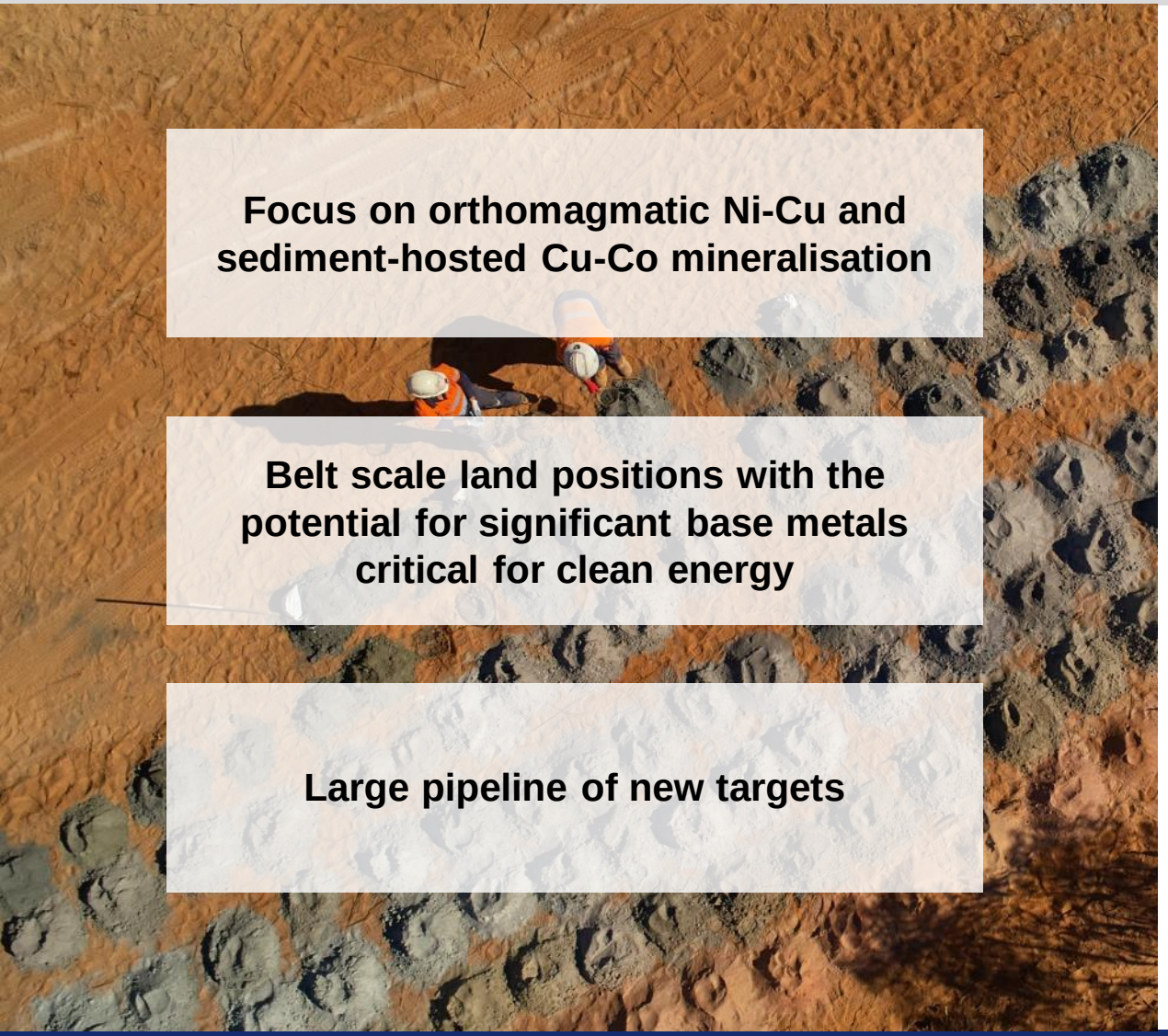
Andromeda Zn-Cu Discovery

A GSWA Exploration Incentive Scheme co-funded discovery

- Andromeda is a geophysical discovery and the first VMS prospect of significance in the Albany-Fraser Orogenic Belt.
- Identified by a MLEM survey over a structural ellipse.
- The conductive plate is 450m from surface.
- Andromeda has characteristics consistent with Besshi-style VMS deposits.
- Ore comprises pyrrhotite, pyrite, sphalerite and chalcopyrite.

IGO's Streamlined Asset Portfolio

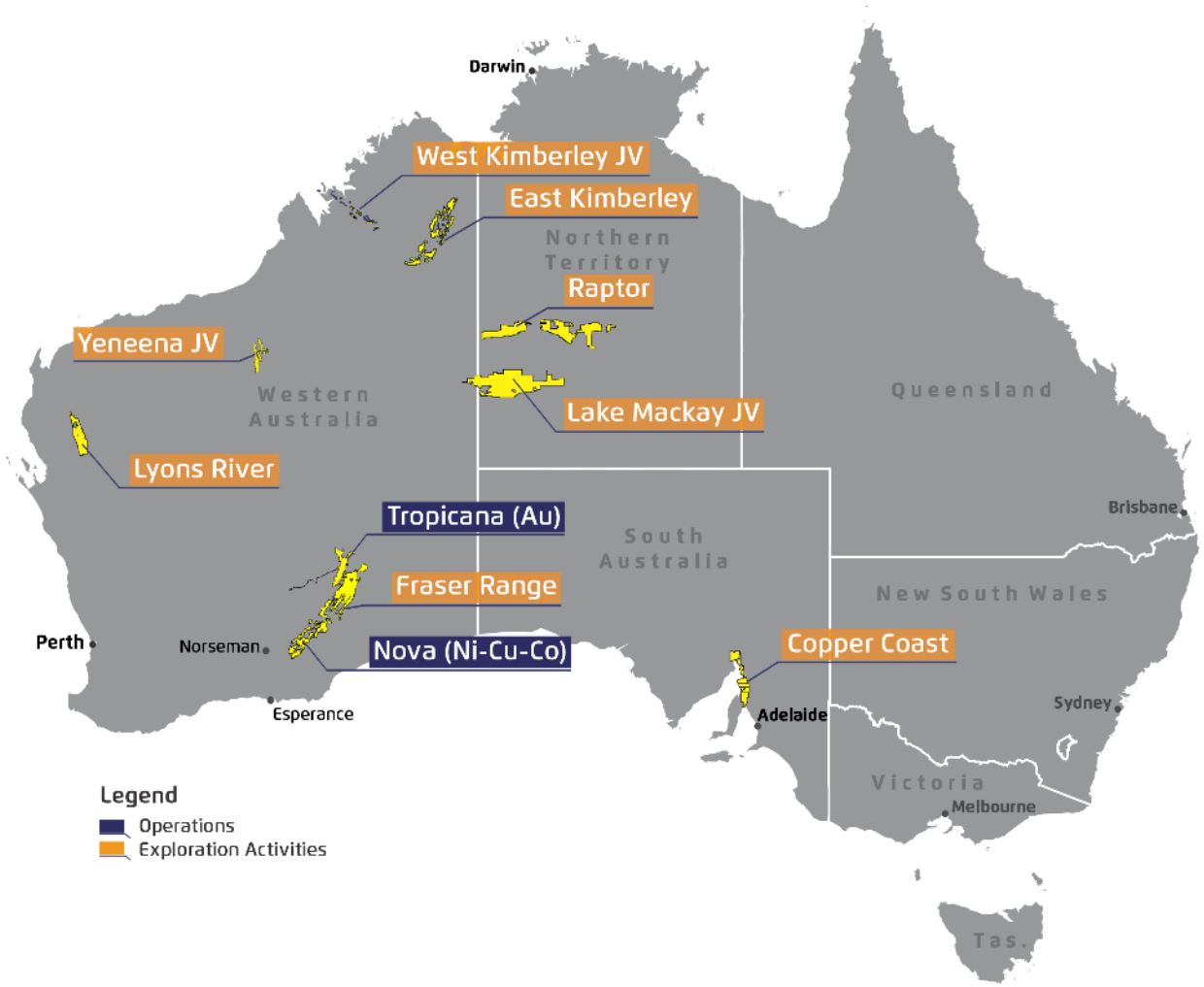
Belt-scale discovery opportunities critical for clean energy



Focus on orthomagmatic Ni-Cu and sediment-hosted Cu-Co mineralisation

Belt scale land positions with the potential for significant base metals critical for clean energy

