



ZAMIA

ZAMIA METALS LIMITED
TARGETING GOLD & COPPER
IN QUEENSLAND
EXPLORATION STRATEGY,
JULY 2016 – JUNE 2017

June 2016

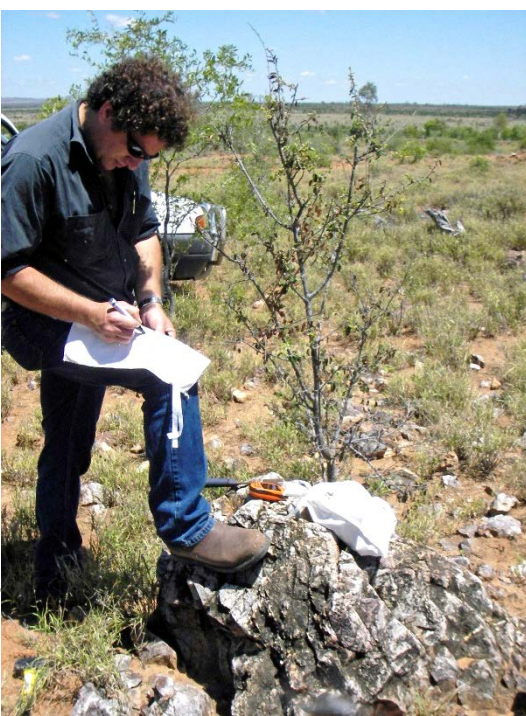




Introducing Zamia Metals Limited

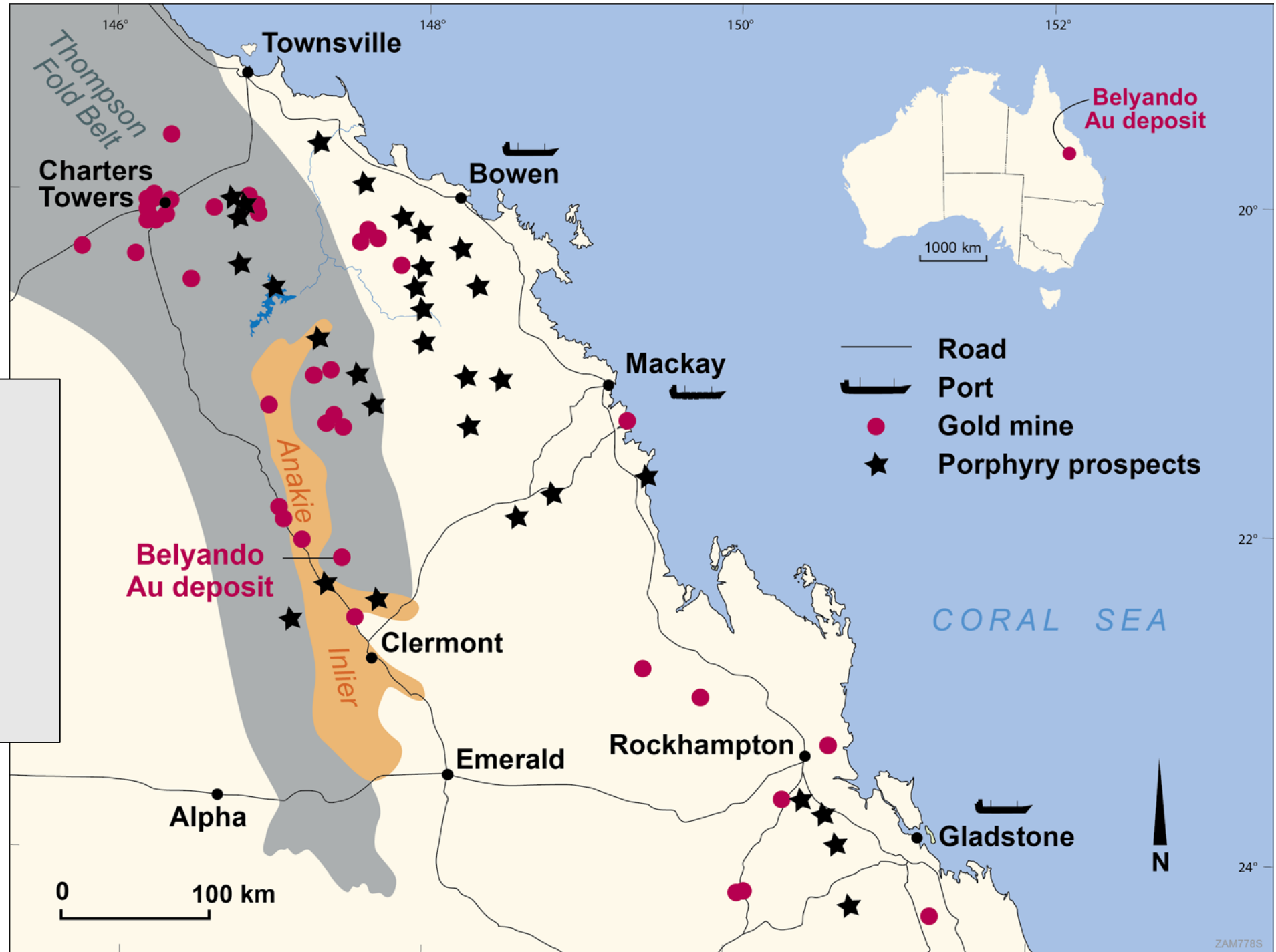
- **Listed on ASX since 2008**
- **Package of Exploration Permits for Minerals (EPMs) in central Queensland**
- **Exploration success with discovery of Anthony porphyry molybdenum (Mo) deposit**
- **Focusing on a region with a long history of gold mining**
- **Targeting epithermal gold and porphyry copper-gold deposits**

Zamia has identified and prioritised exploration targets within its mineral tenements and is seeking funding to advance those targets towards discovery and resource delineation





The Target Region - Central Queensland



- Numerous operating & dormant gold mines
- Good infrastructure - roads, power, water
- No major environmental issues

Location map. Zamia's focus is the area north of Clermont



The Charters Towers to Clermont belt in Central Queensland has been a significant gold producing area since the 1860s when gold was discovered at Clermont. Significant epithermal gold deposits (¹Morrison & Beams, 1995) include:

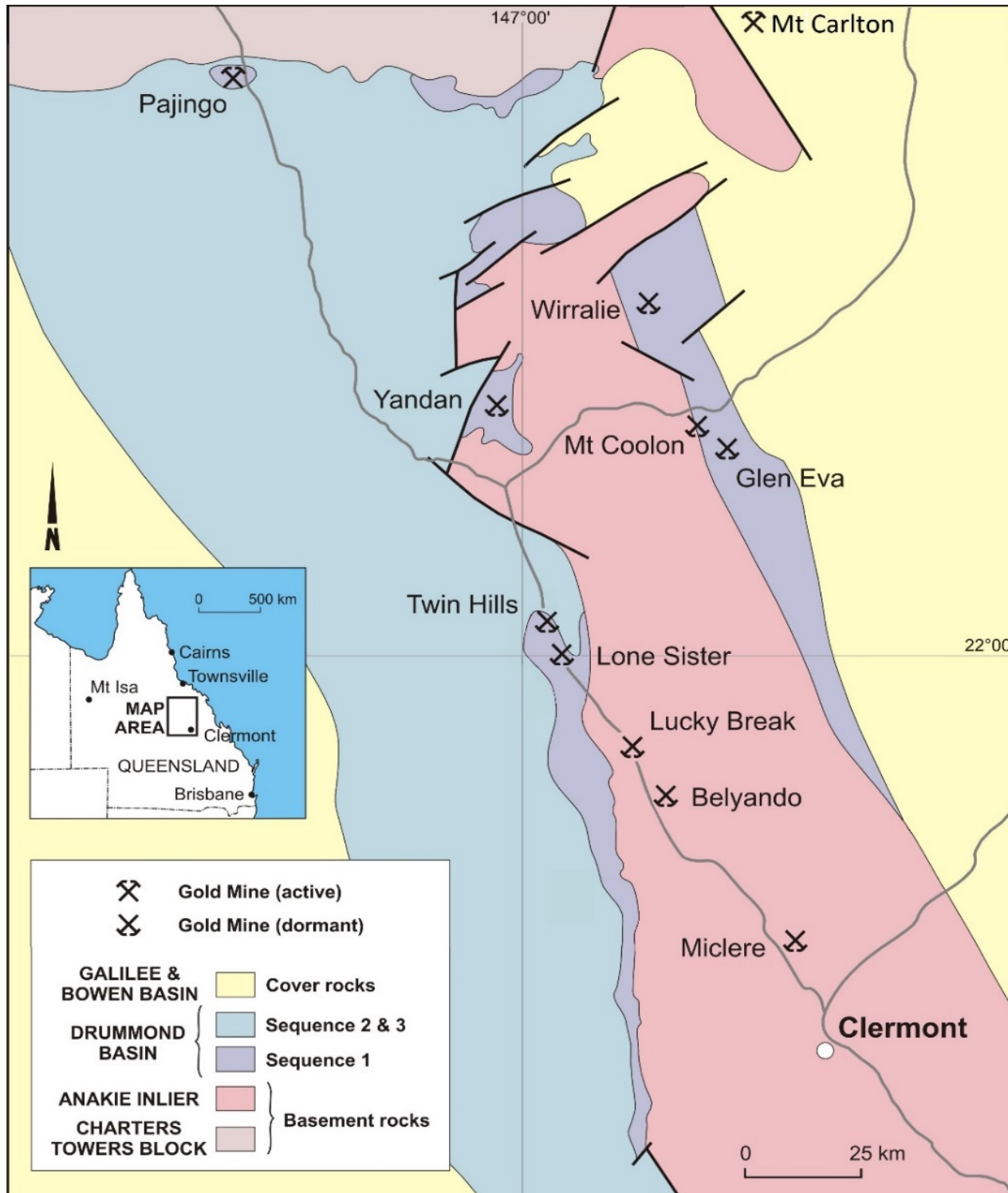
- Charters Towers district: Production 6.6 Moz
- Pajingo: Production + resource 3 Moz
- Mount Carlton: > 1 Moz
- Wirralie: Production 320,000 oz
- Yandan: Production 350,000 oz
- Mount Coolon: Production 290,000 oz
- Twin Hills: Resource 390,000 oz

