Geophysics and Drilling Collaborations Program 2022

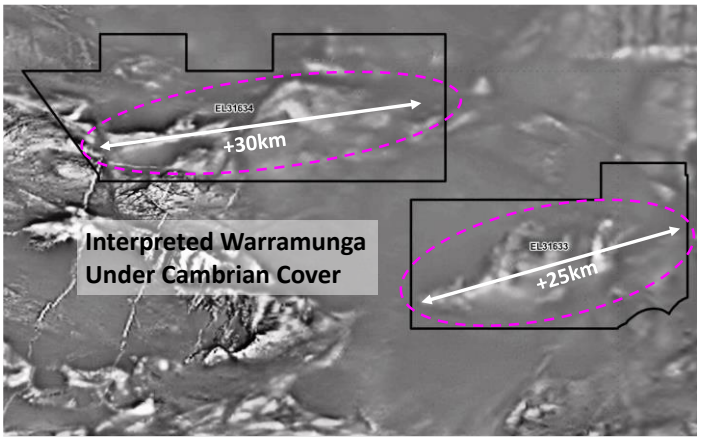
"Resourcing the Territory"

Geophysics Collaboration

KING RIVER RESOURCES LIMITED

Epenarra EL31633 and EL31634, Tennant East Project

FINAL REPORT



Large Untested Isolated Magnetic Bodies Under Cambrian Cover

Tenements: EL31633 and EL31634

Holder: Treasure Creek Pty Ltd

Map Sheets: 100K: Epenarra 5957; Oorradigee 5857, 5315 Coolibah 6057, Favenc 5958

250K: Frew River SF5303; Alroy SE5315, Bonney Well SF5302

Datum Zone: GDA94 MGA53

7 December 2022

Author: Andrew Chapman

Email: info@kingriverresources.com.au

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1. Abstract

A VTEMmax airborne electromagnetic (AEM) survey was successfully completed over King River Resources Epenarra Project (EL31633/EL31634) located approximately 135km southeast of Tennant Creek in the Northern Territory.

The survey was completed between the 4th-22nd July 2022 with 400m spaced survey lines oriented 090-270° (EL31633) and 000-180° (EL31634) for a total of 116 lines and 1462-line km over the project area.

The purpose of the survey was to identify conductive units that could be associated with massive sulphide mineralisation, low conductive units, marker horizons within the Georgina Basin, faults, basin geomorphology and other criteria suitable for both IOCG and Stratiform Copper mineralisation.

The VTEMmax survey shows that the tenement areas comprise of sporadic conductive cover material overlying more resistive basement. Analysis of the profile data, EM imagery and inversions has generated twenty-six anomalies of interest.

Near surface conductive features are more apparent to the east within EL31633, likely due to recent drainages within the Georgina Basin sediments and controlled by topography.

Basin stratigraphic and discrete conductive responses within the project have been delineated. Some are likely due to clays and increased conductivity within the near surface, with some considered to represent targets for further investigation.

Significant anomalies associated with basement units have been assigned a high priority with four in EL31633 and five in EL31634. These high priority anomalies are situated in significant litho-structural positions.

Further modelling and geological interpretation is recommended which may assist to increase target prospectivity before conducting ground investigations. Ground investigation should include gravity and induced polarisation surveys, which will detect dense and polarizable copper sulphide and base metal mineralisation and assist in delineating drill targets.

2. Introduction

King River Resources (KRR) took part in the round 15 of the Geophysics and Drilling and Collaboration applications and was awarded a collaboration at its Epenarra Project within the Tennant East Region.

The programme was an airborne VTEM survey over EL31633 and EL31634 (regional scale: +350km2) to assess the nature of both the Cambrian cover and basement units.

King River Resources tenements in the NT are held by Treasure Creek Pty Ltd which is a wholly owned subsidiary of King River Resources Limited ("Company"), an ASX listed public company (ASX: KRR).

EL31633 & EL31634 is part of King River Resources Epenarra Project and is located approximately 100 kilometres south east of Tennant Creek in the central part of the Northern Territory (Figure 1). EL31633 has an area of 381.14 square kilometres (122 sub blocks) and EL31634 an area of 525.97 square kilometres (168 sub blocks).

Access to the area is by the sealed Stuart Highway south from Tennant Creek, and then by the Kurundi Road and unsealed station tracks. Kurundi Road leads to Epenarra station.

EL31633 is located within the boundaries of Perpetual Pastoral Lease PPL 1026 "Epenarra", NT Portion 000 – Epenarra Station. EL31634 is mostly over Crown Land (NT Por 4469)

Figure 2 and 3 shows the location of the Exploration License in relation to the main highways and cadastre.