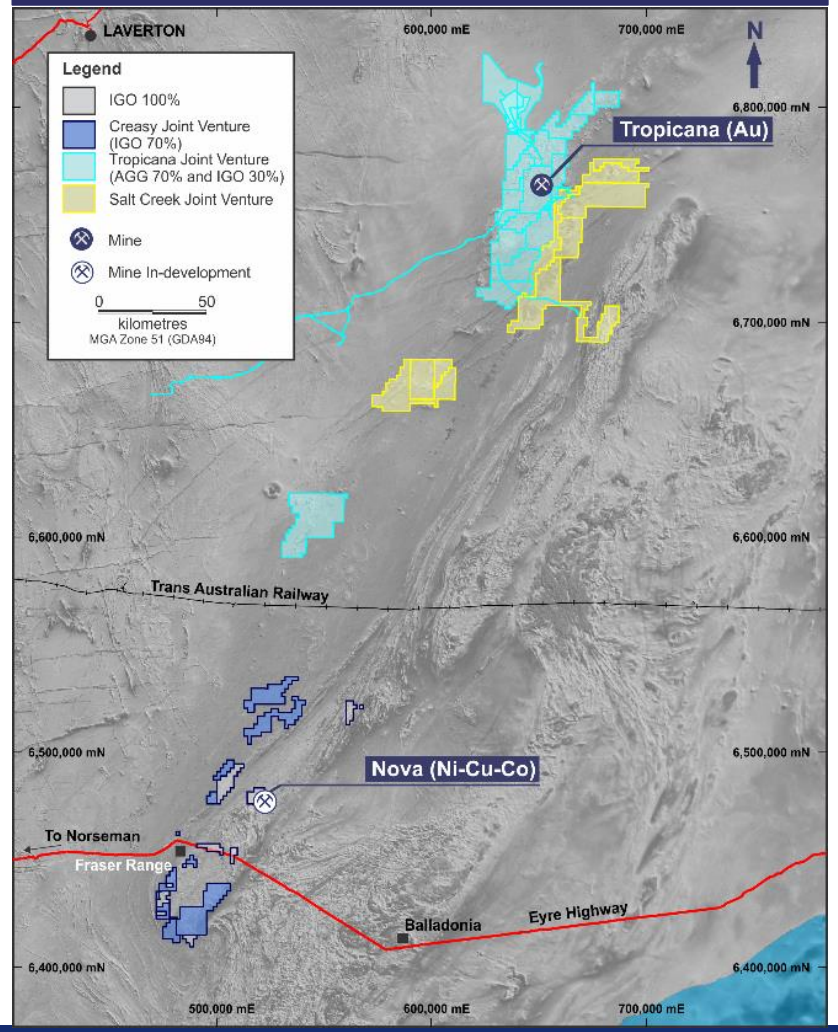
Large pipeline of new targets



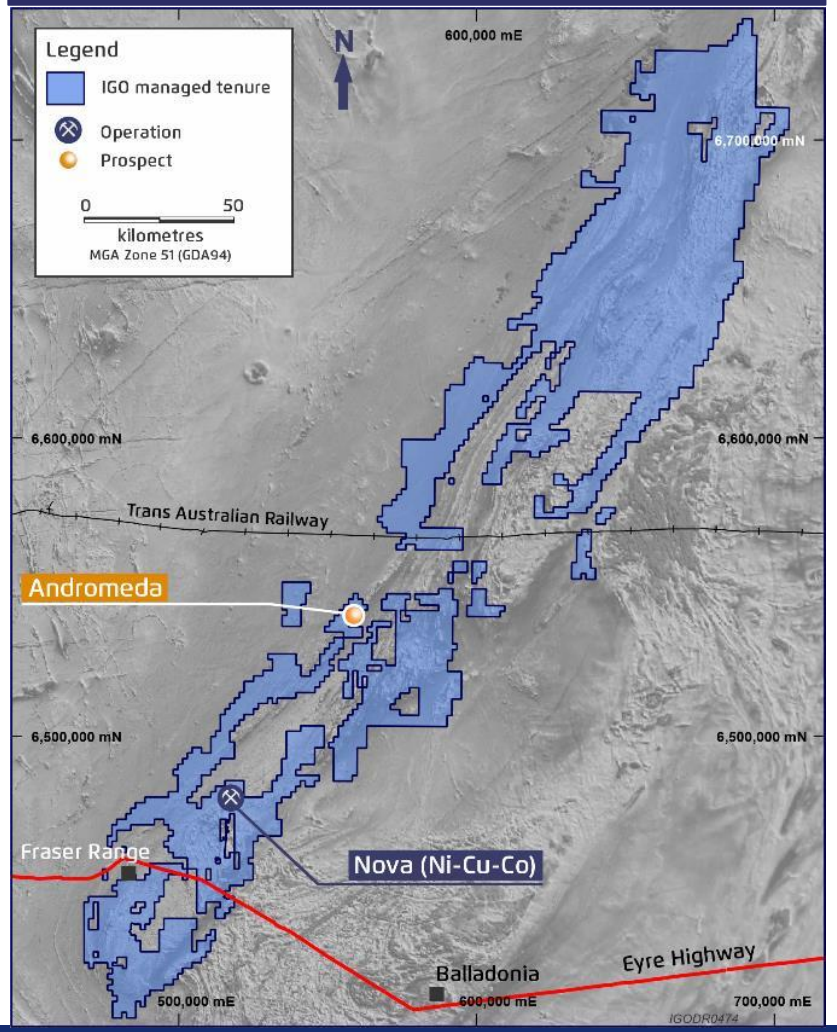
Historic and current tenement position in AFO

Location of Andromeda Zn-Cu deposit in a Ni-Cu Belt

September 2015



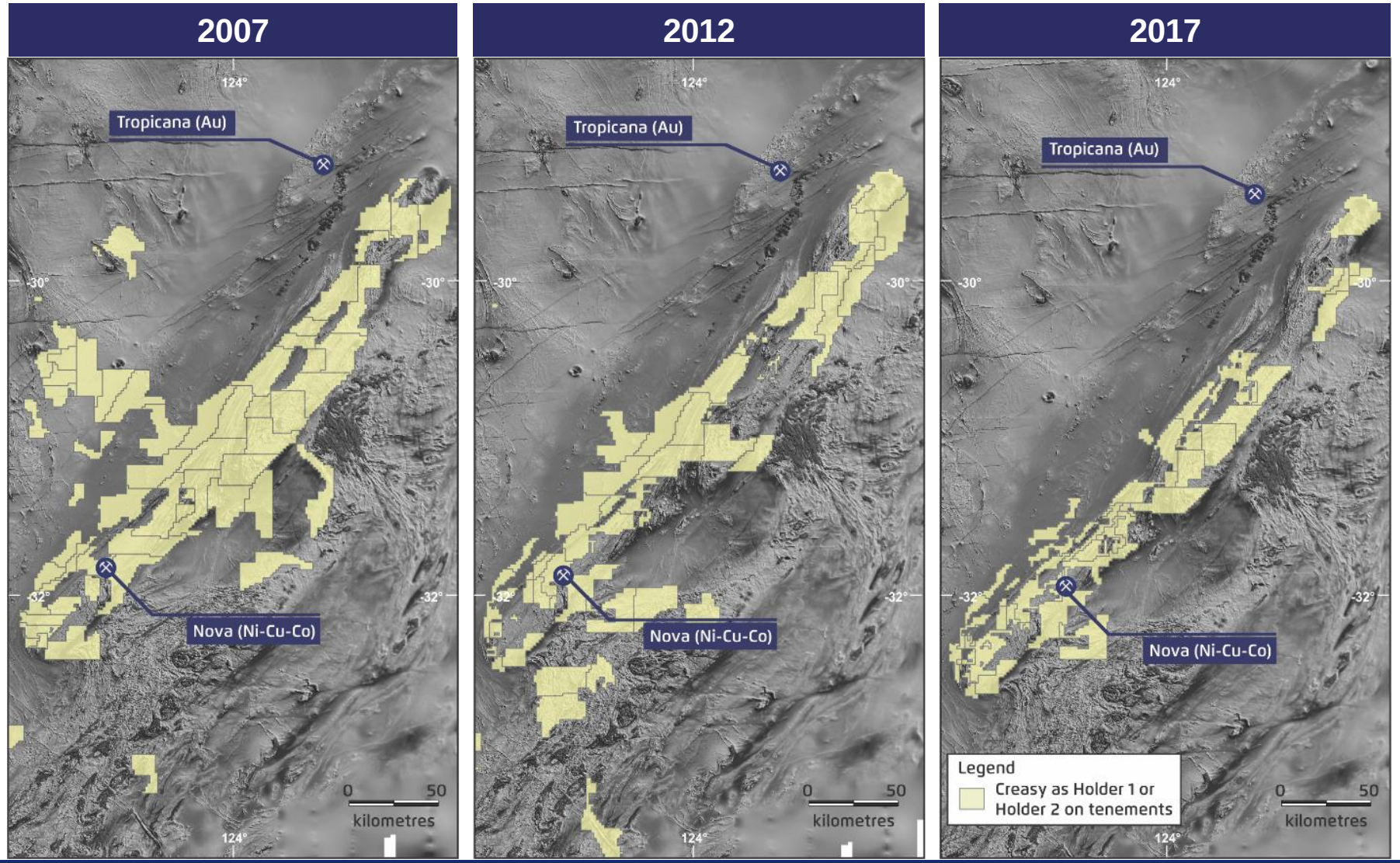
September 2019



Albany Fraser Orogenic Belt

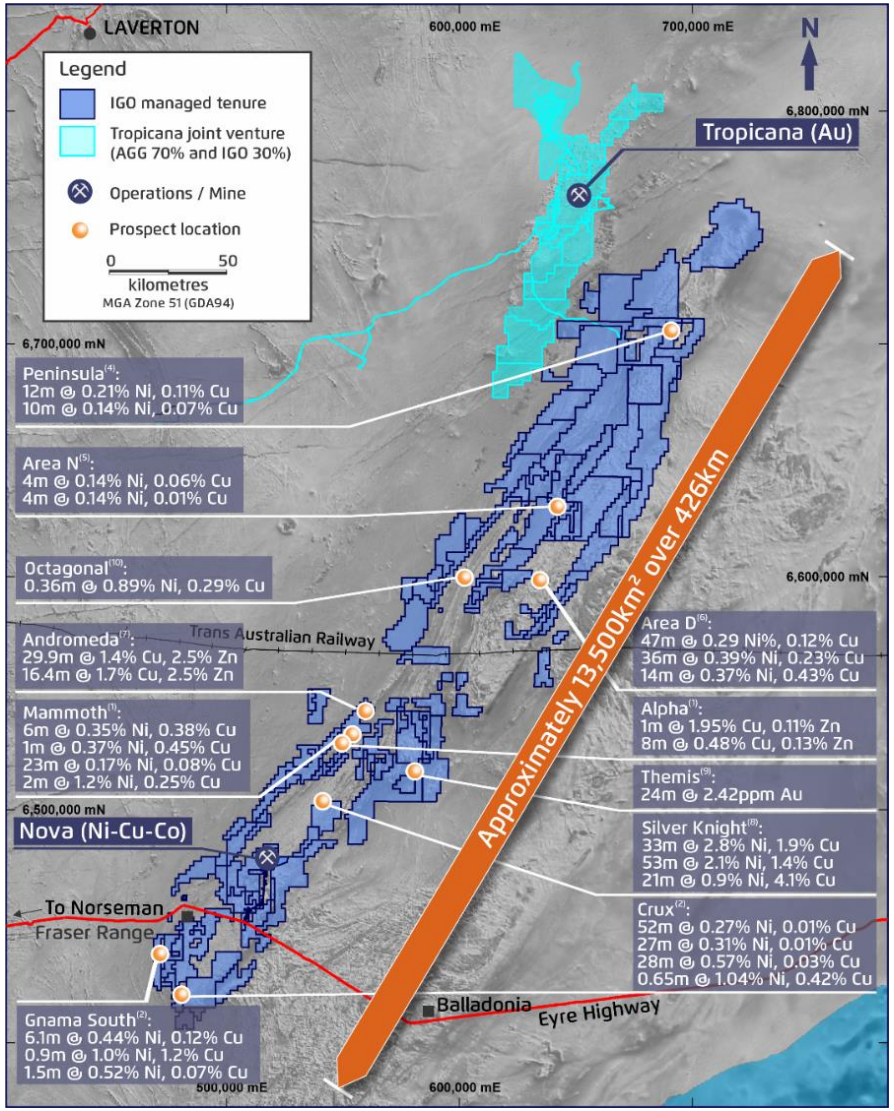
How explored is the Fraser Range?

- Creasy controlled companies have held and continue to hold large areas of tenement to today.
- A review of exploration activities in the Albany Fraser Belt reveals that exploration has been patchy and shallow.
- Creasy has done much work, but many opportunities remain.