Zamia's discovery of the Anthony molybdenum deposit demonstrates the potential of the region to host significant porphyry systems





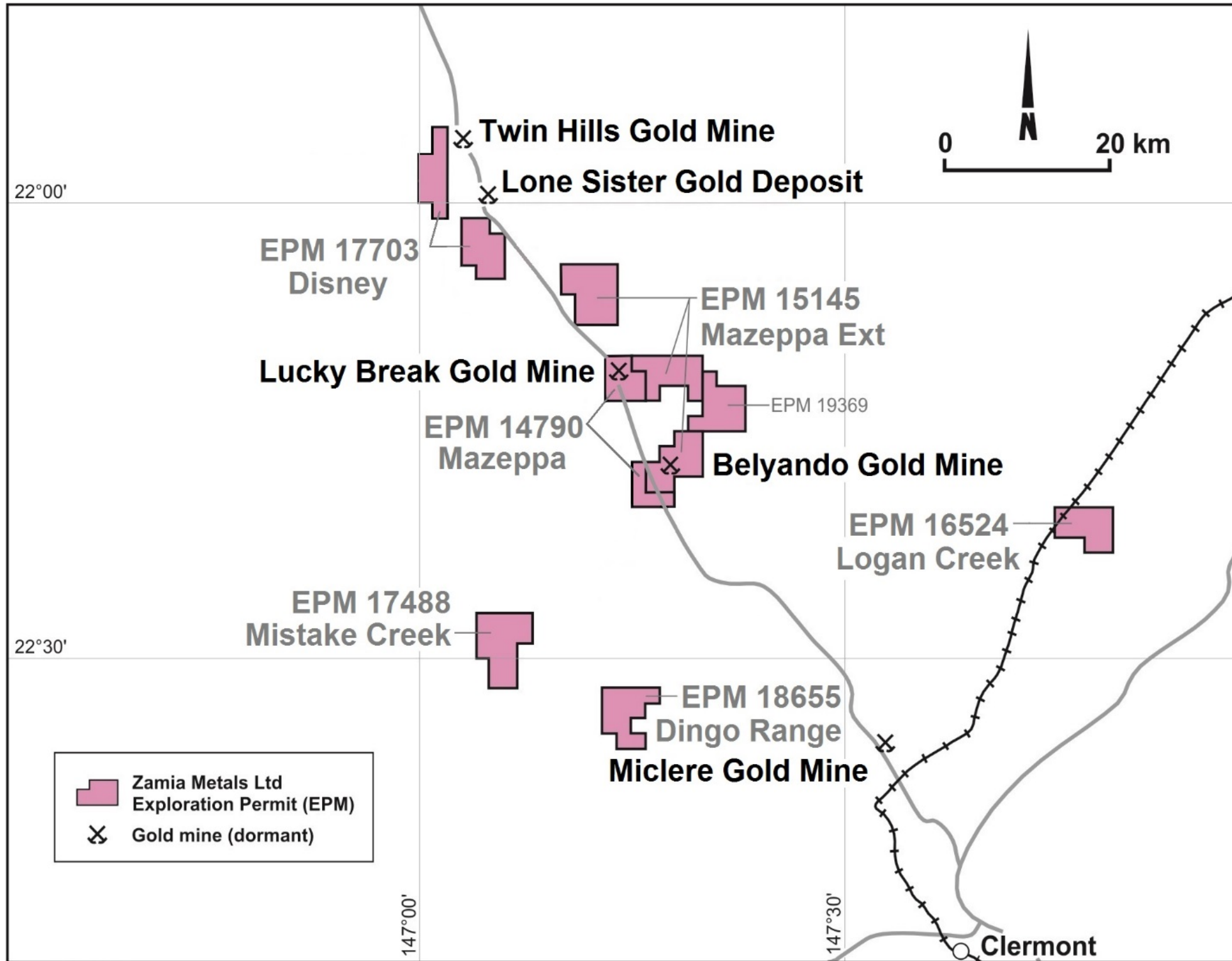
Geological Setting



- **Anakie Inlier: A north-trending basement ridge of Neoproterozoic to Cambrian metamorphic rocks**
- **Drummond Basin: A Devonian to Carboniferous volcano-sedimentary sequence with the Silver Hills Volcanics (dacite – andesite) at the base**
- **Devonian to Carboniferous intrusive complexes of granite to diorite composition with high level porphyry & breccia bodies**
- **Drummond Basin flanked by basin sequences of Permian to Mesozoic age**
- **Extensive black soil obscures bedrock**



Zamia's Exploration Permits



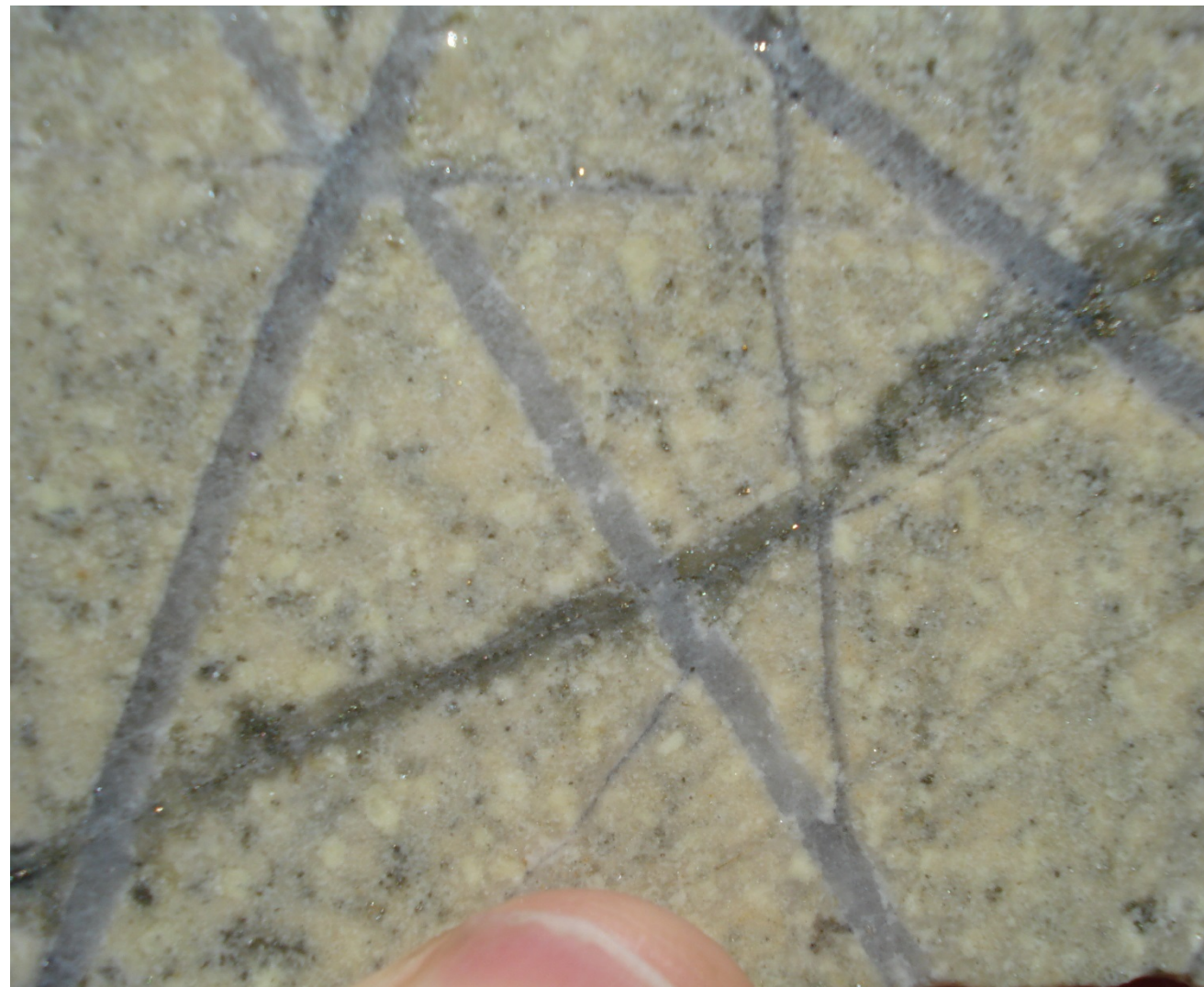
The Anthony molybdenum deposit, discovered by Zamia, is a typical porphyry system -

- High level porphyry & breccia intrusions
- Stockwork vein mineralisation
- Large tonnage
- Characteristic alteration patterns
- A large geochemical halo

The Anthony discovery demonstrates regional prospectivity for large porphyry-style deposits

Porphyry deposits, even when buried to depths of hundreds of metres, make excellent mining targets -

