



AGES Conference

Alice Springs, April 2023

***Exploring for copper and critical minerals
in the NT***

Sarah James – Exploration Manager



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Discussion Outline

1

**Project
Generation
&
South32
Partnership**

2

**Seismic
reprocessing
by HiSeis**

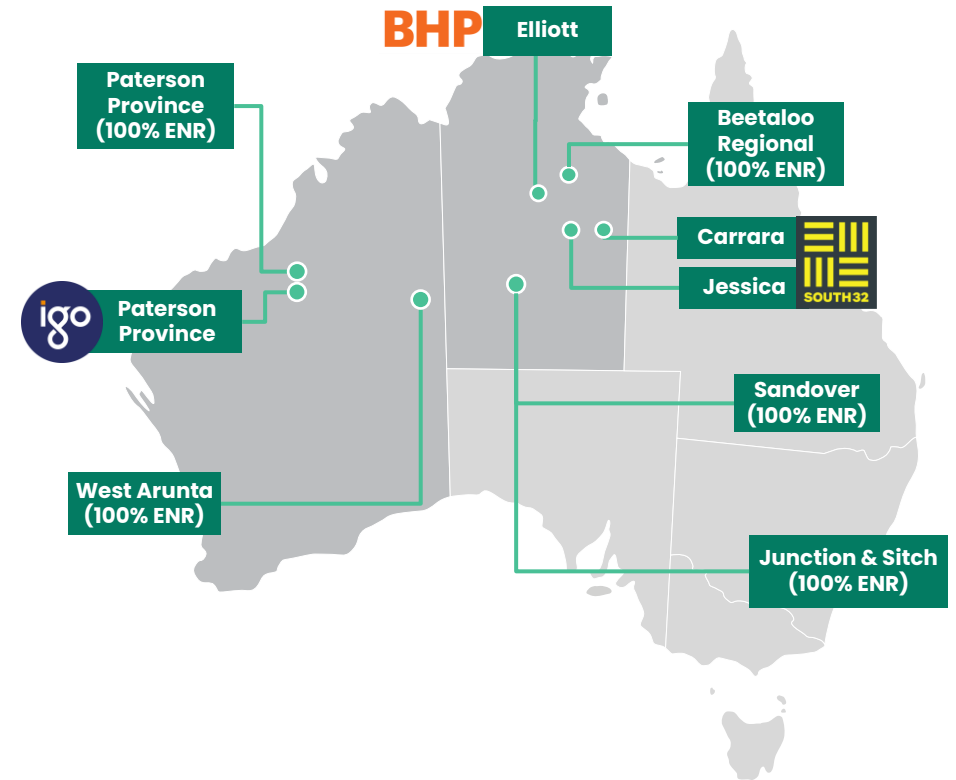
3

**Zeta IOCG
Drill Target**

Encounter

Creating value through project generation and discovery

- Project Generation > Fast mover, early adopter of new technologies & datasets
- Build Partnerships > Collaborating with high quality exploration teams and experts
- Advanced Exploration > Progress 100% projects rapidly to defined milestones



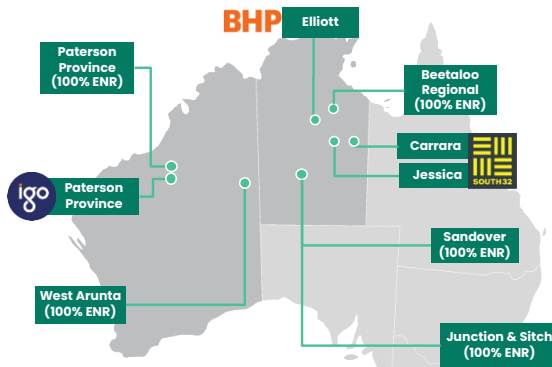


Northern Territory:

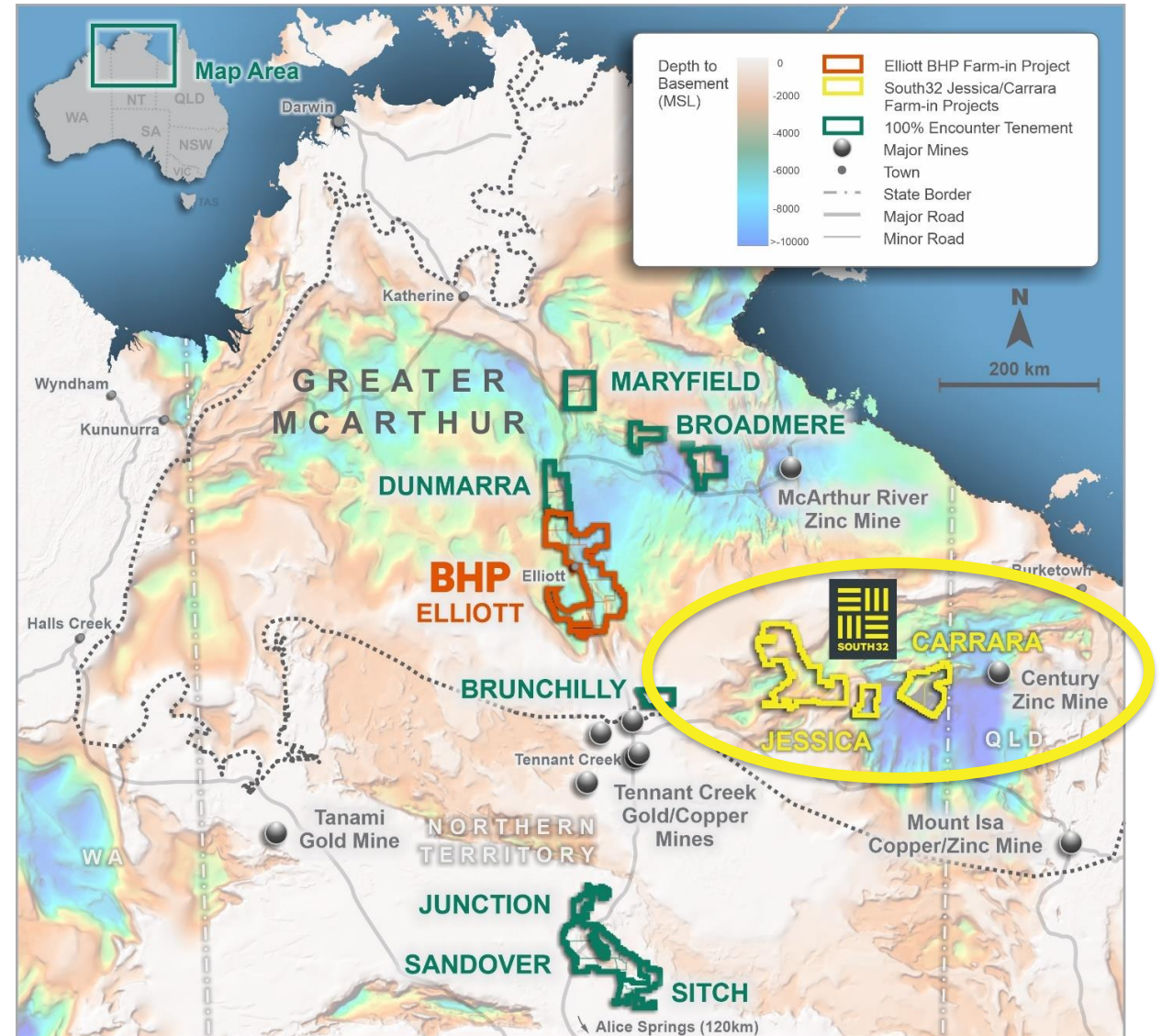
Globally significant opportunities
for copper and critical minerals

