Frewena Fable

&

Frewena Far East

AMAGRAD GDC Program

East Tennant, NT

Final Report

Tenements:	EL 31974, EL 32287, and EL 32293
Tenement Holder:	Inca Minerals (90%) MRG Resources Pty Ltd (5%) Dr Jonathan West (5%)
Tenement Operator:	Inca Minerals Ltd (recipient company)
Date:	January 2021
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1:100k Mapsheets:	Favenc (5958), Wonarah (6158), and Alroy (6159)
1:250k Mapsheet:	Alroy (SE5315)
Datum:	GDA94 / Zone 53S

Contents

List of Tables

List of Figures

Copyright Section

1. Abstract

This Geophysics and Drilling Collaboration (**GDC**) grant was awarded funding of $100,000 to undertake detailed airborne magnetic-radiometric surveying over 1,182km^2 in the emerging East Tennant region of the Northern Territory.

Following innovative target generation work based on an unreported Bureau of Mineral Resources 1960's field observation of copper in granitic rocks, two standout exploration projects – the Frewena Fable and Frewena Far East Projects – have been developed by Inca Minerals that are considered highly prospective to host large scale Iron Ore Copper-Gold mineralisation.

Exploration and generative work made use of regional datasets and various recently released survey results by Geoscience Australia and the Northern Territory Geological Survey that are specific to the East Tennant region. While these excellent datasets were effective for prioritising regional scale features, higher resolution magnetic-radiometric surveying was deemed by Inca to be a requirement to shift towards prospect scale vectoring that is hoped to ultimately lead to successful mineral resource discovery.

Acquisition of detailed magnetic and radiometric data under this grant represents approximately 9% of the East Tennant region with an area of 1,182km^2 surveyed over two blocks. Geophysical surveying was undertaken by MagSpec Airborne Surveys Pty Ltd between 7 November and 24 November 2020, and was based at the Barkly Homestead. Survey design and processing was undertaken by Resource Potentials Pty Ltd.

Captured data has undergone initial processing and filtering to produce various images of magnetics, radiometrics, and local digital terrain models. Data resolution has been significantly increased by more than tenfold with image cell size, or pixels, now measuring c. 8m by 8m in size. The datasets will improve geological understanding of the region, and in particular the structural architecture. Additional, filtering and interpretation of detailed magnetics – outside the scope of this GDC grant – is ongoing at the time of writing and will be included in tenure annual reporting requirements for the individual projects. This work aims to delineate subtle, coherent bodies in the subsurface that may relate to large scale hydrothermal mineralisation and alteration.

While the East Tennant region has rapidly emerged as a hot spot for potential Iron Ore Copper-Gold mineralisation, the vast size of the area dictates that exploration endeavours need to be efficient and systematic in their approach. The detailed magnetic-radiometric surveying completed under this GDC grant has produced high quality data to bridge the gap between regional and prospect scale vectoring.

2. Introduction

Inca Minerals (**Inca** or the **Company**), an ASX listed explorer, holds 2,320km^2 of granted tenure and exploration licence applications in the emerging, yet underexplored, East Tennant region of the Northern Territory. The land holding, known as the Frewena Group Projects (the **Projects**), is primarily considered prospective for large scale Iron Ore Copper-Gold (**IOCG**) mineralisation and includes:

- **Frewena Fable** (granted EL 31974 and application EL 32287);
- **Frewena East** (applications EL 32289, EL 32580, and EL 32635); and,
- **Frewena Far East** (application EL 32293).

Granted tenure and applications are part of a joint venture between Inca (90%), MRG Resources Pty Ltd (5%) and Dr Jonathan West (5%), with Inca the project operator. EL 31974 was granted 7 March 2019, while licence applications – applied for through the competitive process following lifting of the East Tennant moratorium – are expected to be granted in August, or thereafter, this year.

The Projects are located between 120km and 220km east of Tennant Creek and lie proximal to the Barkly Highway, as shown in Figure 1. The Barkly Homestead, a useful early stage exploration base complete with an airstrip, sits centrally between the Projects.

The majority of Frewena Fable falls over vacant crown land (NT Portion 4469), with a minor portion within the Dalmore Downs Station (NT Portion 773). Frewena East and Frewena Far East fall within the Dalmore Downs Station and, in the case of Frewena Far East, the southern portion of Alroy Downs Station (NT Portion 651).

Access to the Projects is by the Barkly Highway and existing pastoral station tracks. A Mining Management Plan (**MMP**) application has been approved for construction of access tracks and an exploration camp within Frewena Fable.

This GDC grant funded program was awarded $100,000 to undertake detailed airborne magnetic-radiometric (**AMAGRAD**) surveying over 1,182km^2 at Frewena Fable and Frewena Far East. While AMAGRAD is a standard early stage exploration technique, it is considered important to not only significantly advance resolution of these public datasets over a large portion of the East Tennant region (approximately 9% of the East Tennant), but also to provide high quality data to best guide prospect scale targeting for subsequent high impact exploration including gravity and induced polarisation geophysical surveying and drill testing.

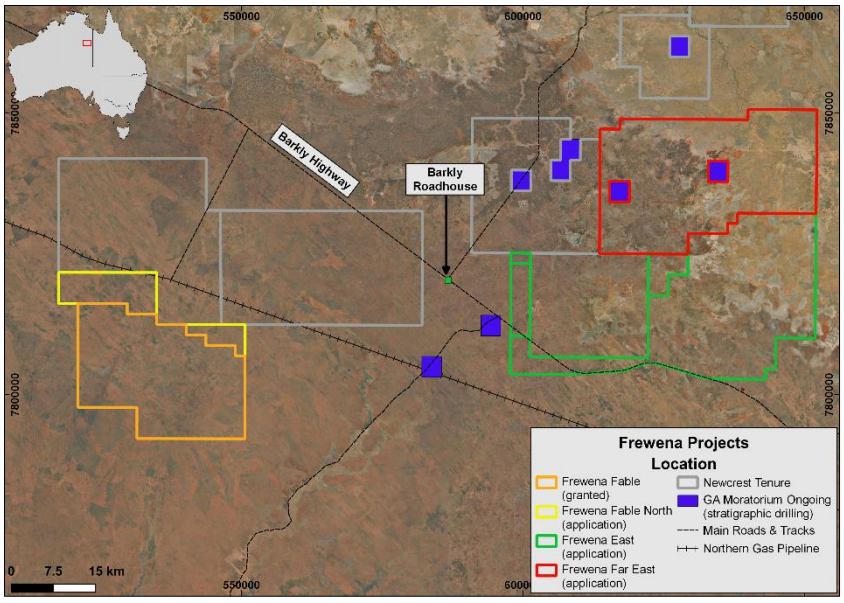

Figure 1 **ABOVE**: The Frewena Projects are located between 120km and 220km east of Tennant Creek in the emerging East Tennant region of the Northern Territory

3. Regional Geology

The Frewena Projects lie within the Georgina Basin, a 360,000km^2 remnant of the Neoproterozoic to Palaeozoic sedimentary sequence that was originally deposited across an intra-continental platform in central Australia. Outcrop within the region, and locally within the Projects, is generally rare with geology largely comprised of carbonate sedimentary rocks, limestone, and shale. Cover thickness within the region is thought to vary from negligible to many hundreds of meters thick.

Sedimentary lithologies of the Georgina Basin largely obscure older basement rocks. Past exploration of the region has largely been restricted to sedimentary hosted phosphate deposits, which has left large swathes unexplored by modern methods for base and precious metals. The region's location between the mining centres of Mt Isa and Tennant Creek, however, suggests Proterozoic basement could be prospective for

large scale base and precious metal mineralisation and this realisation has seen the East Tennant region emerge as a potential new IOCG province in recent years.

Significant pre-competitive data acquisition has been undertaken in the East Tennant region by Geoscience Australia (**GA**) and the Northern Territory Geological Survey (**NTGS**). This work has included seismic, magnetotelluric (**MT**), and airborne electromagnetic (**AEM**) geophysical surveying in the area covering Frewena East and Frewena Far East, though does not extend south west over Frewena Fable. Important observations and conclusions with regard to the East Tennant region from the various GA and NTGS work programs include:

- Occurrence of a large scale and deep-seated structural architecture;
- Modelled iron-oxide alteration;
- Accessible basement depths (Figure 2);
- Modelled IOCG mineral potential (Figure 3); and,
- High conductivity features modelled to extend from the mantle which could indicate past metal bearing fluid flow zones relating to IOCG mineralisation (Figure 4).

A standout interpretation from GA and NTGS's precompetitive work is conductivity cross sections derived from MT surveying. As shown in Figure 4, a large mantle tapping feature is noted to occur along the East Tennant Ridge and extends to the near surface below the Frewena Far East Project. This conductive feature potentially represents an ancient fluid flow zone from the mantle and may relate to a fluid pathway associated with IOCG style mineralisation and alteration. It's occurrence beneath Frewena Far East adds great weight to the Project's exploration model (see Exploration Concept section for details), and given the trend indicated in GA's modelling, it is likely this feature – or a related structure – might also lie beneath Frewena Fable to the south west.

The extensive work undertaken by GA and the NTGS resulted in a pegging rush to secure tenure in the region during late 2019.

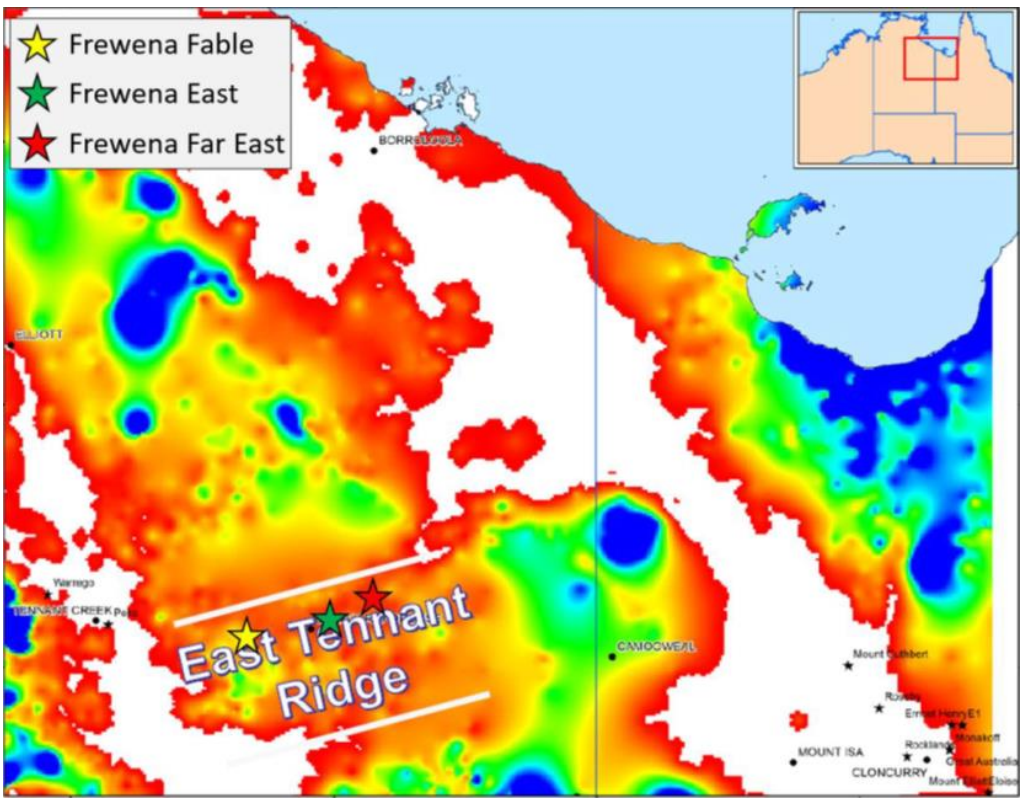

Figure 2 **ABOVE**: Depth to basement along the East Tennant Ridge as modelled by GA/NTGS (after Czarnota, 2019)

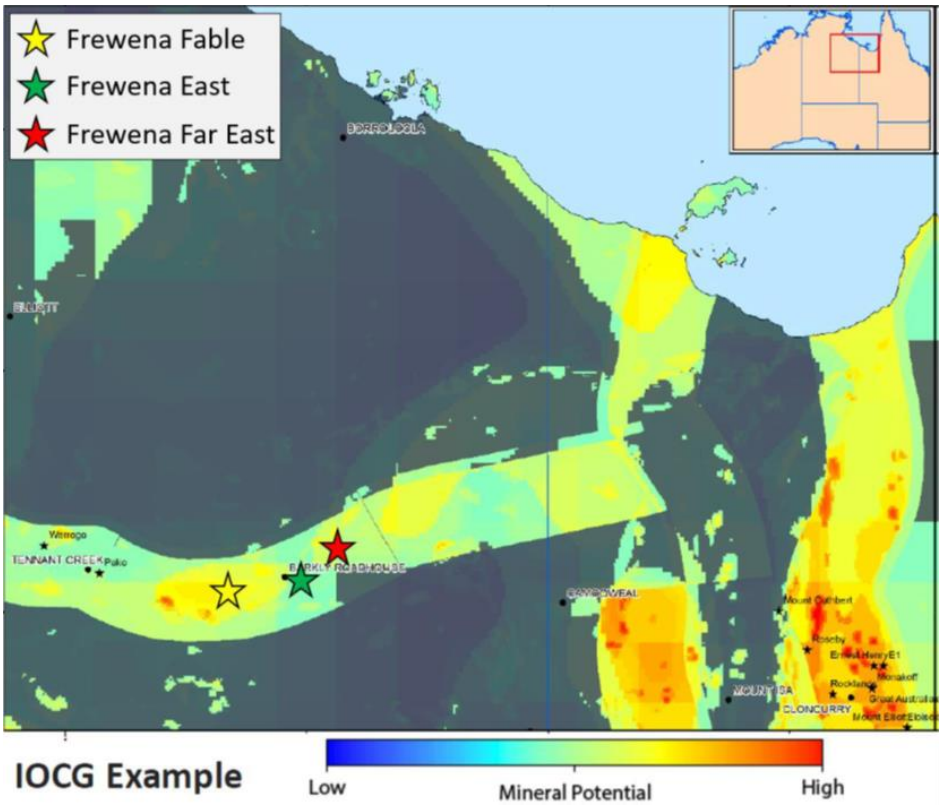

Figure 3 **ABOVE:** Modelled IOCG mineral potential within the East Tennant region (after Murr, 2019)