Albany Fraser Orogenic Belt

A Ni-Cu tenement portfolio

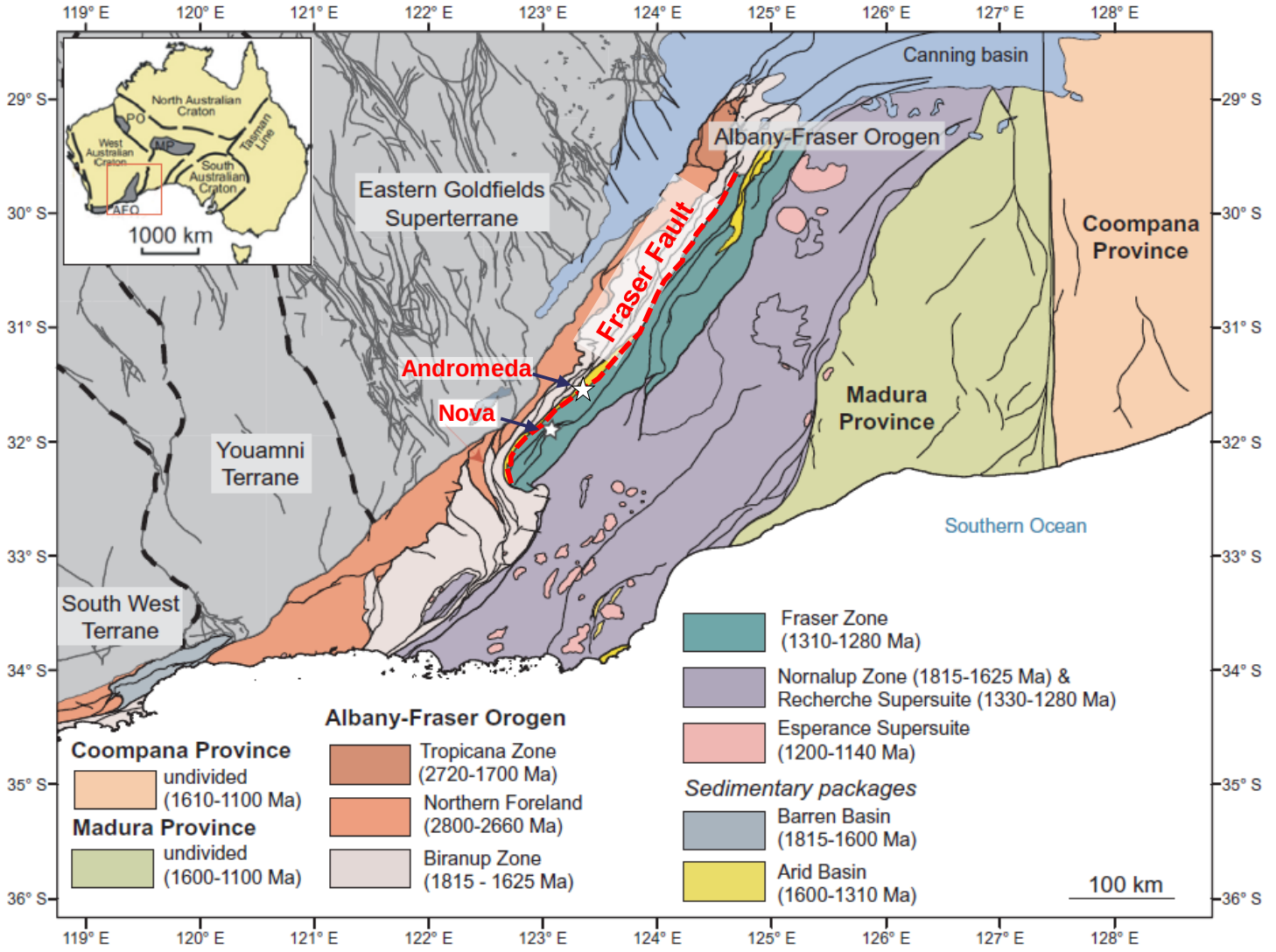


- Classic Minerals ASX Releases: 29 August 2013, 12 December 2013 and 17 December 2016
- Sirius Resources ASX Release June 2015 Quarterly and IGO ASX Releases: 26 July, 2018 and 20 February, 2019
- Enterprise Metals EIS Final Drilling Report to DMP: 25 July 2014
- Orion Gold ASX Release 17 March 2014
- Legend Mining ASX Release 6 June 2017, 12 January 2018, 12 April 2018, 9 July, 2019
- Creasy Group Application for M28/395 20 July, 2018
- Rumble Resource ASX Release, 1 July, 2019

Andromeda Zn-Cu Discovery

Regional Geology

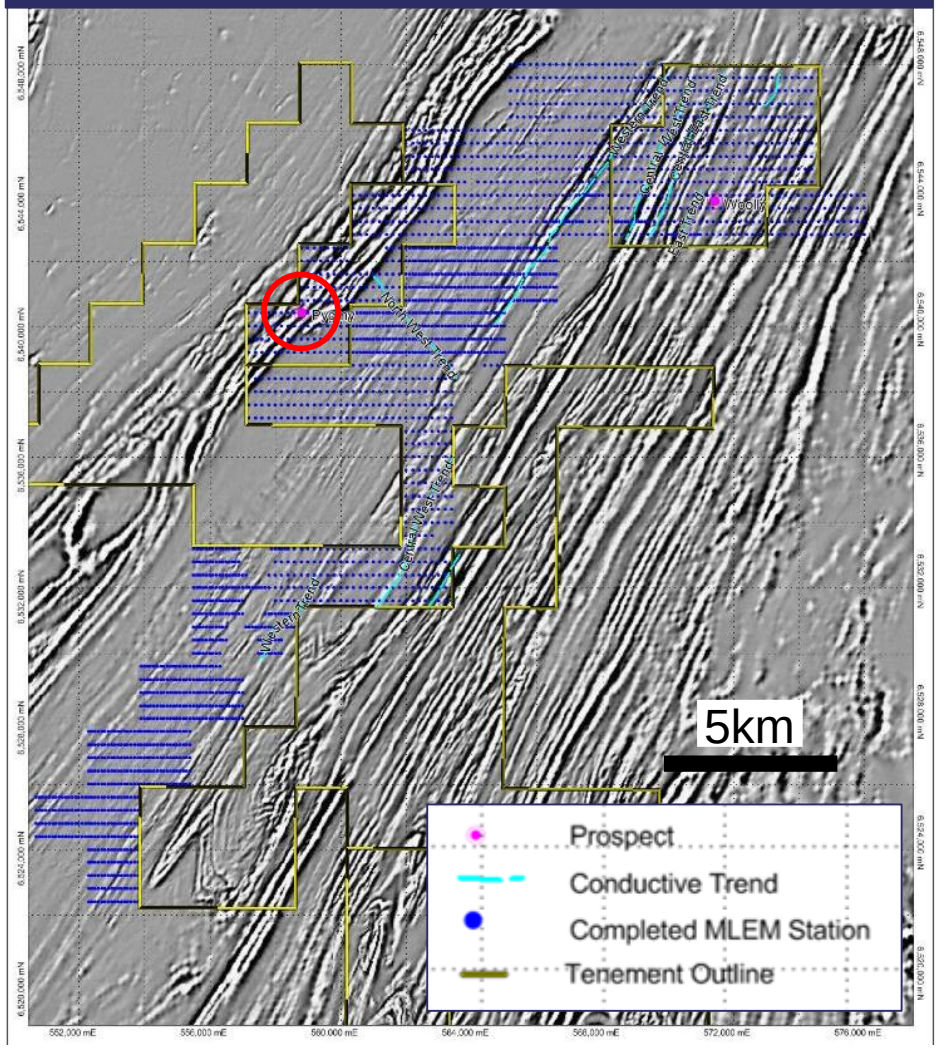
- Andromeda is located within the Fraser Zone, a package dominated by granulite grade mafic rocks and lesser metasediments.
- The Fraser Zone is bound to the west by reworked Archean rocks, the Northern Foreland and rocks of oceanic affinity within the Madura Province to the east.
- Crustal architecture, plus geochemical data from within the Fraser Zone suggests a backarc or perhaps intracontinental rift setting (Glasson et al., 2019).
- Andromeda occurs along the margin between the 1600-1310 Ma Arid Basin and the 1310-1280 Ma Fraser Zone.