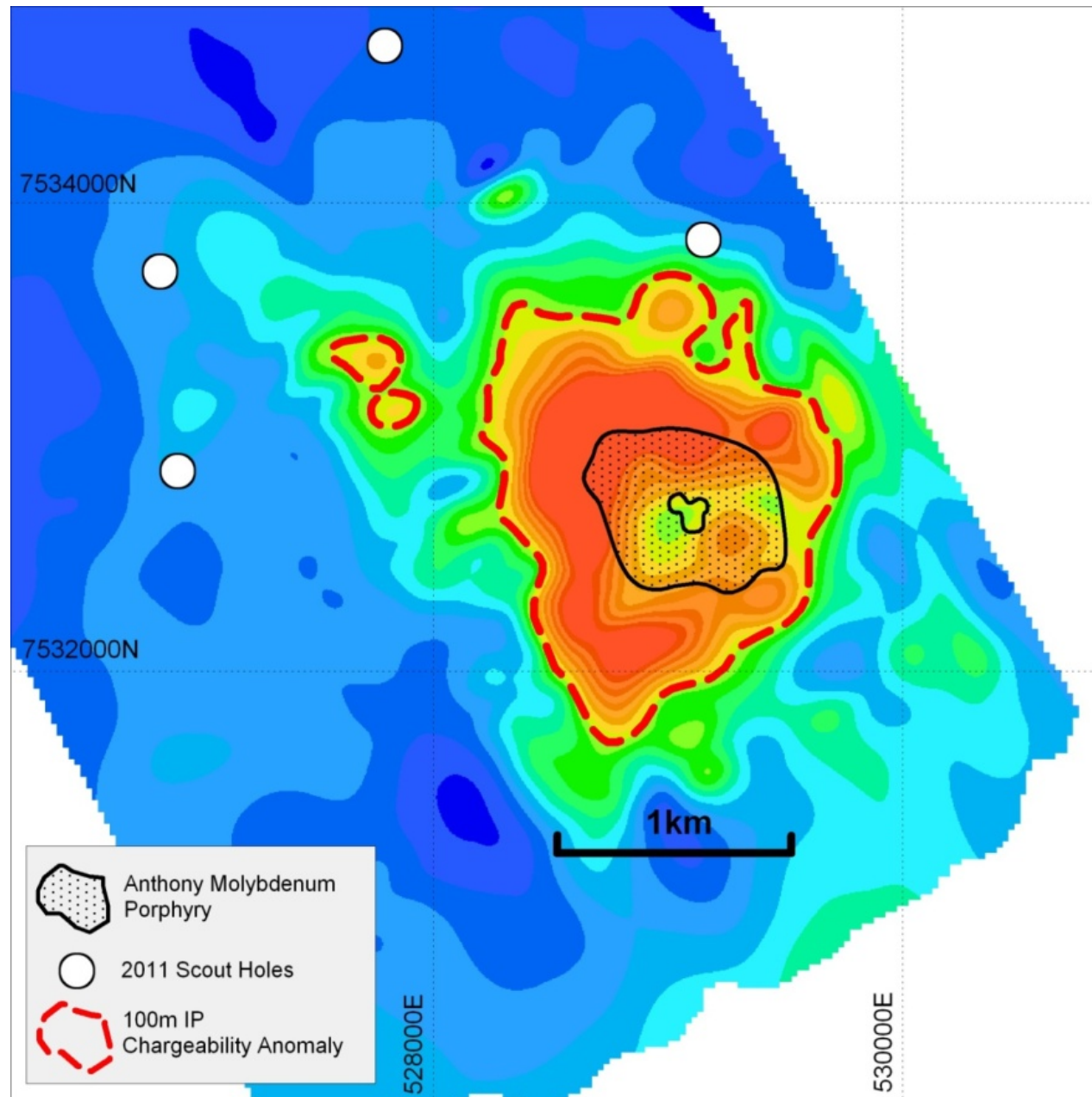
- Large size
- Can be bulk mined by block caving
- Simple mineralogy & processing



Anthony drill core showing characteristic sulphide stockwork veining in an altered porphyry intrusion

Zamia has identified numerous targets for epithermal gold and porphyry copper-gold (Cu-Au)

Zamia is now at a stage where it needs to apply significant funding to test these targets



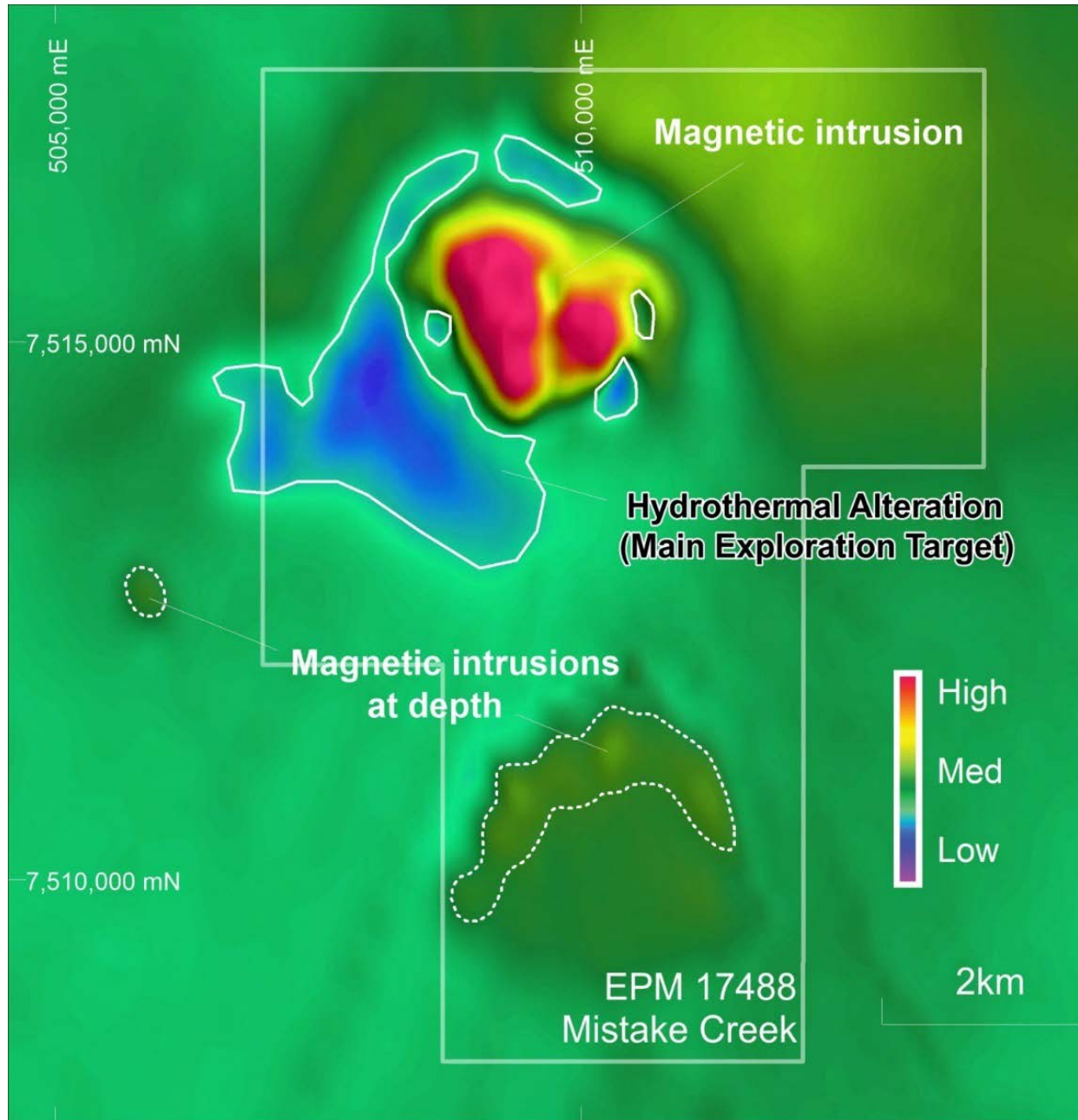
Successful exploration requires:

- Induced polarisation (I.P.) surveys to detect disseminated sulphide concentrations and identify drilling targets
- Deep drilling to test the targets
- Careful geological study to recognise characteristic patterns of rock alteration

Anthony deposit: I.P. chargeability anomaly (red-orange) at 100m depth surrounding the molybdenum resource



Mistake Creek (EPM 17488 Mistake Creek)



- Porphyry copper-gold target
- Magnetic high - an intrusive igneous complex
- Porphyry-style quartz-sulphide veins
- Arcuate magnetic low indicates a broad zone of rock alteration – the main exploration target, untested in previous exploration
- Radiometric imagery shows an arcuate potassium channel anomaly, perhaps reflecting porphyry-related potassic alteration

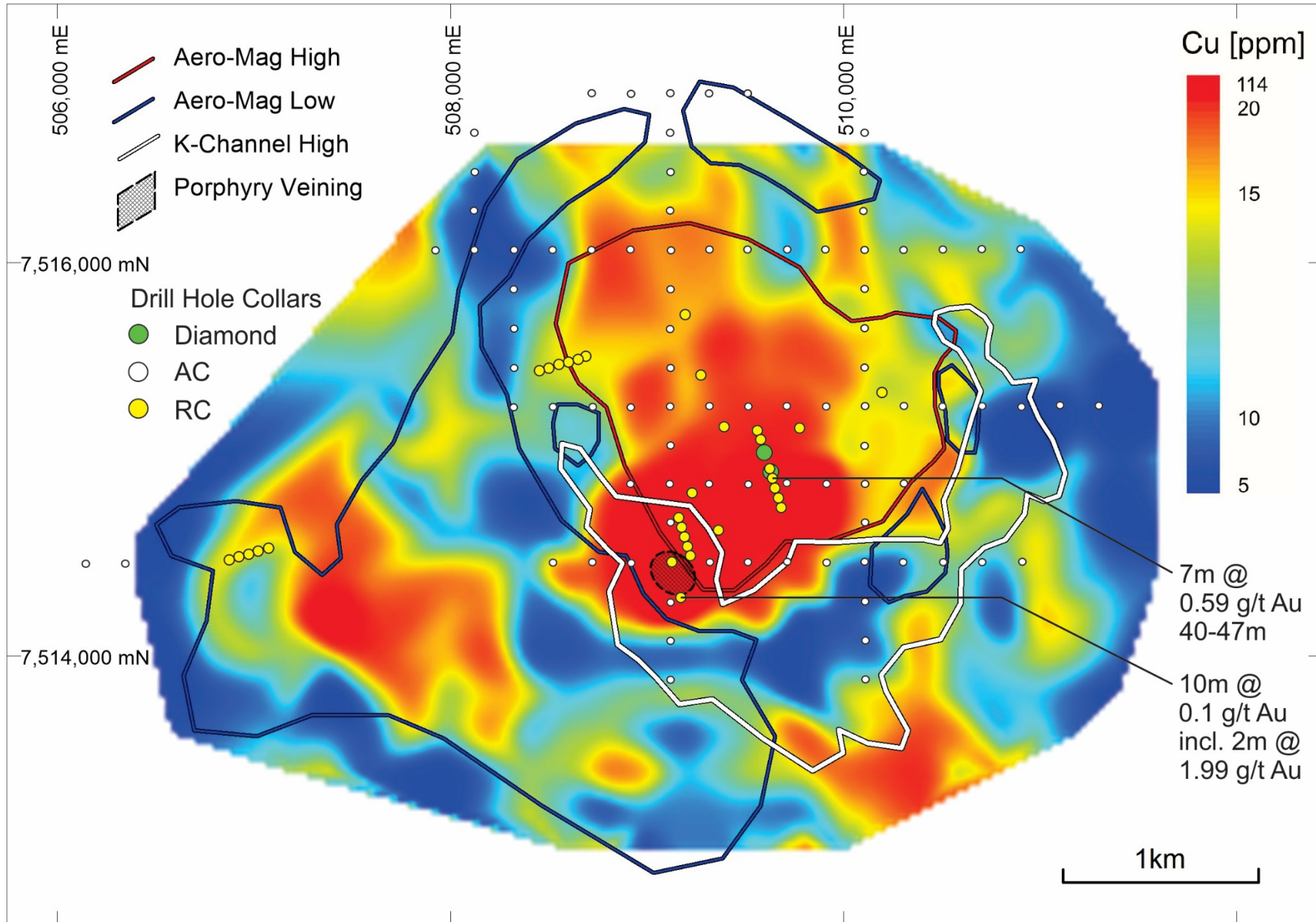


Mistake Creek magnetic image

Porphyry-style veins of quartz-iron oxide (after sulphide)