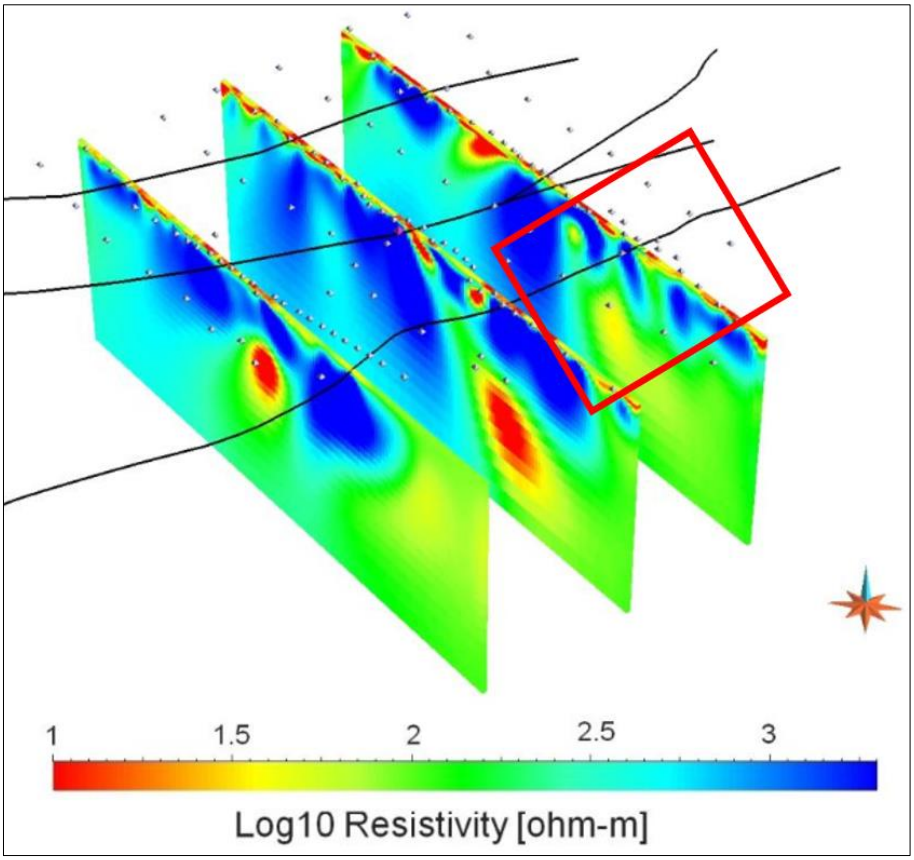

Figure 4 **ABOVE:** Stacked MT conductivity cross sections in the East Tennant region indicate a series of mantle tapping features beneath the Frewena Far East Project that might represent large scale fluid flow zones related to IOCG style mineralisation (red outline marks approximate location of the Project) (after Duan, 2019)

4. Previous Exploration

4.1 *Frewena Fable*

No past exploration is recorded within the Frewena Fable tenure, with the closest recorded activities outside of the licences being two diamond drill holes located 25km north east, as shown in Figure 5. These holes were completed by CRAE in 1980 and drilled to 310m and 346m to test a Tennant Creek style magnetic anomaly. Barren quartz-banded magnetite-biotite-quartz schist interbedded with stromatolitic dolomites of Middle Proterozoic age were intersected with exploration discontinued by CRAE (Snelling, 1980). It is interesting to note, however, this ground in presently held by Newcrest Operations Ltd who pegged two licences two weeks prior to the application of EL 31974 and just prior to the East Tennant moratorium being put in place.

While no systematic exploration is recorded within the Project area, an unreported 1960's Bureau of Mineral Resources (**BMR**) field observation (pers comm, Tapp, 1969) made mention of disseminated copper in granitic rocks approximately 30 miles south of the then Frewena Roadhouse.

This observation, made during an unplanned helicopter set down during regional mapping, formed the basis for target generation work at Frewena Fable. The occurrence not only of copper but also of granite in an area regionally mapped as Phanerozoic shale and limestone was considered sufficient to warrant follow up exploration. The observation, although short on detail, suggested IOCG as the most applicable exploration model; however, other forms of mineralisation cannot be ruled out prior to detailed exploration.

Based on the 1960's observation, an extensive review of regional datasets was undertaken for target generative work with subsequent interpretation of ASTER satellite data. A compelling exploration model resulted from this work (see next section for details), and expanding this method over a larger area within the Barkly Tableland resulted in identification of Frewena Far East as a look-a-like target.

To date, reconnaissance of Frewena Fable to test the exploration model has been inhibited by a lack of access tracks through what is quite scrubby vegetation. With the approval of Inca's MMP it is anticipated that construction of tracks will allow ground based exploration during the 2021 field season.

It is also important to note that as the area has not been subjected to systematic exploration for precious and base metals, that geophysical data is currently restricted to regional scale gravity, magnetics, radiometrics, and wide spaced AusAEM flightlines. These provide useful resources for assessing the district, but are too coarse a resolution for prospect scale targeting.

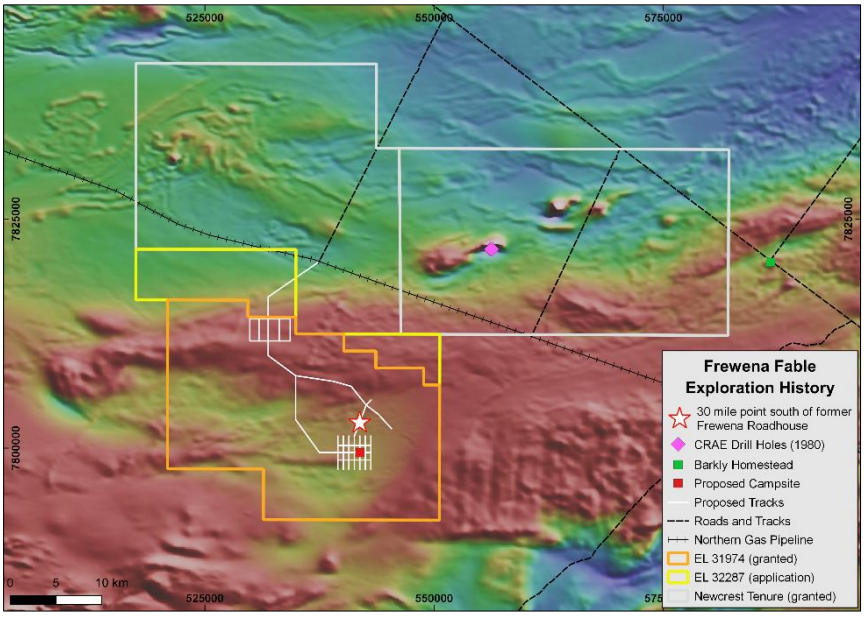

Figure 5 **RIGHT:** Total Magnetic Intensity (**TMI**) map of Frewena Fable displaying location of the CRAE 1980 drilling north east of the Project and Inca's proposed access tracks under the Company's recently approved MMP

4.2 *Frewena Far East*

Limited historical exploration for sediment hosted phosphate in the 1960's and later has been undertaken within the Frewena Far East area; however, no systematic exploration for base and precious metal mineralisation is reported.

A single stratigraphic hole, shown in Figure 6, drilled by the Bureau of Mineral Resources in 1968 (Alroy-2) falls within EL 32293 at Lamb Hill and was drilled to 175m depth. The hole intersected limestones and related sediments lying above igneous rocks described as amygdaloidal basalt flows composed of phenocrysts of pyroxene and plagioclase (labradorite) in a groundmass of plagioclase, chlorite and devitrified glass, and numerous chlorite-filled amygdule's. Quartz occurred in scattered pockets, possibly representing later infillings, and plagioclase laths had been largely altered to a zeolite mineral, chlorite, and muscovite (Bastian, 1968). The basalt was equated to the Peaker Piker Volcanics that outcrops 100km to the north and northeast, with the Colless Volcanics west of Lawn Hill in Queensland, and with the Helen Springs Volcanics located east of Tennant Creek (Bastian, 1968).

While no geochemical information was presented, the intersection of basement rocks at shallow levels vindicates the thickness of cover interpretation of GA and NTGS, while also providing support to IOCG prospectivity with identification of mafic igneous rocks. This occurrence, when viewed in conjunction with the large mantle tapping architecture identified in MT survey as shown in Figure 4, strongly suggests that base and precious metal exploration is warranted at Frewena Far East.

In addition to the GA and NTGS datasets mentioned above, Inca is also eagerly awaiting data from seismic line 19GA-B1 that runs through the east portion of Frewena Far East, and results of stratigraphic drilling being undertaken by GA and NTGS during 2020, as shown in Figure 6.

Limited geological reconnaissance by the Company, to date, has observed occurrence of iron flooded breccias at Frewena Far East with elevated geochemistry including maximum values in rock chips of: 124ppm arsenic, 78ppm cobalt, 127ppm chromium, 89ppm copper, 7ppb gold, 102ppm lead, 0.21% sulfur, 0.14% vanadium, and 0.19% zinc. Figure 7 displays examples of observed lithologies at Frewena Far East.

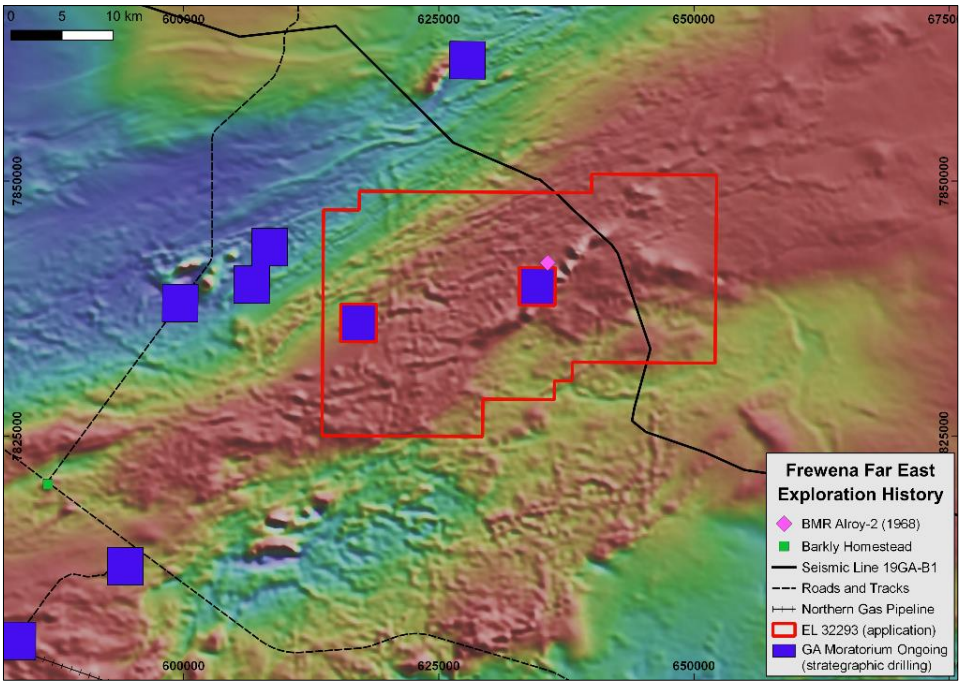

Figure 6 **ABOVE**: TMI map of Frewena Far East displaying location of BMR drill hole Alroy-2 and Ga and NTGS's seismic line 19GA-B1. The two portions blue portions excised from EL 32293 represent areas where stratigraphic drilling is planned by GA and NTGS during 2020

Figure 7 **RIGHT**: Examples of rock chips from Frewena Far East, including: a) unsampled silica breccia; b) silica breccia with heterogeneous clasts; c) hematite-goethite-quartz breccia with 0.14% Zn and 148ppm Ni; d) massive vitreous goethite with 0.19% Zn; e) hematite-goethite rich matrix supported breccia with strong limonite overprint, and f) intense hematite-goethite overprinted breccia with pre-existing textures destroyed and reporting 78ppm Co, 89ppm Cu, 108ppm Ni and 483ppm Zn

5. Exploration Concept

The exploration model developed for Frewena Fable (and later used to identify Frewena Far East) was centred on confirming occurrence of granitic style rocks in the location as roughly described in the 1960's BMR observation of copper in granitic rocks.

While a detailed review included interrogation of regional magnetics, gravity, and the then recently announced results of Geoscience Australia's AusAEM Airborne Electromagnetic Survey, the two most useful datasets were found to be radiometrics (principally thorium, Th, uranium, U, and the ternary diagram), and the digital terrain model.

As can be seen in Figures 8 to 10, Th, U, and ternary radiometrics display a series of strong anomalies in the correct approximate location as per the 1960's observation, with Th-U considered indicators of granitic lithologies. These anomalies display distinct, roughly circular geometries within regionally Th-U barren sedimentary rocks, which suggests a cluster of intrusive features may occur within Frewena Fable.

Furthermore, when these radiometric anomalies (Th was preferenced due to its lesser mobility) are plotted over the digital elevation model, a strong coincidence is seen with a low series of hills or rises, as shown in Figure 11. Like the radiometric signature, these topographical features are distinct within an otherwise flat region which strongly suggests a different lithology occurs. Taken together, these radiometric and topographical features are considered highly supportive of the 1960's observation.

Regional magnetics over Frewena Fable, as shown in Figure 12, suggests a zone of structural complexity with intersection of ENE-WSW features (likely stratigraphy) and NNE-SSW lineaments (likely faults), amongst others. Several larger NNE-SSW lineaments are noted to occur proximal to the Th-U anomalies, while the inferred stratigraphy trends appear less pronounced in the general vicinity of Th-U highs, again suggesting different lithologies and/or disruption of lithologies occur.

Also visible in regional magnetics are the Tennant Creek style, high tenor magnetic features to the north east within Newcrest's tenure that were drilled by CRAE in 1980. These magnetic highs also form low elevation rises like those within Frewena Fable; however, they display no radiometric response which likely suggests they represent different lithologies.

Regional gravity data over Frewena Fable is too low resolution for detailed interpretation on a target scale; however, a broad moderate tenor gravity feature is evident under EL 31974 as shown in Figure 13. This feature appears to show internal variability of intensity and hosts the Th-U-topography anomalies.

The regional gravity feature is also potentially identifiable in AEM data as displayed by the conductivity cross section in Figure 14. Between points A and B along flightline 1180002 (in Figures 13 and 14), a fault bound block is noted. While this is not a conclusive observation, the apparent coincidence seen in two different datasets is encouraging and suggests the gravity feature in not simply Phanerozoic shale and limestone.

In order to advance understanding of Frewena Fable geology and mineral potential, an interpretation of ASTER satellite data by an external consultant was commissioned.

This interpretation highlighted the potential for significant hydrothermal alteration, conductivity anomalies, and possible sulfide bodies within Frewena Fable over an area 30km by 15km in size. Prominent mineral species interpreted to possibly occur include: bornite, chalcopyrite, pyrite, quartz, kaolinite, Mg-chlorite, illite, and K-feldspar (Pendock, 2019a).

Notably, these mineral species form zoned alteration patterns, as displayed in Figures 15 to 17, as would be expected in IOCG systems, and also show very strong correlation to Th-U-topographic anomalies. A number of target areas were identified with the two principal prospects – Tamborine and Alpaca Army – relating to the two larger Th-U-topography anomalies.