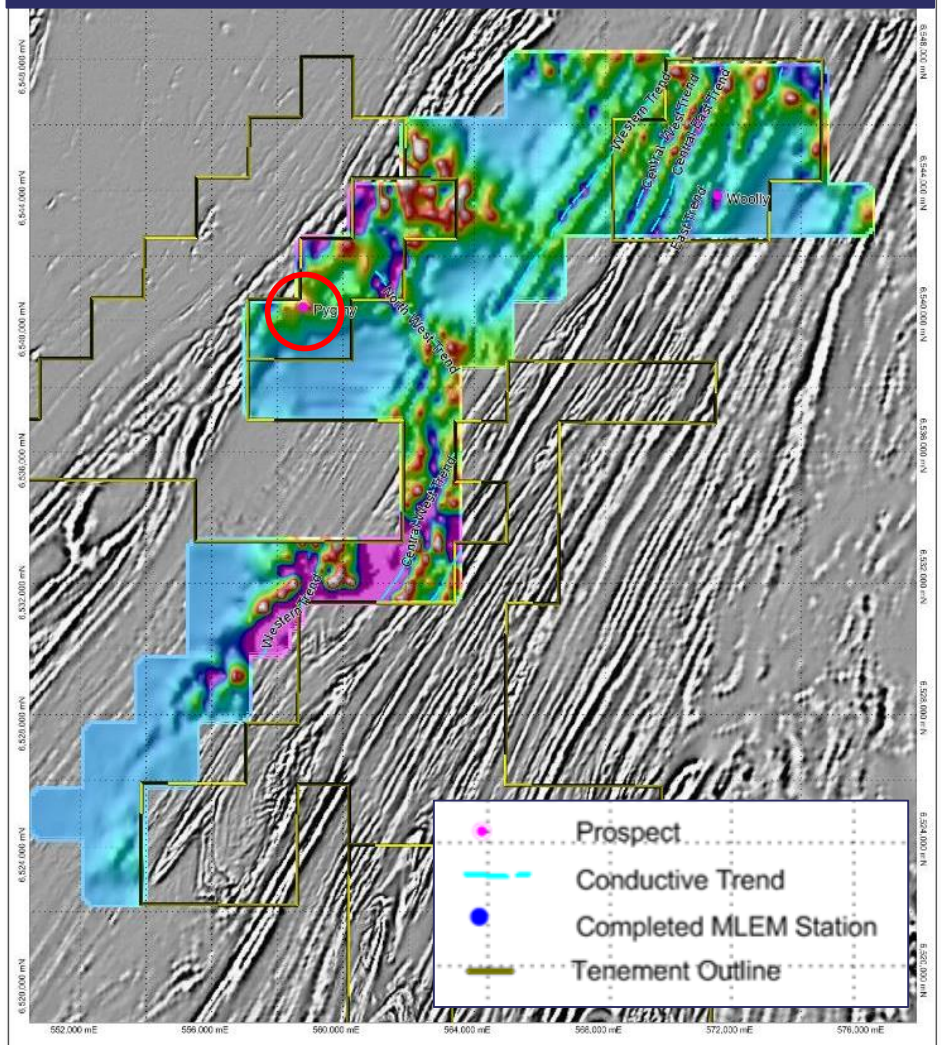
Andromeda Zn-Cu Discovery

A deliberate combination of quality geophysics and geological curiosity

Tenements on TMI2VD, 400m station locations

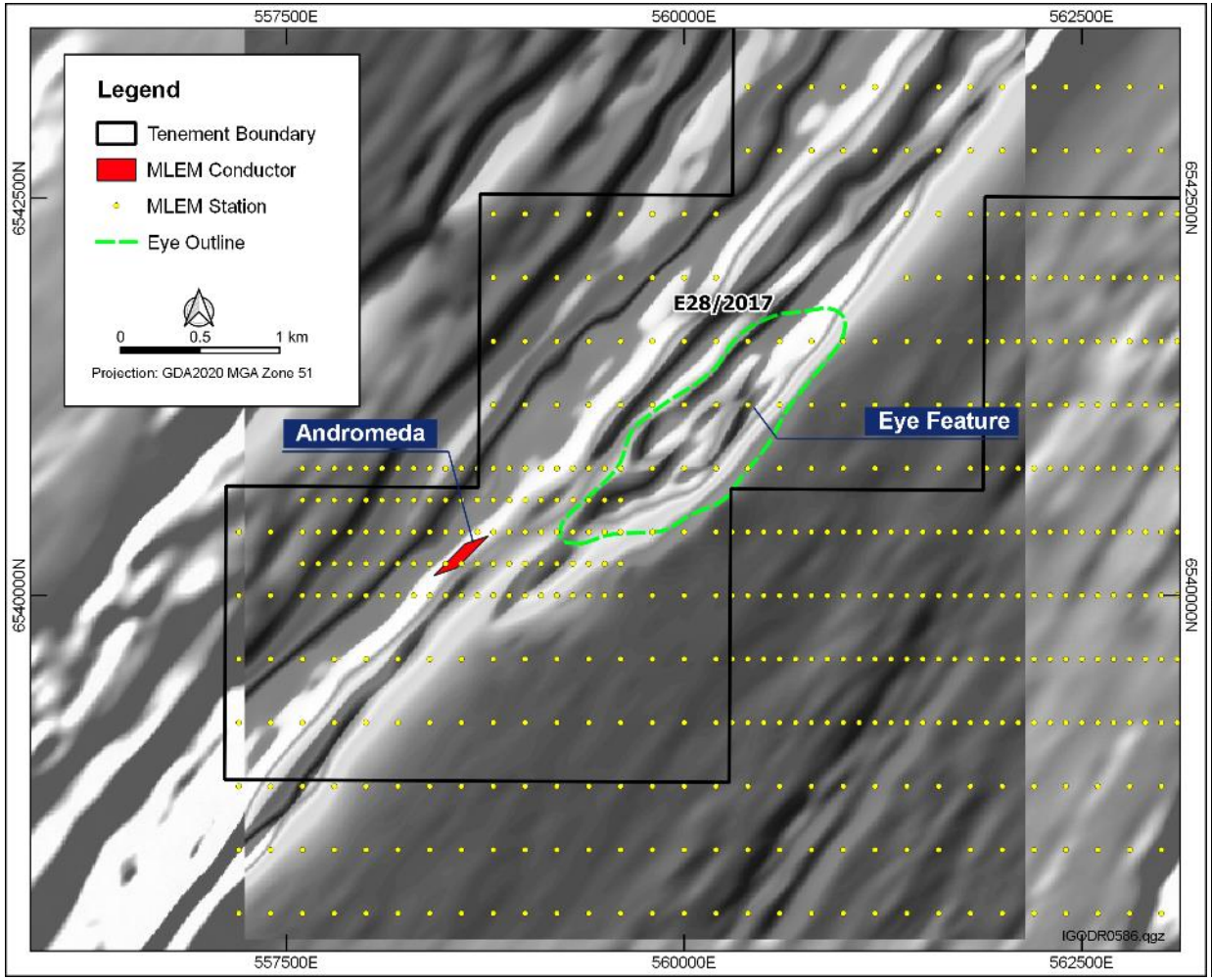


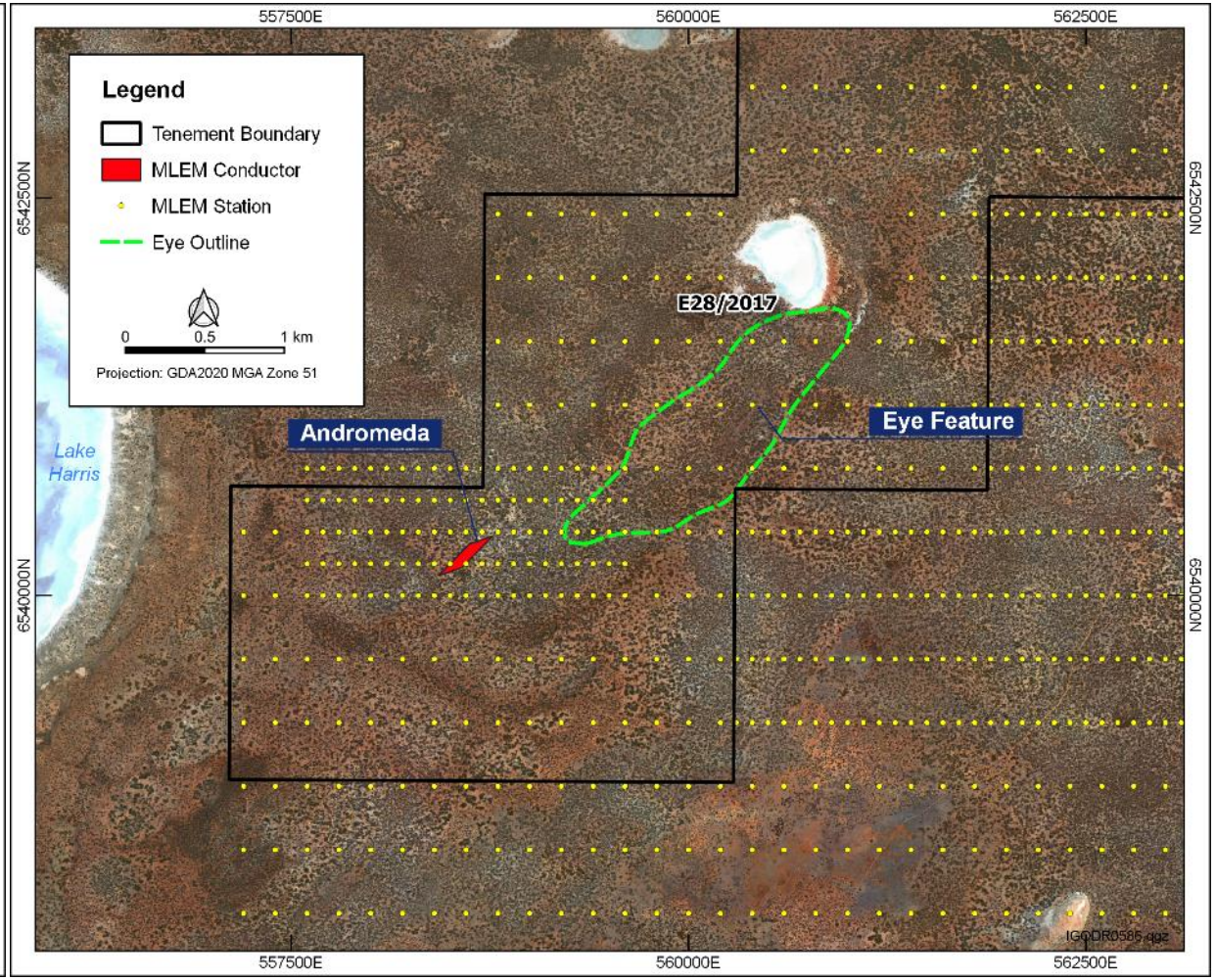
HT SQUID Z Ch25 showing conductive trends



Andromeda Zn-Cu Discovery

Geology masked by sand dunes, salt lakes and clay pans





Andromeda Zn-Cu Discovery

MLEM survey parameters

Configuration	Slingram to minimise IP and SPM effects
Loop Size	400m (200m infill)
Line Spacing	400m (200m infill)
Station Spacing	200m (100m infill)
Receiver system	Smartem24
Jessie Deeps HT SQUID	Bz (up), Bx (east), By (north)
Fluxgate	Bz(up), Bx (east), By (north)
Sensor Location	400m east of loop centre
Transmitter	Transmitter Technologies TTX
Effective current	~80A
Frequency	0.5Hz

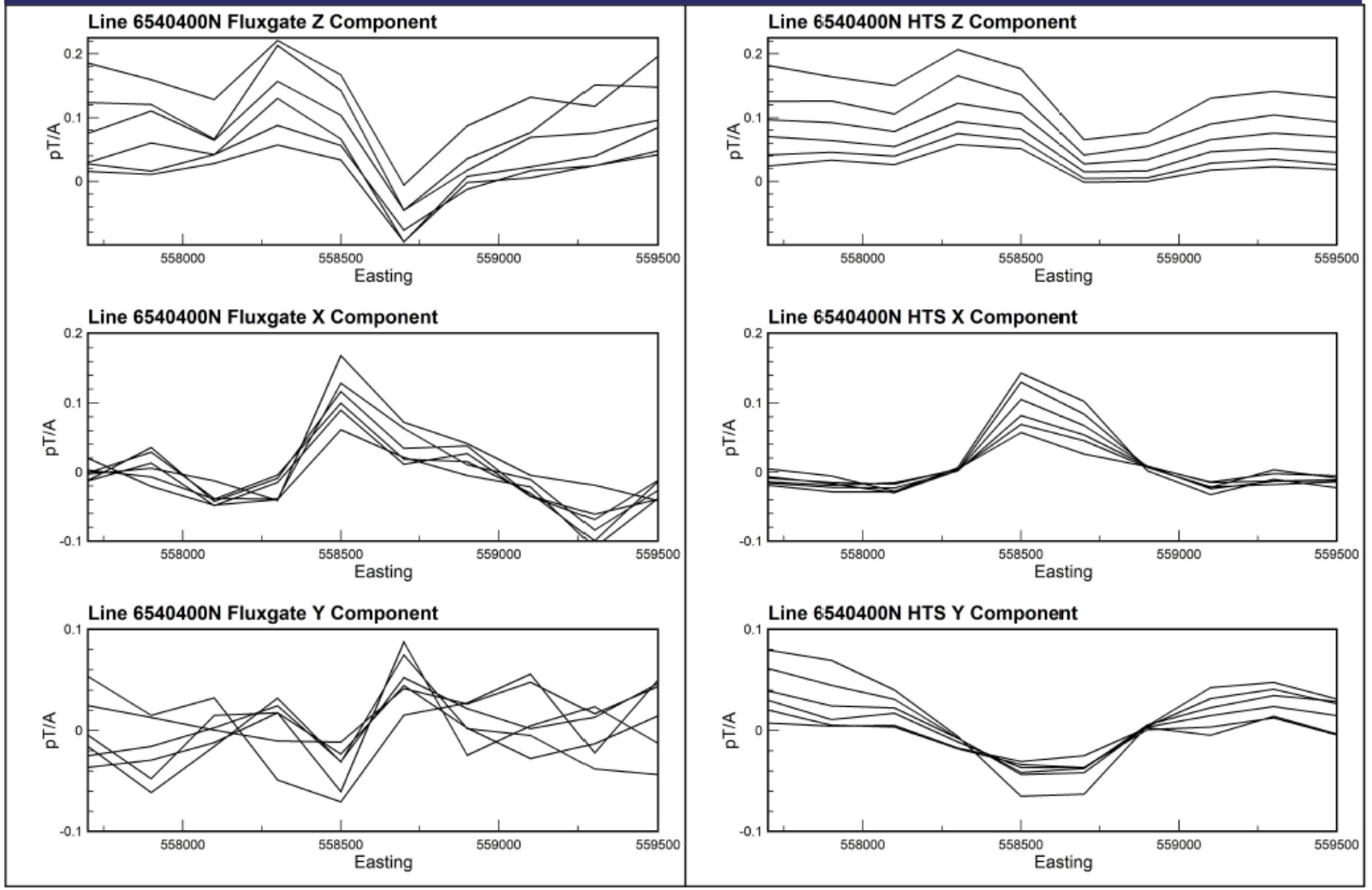
Data repeatability for the HTS was <0.02pT/A for the Z component.
Fluxgate repeatability was ~ 0.1pT/A in the Z component.