Mistake Creek - Soil Geochemistry

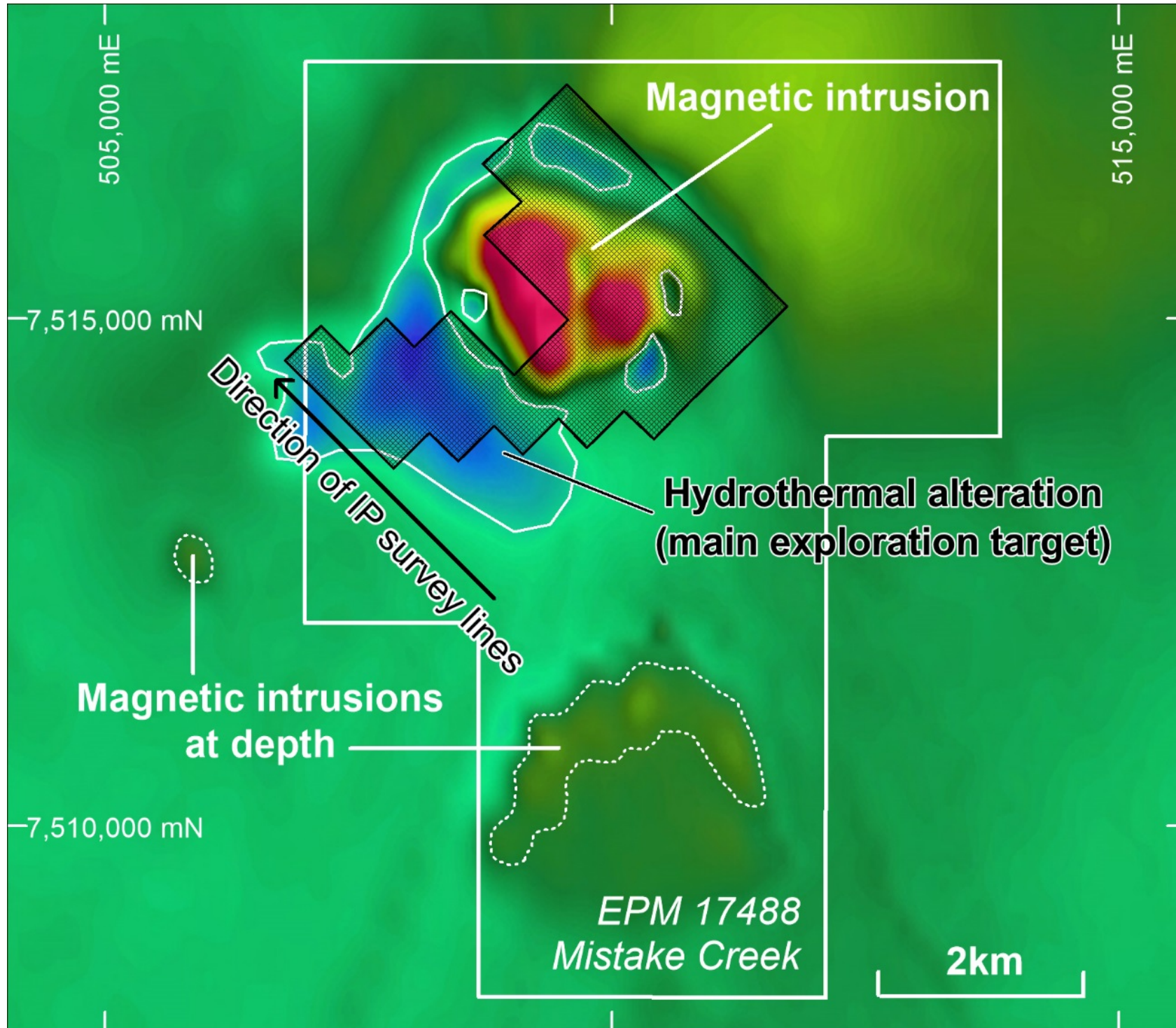


- Extensive copper- and gold-in-soil geochemical anomalies (²Zamia, 2011)
- Limited historic drilling -
 - only 2 diamond holes
 - mainly shallow RC holes
 - focussed on magnetic high, not on magnetic low (alteration)
- Shallow historic RC drilling intersected elevated Au (up to 2.0 g/t)
 - associated with elevated Cu, Mo, Zn & As (³Shywolup, 1996)

Copper-in-soil geochemistry

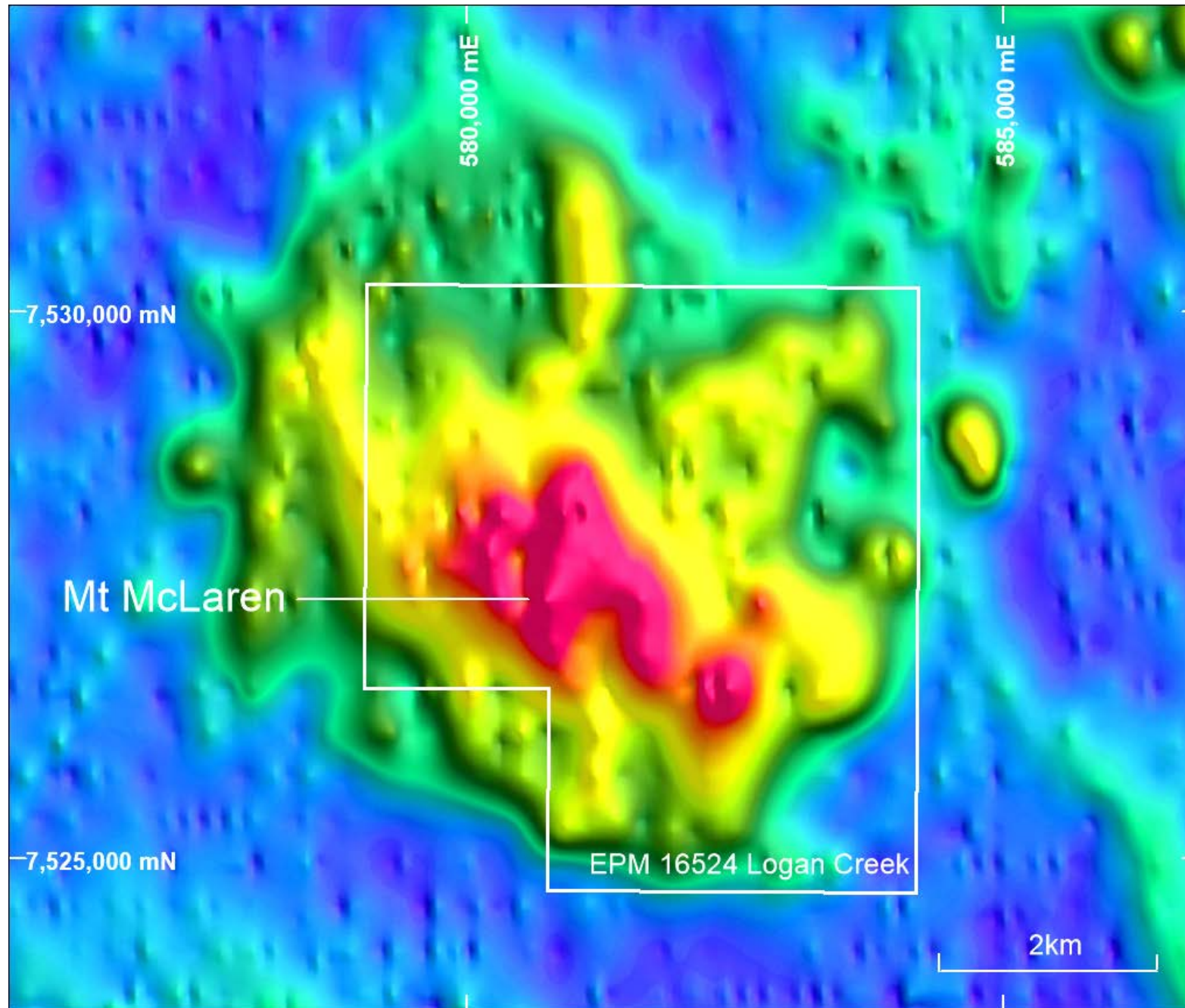


Mistake Creek - Planned Exploration Programme



- Deep penetration dipole-dipole I.P. survey
- Drill testing of targets

EPM 17488 Mistake Creek has an annual expenditure commitment of \$85,000



Radiometric potassium channel image

Classic porphyry signature:

- Multiple igneous intrusions (intersected in historic drill holes)
- Veins of quartz-iron oxide (after sulphide)
- Silica-sericite alteration at surface
- A strong potassium signature in radiometric imagery
- A large (1500m x 1500m) Mo-in-soil geochemical anomaly surrounded by Cu and Pb-Zn anomalies (⁴SAMAust Australia, 1973)
- 3000m x 2000m zone of elevated I.P. chargeability (⁵Graham, 1978a)
- Elevated Au Cu Mo As Zn & Pb in drill hole intersections (⁶Graham, 1978b; ⁷Forster, 1988))