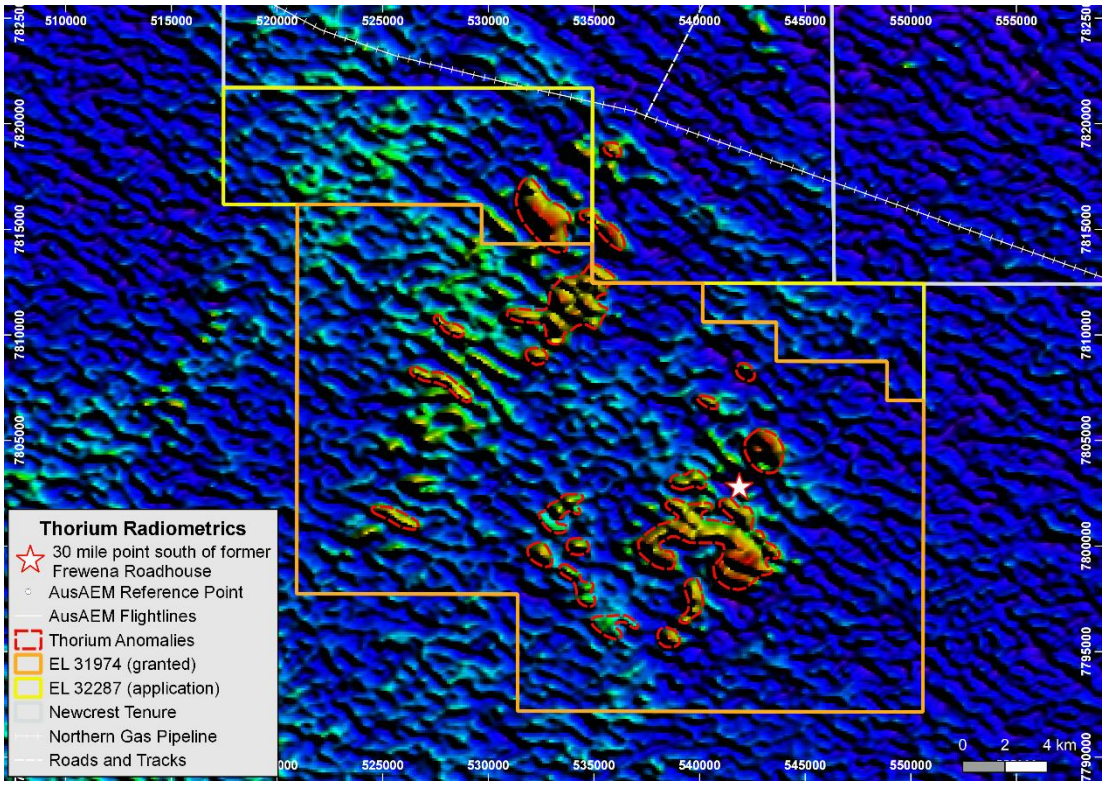

Figure 8 **ABOVE:** Th radiometric image over Frewena Fable displays a cluster of anomalies that potentially represent intrusive bodies

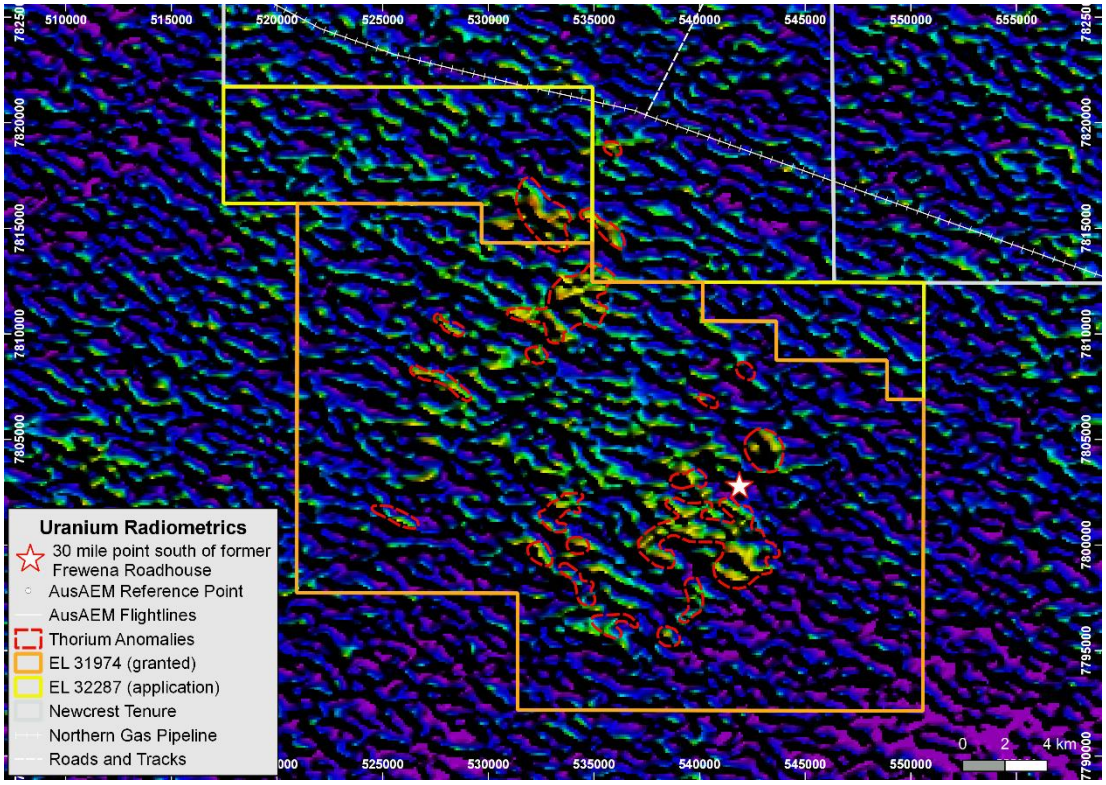

Figure 9 **ABOVE:** U radiometric image over Frewena Fable displays a cluster of anomalies that potentially represent intrusive bodies

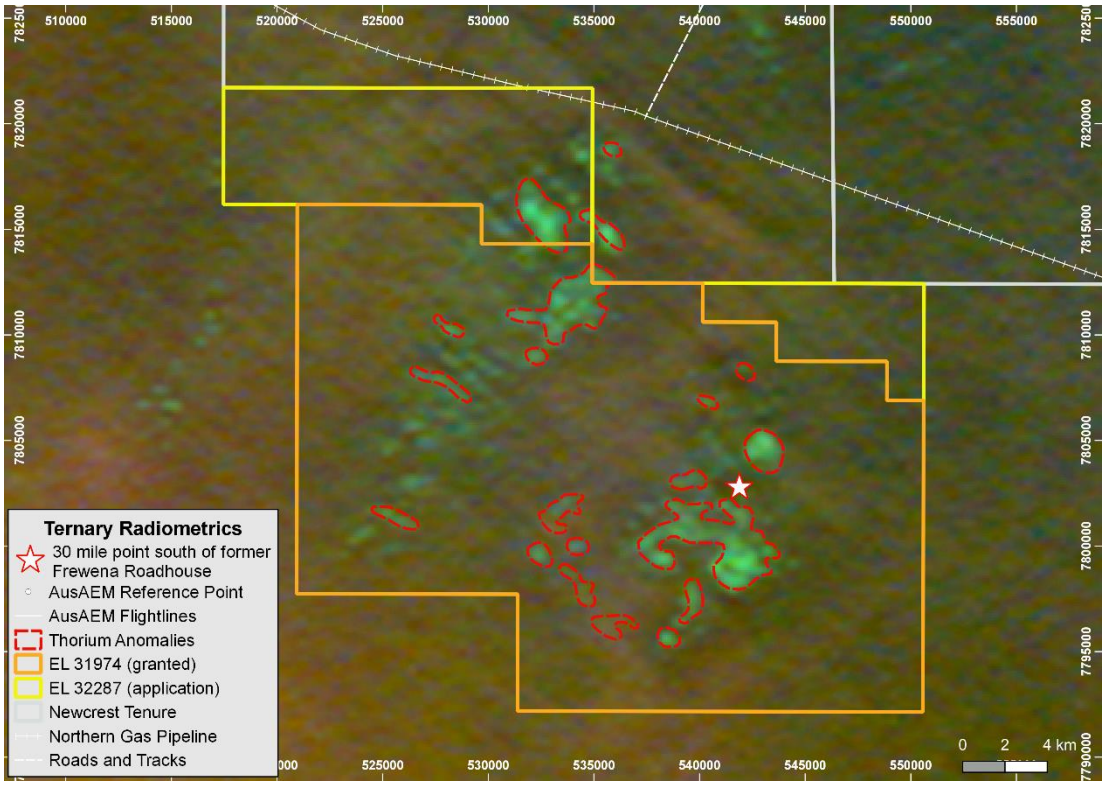

Figure 10 **ABOVE:** Th radiometric image over Frewena Fable displays a cluster of anomalies that potentially represent intrusive bodies

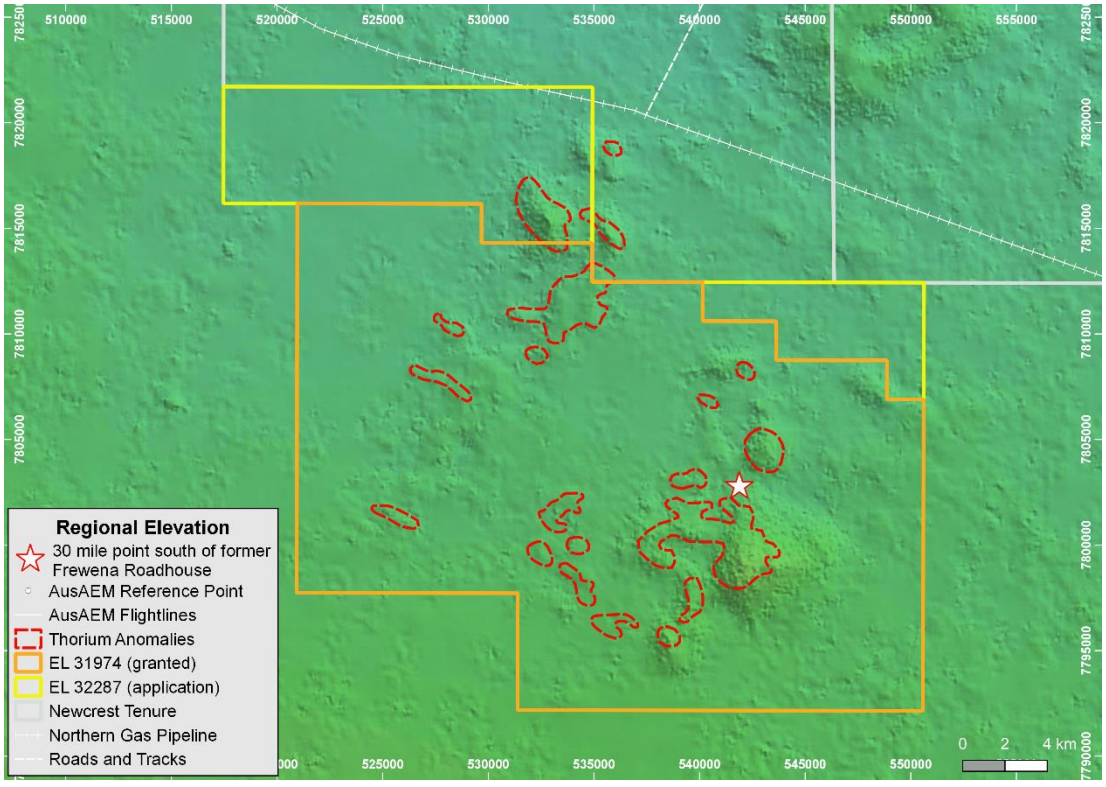

Figure 11 **ABOVE:** Th radiometric anomalies plotted over the digital elevation model show a strong correlation to a series of low hills within Frewena Fable