Encounter Northern Territory Portfolio

Globally significant opportunity for copper and critical minerals



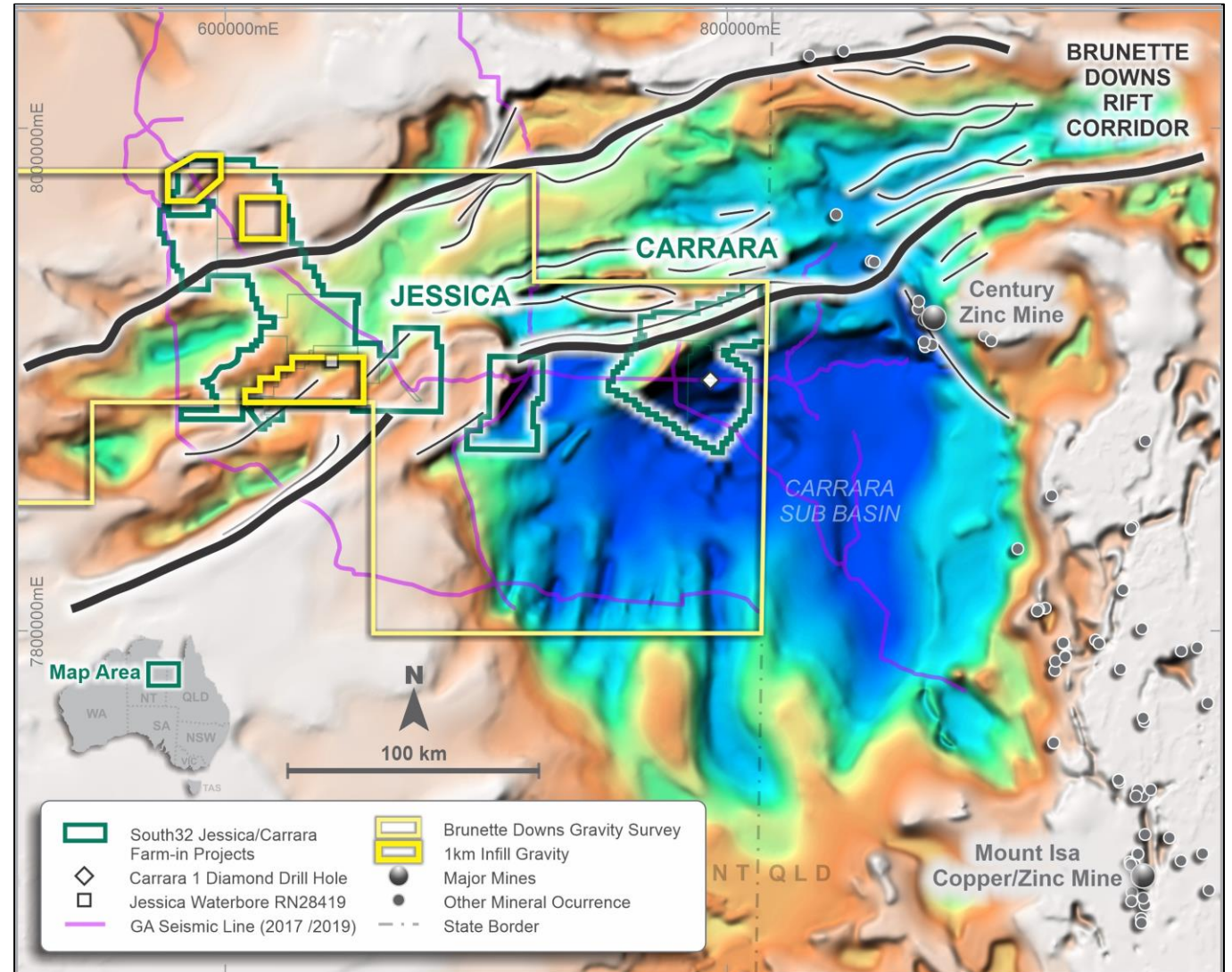
- NT has highly prospective, vastly underexplored regions under shallow cover
- Transformational investment in pre-competitive data by Geoscience Australia (GA) and NTGS
- New datasets are providing crucial early insights
- Encounter has a large portfolio of copper and critical mineral exploration projects in NT



Jessica and Carrara Projects

Unique exploration opportunities

- South Nicholson Seismic Survey, a foundational dataset acquired as part of the EFTF
- Brunette Downs Rift - major regional scale rift corridor, vast area of prospective Proterozoic sedimentary sequences
- Correlation of prospective stratigraphic units from the Isa Superbasin across the Carrara Sub-basin, supported by NDI Carrara-1
- Carrara located at interpreted structural offset on the western margin of the subbasin
- Jessica located on northern flanks of East Tennant ridge & NNW structural corridor
- Detailed gravity survey completed by the NT Geological Survey