Quartz-iron oxide veins in silica-sericite altered rhyolite

Exploration Programme

- Re-assessment of historic soil geochemistry
- Re-model historic I.P. data and, if necessary, carry out a new I.P. survey
- Reverse circulation ('RC') and diamond drilling to test targets identified by the I.P. survey

EPM 16524 Logan Creek has an annual expenditure commitment of \$120,000



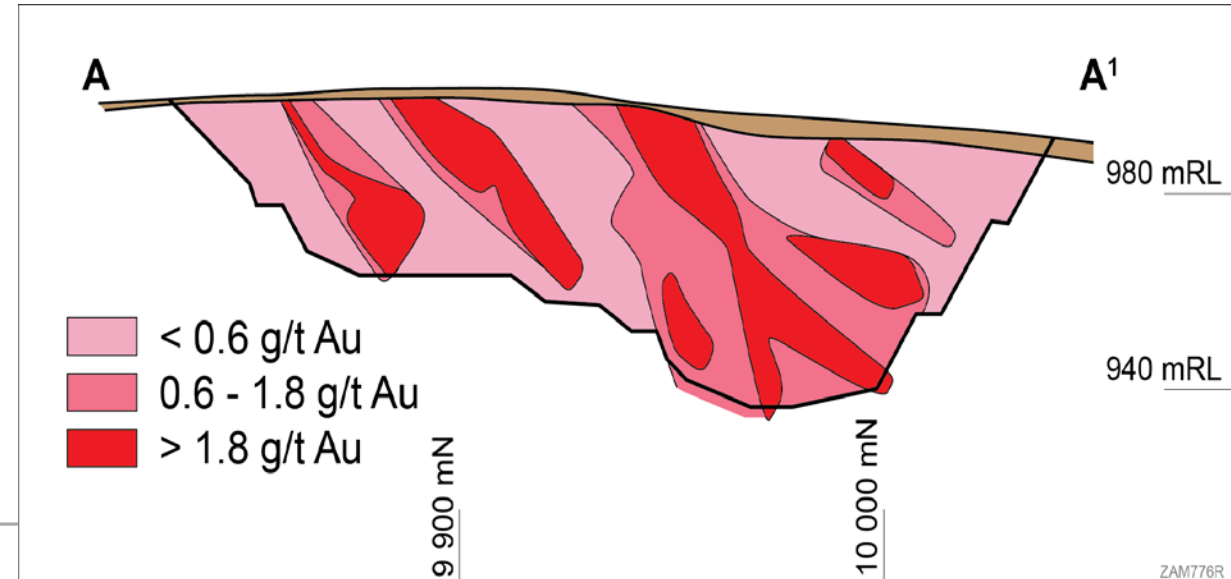
Belyando Gold Mine (EPM 15145 Mazeppa Extended)



- Discovered in 1985 by drilling a geochemical anomaly
- Initial non-JORC Resource (⁸Ross Mining, 1988) – 1.16 Mt at 2.19 g/t Au to a depth of 55m (81,000 oz contained Au)
- Operation 1989-1995
- Production: 85,846 oz Au, recovery 72% (⁹Mustard, 1998)
- Multiple gold lodes plunging northwest
- Gold mineralisation outlined to 150m depth and remains open down plunge

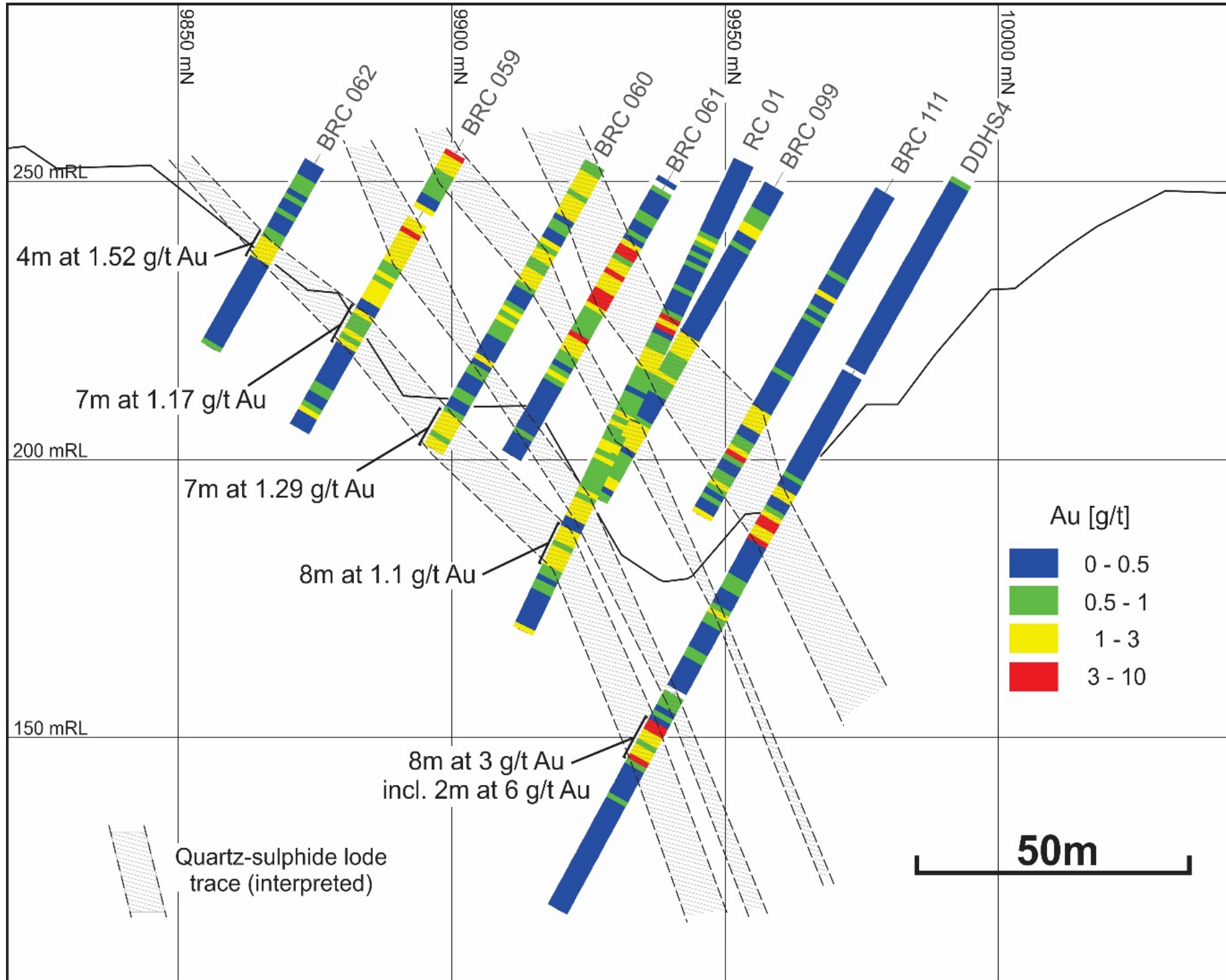
Belyando opencut with leach heaps in the background

Grade section 10,000mE (looking west)





Belyando Gold Mine (EPM 15145 Mazeppa Extended)

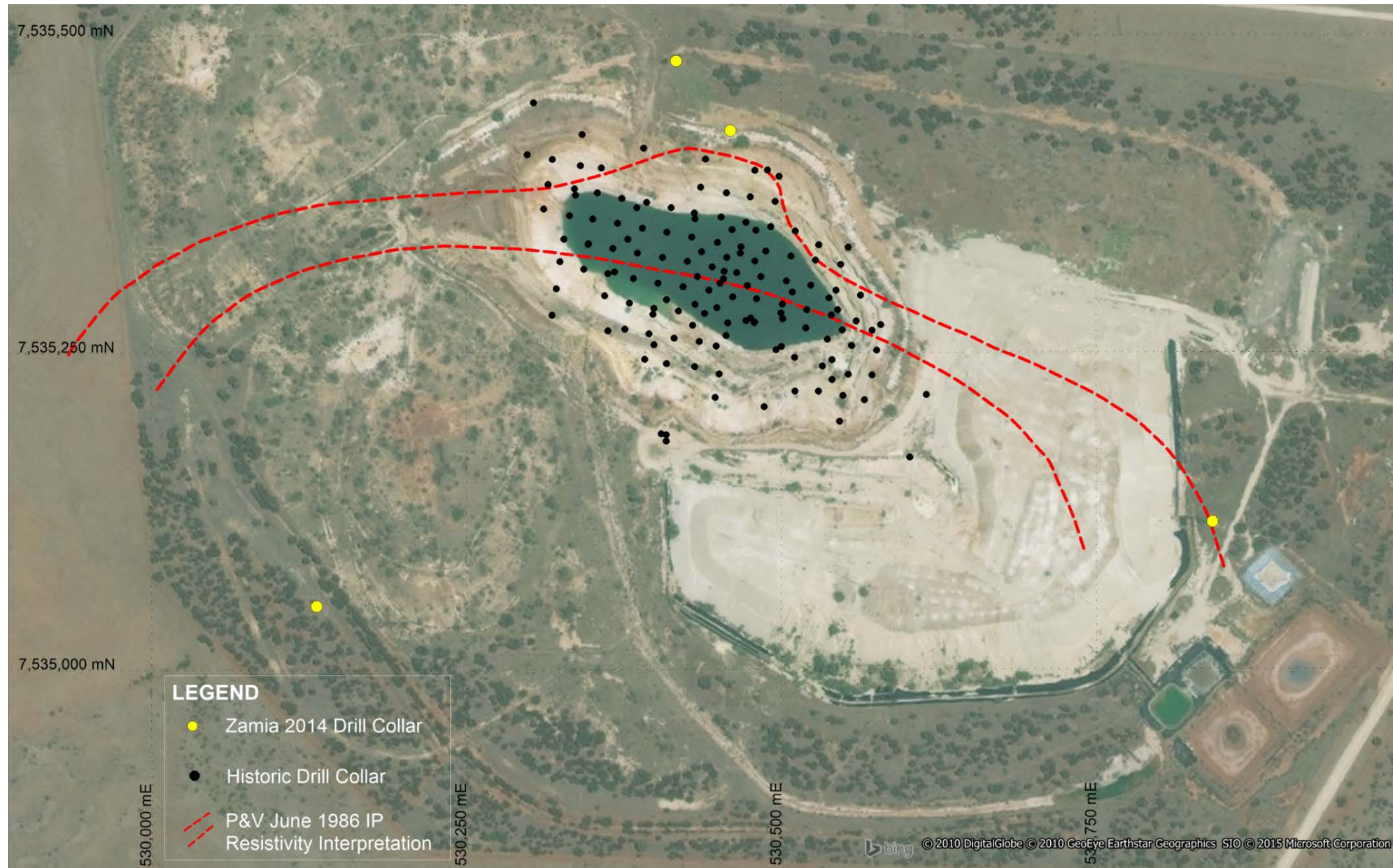


Previous resource drilling, mostly to a depth of only 80m, shows good gold intersections below the pit, showing good potential for gold at depth below the pit