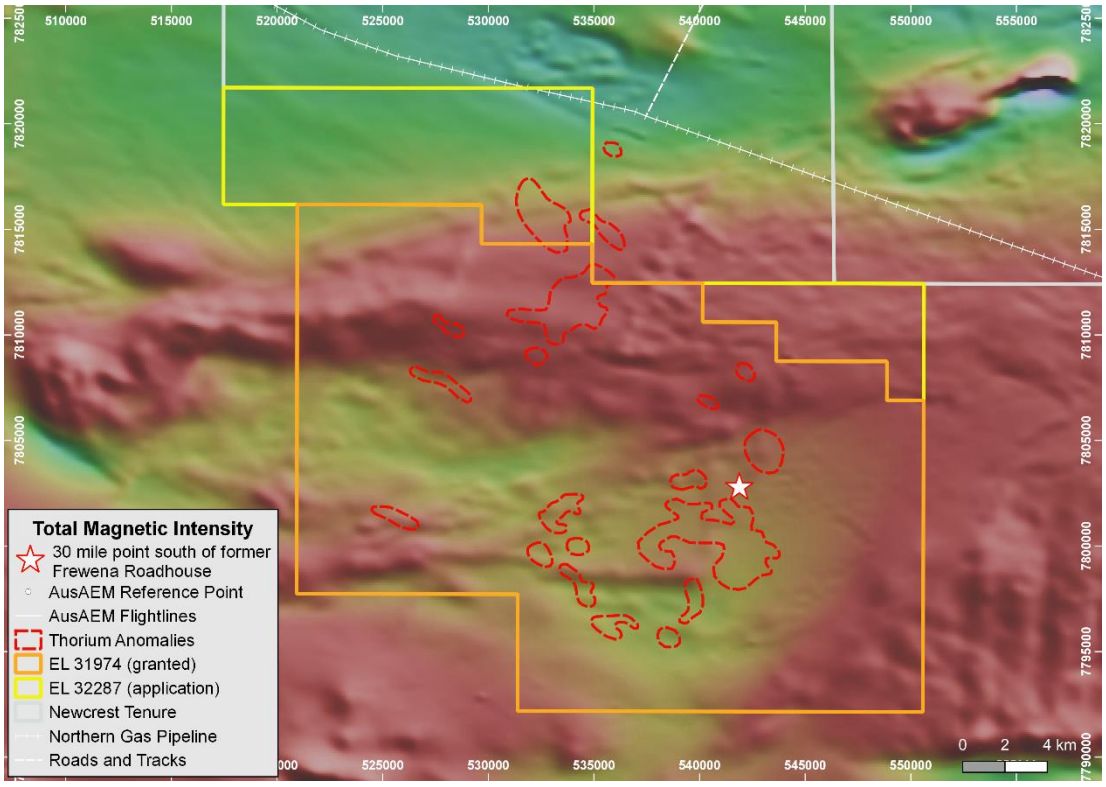

Figure 12 **ABOVE:** Regional TMI magnetic image over Frewena Fable

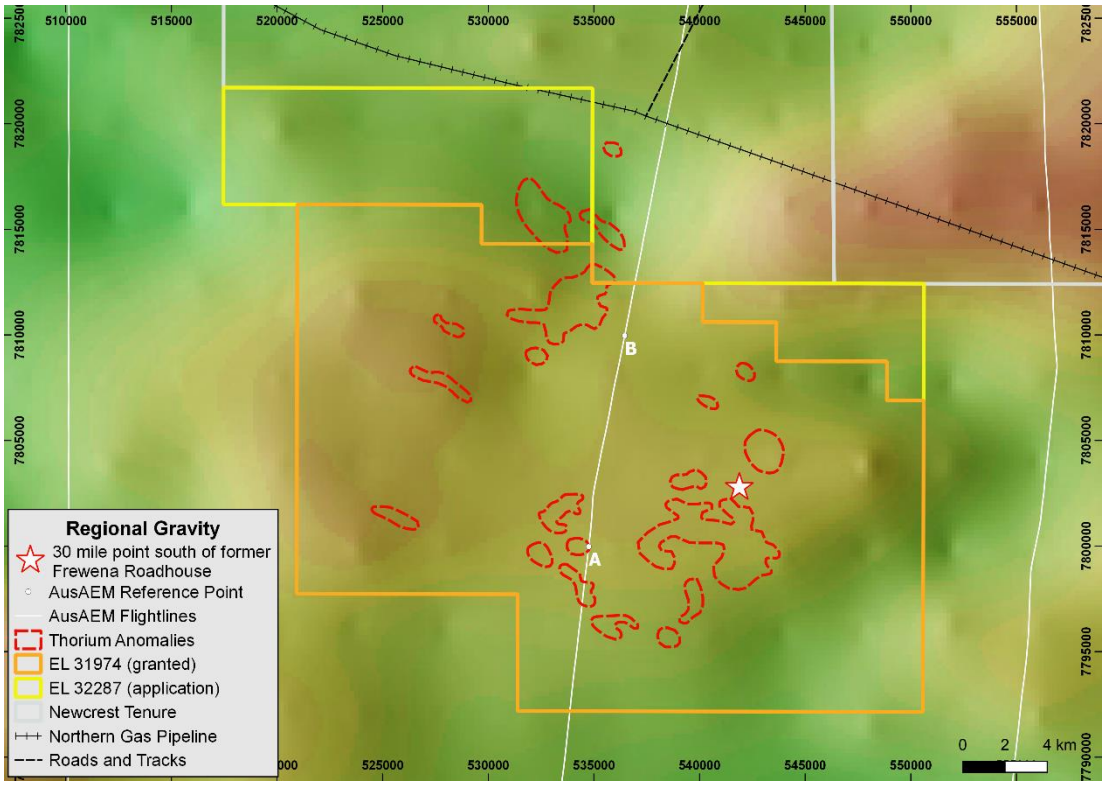

Figure 13 **ABOVE:** Regional gravity image over the Frewena Fable

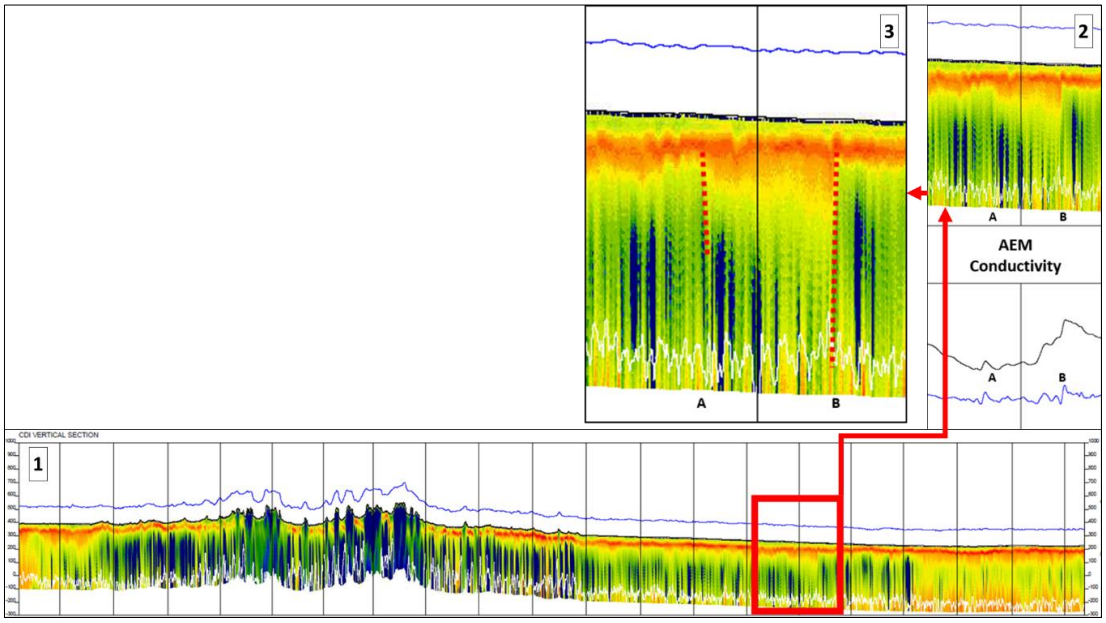

Figure 14 **ABOVE:** AEM conductivity cross section; red box in Section 1 represents approximate location of Frewena Fable tenure along flightline 1180002; red dashed lined in Section 3 interpreted as steeply dipping faults that correspond to the regional gravity feature between points A and B

While ASTER interpretation is subjective, and its use in delineating sulfides highly debated, results of this work are considered a success having allowed a large area to be rapidly and inexpensively reviewed. The strong correlation of ASTER signatures to anomalies in other datasets is considered strong support of the 1960's observation and, more broadly, very supportive of the IOCG exploration model being followed for Frewena Fable.

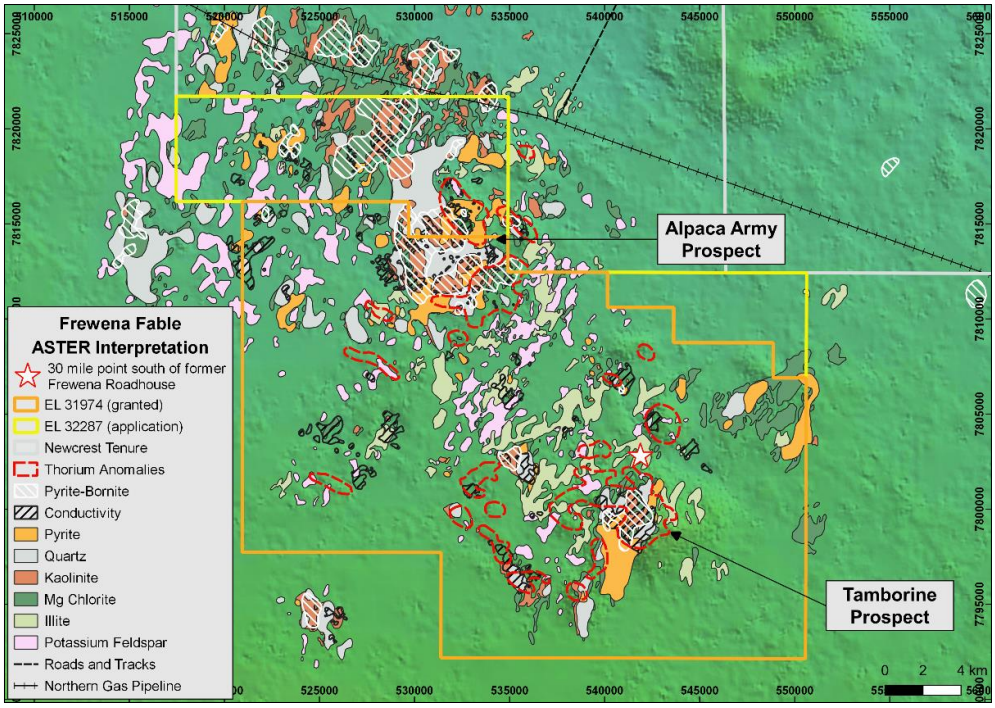

Figure 15 **ABOVE:** ASTER interpretation over Frewena Fable highlighted potential for significant zoned hydrothermal alteration, sulfide bodies, and conductive zones showing a strong correlation with Th-U-topography anomalies

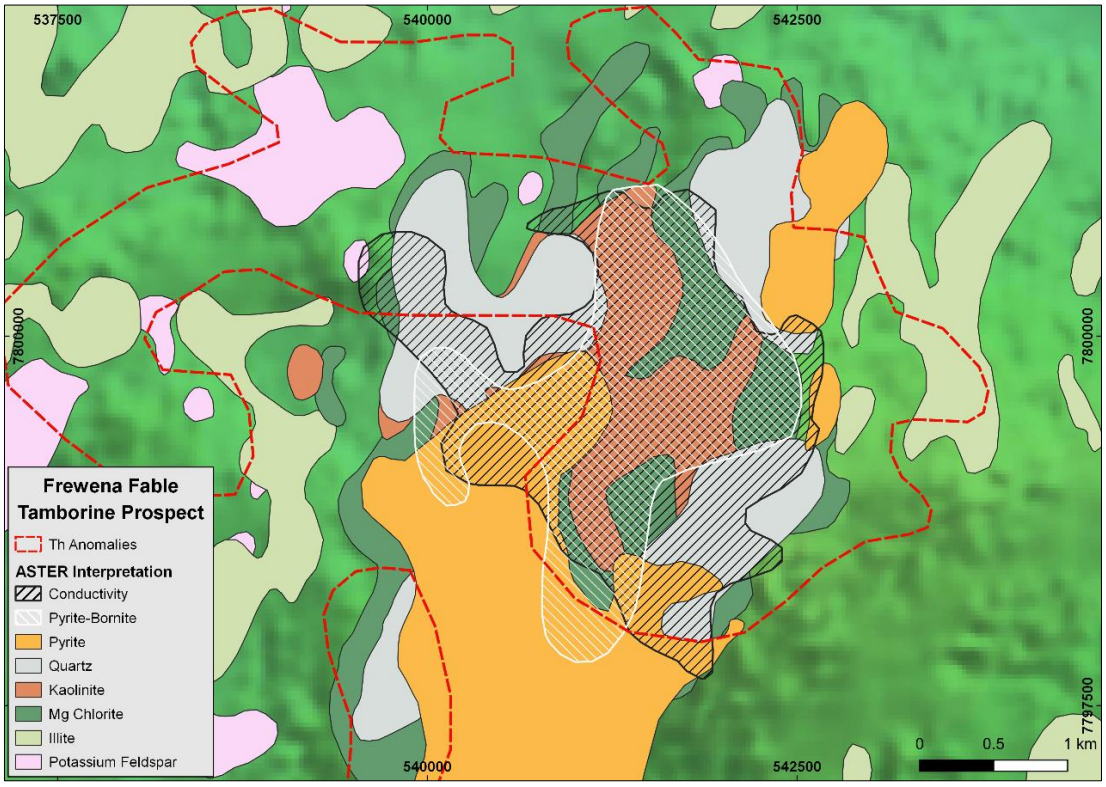

Figure 16 **ABOVE:** ASTER interpretation over the Tamborine Prospect displays the potential for well zoned alteration with strong correlation to Th-U-topography anomalies

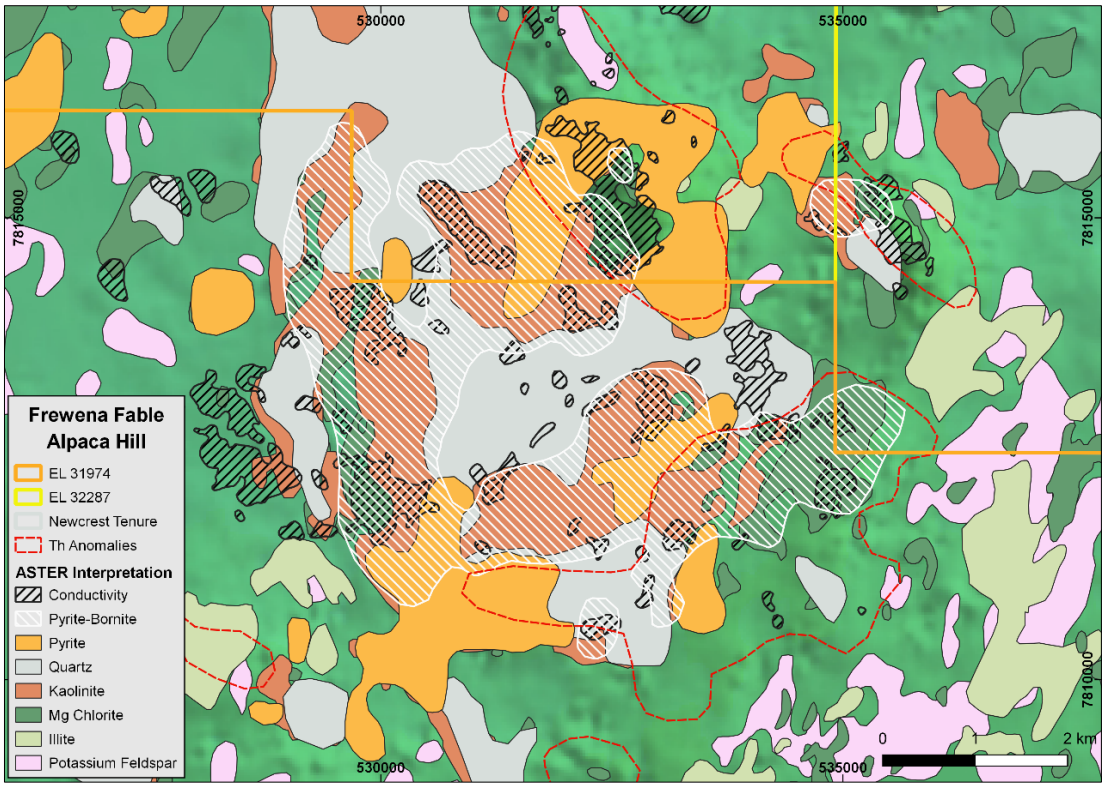

Figure 17 **ABOVE:** ASTER interpretation over the Tamborine Prospect displays the potential for well zoned alteration with strong correlation to Th-U-topography anomalies

Having developed the Frewena Fable exploration model, its use was expanded over a larger area within the Barkly Tableland that led to identification of Frewena Far East as a look-a-like target. Figures 18 to 25 display various images from Frewena Far East which outline a second compelling project within the East Tennant region.

Strong similarities are noted between Frewena Fable and Frewena Far East, with additional highlights at the latter including a very strong degree of structural complexity noted in magnetics (Figure 21), a major and intense 18km long magnetic high that correlates to a large conductive body (Figures 21 and 24), and a series of mid tenor, bulls eye gravity anomalies (Figure 22).