Jessica and Carrara

Leading edge exploration in
partnership with South32



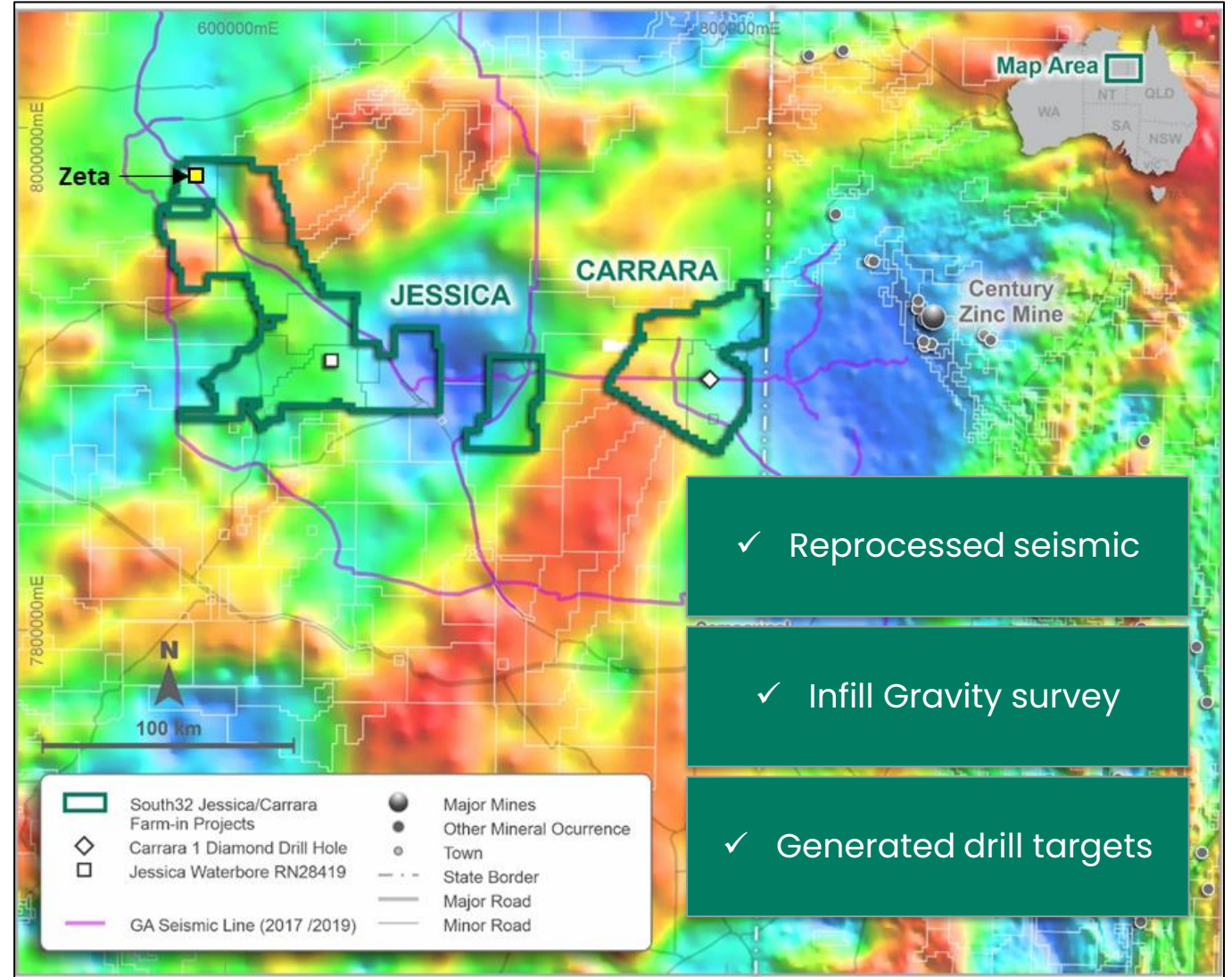
encounter
resources



South32 entered into two farm-in agreements

Jessica and Carrara

- Two Farm-ins and JV's signed Jun-22
 - Jessica Project
 - Carrara Project
- South32 funding exploration
- Technical committee - Encounter and South32.
- South32 managing farm-in phase
- Significant work program



Discussion Outline

1

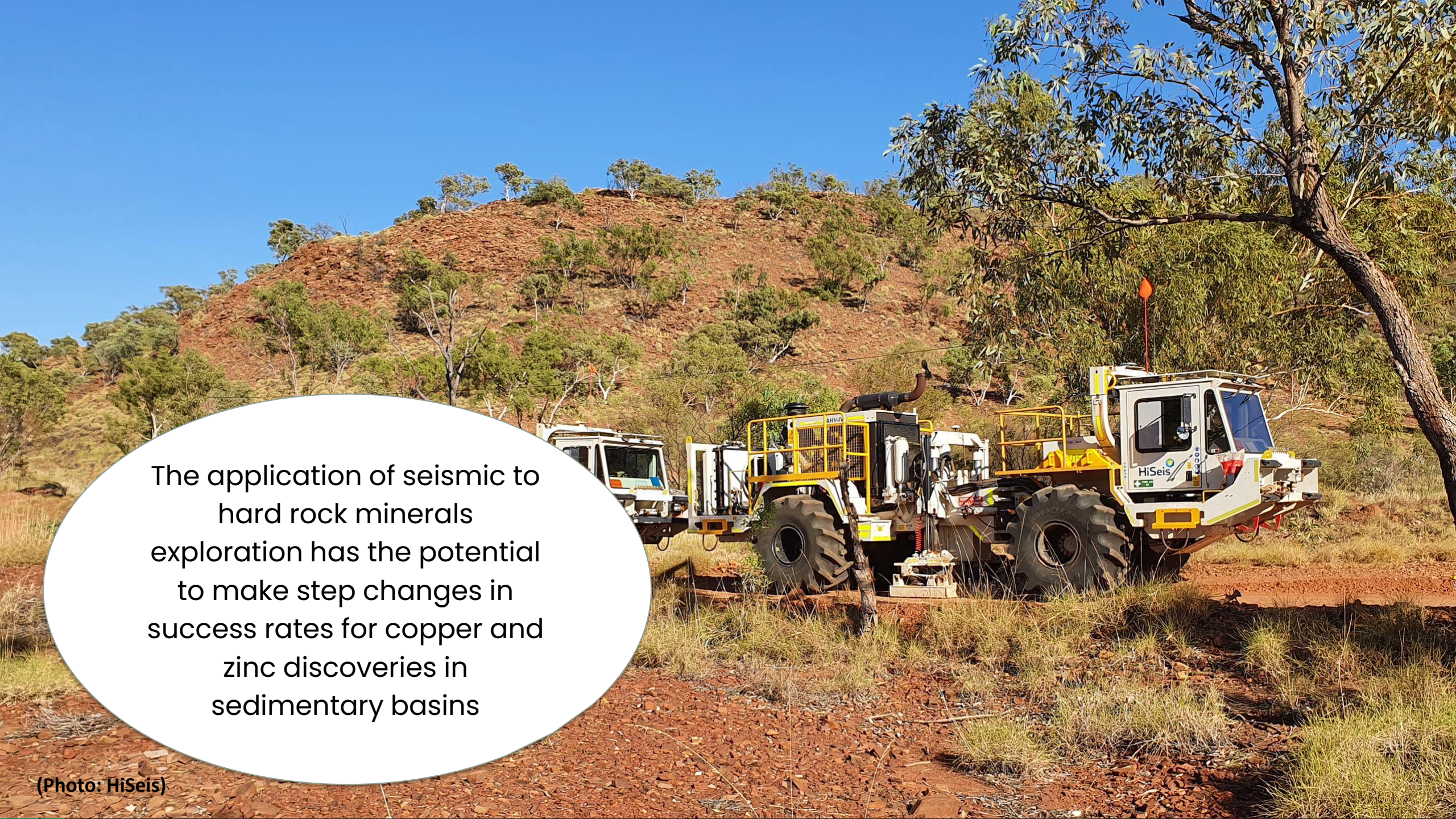
**Project
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**Zeta IOCG
Drill Target**