(Drilling data from ¹⁰Mustard/Menzies Gold NL (1987) and ⁸Ross Mining (1988))



Belyando I.P. Survey (1986)



Shallow (~ 100m) I.P. showed (a) a chargeability anomaly extending away from known gold concentration, and (b) a broad arc of high resistivity possibly due to silica alteration. I.P. targets remain largely untested by drilling

Belyando Gold Mine (EPM 15145 Mazeppa Extended)



ZAMIA

- **Gold in quartz-pyrite-arsenopyrite veins and in siliceous breccia**
- **Hosted by silicified & brecciated Anakie Metamorphics**



*Quartz + fine grained pyrite from
64.6m in hole DDHS4. Assay 2.36 g/t
Au + 1800 ppm As*

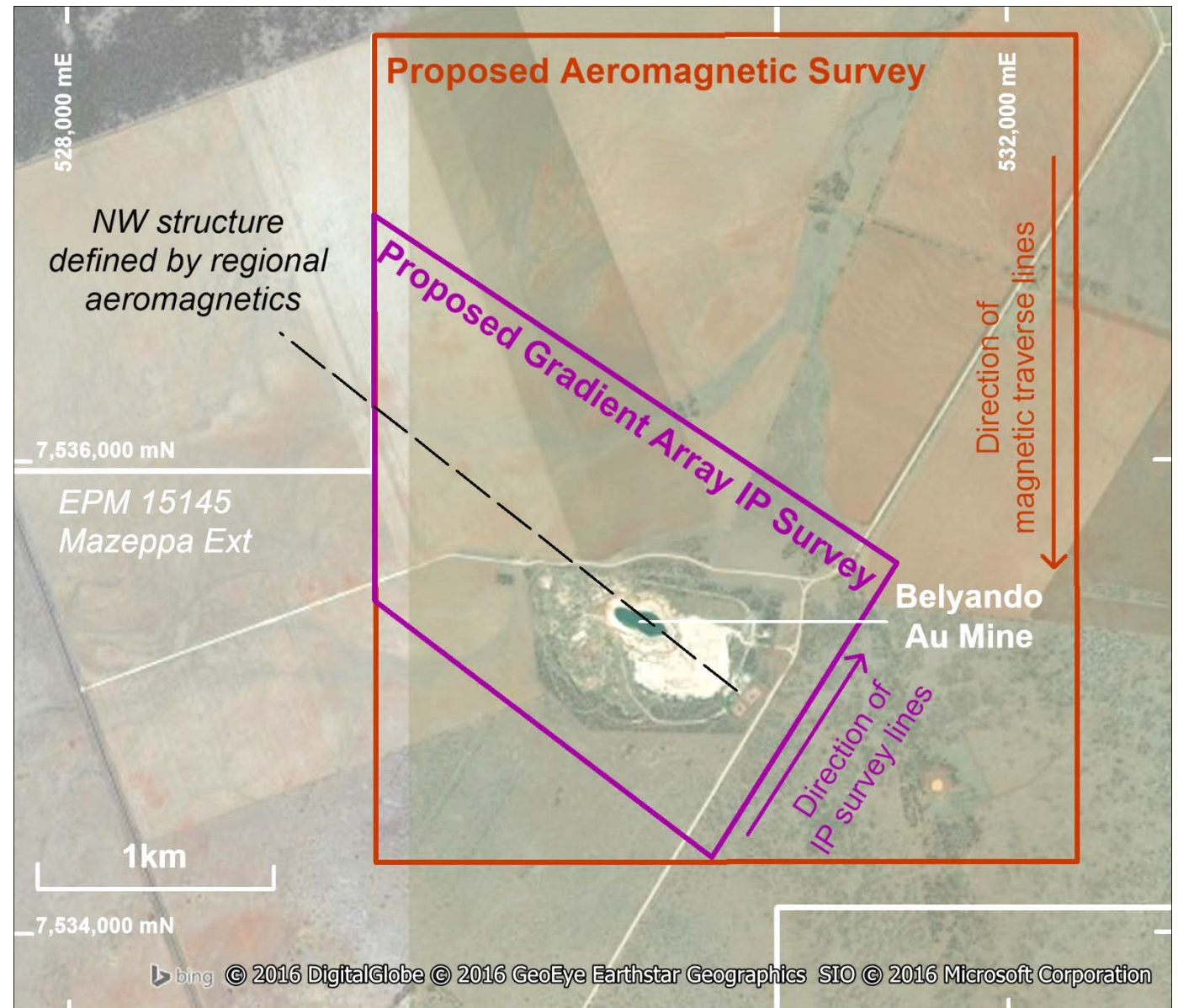
Targets

- **Extensions of known lodes to northwest below and down plunge from open-cut mine**
- **Undiscovered lodes lateral to and along strike from known lodes. Magnetic imagery shows magnetite depletion (alteration) along a northwest (NW) - oriented structure**
- **A broad zone of low grade gold (0.8 – 1.0 g/t Au) offering a target for a bulk-mineable gold deposit**
- **Satellite gold deposits (e.g. Ibis geochemical anomaly)**
- **Possibly, porphyry-style copper-gold at depth below the Belyando gold deposit**



Belyando Gold Mine - Planned Exploration Programme

- Helicopter magnetic survey over Belyando and extending several kilometres beyond
- A gradient array I.P. survey covering a larger area than the 1986 survey and capable of extending to greater depth
- RC and diamond drill holes to test:
 - Extensions to the known gold lodes
 - Targets identified by the I.P. survey
 - The IBIS geochemical anomaly



EPM 15145 has an annual expenditure commitment of \$300,000



- Pervasive sericite alteration over an area of 1000m x 1000m
- Surface rubble (“float”) of quartz veins with gossanous iron oxide (after sulphide)
- Float samples have elevated concentrations of Au As Sb Bi Cu (¹¹Geffress, 1994)
- Best assays 16.7 g/t Au & 12.2% Cu
- Limited previous shallow drilling intersected only low grade gold



Quartz-iron oxide float

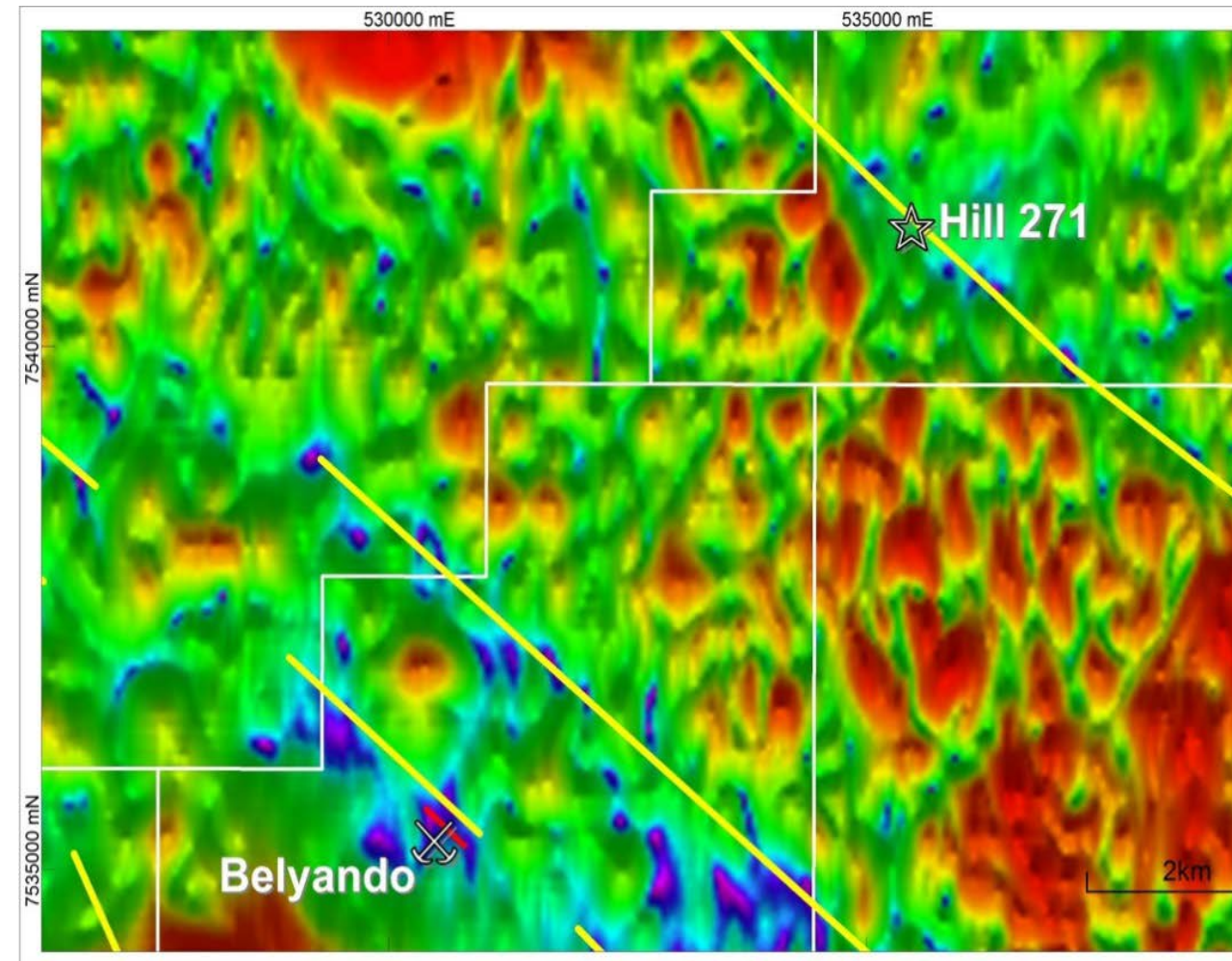
- Aeromagnetic imagery shows that the prospect lies along a northwest-trending structure, i.e. parallel to the one which apparently controls the Belyando gold lodes
- In 2013, a single 1.6 km I.P. line detected a chargeability anomaly of +700m width at a depth of + 100m (¹²Zamia, 2014)
- An RC drill hole, to 211m, intersected only weak copper-gold mineralisation



Targets

- The northwest structure is a zone of magnetite depletion (alteration) similar to Belyando
- The radiometric signature (high potassium) could indicate proximity to a porphyry-style copper-gold system.