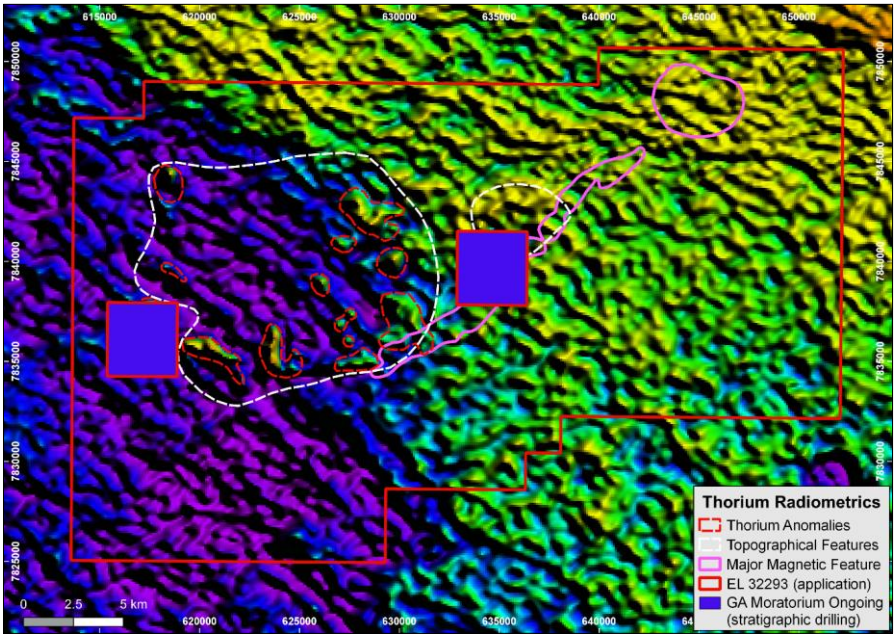

Figure 18 **ABOVE:** Th radiometric image over Frewena Far East presents a series of anomalies similar to those seen at Frewena Fable

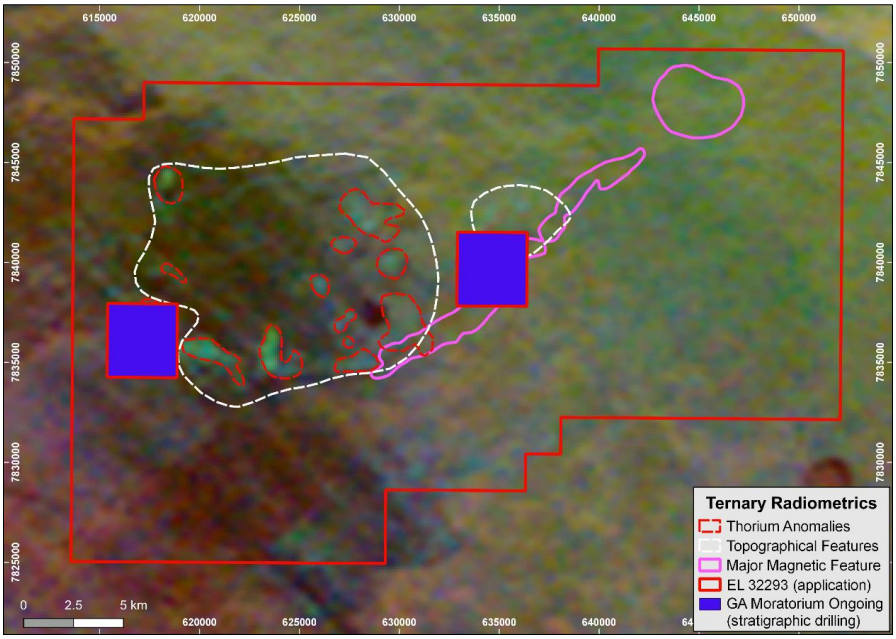

Figure 19 **ABOVE:** Frewena Far East radiometric ternary diagram also displays similar characteristics as Frewena Fable

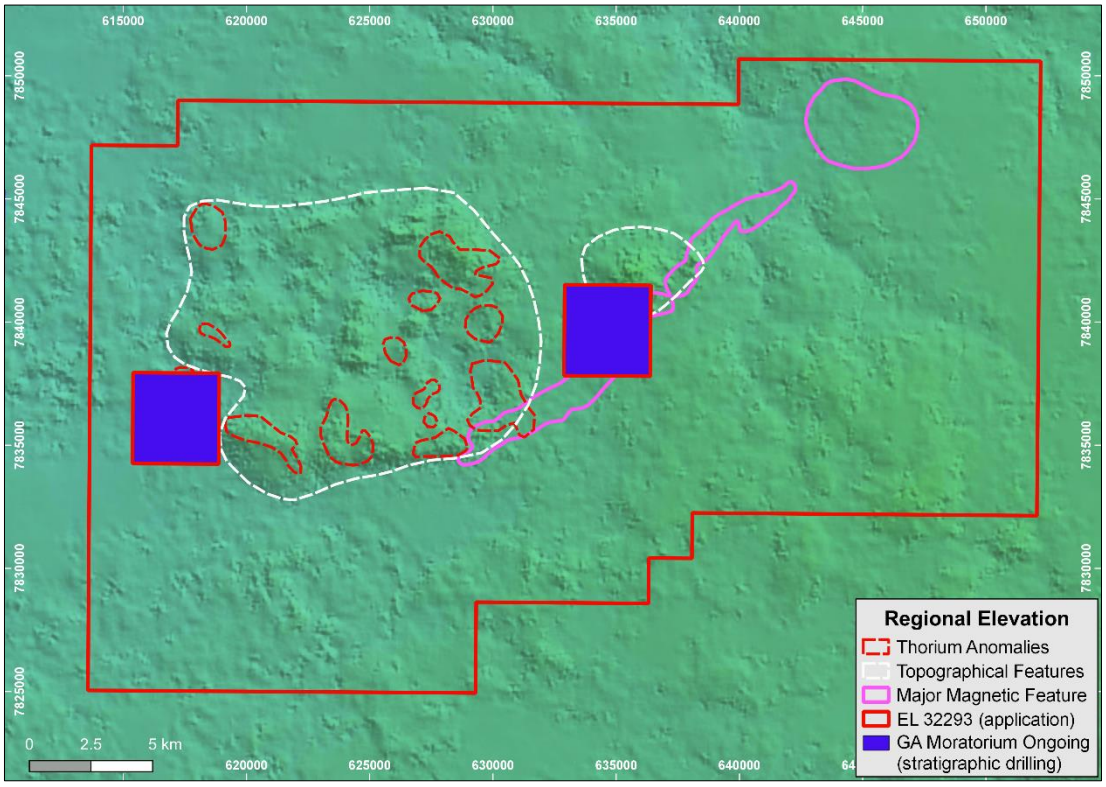

Figure 20 **ABOVE:** Digital terrain model over Frewena Far East shows that the radiometric anomalies largely fall within a circular 12km diameter topographic feature (Western Anomaly) with an additional smaller topographic high to the east

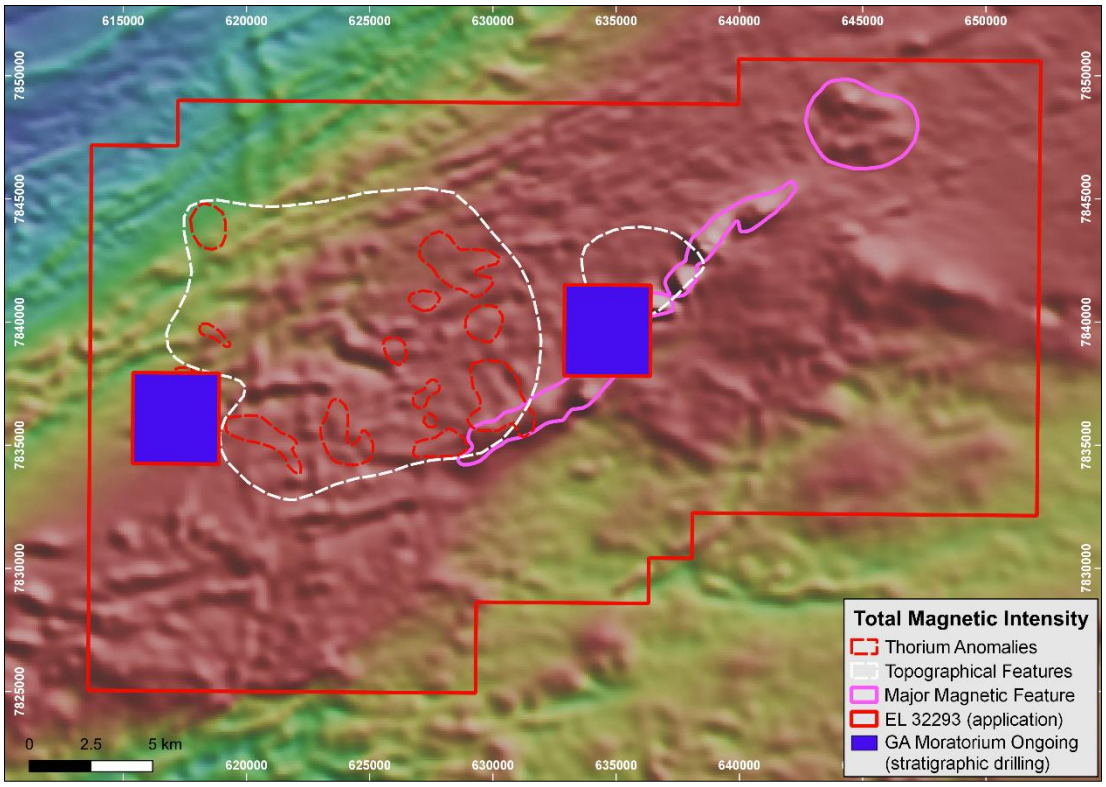

Figure 21 **ABOVE:** Regional TMI image over Frewena Far East highlights complex structure with intersection of large scale features. Also evident is a major magnetic high 18km long that lies proximal to radiometric and topographical anomalies

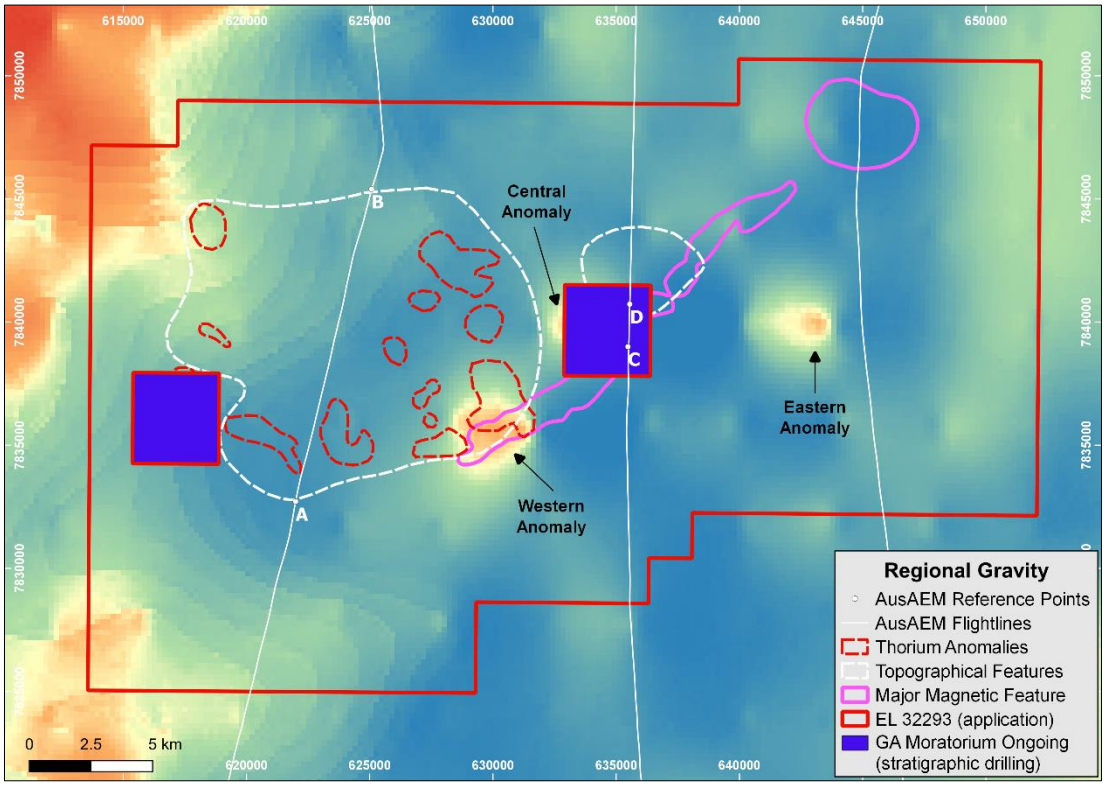

Figure 22 **ABOVE:** Regional gravity image over Frewena Far East with colour schema modified to enhance local features. Three medium tenor, bullseye gravity highs are evident in close proximity, and more distal, to radiometric, topographical, and magnetic features

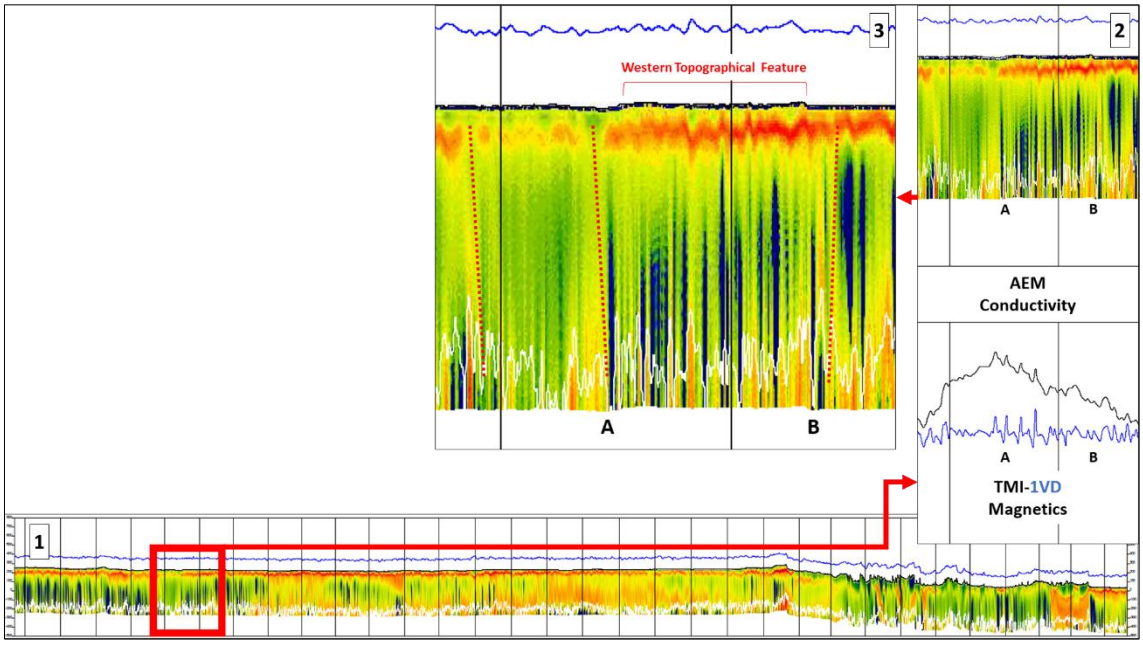

Figure 23 **ABOVE:** AusAEM conductivity cross section along flightline 1220003 (points A and B); red box in Section 1 represents approximate location of Frewena Far East tenure; significant faulting is noted within the western topographical feature