Andromeda Zn-Cu Discovery

Excellent detection at >450m

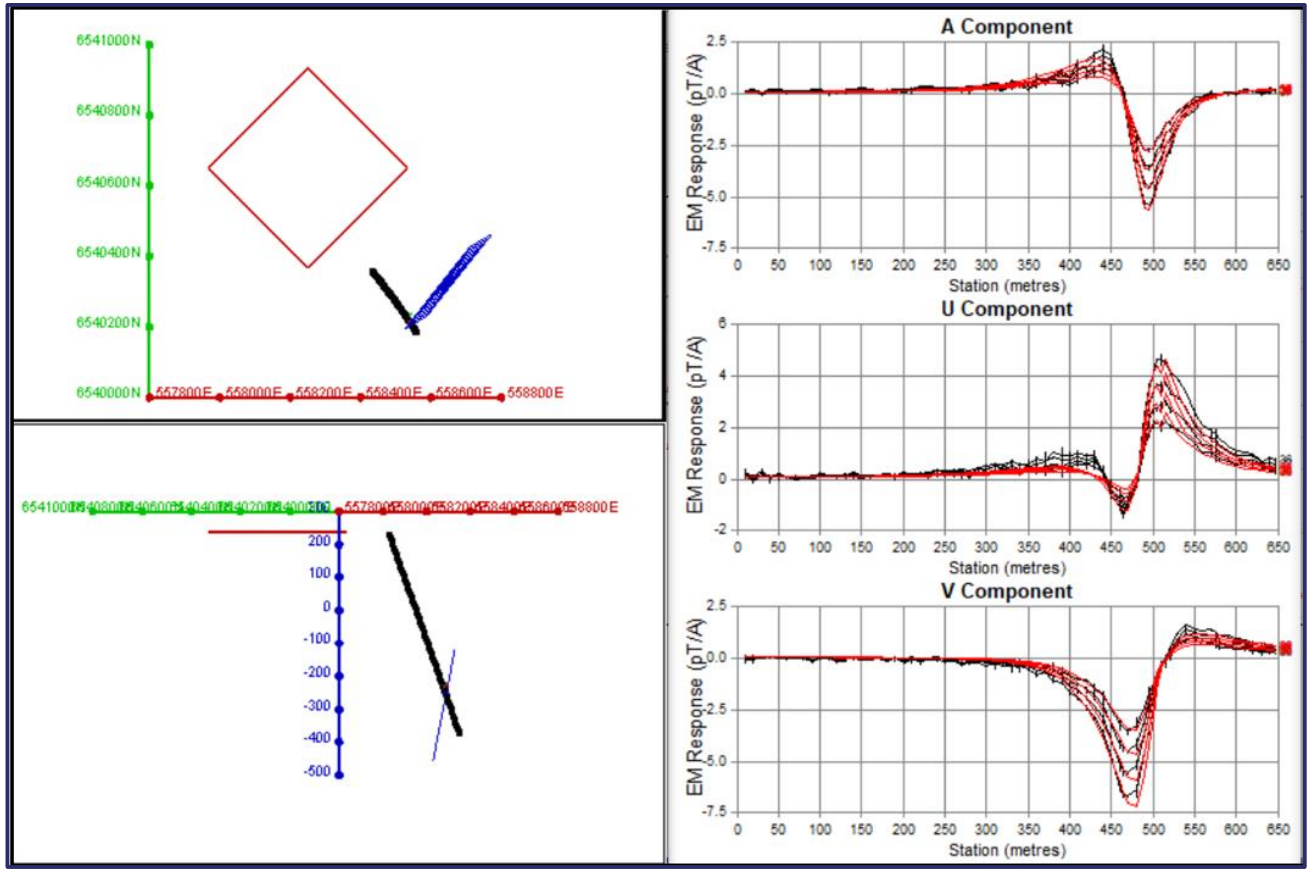
- The Andromeda conductor is seen as a late time anomaly with good responses in all three components of the HT SQUID readings.
- The response was characterised by an exponential decay with a time constant of approximately 80ms and interpreted to indicate massive sulphide mineralisation.
- Model parameters were best fit by a plate 400m long, 100m wide, 450m deep, dipping 80 degrees to the west and with a conductivity thickness of 4,200 Siemen.
- The fluxgate sensor also detected Andromeda, however the fluxgate signal was noisier.

MLEM profiles over Andromeda; Fluxgate (left) and HT SQUID (right)