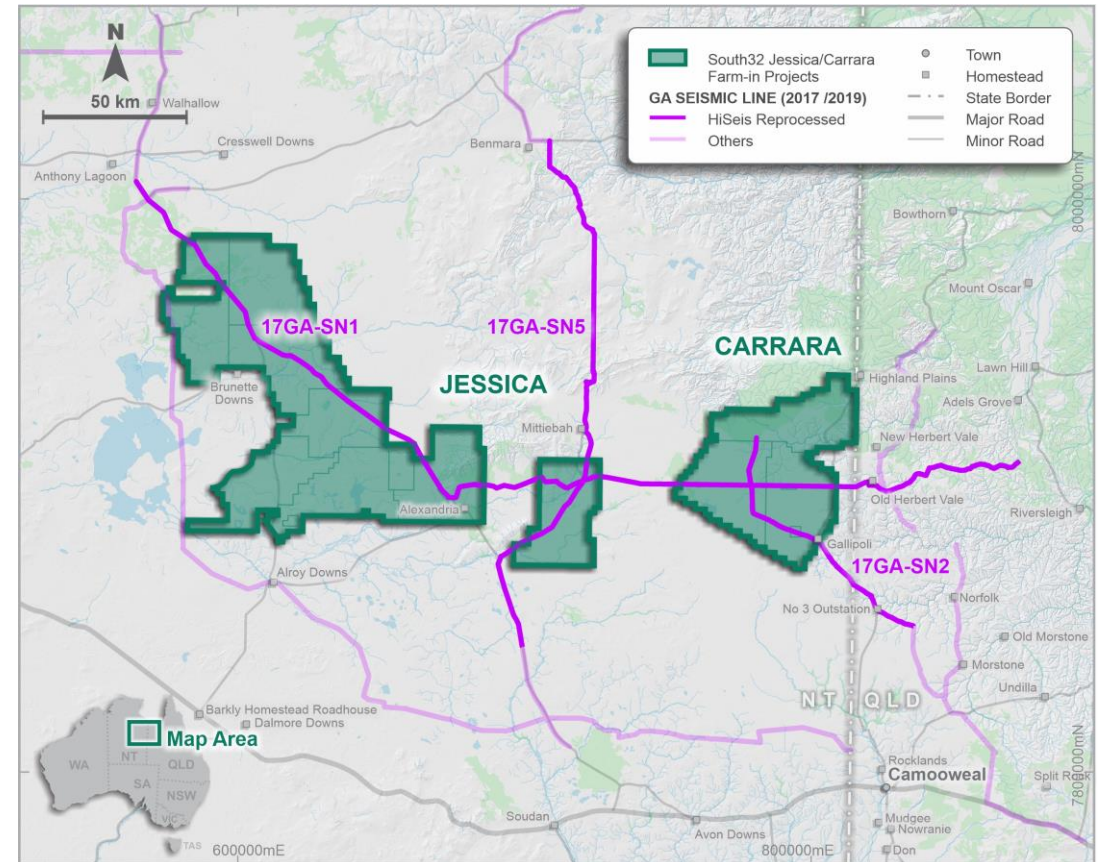
A large white and yellow HiSeis seismic truck is parked on a red dirt road. The truck has a large antenna on its roof and is equipped with various sensors and equipment. The background shows a hilly, vegetated area with a clear blue sky. The truck is the central focus of the image, and the text is overlaid on a white oval on the left side.

The application of seismic to
hard rock minerals
exploration has the potential
to make step changes in
success rates for copper and
zinc discoveries in
sedimentary basins

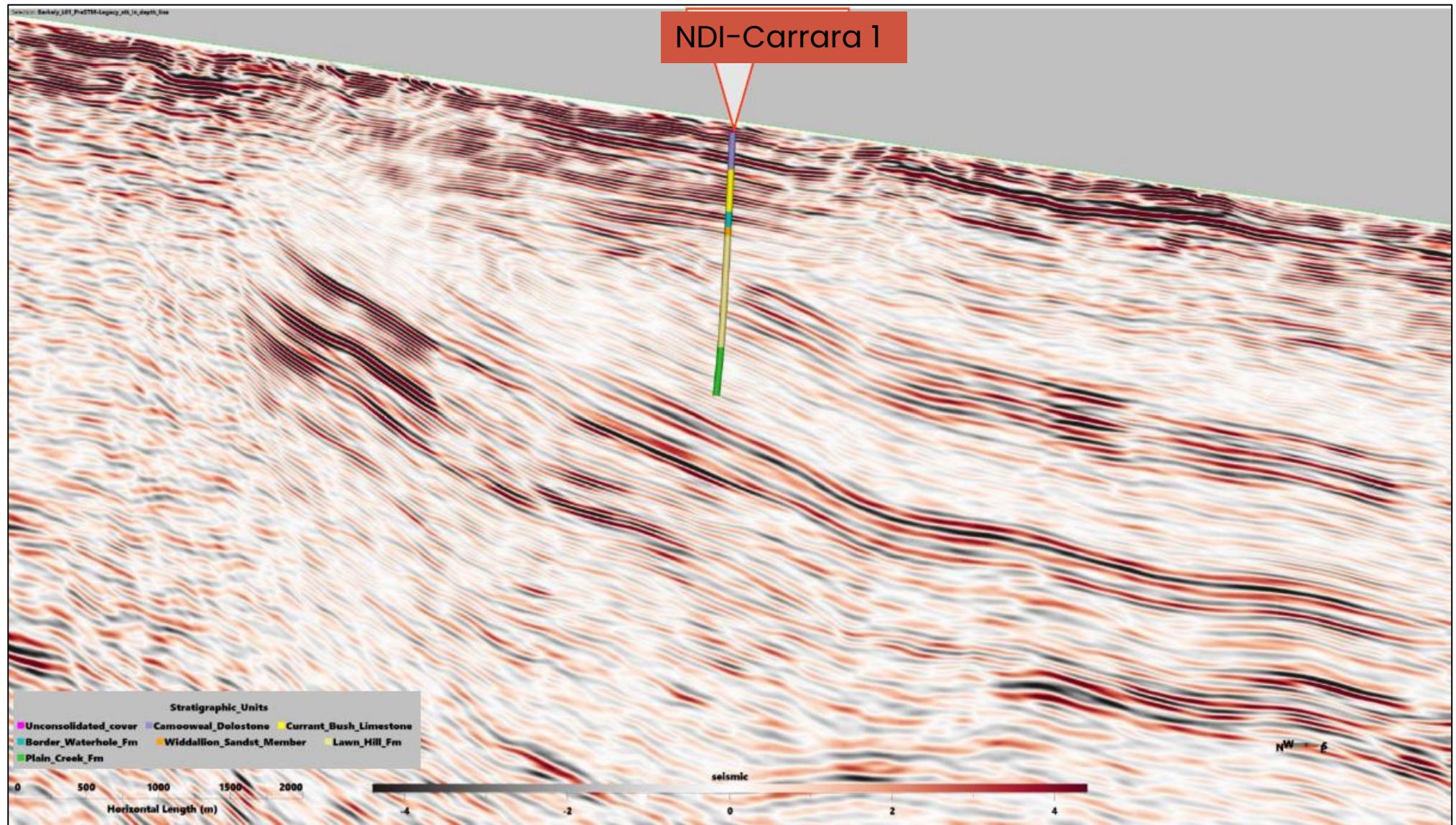
(Photo: HiSeis)