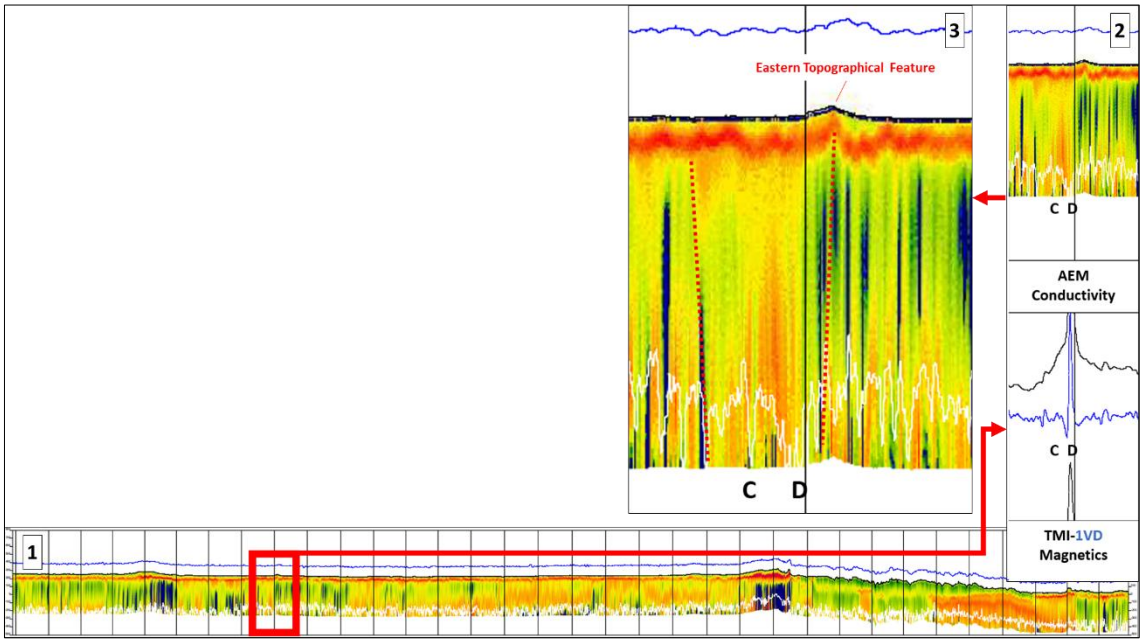

Figure 24 **ABOVE:** AusAEM conductivity cross section along flightline 1230003 (points C and D); red box in Section 1 represents approximate location of Frewena Far East tenure; a major conductivity anomaly is noted to occur at depth between points C and D with this anomaly correlating to the major 18km long magnetic feature

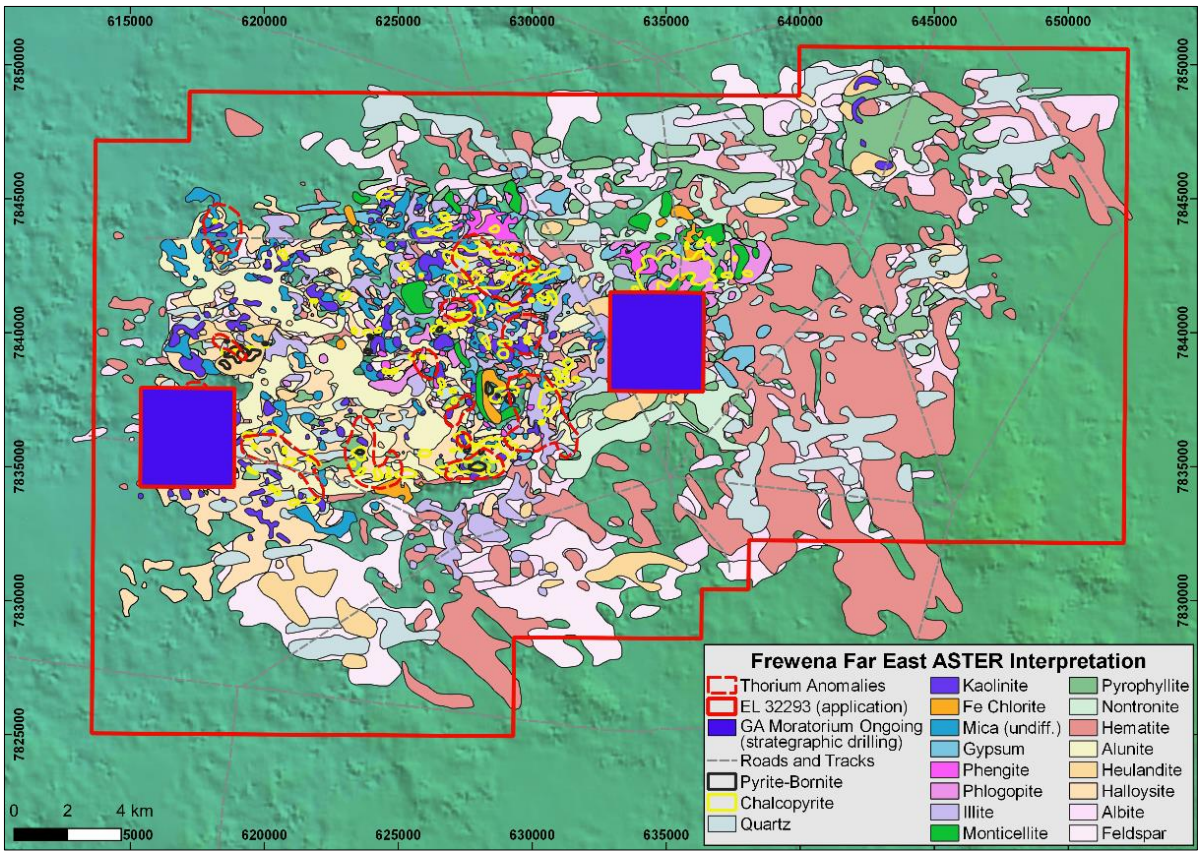

Figure 25 **ABOVE:** ASTER interpretation over Frewena Far East highlighting the potential for significant mineralogical variability with numerous hydrothermal mineral species possible; a strong correlation is noted between ASTER interpretation and radiometric, topographical features, magnetic, and gravity anomalies

6. Details of the Collaborative Program

The geophysical program completed by Inca under this GDC grant was detailed airborne magnetic-radiometric (**AMAGRAD**) surveying over the Frewena Fable and Frewena Far East Projects.

While AMAGRAD surveying is a standard early stage exploration technique, it's use at Inca's Frewena Projects is considered important not only to significantly advance the resolution of these datasets over a large portion of the East Tennant region (1,182km^2 representing approximately 9% of the East Tennant region), but also to provide high quality data to use for prospect scale targeting.

To date, exploration targeting at the Frewena Projects has largely been restricted to review of surficial geological features (i.e. radiometrics, topography, ASTER). With the acquisition of detailed magnetics and radiometrics, further refinement of known surface features such as Th anomalies can be undertaken and, more crucially, subsurface features can be assessed via magnetics.

To facilitate the program, Inca engaged Resources Potentials Pty Ltd (**ResPot**) – a specialist geophysical consultancy – to undertake survey design, seek quotes for data acquisition, and to undertake data processing, filtering, and modelling post surveying. Data acquisition was undertaken by MAGSPEC Airborne Surveys Pty Ltd (**MAGSPEC**) at a highly competitive price of $6.85/line km.

The AMAGRAD program was based from the Barkly Homestead with total lineage flown being 25,888km, which included 13,227km covering 597km^2 at Frewena Fable and 12,661km covering 585km^2 at Frewena Far East. Line spacing was 50m with sensor high between 30-40m. Survey parameters and boundary coordinates are presented in Table 1 and 2, respectively, with Figures 26 and 27 illustrating line direction and survey locations at Frewena Fable and Frewena Far East.

At Frewena Far East, the AMAGRAD survey was extended over two areas excised from the exploration licence for GA and NTGS to undertake stratigraphic drilling. Approval was sought from and granted by the Department of Industry, Tourism and Trade (**DITT**) to allow surveying over these areas to provide more complete detailed data to be added to the public database. The survey was completed without incident.

Technical specifications of the AMAGRAD survey include:

- **Geometrics G-823A tail sensor mounted magnetometer**
  - Sensor Type - Caesium vapour
  - Resolution - 0.001 nT
  - Sensitivity - 0.01 nT
  - Sample Rate - 20 Hz (≈3.5 metre sample interval)
  - Compensation - 3-axis fluxgate magnetometer
- **RSI RS-500 gamma-ray spectrometer**
  - 2x RSX-4 detector packs.
  - Total Crystal Volume - 32 L
  - Channels - 1024
  - Sample Rate - 2 Hz (≈35 metre sample interval)
  - Stabilisation - Multi-peak, automatic gain
- **Bendix/King KRA 405 radar altimeter**
  - Resolution - 0.3 m
  - Sample Rate - 20 Hz
  - Range - 0-760 m

- **Renishaw ILM-500-R laser altimeter**
  - Resolution - 0.01 m
  - Accuracy - 0.1 m
  - Sample Rate - up to 20 Hz
  - Range - 0-500 m
- **GEM Overhauser / Scintrex ENVIMAG proton precession magnetic base stations**
  - Resolution - 0.01 / 0.1 nT
  - Accuracy - 0.1 / 0.5 nT
  - Sample Rate - 1.0 / 0.5 Hz
- **NovAtel OEM 719 DGPS Receiver.**
  - Channels - 555
  - Signal Tracking - L1/L2 + GLONASS Multi Frequency
  - Positional Accuracy - 0.4 m RMS (NovAtel CORRECT)
  - Sample Rate - 2 Hz

Area Name	Traverse Line spacing (m)	Traverse Line Direction (deg)	Tie Line Spacing (m)	Tie Line Direction (deg)	Sensor Height* (m)	Total Line Kilometres
Frewana Fable	50	000-180	500	090-270	30-40	13,227
Frewana Far East	50	135-315	500	045-225	30-40	12,661
					Total	**25,888**

Table 1 **ABOVE:** AMAGRAD survey parameters

Frewana Fable		Frewana Far East	
EASTING	NORTHING	EASTING	NORTHING
524400	7821700	615454	7847166
534950	7821700	636448	7847020
534950	7812500	636462	7848862
550650	7812500	639961	7848837
550650	7792100	639976	7850682
531350	7792100	648397	7850672
531350	7797700	649440	7851681
524400	7797700	651561	7849559
		650519	7848551
		650368	7837685
		646870	7837714
		646840	7834025
		636350	7834107
		636322	7830418
		617453	7830493
		616365	7829460
		614244	7831581
		615305	7832641

Table 2 ***ABOVE:*** *Survey boundary coordinates for the two blocks covering Frewena Fable and Frewena Far East*

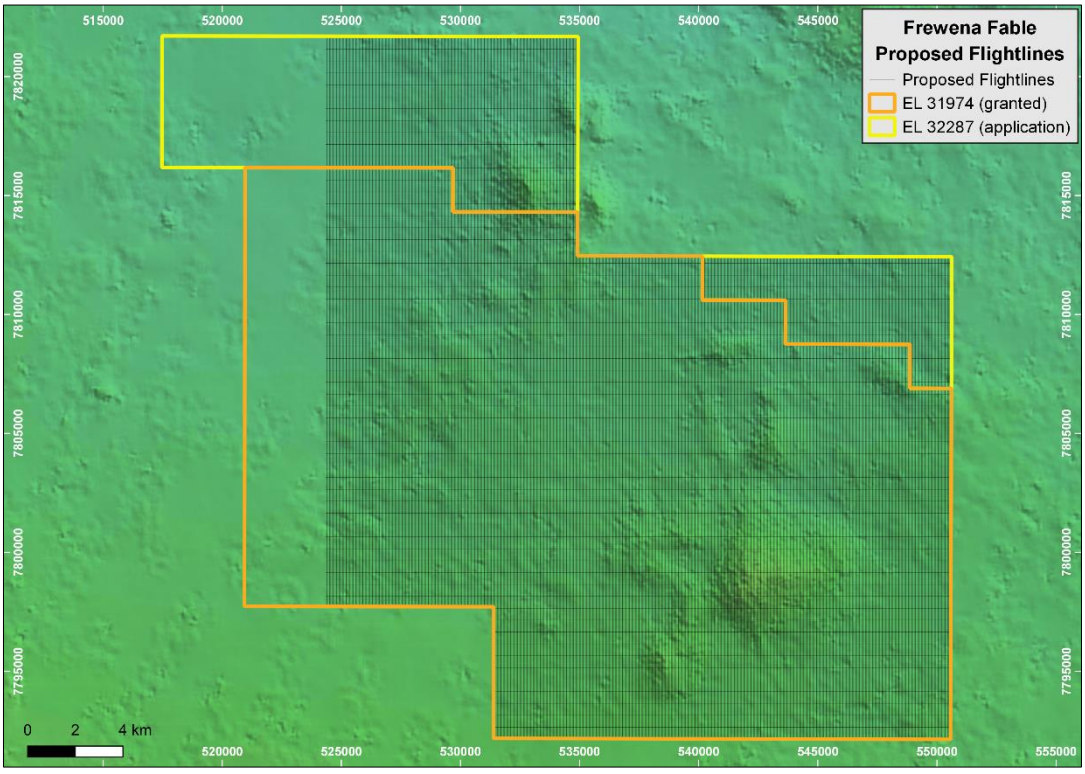

Figure 26 **ABOVE:** AMAGRAD survey flightlines over the Frewena Fable Project were orientated north-south at 50m spacing with east-west tie lines at 500m spacing