Andromeda Zn-Cu Discovery

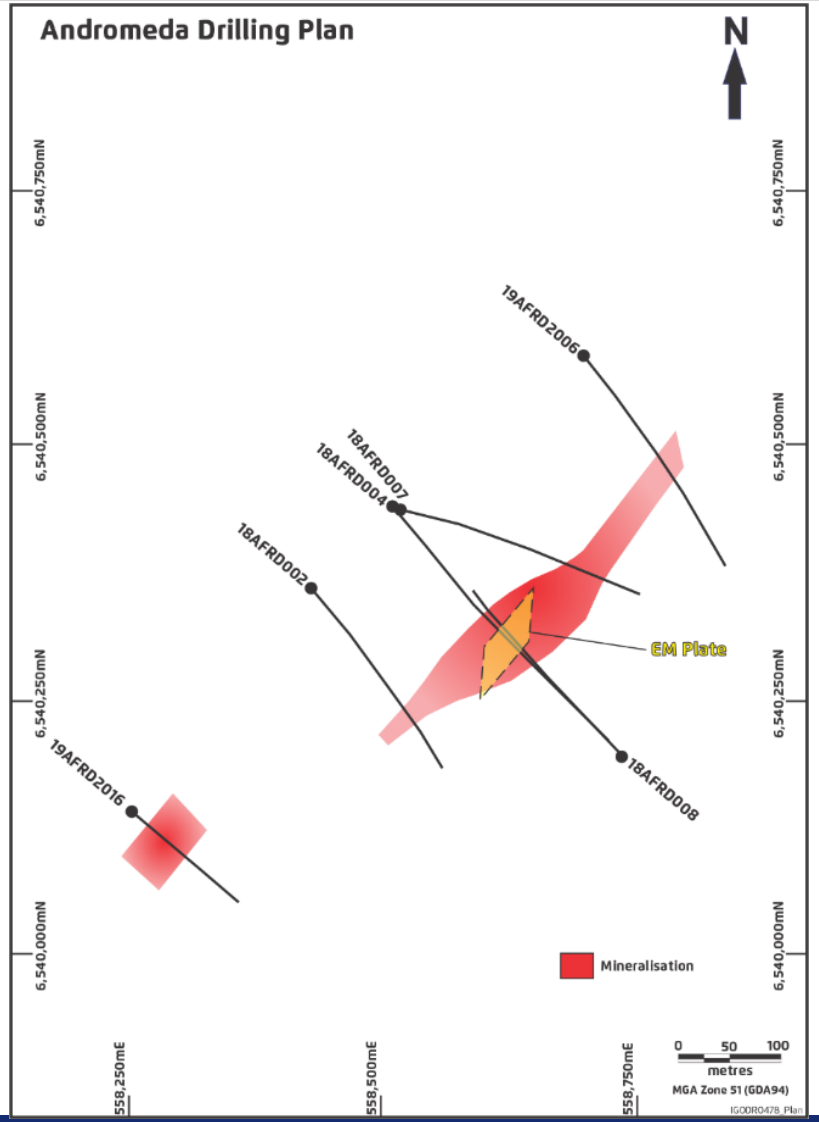
DHEM results

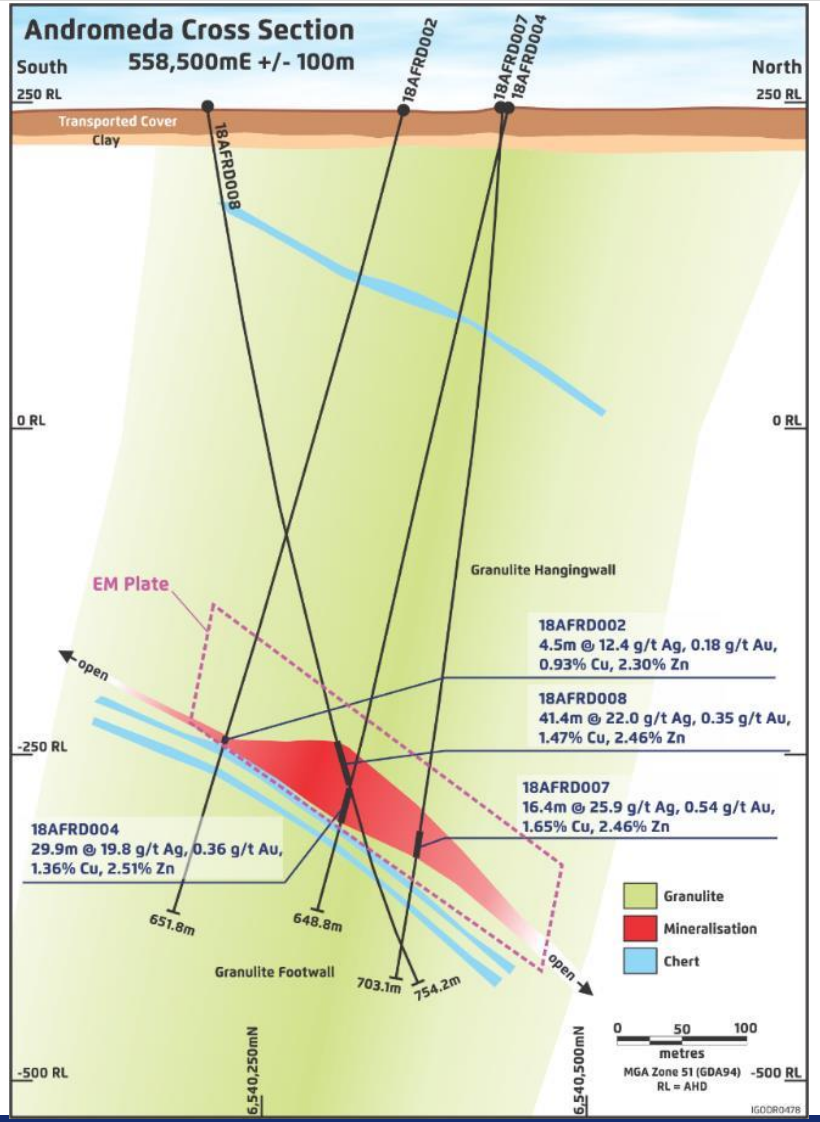


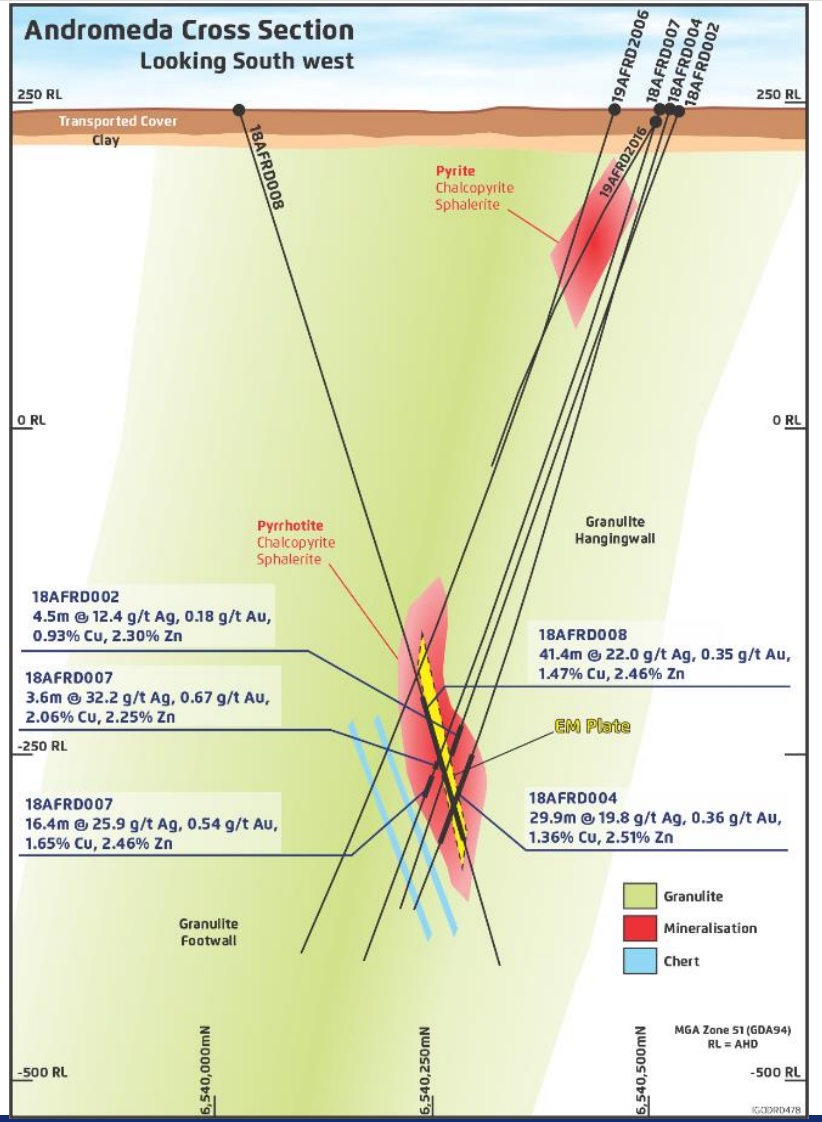
- Drill hole 18AFRD002 intersected the EM target ~80m from the planned pierce-point.
- 4.5m of pyrrhotite, pyrite, sphalerite and minor chalcopyrite was drilled from 510.5m downhole.
- 18AFRD002 was logged to 648m with a DigiAtlantis B-field EM probe, coupled with a transmitter with an output of 50A.
- Three conductors were identified with the strongest at ~515m, with time-constants in the order of ~200ms.
- A 400m x 100m, 24,000S off-hole conductor projected to align with the 5m intersection of pyrrhotite-dominant sulphides was modelled.

Andromeda Zn-Cu Discovery

Sections through the ore, including a new lens







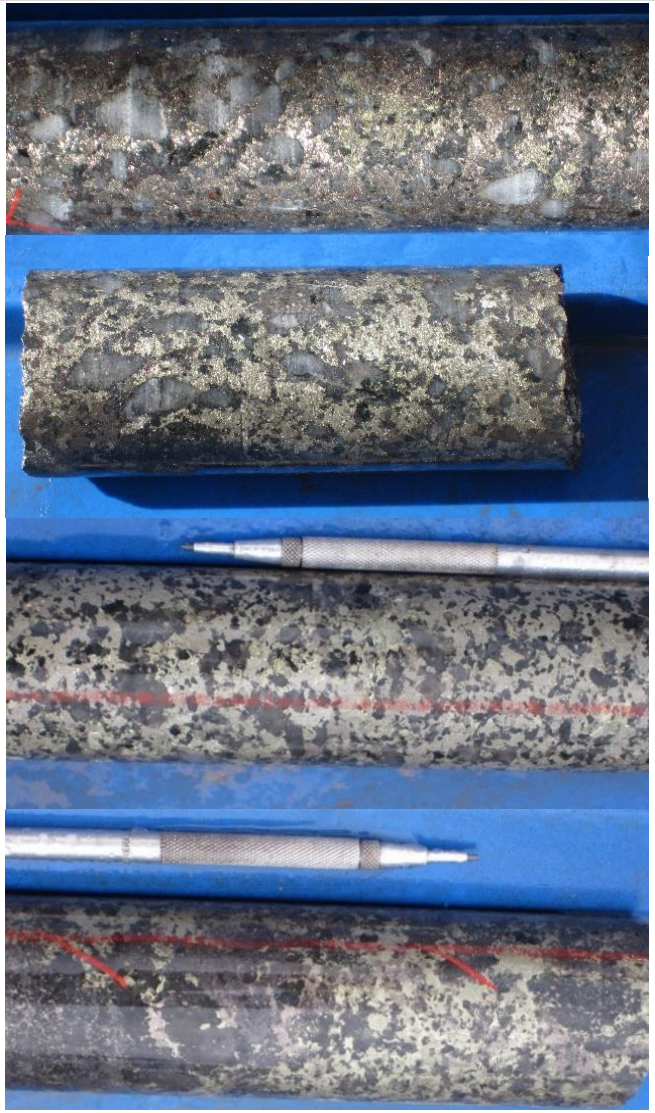
Andromeda Zn-Cu Discovery

A high level look at the ore

- Ores show pervasive, evenly distributed, durchbewegung textures characterized by lithic fragments of (i) mafic host rocks and (ii) polycrystalline quartz/chert grains.
- No metal zonation across ore body; plastic deformation and 'movement' of ore within original host rock package.
- Very small stockwork zone underlies the deposit.

Geochemical results from mineralized intersections through Andromeda[1]							
Hole ID	**From (m)**	**To (m)**	**Width (m)**	**Cu %**	**Zn %**	**Au ppm**	**Ag ppm**
18AFRD002[1]	510.50	515.00	4.5	0.93	2.30	0.18	12.4
18AFRD004[1]	548.10	578.00	**29.90**	**1.36**	**2.51**	**0.36**	**19.8**
18AFRD007 upper[1]	539.06	542.69	3.63	2.06	2.25	0.67	32.2
18AFRD007 main[1]	547.61	564.00	**16.39**	**1.65**	**2.46**	**0.54**	**25.9**
18AFRD008 #1[1]	435.02	438.54	3.52	2.51	2.32	0.38	31.6
18AFRD008 #2[1]	499.57	504.24	4.67	0.63	1.92	0.38	12.1
18AFRD008 #3[1]	531.18	572.54	41.36	1.47	2.46	0.35	22.0
18AFRD008 #4[1]	576.70	584.55	7.85	0.77	2.11	0.68	13.3

Top two photos: Typical breccias of quartz/chert clasts in a pyrrhotite-chalcopyrite matrix. Bottom two photos: Cpy-Sph-rich matrix with >1cm dark silica/chert or mafic clasts.

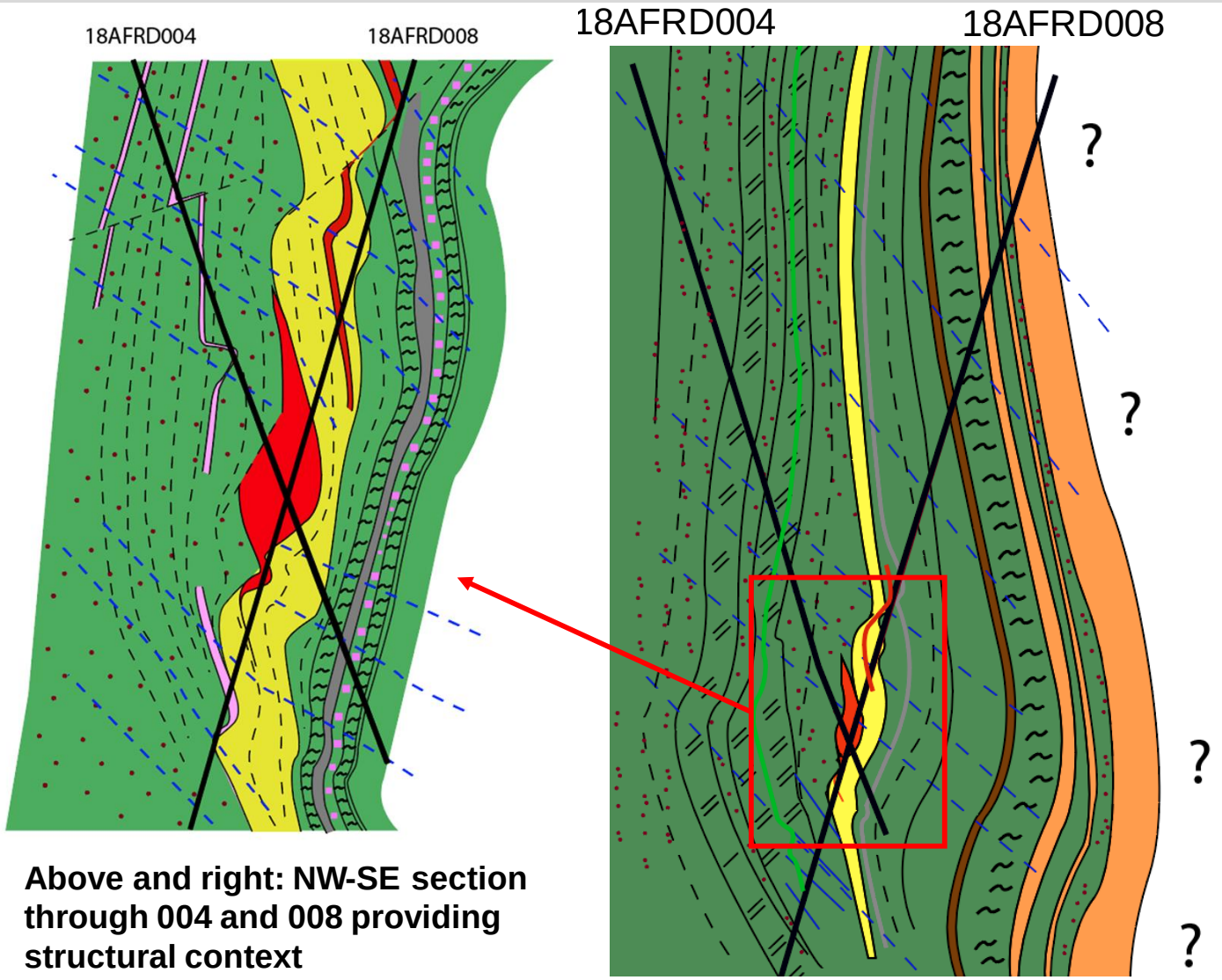


1) Refer to IGO ASX releases dated 26 July, 2018 and 20 February 2019: Annual Update of Exploration Results, Mineral Resources and Ore Reserves

Andromeda Zn-Cu Discovery

Host rock geology to mineralisation

- Steeply dipping to subvertical mafic-dominated stratigraphy comprising garnetiferous mafic granulites (±2 pyroxene), some hosting mottled to massive amphiboles.
- Sediments and orthogneisses only observed in the upper part of 18AFRD008, comprising strongly foliated, graphite-bearing metasediments of pelitic origin folded about asymmetric folds.
- Mineralisation displays sheared contacts – offsets undetermined
- Structural interpretation suggests that EM modelling is averaging two mineralised lenses – untested residual targets exit.