Reprocessing of seismic by HiSeis

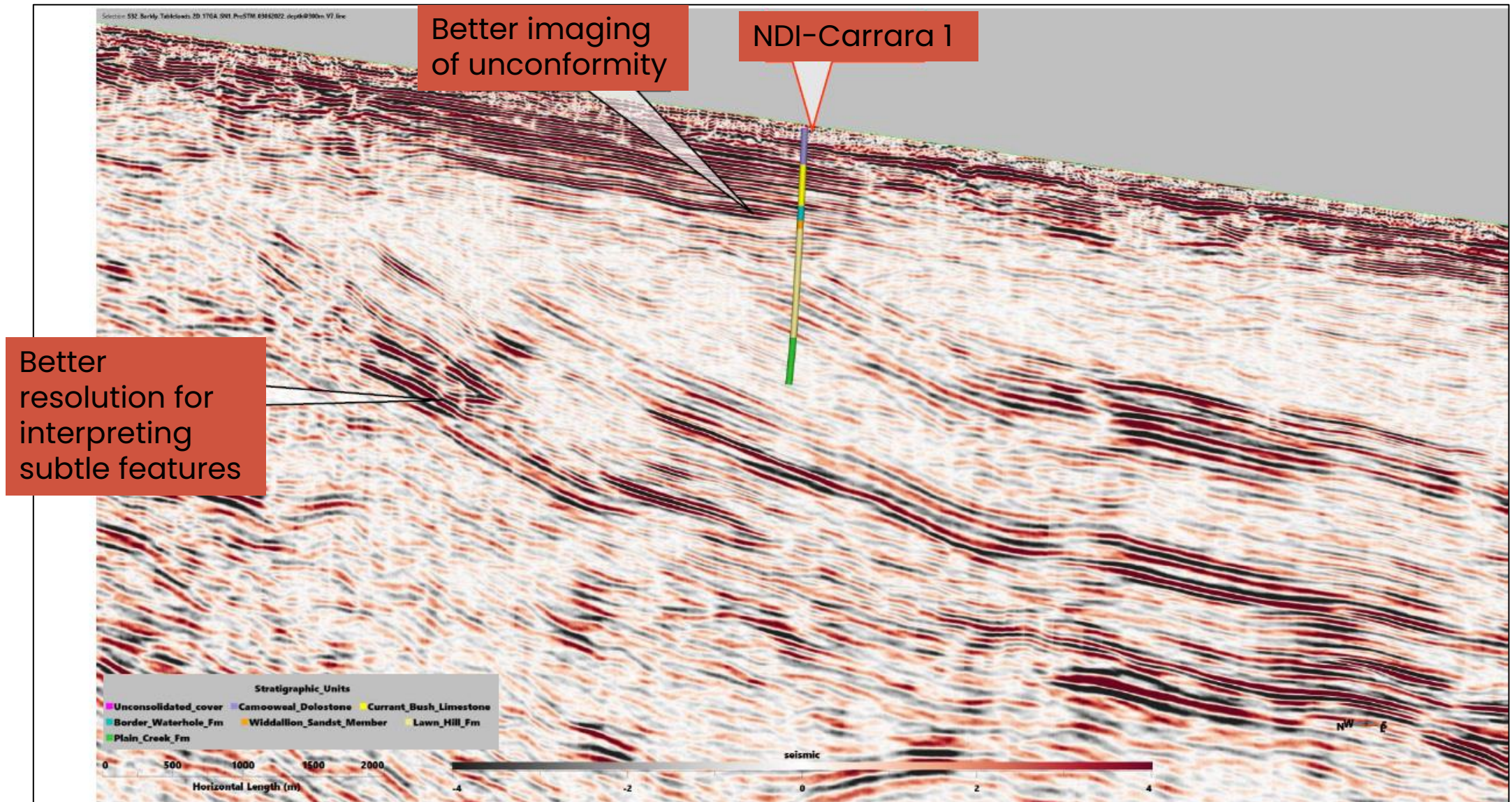
- Reprocessing of seismic lines
 - 17GA – SN1: ~350 km
 - 17GA – SN2: ~100 km
 - 17GA – SN5: ~200 km
- Reprocessing
 - gain detail of the near surface geology and structure
 - preserved seismic character
 - improved shallow reflectivity
 - highlight subtle variations
- Interpretation completed using combination of
 - “legacy” GA psdm seismic data for deep basin architecture
 - various HiSeis reprocessed pstm (scaled to depth) datasets for shallower interpretation (<5000m).



Legacy seismic data snapshot



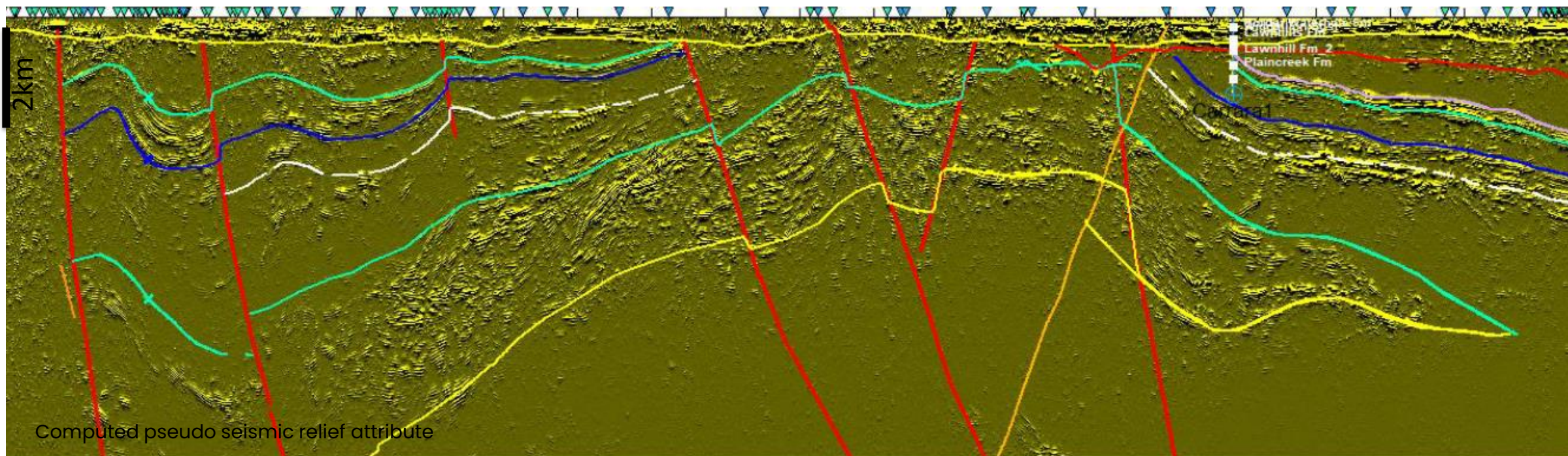
HiSeis reprocessed seismic data snapshot



Reprocessing of seismic by HiSeis

Multiple targets at key structural locations

- Improved interpretation, stratigraphic correlation and structural architecture through the Carrara sub-basin and the Brunette Downs Rift corridor
- Definition of multiple exploration targets at key structural locations
- Several large-scale faults have adjacent “AVO” (amplitude versus offset) anomalies
 - Potential paleo hydrocarbon traps that are base metal mineralisation targets.