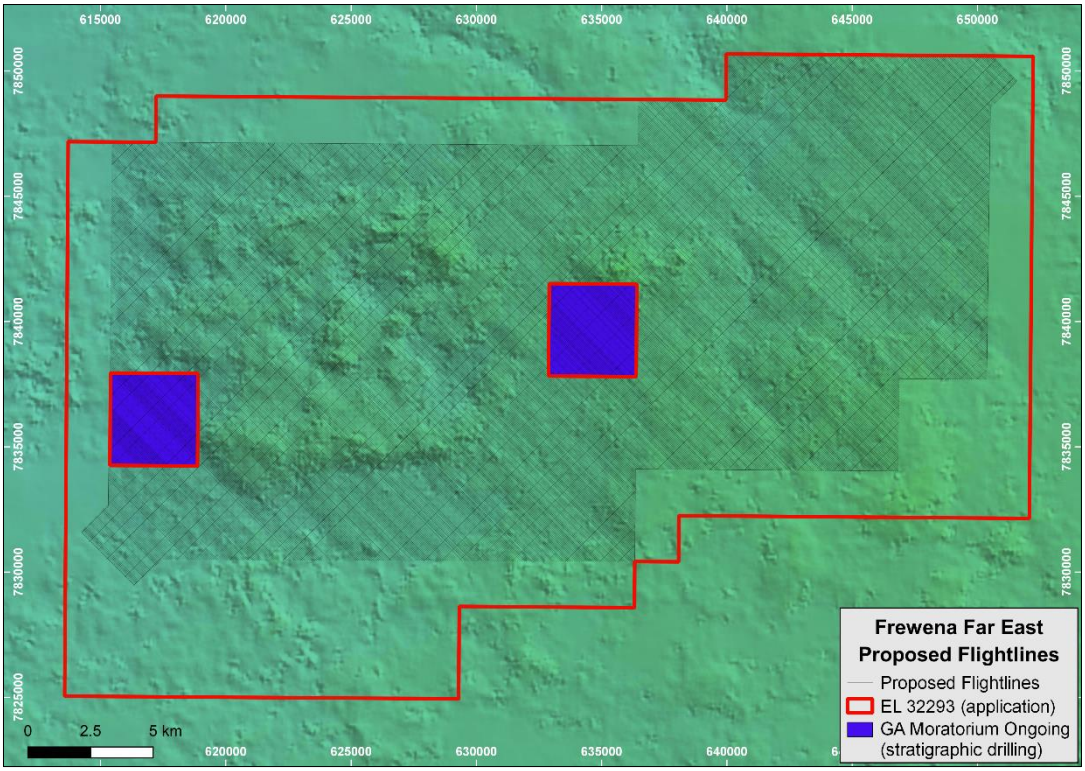

Figure 27 **ABOVE:** AMAGRAD survey flightlines over the Frewena Far East Project were orientated south east – north west at 50m spacing with north east – south west tie lines at 500m spacing; the survey was extended over the two areas excised from EL 32293 where GA and the NTGS have undertaken stratigraphic drilling

7. Results and Interpretation

The AMAGRAD survey was successfully completed with high quality data acquired. Initial processing of the data has been undertaken by MagSpec and ResPot, with a selection of relevant images in subsections 7.1 and 7.2, below.

The survey has resulted in a more than tenfold increase in image resolution with the image cell size, or pixel, reduced from the regional scale of c. 85m by 85m to the detailed scale of c. 8m by 8m.

Further data processing and interpretation – beyond the scope of the GDC grant funding – remains ongoing at the time of writing and will be included as part of annual reporting requirements for the Frewena Projects.

7.1 *Frewena Fable*

Initial processing of detailed AMAGRAD surveying at Frewena Fable has provided high resolution data to better define the area's elevation, radiometric, and magnetic characteristics. Figures 28 to 31 display topography, ternary radiometrics, total magnetic intensity, and the 1st vertical derivative TMI, respectively. Additional data processing and interpretation is ongoing at the time of writing.

Results for topography, radiometrics, and magnetics confirm features defined from regional data, as would be expected, but with much better control on occurrence and geometry. An interim interpretation of structure is illustrated in Figure 31, along with the regional Th anomalies for reference, that suggests a highly complex structural setting with major disruption of regional faults. Numerous cross cutting features are noted that raises the potential for dilutional sites near the vicinity of structural intersections that could be potential host sites for IOCG style intrusive features. The Tamborine Prospect – and an additional topography-Th-ASTER feature immediately to the north – is noted to occur at one such intersection point with a major magnetic termination directly beneath the centre of the prospect.

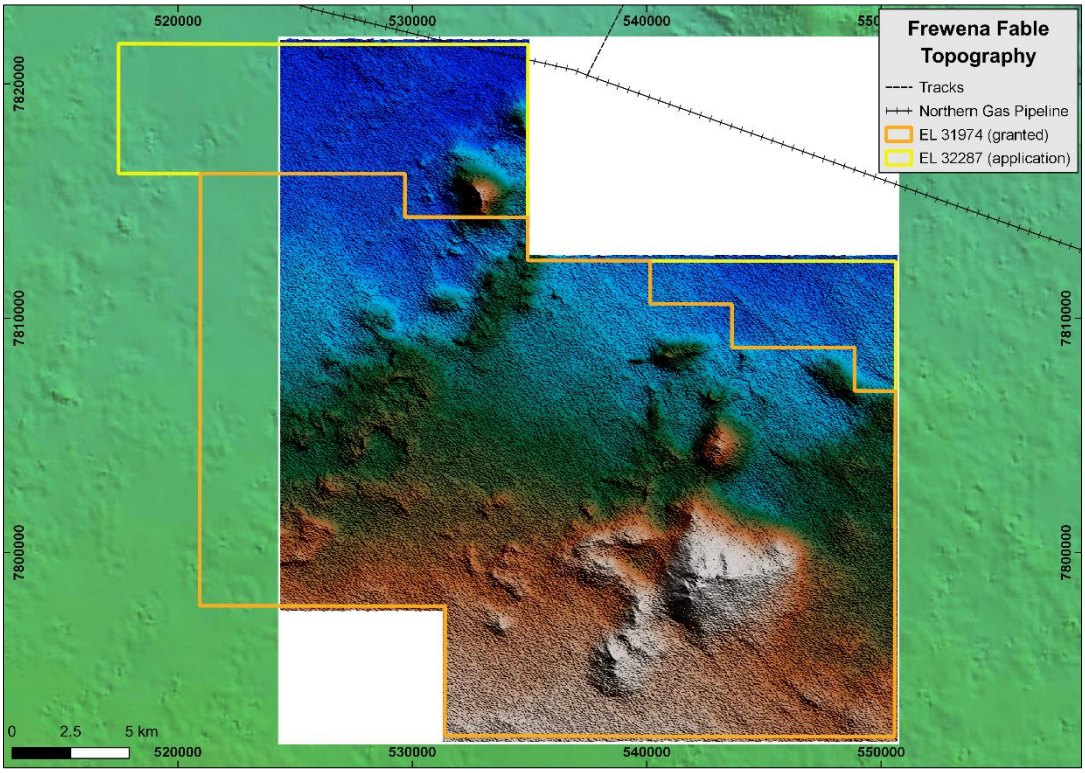

Figure 28 **ABOVE:** Digital elevation model derived from the detailed AMAGRAD survey over Frewena Fable

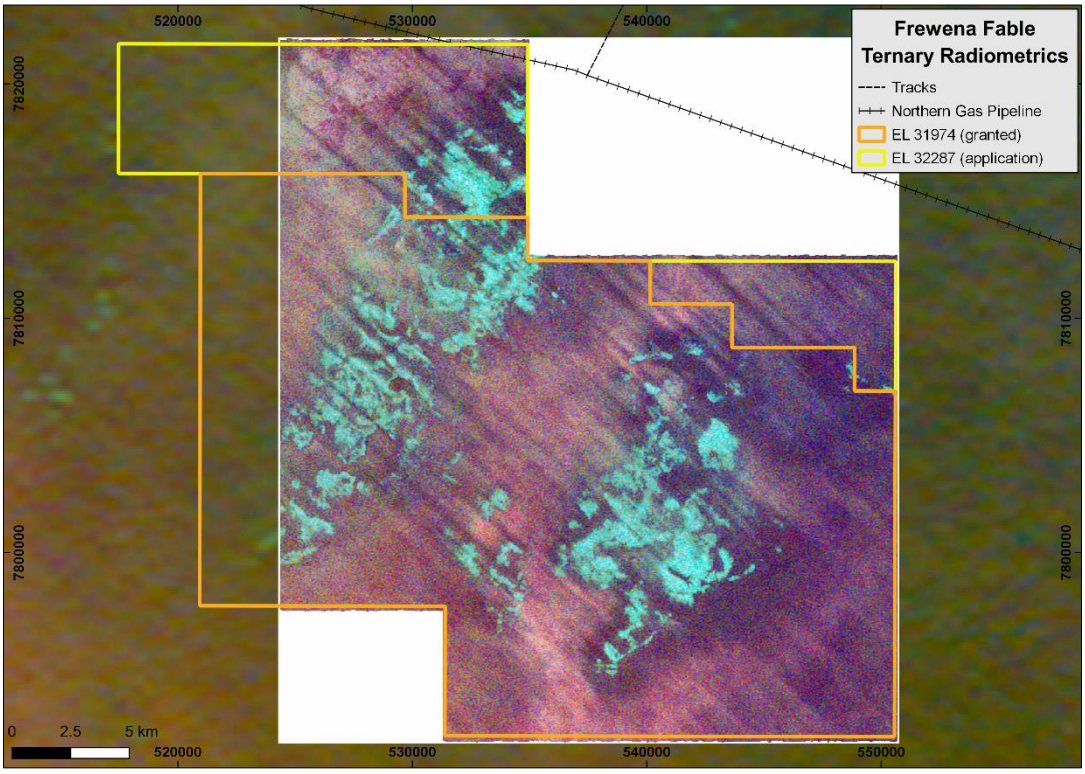

Figure 29 **ABOVE:** Ternary radiometric image derived from the detailed AMAGRAD survey over Frewena Fable

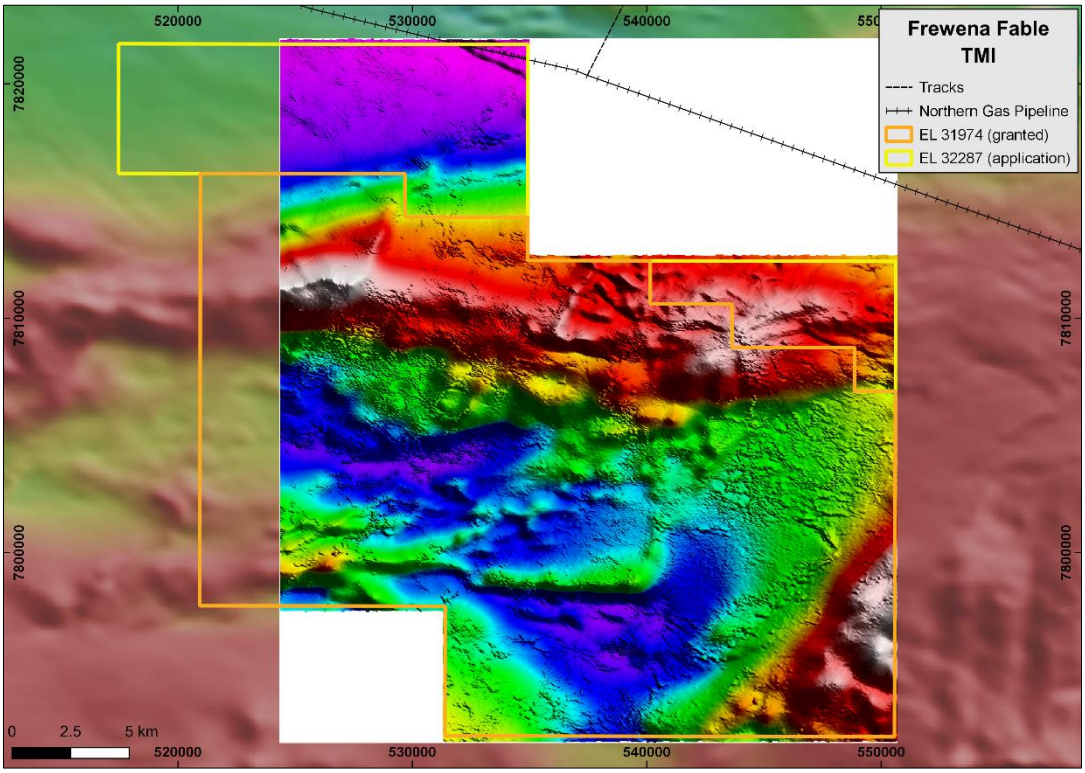

Figure 30 **ABOVE:** Total magnetic intensity image derived from the detailed AMAGRAD survey over Frewena Fable

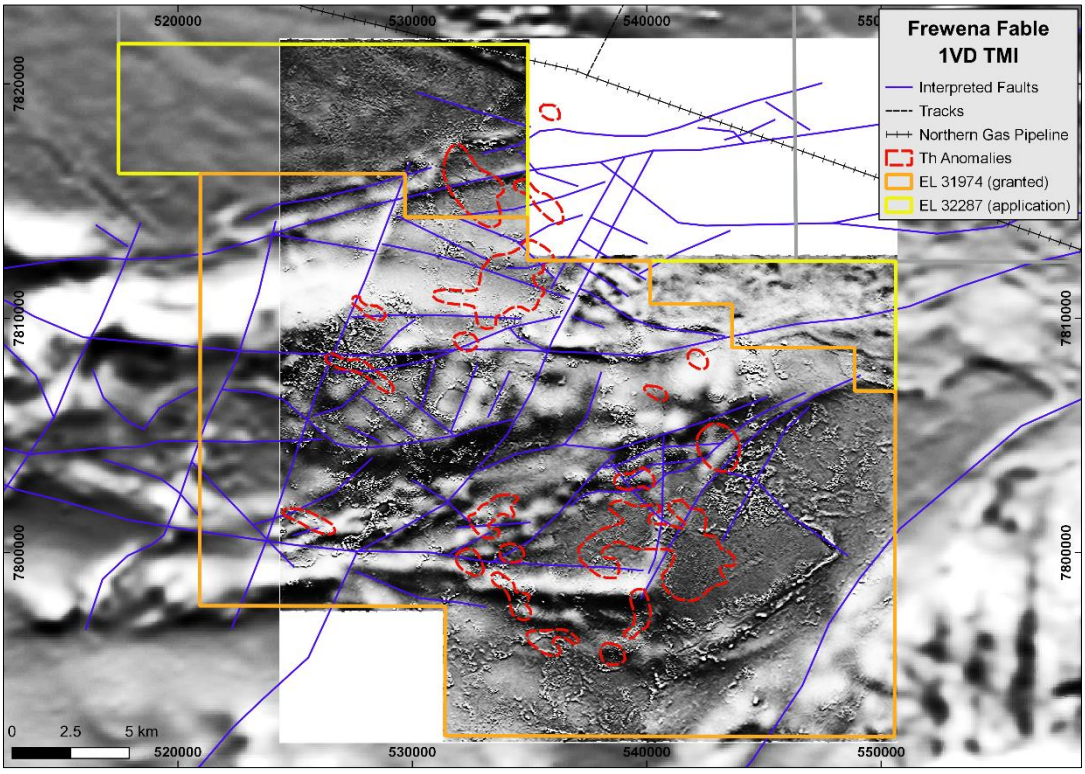

Figure 31 **ABOVE:** 1st vertical derivative TMI image derived from the detailed AMAGRAD survey over Frewena Fable

7.2 *Frewena Far East*

As with Frewena Fable, initial processing of detailed AMAGRAD surveying at Frewena Far East has provided high resolution data to better define the area's elevation, radiometric, and magnetic characteristics. Figures 32 to 35 display topography, ternary radiometrics, total magnetic intensity, and the 1st vertical derivative TMI, respectively. Additional data processing and interpretation is ongoing at the time of writing.