Aeromagnetic image showing northwest-trending structures



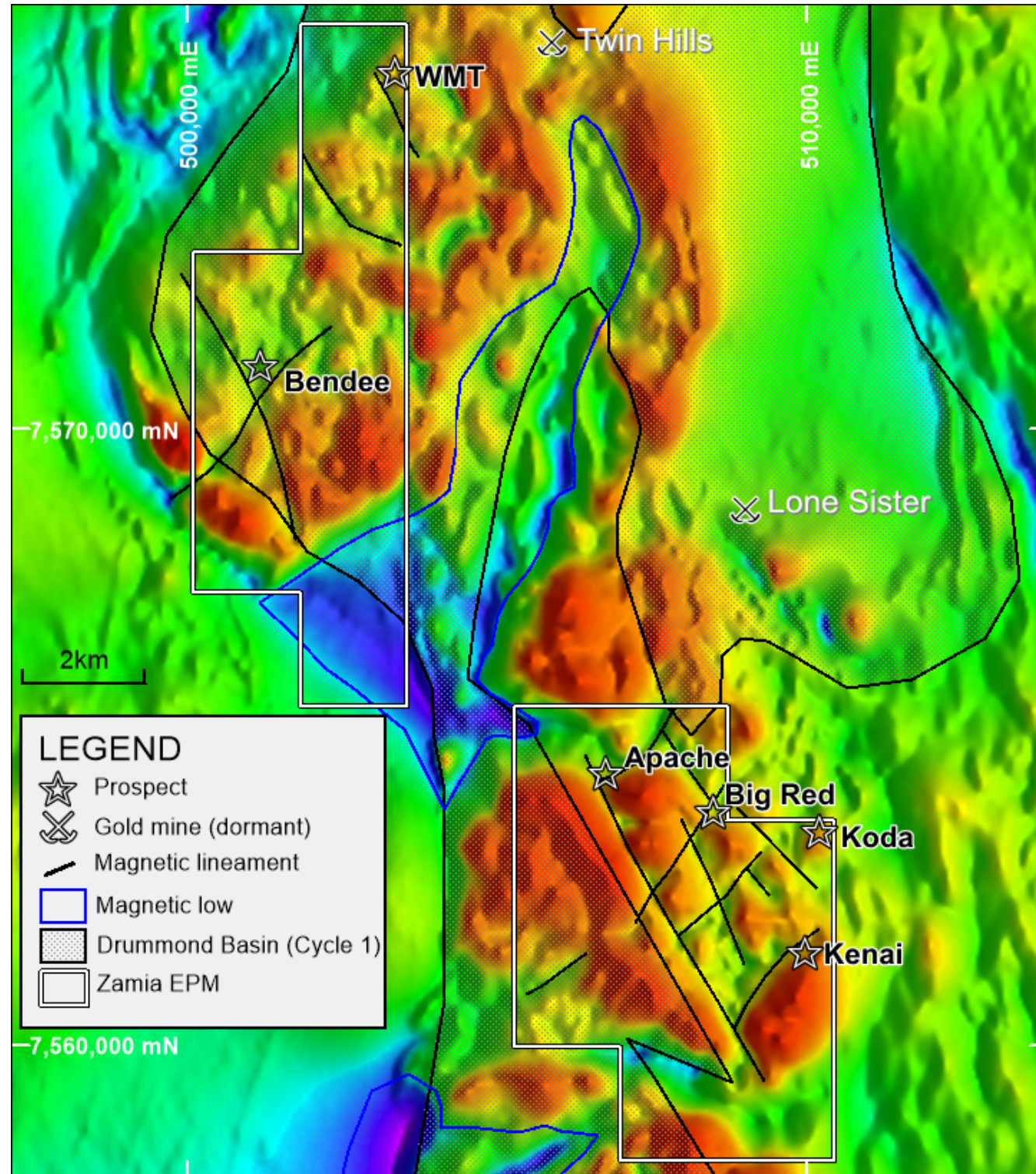
Exploration Programme

- Detailed surface geological mapping to record vein styles and intrusive rocks
- Additional I.P. to provide coverage over the northwest-oriented zone of magnetite depletion evident in the aeromagnetic image
- Plan drill targets based on the I.P. and soil geochemical results

EPM 19369 Amaroo South has an annual expenditure commitment of \$45,000



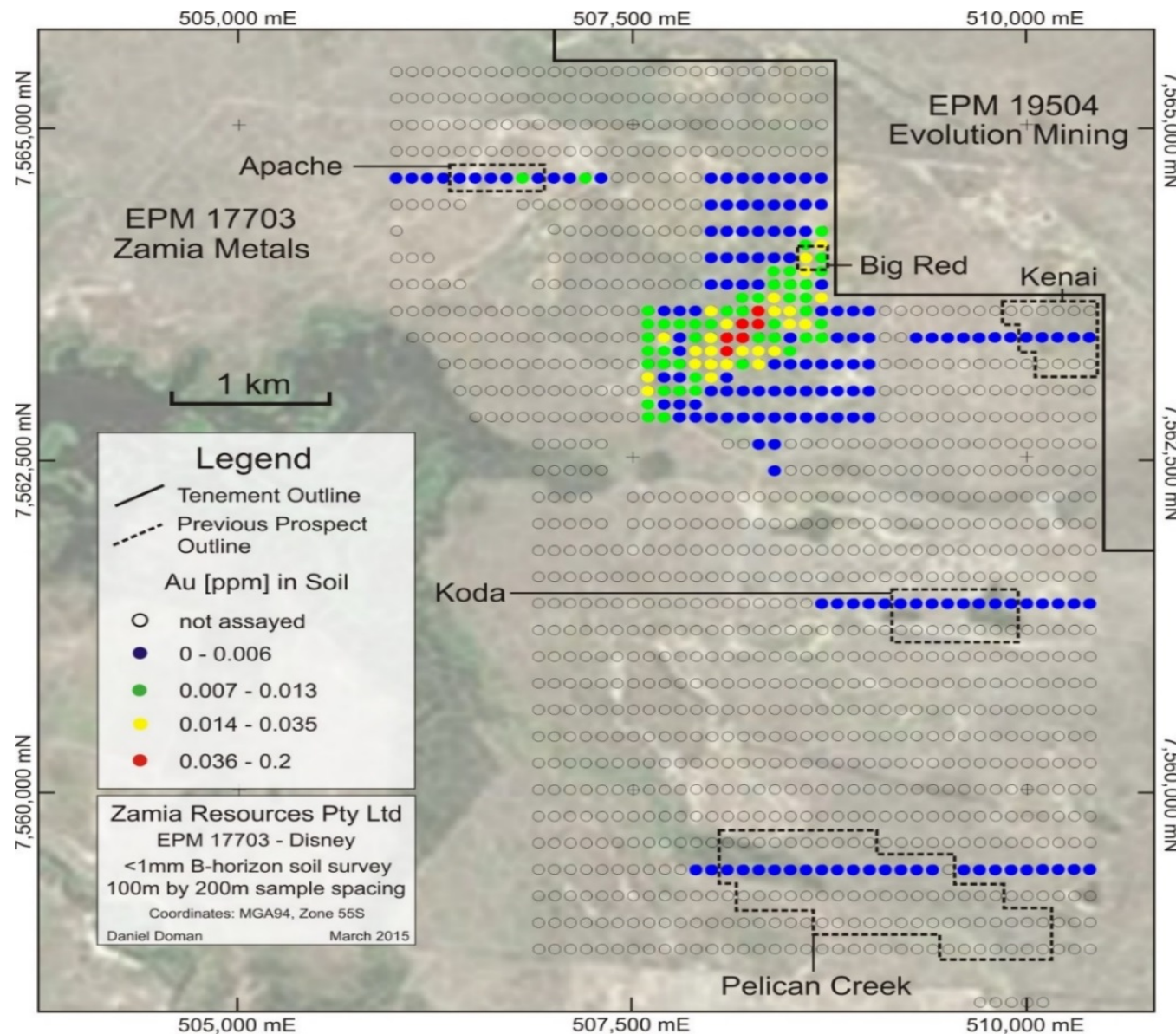
Disney Epithermal Gold Targets (EPM 17703 Disney)



- EPM 17703 lies immediately west and south of known epithermal gold deposits, Twin Hills and Lone Sister (held by Evolution Mining)
- EPM 17703 contains several epithermal gold prospects which have had limited drill testing
- Apache: Previous drilling intersected 2m at 3.25 g/t Au from 137m depth. Untested area with quartz float containing up to 2.72 g/t Au
- Bende: Previous drilling intersected 4m at 0.63 g/t Au from surface. A 1 km strike of breccia remains untested by drilling.
- Aeromagnetic imagery shows demagnetised linear features - evidence of hydrothermal activity along controlling structures
- Soil geochemical anomalies are located along these structures



Big Red Prospect (EPM 17703 Disney)



- Gold-in-soil anomaly extends over 1.5 km strike length (¹³Zamia, 2015)
- Surface rubble includes hydrothermal breccia containing up to 1.06 g/t Au
- Most intense gold-in-soil anomaly not tested by drilling