Carrara and Jessica on the ground

Next steps – drill testing

- A suite of compelling drill targets identified
- Test key structural targets and stratigraphic concepts
- Gain empirical diamond drilling data
- Stakeholder engagement and approvals well advanced for diamond drilling
- 6,500m planned for 2023 field season
 - 3 drillholes at Carrara
 - 4 drillholes at Jessica
- One of the drillholes at Jessica – a particularly exciting IOCG target – Zeta



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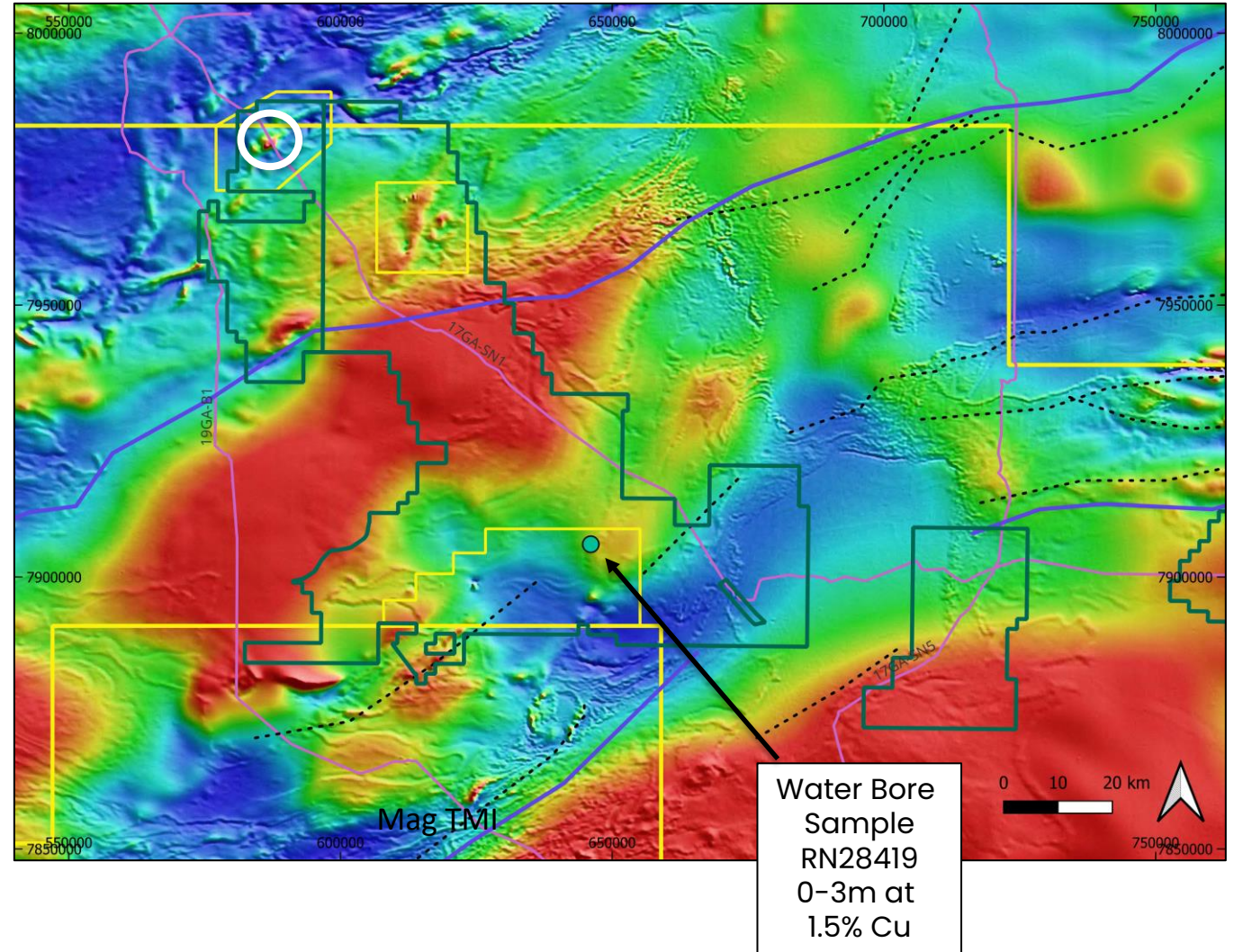
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**Zeta IOCG
Drill Target**

Jessica Project

Infill gravity data collected

- Key structural corridors east of Tennant Creek
- Potential for both
 - basement IOCG style mineralisation
 - sediment-hosted base metals
- Copper anomalism in water bore drill chips
 - RN28419 0-3m at 1.5% copper
- NTGS completed 2km spaced Brunette Downs Gravity Survey 2022
- Collected 1km-spaced gravity infill data
 - covering a series of high priority magnetic targets.