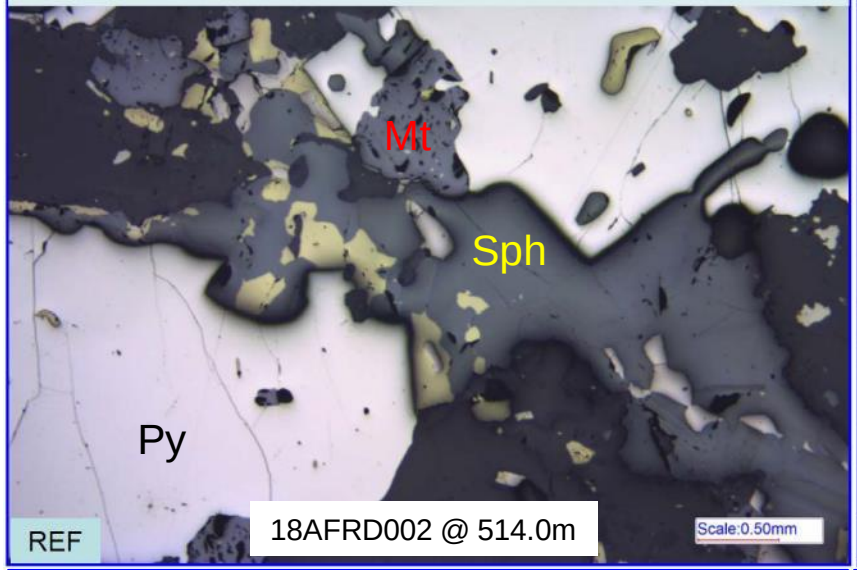


Above and right: NW-SE section through 004 and 008 providing structural context

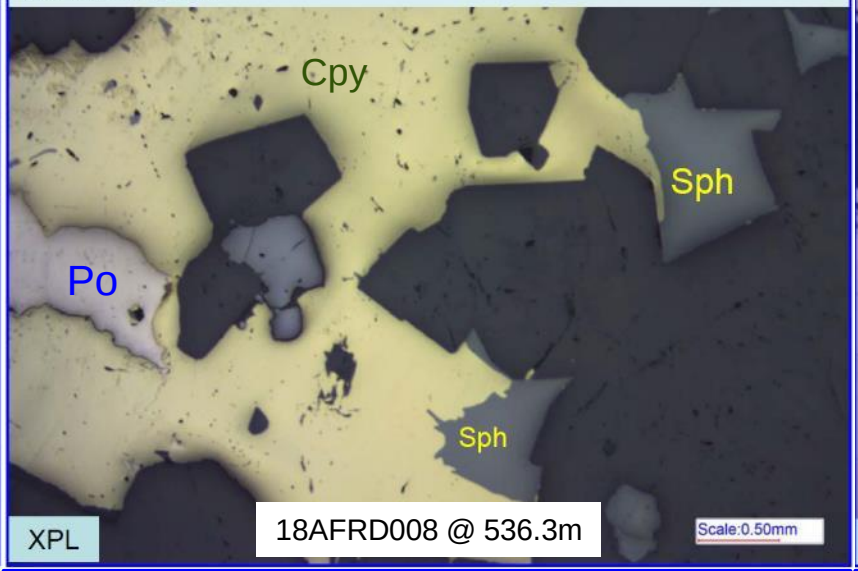
Andromeda Zn-Cu Discovery

Petrographic analysis of the ore

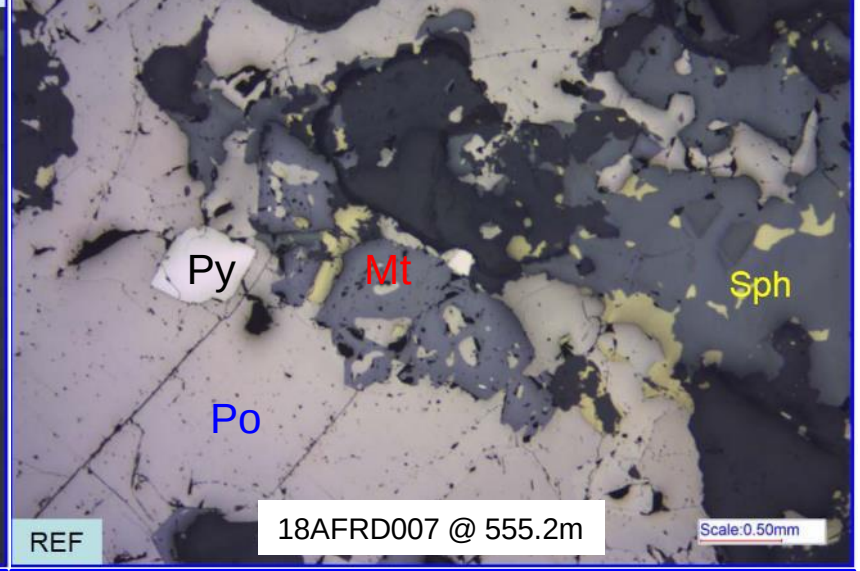
Euhedral and tatty pyrite crystals separated by stream of grey sphalerite and spotty chalcopyrite and pyrrhotite



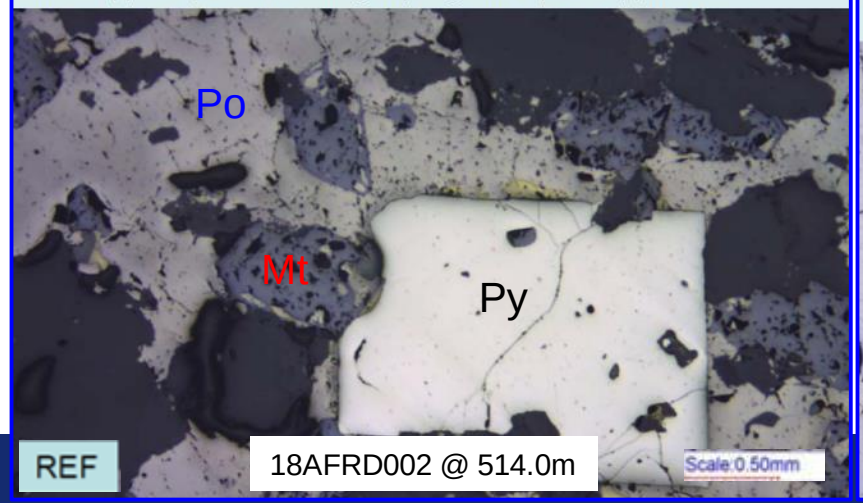
Euhedral clinopyroxene crystals (dark grey) with interstitial chalcopyrite, pyrrhotite and minor sphalerite



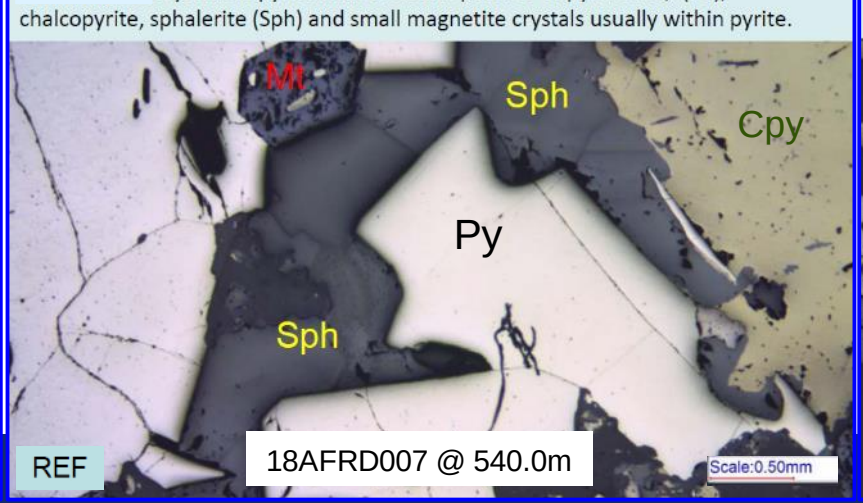
Pyrite crystals growing in pyrrhotite with interstitial grey sphalerite and chalcopyrite



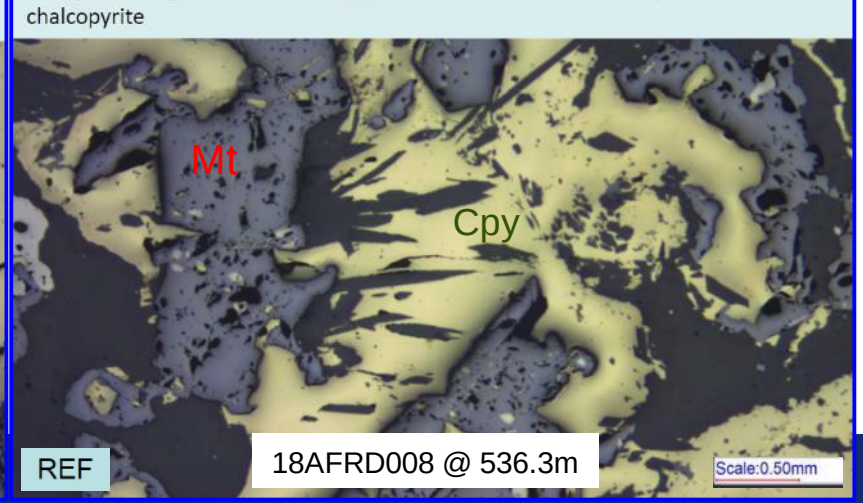
Euhedral pyrite crystal and smaller greny magnetite crystals in pyrrhotite host



Crystalline pyrite with anhedral patches of pyrrhotite, (Po), chalcopyrite, sphalerite (Sph) and small magnetite crystals usually within pyrite.