Results for topography, radiometrics, and magnetics confirm features defined from regional data, as would be expected, but with much better control on occurrence and geometry. An interim interpretation of structure is illustrated in Figure 35, along with the regional Th anomalies for reference, that suggests a highly complex structural setting with major disruption of regional faults and stratigraphy.

The major 18km long magnetic feature at Frewena Far East is seen to consist of several faulted blocks, or zones, with major dislocations occurring in the vicinity of the Eastern Topographical feature. Also noted is a well-developed network of subparallel, north-south orientated features in the western portion of the image. These may relate to a dyke swarm. Numerous cross cutting features are noted that raises the potential for dilutional sites near the vicinity of structural intersections that could be potential host sites for IOCG style intrusive features.

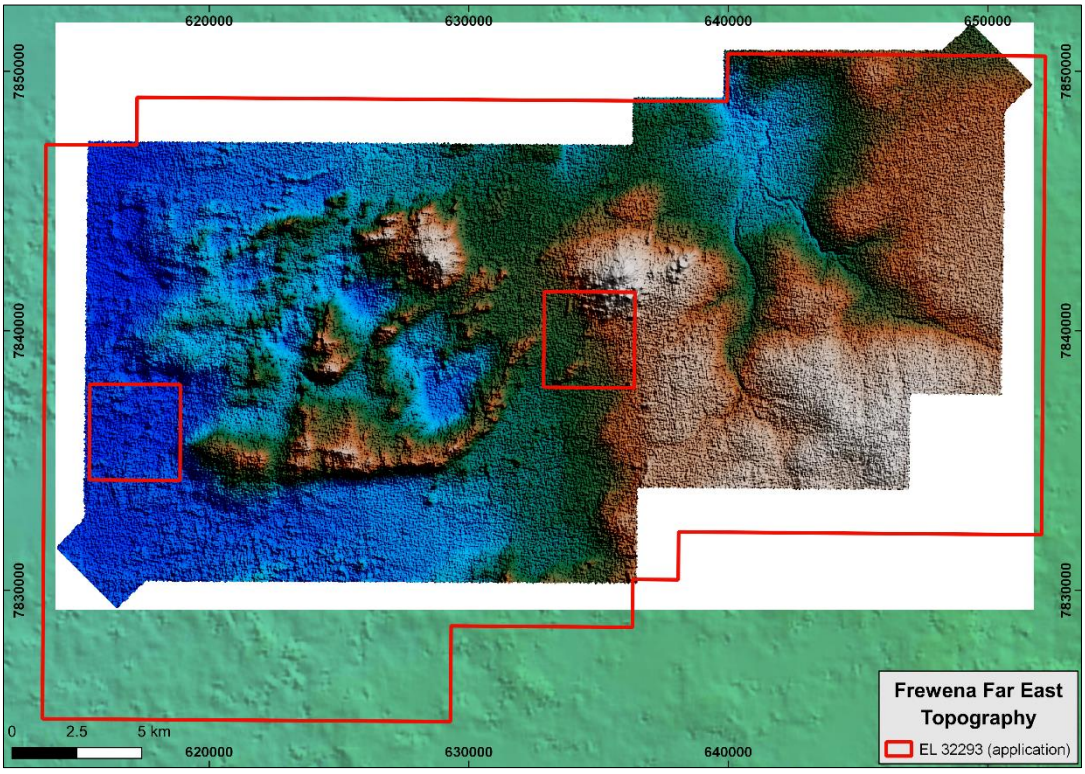

Figure 32 **ABOVE:** Digital elevation model derived from the detailed AMAGRAD survey over Frewena Far East

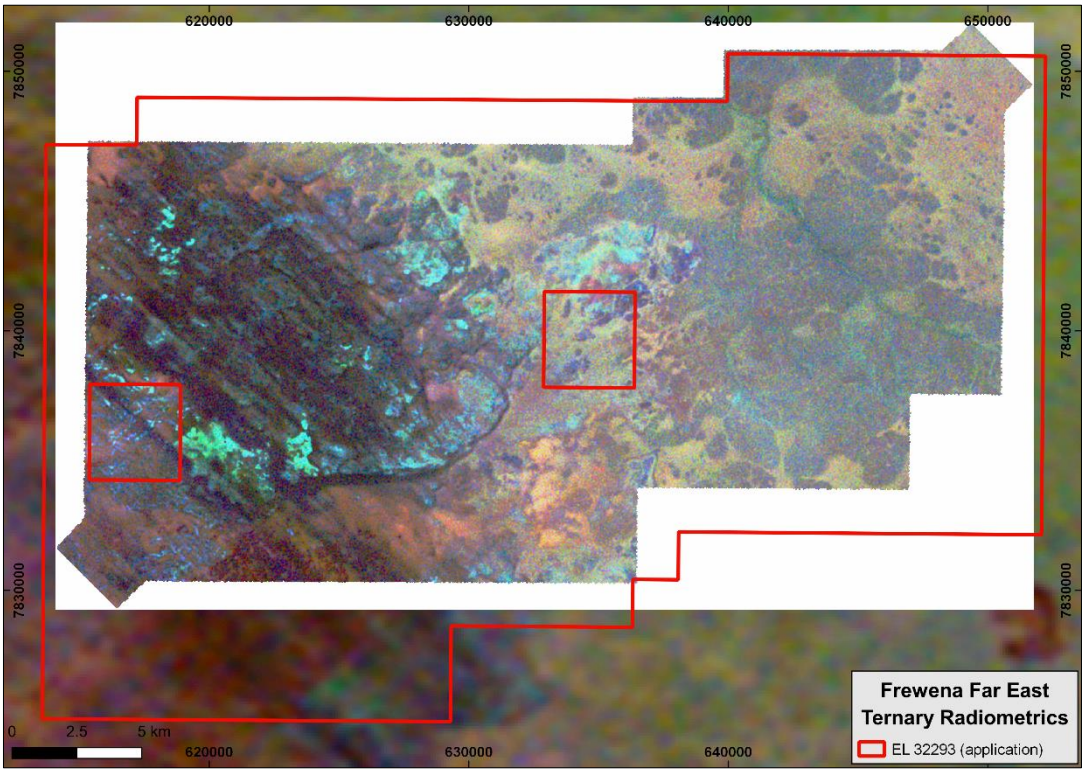

Figure 33 **ABOVE:** Ternary radiometric image derived from the detailed AMAGRAD survey over Frewena Far East

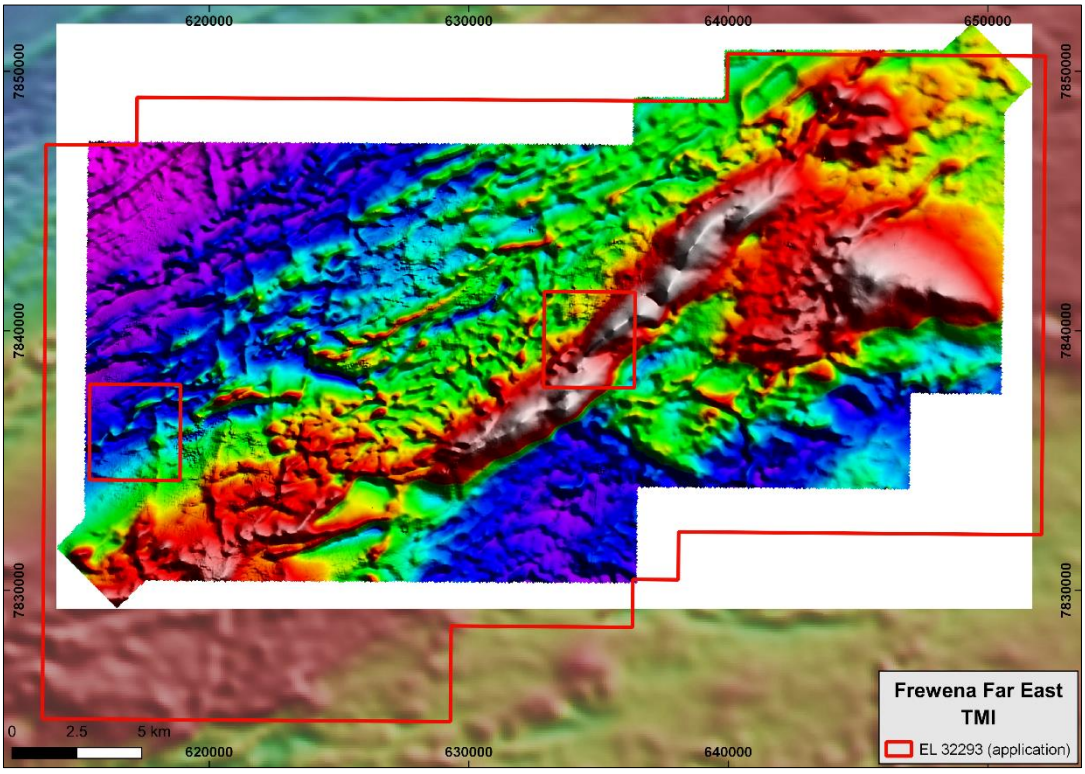

Figure 34 **ABOVE:** Total magnetic intensity image derived from the detailed AMAGRAD survey over Frewena Far East

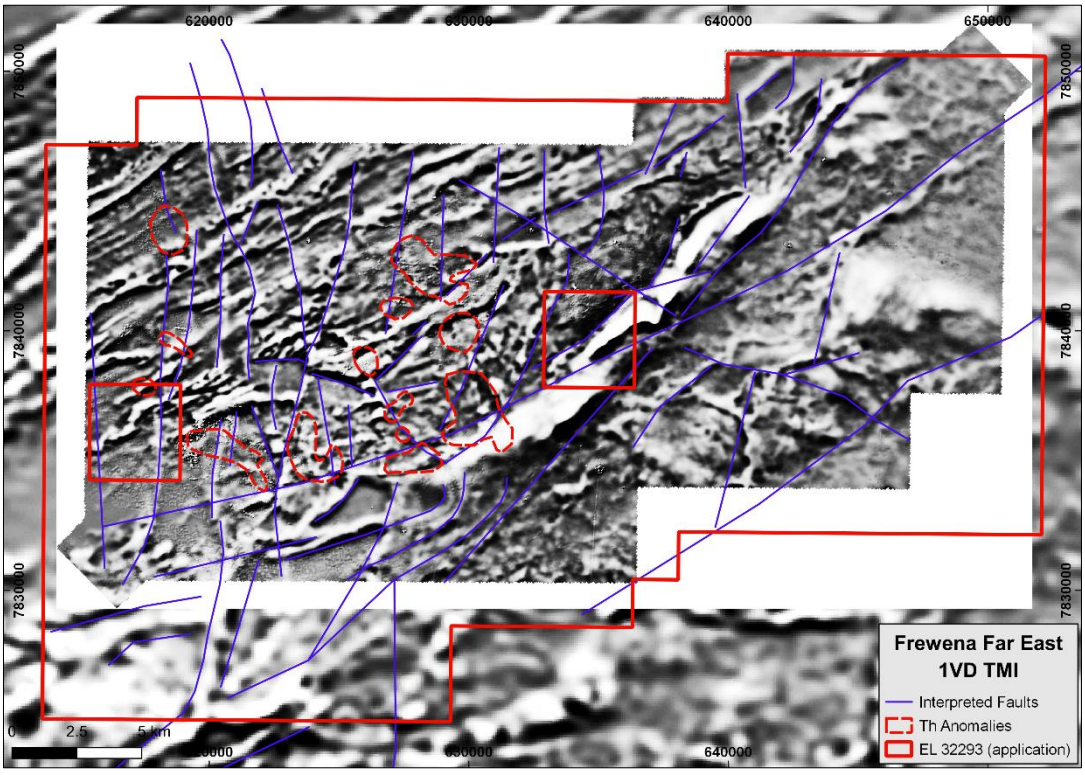

Figure 35 **ABOVE:** 1st vertical derivative TMI image derived from the detailed AMAGRAD survey over Frewena Far East

8. Conclusion

This GDC grant was awarded funding of $100,000 to undertake detailed AMAGRAD surveying over 1,182km2 in the emerging East Tennant region of the Northern Territory.

The AMAGRAD surveying was deemed by Inca to be a requirement to shift from regional scale to prospect scale vectoring at its Frewena Fable and Frewena Far East Project, that are hoped to ultimately lead to successful mineral resource discovery.

AMAGRAD data acquisition under this grant represents approximately 9% of the East Tennant region with an area of 1,182km2 surveyed over two blocks. Geophysical surveying was undertaken by MagSpec Airborne Surveys Pty Ltd between 7 November and 24 November 2020, and was based at the Barkly Homestead. Survey design and processing was undertaken by Resource Potentials Pty Ltd. Captured data has undergone initial processing and filtering to produce various images of magnetics, radiometrics, and local digital terrain models. Data resolution has been significantly increased by more than tenfold with image cell size, or pixels, now measuring c. 8m by 8m in size.

The datasets will improve geological understanding of the region, and in particular the structural architecture. Additional, filtering and interpretation of detailed magnetics – outside the scope of this GDC grant – is ongoing at the time of writing and will be included in tenure annual reporting requirements for the individual projects. This work aims to delineate subtle, coherent bodies in the subsurface that may relate to large scale hydrothermal mineralisation and alteration.

9. References

Czarnota, K., Pitt, L., 2019, *Depth to pre-Neoproterozoic rocks between Tennant Creek and Mt. Isa – A preliminary model*, Record 2019/014. Geoscience Australia, Canberra

Bastian, L.V. and Thieme, R., 1968, *The 1968 Bureau of Mineral Resources Drilling Programme in the Alexandria – Wonarah Area*, Northern Territory, BMR Record No. 1970/114, Canberra

Duan, J., 2019, *Resistivity model derived from magnetotellurics: AusLAMP-TISA Project*, Geoscience Australia, Canberra

Murr, J., 2019, *Iron oxide copper-gold (IOCG) mineral potential assessment for the Tennant Creek – Mt Isa region: geospatial data*, Geoscience Australia, Canberra

Pendock, N., 2019a, *Investigation of the Frewena Cu Project, Northern Territory , Australia, using Aster VNIR/SWIR/LWIR and synthetic aperture radar imagery*, Cape Town (internal company report)

Pendock, N., 2019b, *Investigation of the Frewena East and Frewena Far East IOCG Projects, Northern Territory, Australia, using Aster LWIR and Landsat VNIR/SWIR imagery*, Cape Town (internal company report)

Snelling, A.A., 1980, *EL 2043 Dalmore N.T. Annual Report for the Period Ending 28/5/1980*, CRAE, CR1981-0125

Tapp, B. A., 1969, *Advice on previous BMR exploration and mapping activities and findings in the Frewena Area*, Pers comm