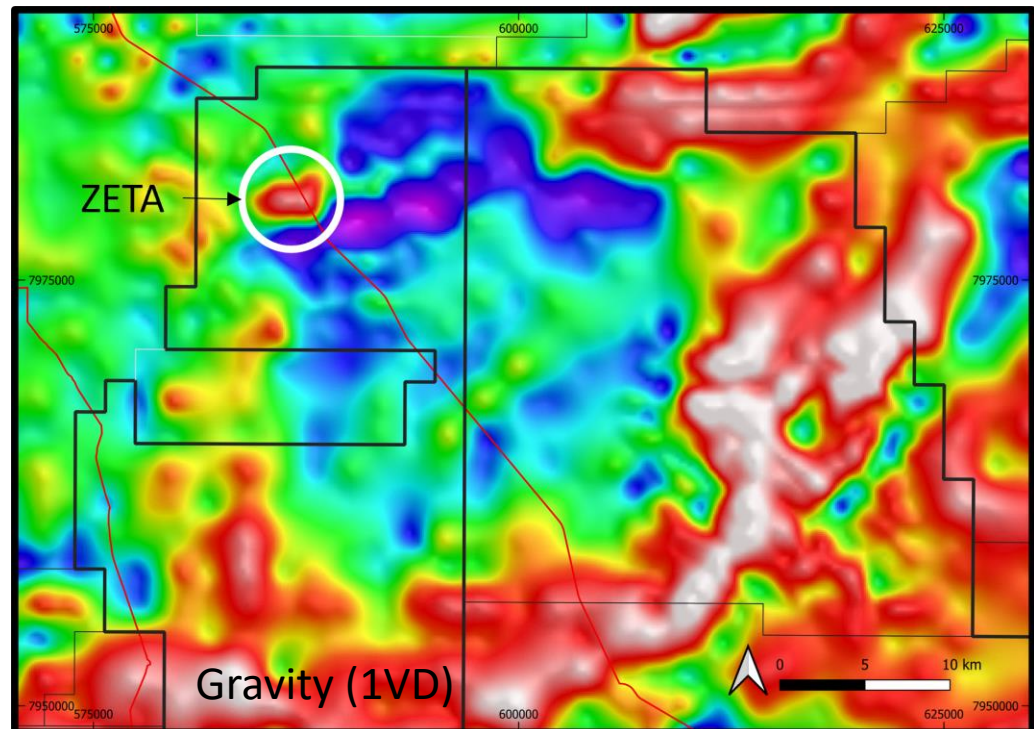
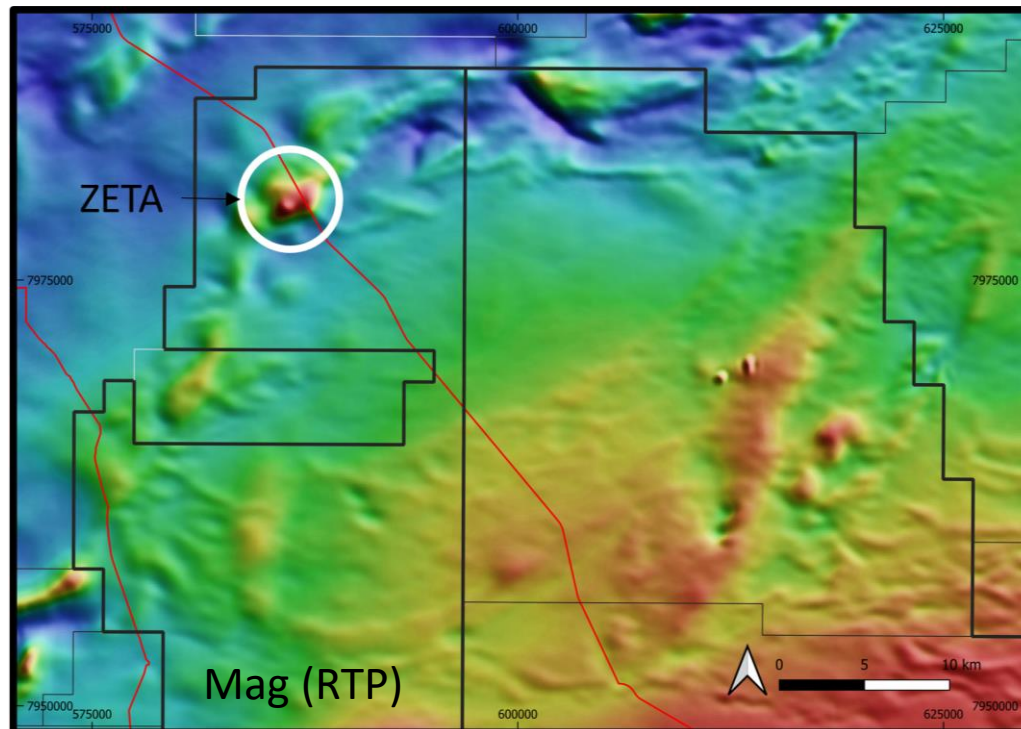


Water Bore
Sample
RN28419
0-3m at
1.5% Cu

Jessica Project

Zeta IOCG Target

- 1 km-spaced infill gravity data collected
- A significant and discrete gravity feature coincident with a prominent magnetic feature
- On the margin of a large interpreted intrusive body

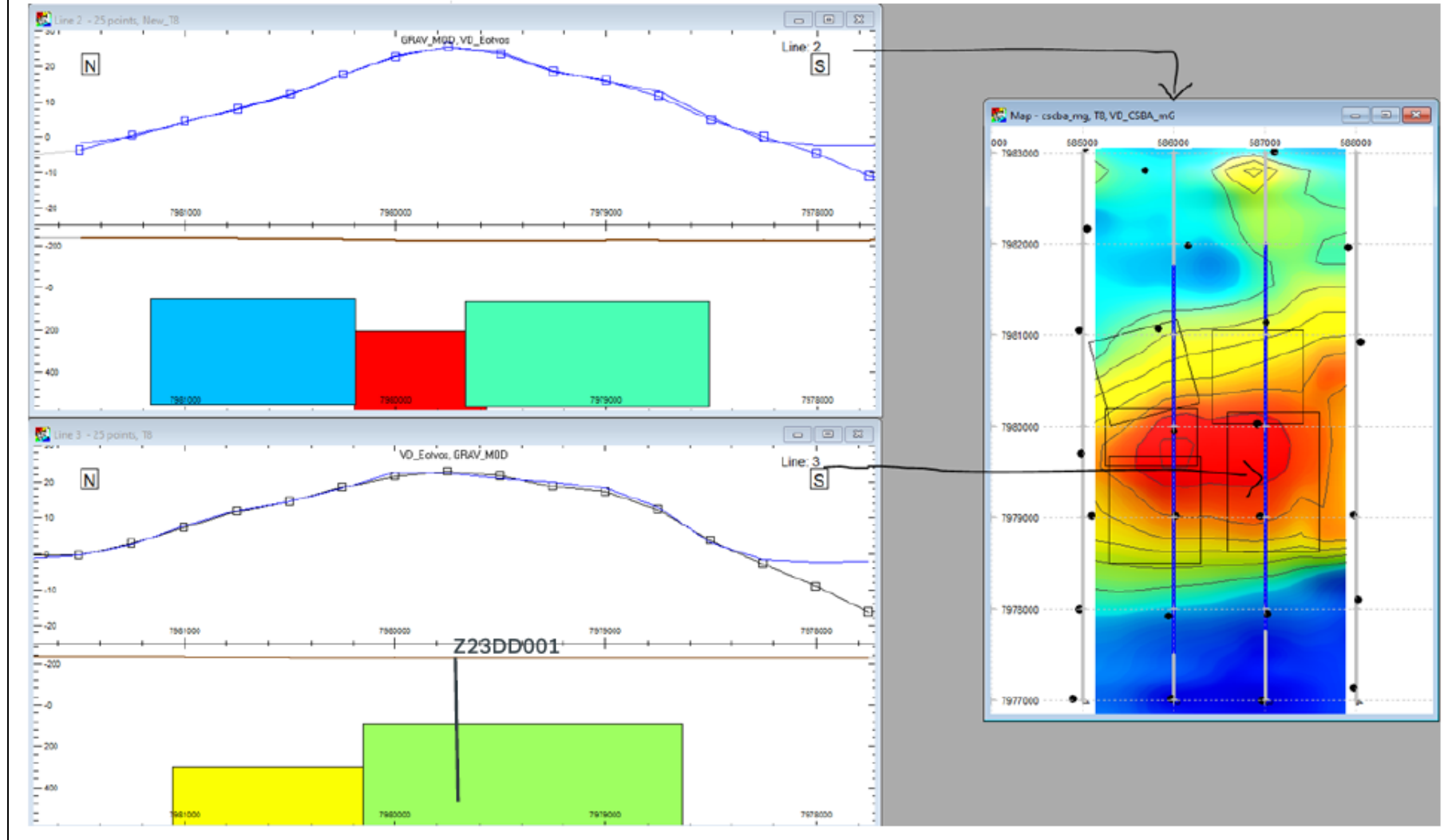


Jessica Project

Zeta - Gravity modelling completed

- **Significant 2.4mGal gravity anomaly ~400m below surface**
- Proposed drillhole to test the peak of the gravity anomaly
- Strongest magnetic response sits to the south of the gravity peak at the target scale