Intergrown magnetite and chalcopyrite with sprays of acicular amphibole in chalcopyrite

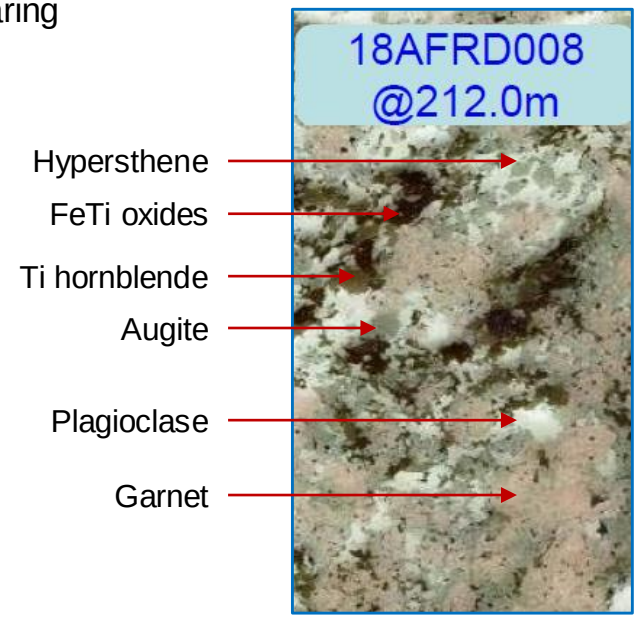


Andromeda Zn-Cu Discovery

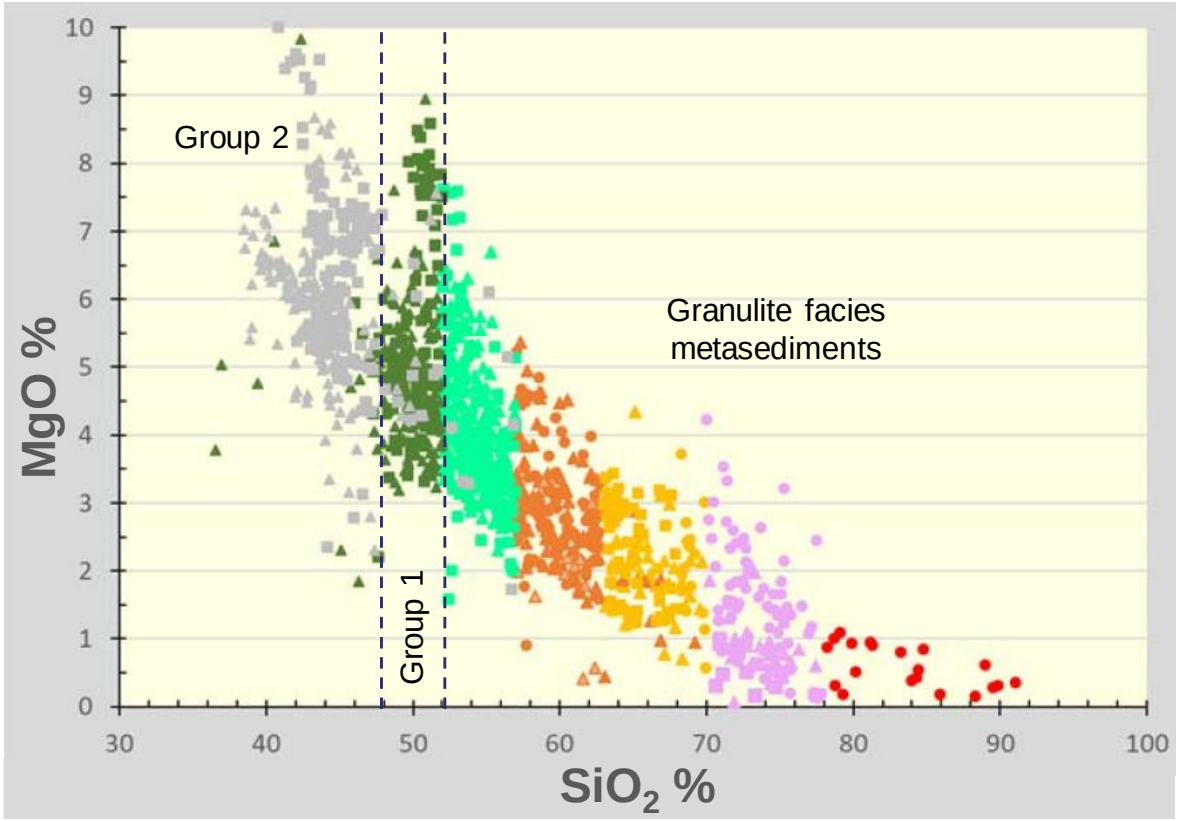
Mineralisation in a metabasalt – sill sequence

- Dominated by mafic granulites; divided into Group 1 and Group 2 on the basis of Si, Ti and Nb concentrations.
- Group 1: Mafic tholeiitic volcanic rocks, with minor interbedded metasedimentary rocks and leucosomes.
  - Zr/Ti and Nb/Y are consistent with basalts erupted during advanced stages of rifting of continental crust prior to breakup.
- Group 2: Basaltic magma that is considered to represent sills emplaced into the Andromeda rock package.

Group 1 Mafic Granulites: garnet- bearing gabbros, to garnet-bearing norite.
~46-52% SiO2, Ti-, Nb-poor



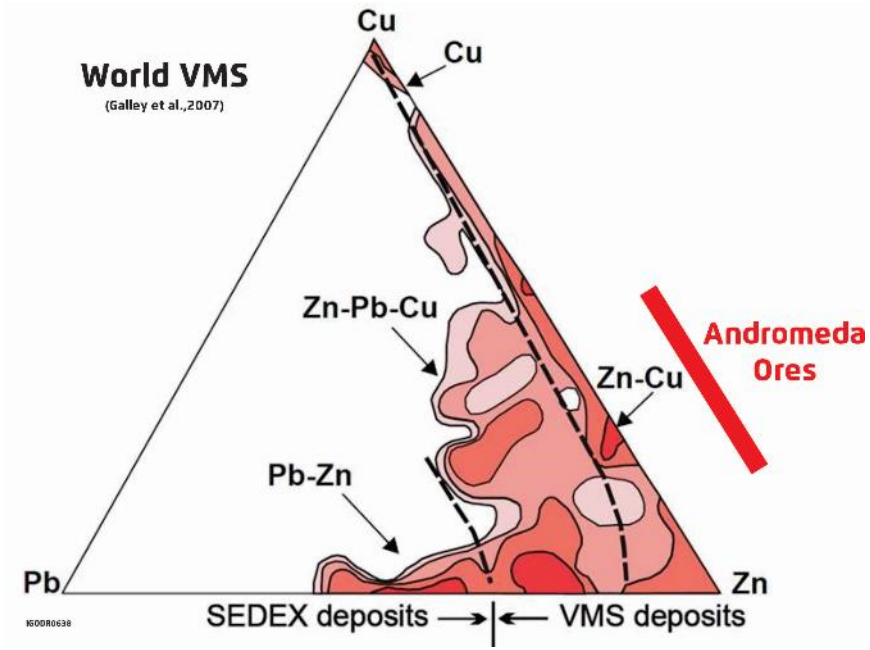
Group 2 Mafic Granulites: Ti-rich, garnet bearing gabbros, to garnet- bearing norite.
mostly <<48% SiO2, Fe-, Ti-, Nb-rich



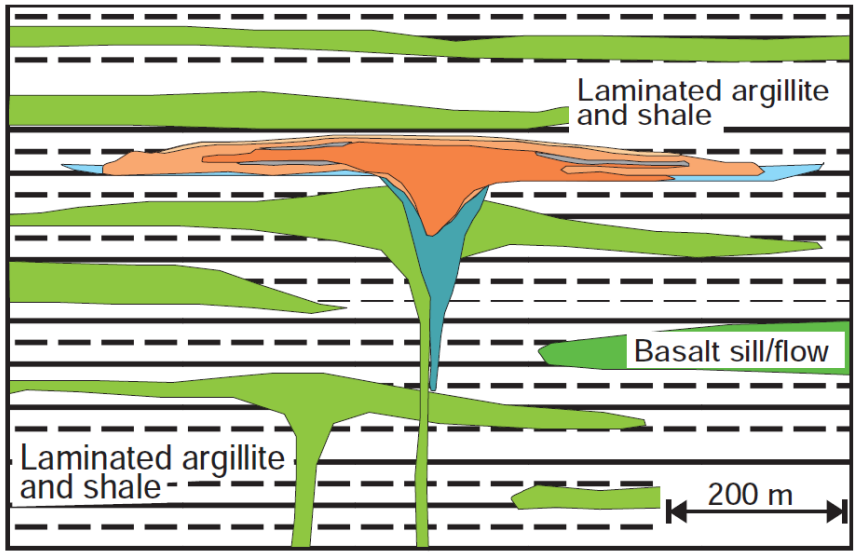
Andromeda Zn-Cu Discovery

A siliciclastic-mafic, or Besshi-type VMS deposit

- The main ore zone comprises pyrrhotite, pyrite, sphalerite, magnetite, chalcopyrite and rare galena.
- ‘Cu ratios’ (100Cu/(Cu+Zn) are largely in the range 35-50, with no Pb.
- ‘Zn ratios’ (100Zn/(Zn+Pb)) are >95; Andromeda is a Zn-Cu VMS deposit.
- Host-rock package is dominated by mafic lavas and sills interlayered with deep water sedimentary rocks.
- There is no preserved metal zonation across the orebody and a footwall stringer zone appears to be absent. Besshi-style deposits in Japan lack stockworks beneath the ore lenses and hydrothermal alteration zones are narrow.



Range of base metal compositions of VMS deposits from Galley et al. (2007) showing the range of Cu/(Cu+Zn) values for Andromeda ores with >20% S.



PELITIC-MAFIC

Canadian grade and tonnage

Average 34.3 Mt
Median 148 Mt

1.6% Cu
2.6% Zn
0.36% Pb
29 g/t Ag
<0.9 g/t Au

Andromeda Zn-Cu Discovery

Summary

- The Andromeda VMS mineralisation is characterised by a pyrrhotite> pyrite>>sphalerite, chalcopyrite and magnetite assemblage, making it easily detected by both fluxgate and HT SQUID EM sensors.
- Metamorphism obliterated primary ore textures, homogenised the Cu/Zn ratio and blended the ores with their cherty metasedimentary and mafic host rocks.
- The host rock succession is dominated by Group 1 oxide-poor and Group 2 oxide-rich mafic granulites.
- Group 1 mafic granulites have rift tholeiite compositions consistent with basalts erupted during the advanced stages of rifting of continental crust just before breakup.
- Group 2 mafic granulites are interpreted as ferrogabbro sills that were intruded into the volcanic package.
- The Andromeda mineralisation type, ore grade and host rock package closely resembles that of Besshi-type deposits.
- The discovery of Andromeda opens a new search space in the AFO for Zn-Cu mineralisation along with the orthomagmatic Ni-Cu-Co mineralisation already known to exist.

Acknowledgements

- Geological Survey of Western Australia are thanked for co-funding drill hole 18AFRD002 through the EIS grant system.
- Jacob Paggi proposed extending the original MLEM survey west to include the Andromeda “eye” feature that lead to the identification of the EM conductor.
- The IGO Exploration Team.

MAKING A DIFFERENCE