Exploration programme

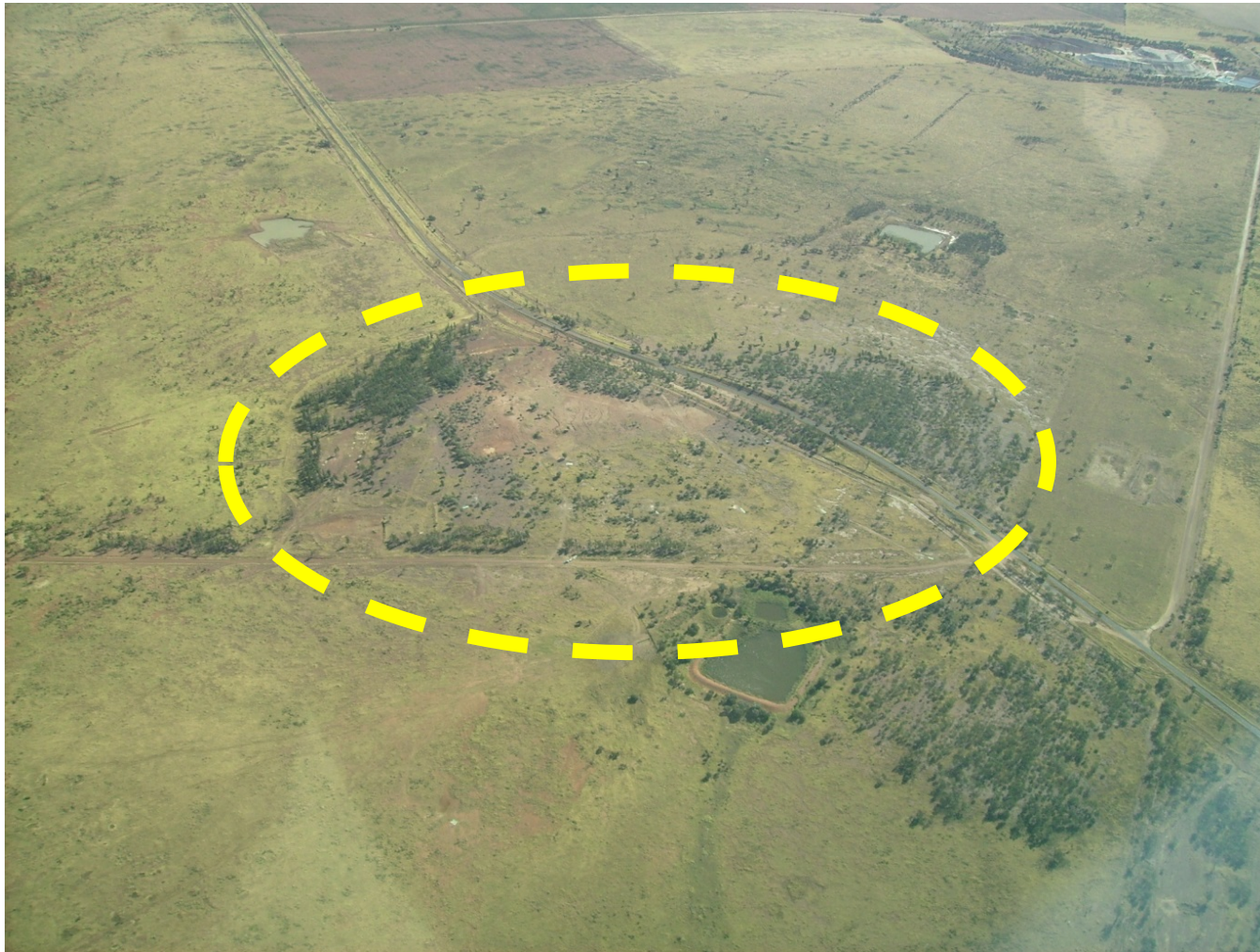
- Re-analyse all soil samples for gold
- RC drilling to test the best geochemical anomalies

Gold-in-soil geochemistry, high-lighting the Big Red prospect. The area of highest gold-in-soil (red dots) has not been tested by drilling

EPM 17793 Disney has an annual expenditure commitment of \$220,000



Anthony Project (EPM 15145 Mazeppa Extended)



Oblique aerial photograph of the Anthony project area. The deposit, approx. 800m x 600m in area, is outlined in yellow. The Belyando mine workings can be seen in the right background

- Anthony is a large porphyry molybdenum (Mo) deposit discovered by Zamia in 2008 by drilling on a Mo-in-soil geochemical anomaly
- The project is sub-economic at the present low molybdenum price
- Drilling on I.P. targets marginal to the Mo resource showed porphyry-style alteration but failed to intersect significant Cu-Au
- It is possible that Anthony will be a feasible project in the future. Zamia intends to apply for a Mineral Development Licence (MDL) covering the deposit plus enough area for future infrastructure requirements
- The MDL area will be excised from Zamia's EPM 14790 Mazeppa and EPM 15145 Mazeppa Extended.



- ✓ **An established gold province with excellent potential for discovery of further epithermal gold and porphyry copper-gold deposits**
- ✓ **Large tenement holding with drill-ready epithermal gold and porphyry copper-gold targets**
- ✓ **Dormant Belyando open-cut gold mine: Resource open down plunge and additional substantial resource potential below known gold lodes**
- ✓ **Good access and excellent regional infrastructure**





Mineral resources are owned by the State of Queensland.

Exploration Permits:

- **Are issued by the Queensland Department of Natural Resources and Mines, initially for a five year period**
- **Carry expenditure and reporting obligations**
- **Require lodgement of environmental bonds**
- **Require access agreements to be negotiated with land-holders**
- **Require access agreements to be negotiated with native title claimants**
- **Can be renewed if all obligations are met**
- **Must be progressively reduced in area**
- **Provide exclusive rights to apply for Mining Licences within the EPM areas**





Zamia's Exploration Permits

Tenement Number	Tenement Name	Grant Date	Expiry Date	Status as at 31.03.2016	Area km²	Expenditure Commitment
EPM 14790	Mazeppa	12.01.2006	11.01.2021	Year 11	39	\$70,000
EPM 15145	Mazeppa Extended	11.08.2006	10.08.2017	Year 10	112	\$300,000
EPM 17488	Mistake Creek	05.11.2009	04.11.2017	Year 7	47	\$85,000
EPM 16524	Logan Creek	23.12.2010	22.12.2020	Year 6	21	\$120,000
EPM 17703	Disney	30.01.2012	29.01.2017	Year 5	60	\$220,000
EPM 19369	Amaroo South	30.01.2012	29.01.2017	Year 5	34	\$45,000
EPM 18655	Dingo Range	29.05.2013	28.05.2019	Year 3	34	\$70,000

Mistake Creek: Porphyry copper-gold target

- Deep penetration dipole-dipole IP survey
- Drill test targets with a fence of holes for porphyry style mineralisation indicators i.e. quartz vein style, alteration and metal zonation

EPM 17488 Mistake Creek has an annual expenditure commitment of \$85,000

Mount McLaren: Porphyry copper-gold-molybdenum target

- Re-assessment of historic soil geochemistry
- Re-model historic I.P. data and, if necessary, carry out a new I.P. survey
- RC and diamond drill holes to test targets identified by the I.P. survey

EPM 16524 Logan Creek has an annual expenditure commitment of \$120,000

Belyando: Epithermal gold target; possible porphyry system at depth

- Helicopter magnetic survey over Belyando and extending several kilometres beyond
- A gradient array I.P. survey covering a larger area and extending to greater depth than the 1986 survey
- RC and diamond drilling

EPM 15145 Mazeppa Extended has an annual expenditure commitment of \$300,000.

Hill 271: Epithermal gold target; possible porphyry system at depth

- Detailed surface geological mapping
- Additional I.P. to provide coverage over the NW-oriented zone of magnetite depletion
- Compile and interpret historical soil geochemical results
- Identify and prioritise drill targets based on the I.P. and soil geochemical results

EPM 19369 Amaroo South has an annual expenditure commitment of \$45,000.

Disney: Epithermal gold targets

- Complete detailed soil geochemical surveys over target areas
- RC drilling to test the best geochemical anomalies

EPM 17703 Disney has an annual expenditure commitment of \$220,000

Smaller funding amounts are required for other regional targets

The total expenditure commitment for the 12-month period is \$910,000



Disclaimer

Forward-Looking Statements

This document contains certain “forward-looking statements”, including, but not limited to, statements concerning current and future drilling programmes, estimation of mineral resources, the continuing development plan, the type of mineralisation present and expected results.

Information inferred from the interpretation of drilling results may be deemed to be a forward looking statement, as it constitutes a prediction of what might be found to be present when and if a project is actually developed.

Statements and estimates concerning mineral resources may also be deemed to be forward looking statements in that they involve estimates, based on certain assumptions, regarding the mineralisation that would be encountered if and when a mineral deposit is actually developed and mined.

Forward looking statements are not historical facts, and are subject to a number of risks and uncertainties beyond management’s control. There can be no assurance that such statements will prove to be accurate. Actual results and future events could differ materially from those anticipated in such statements. Risks and uncertainties that could cause results or future events to differ materially from current expectations expressed or implied by the forward-looking statements include, among other things, but without limitation, those set forth in the Annual Report and the website (www.zamia.com.au) of Zamia Metals Limited (‘Zamia’).

For more information about the Company’s properties and projects, please refer to the Annual Report.

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Technical Information

The technical information contained in this document was approved by Dr Kenneth Maiden, Non-Executive Director of Zamia Metals Limited. Dr Maiden is a Fellow of the Australasian Institute of Mining and Metallurgy (FAusIMM). He has sufficient experience 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 Maiden consents to the inclusion of the matters in the form and context in which they appear.

All technical information contained in this presentation is based on exploration results and scientific data previously released by Zamia Metals Limited and/or quoted from sources in the public domain. Details of data acquisition, processing and interpretation underlying this information are provided in the relevant company reports or scientific literature, as cited and referenced.



References

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- ¹²Zamia Metals Limited (2014) Quarterly Activities Report for the quarter ended 31 December 2013. ASX:ZGM 31 January 2014
- ¹³Zamia Metals Limited (2015) Substantial Gold Anomalies in Soil – EPM 17703 Disney Tenement. ASX:ZGM 25 March 2015



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