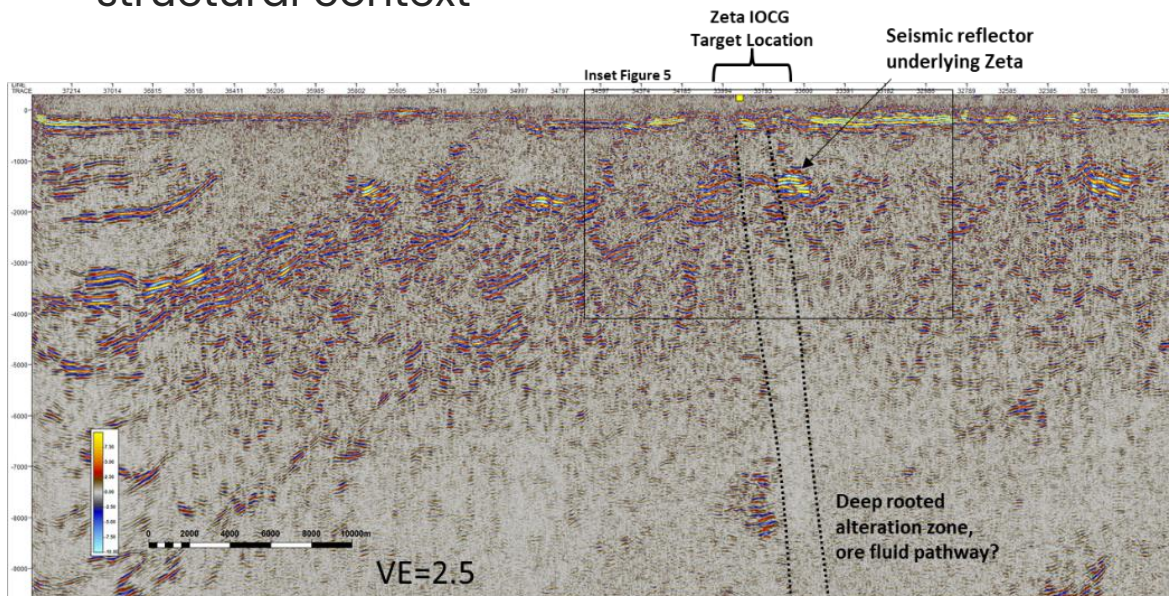
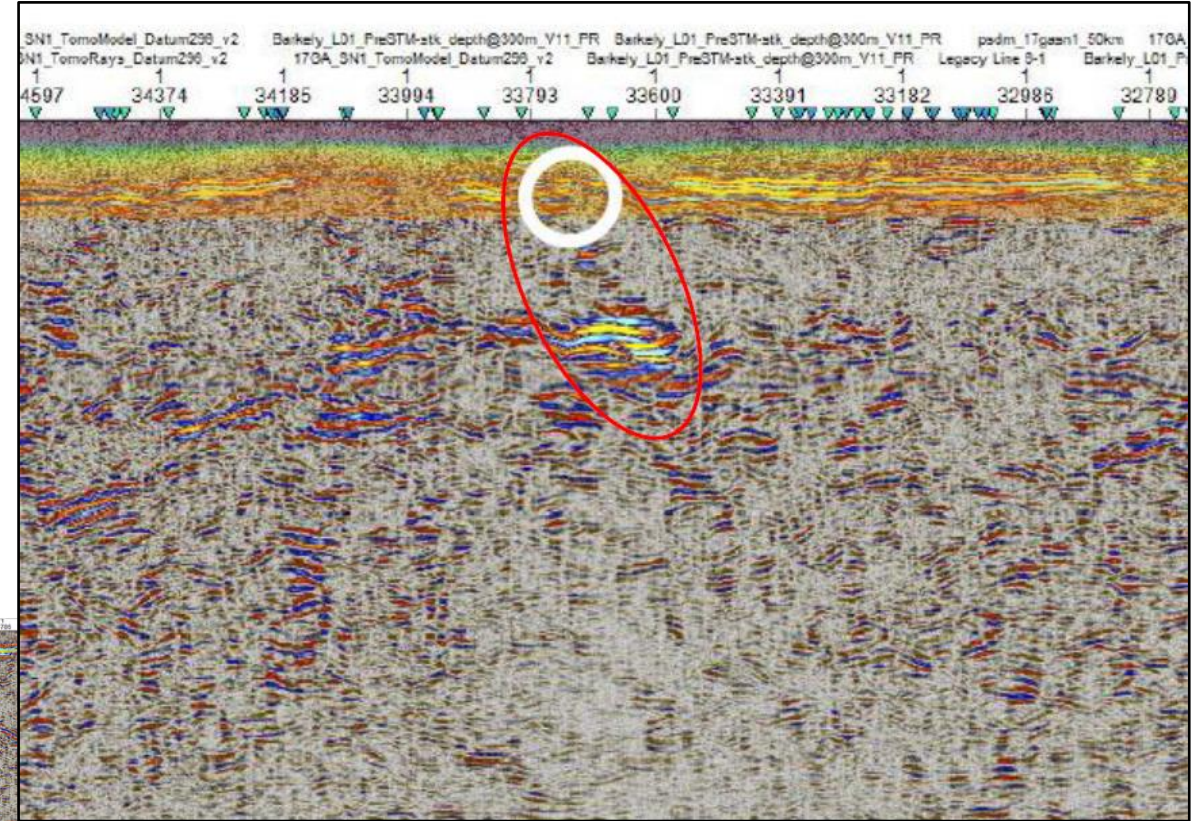
Figure 1: Screen capture of L2 & L3 gravity models (bodies colour coded to density)



Jessica Project

Zeta - Seismic reprocessing

- Discrete high amplitude seismic reflector adjacent to SE dipping fault
- Near vertical zone of textureless seismic character
- Interpreted to represent a potential deep rooted alteration zone, crustal scale structure
- Confluence of geophysical anomalism and structural context



✓ Compelling and priority drill target

Summary

The value of key datasets, collaboration

- ✓ NT provides significant exploration opportunities
 - ✓ Highly prospective, vastly underexplored regions under shallow cover
 - ✓ Transformational investment in pre-competitive data
 - ✓ Crucial early insights for explorers and geoscientists
- ✓ Partnered with high quality exploration teams and experts including BHP, South32, HiSeis
- ✓ Application of seismic to hard rock minerals exploration has the potential to make step changes in success rates for copper and zinc discoveries in sedimentary basins.
- ✓ Co-Authors HiSeis, South32 and ENR



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