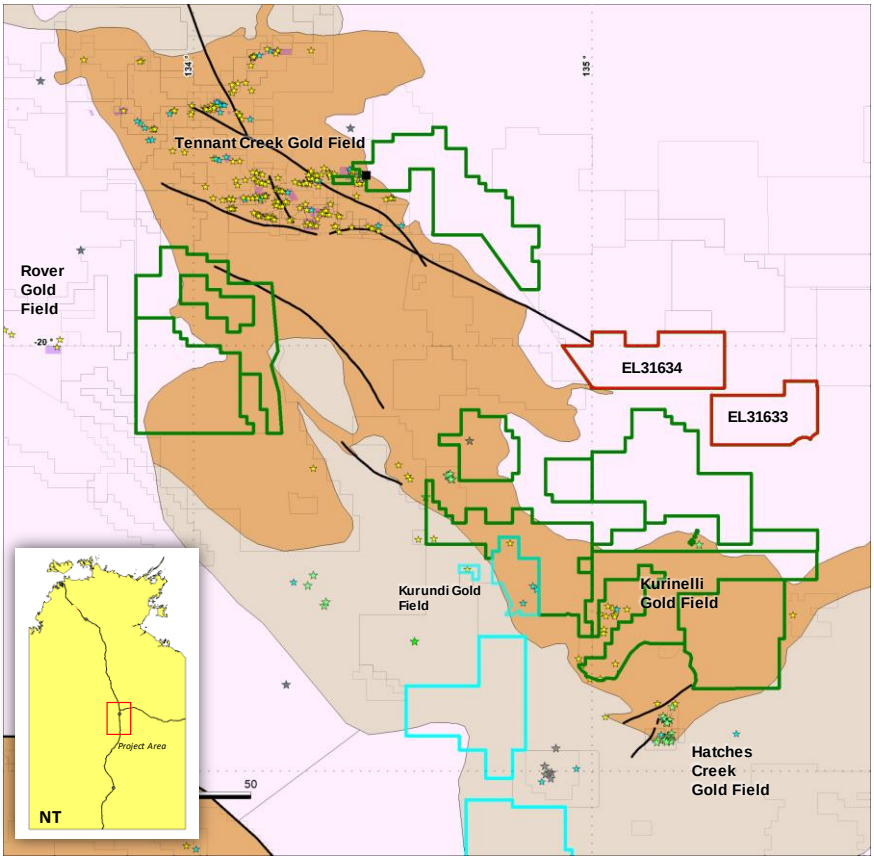


Figure 1: Project Location Plan

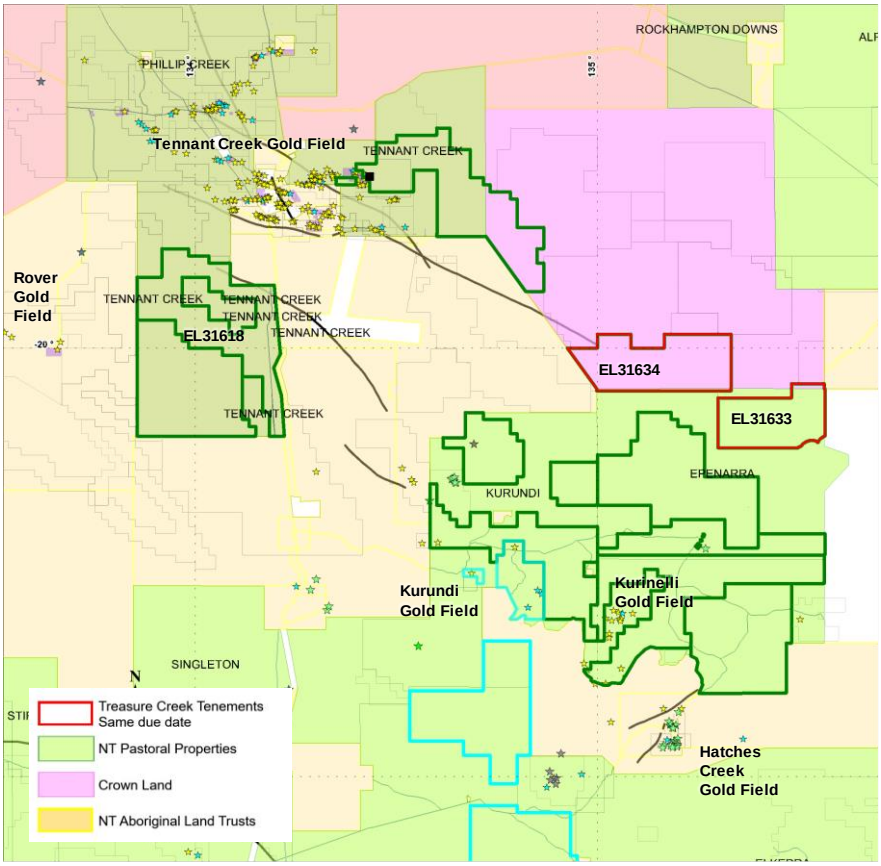


Figure 2: Tenement Location and cadastre

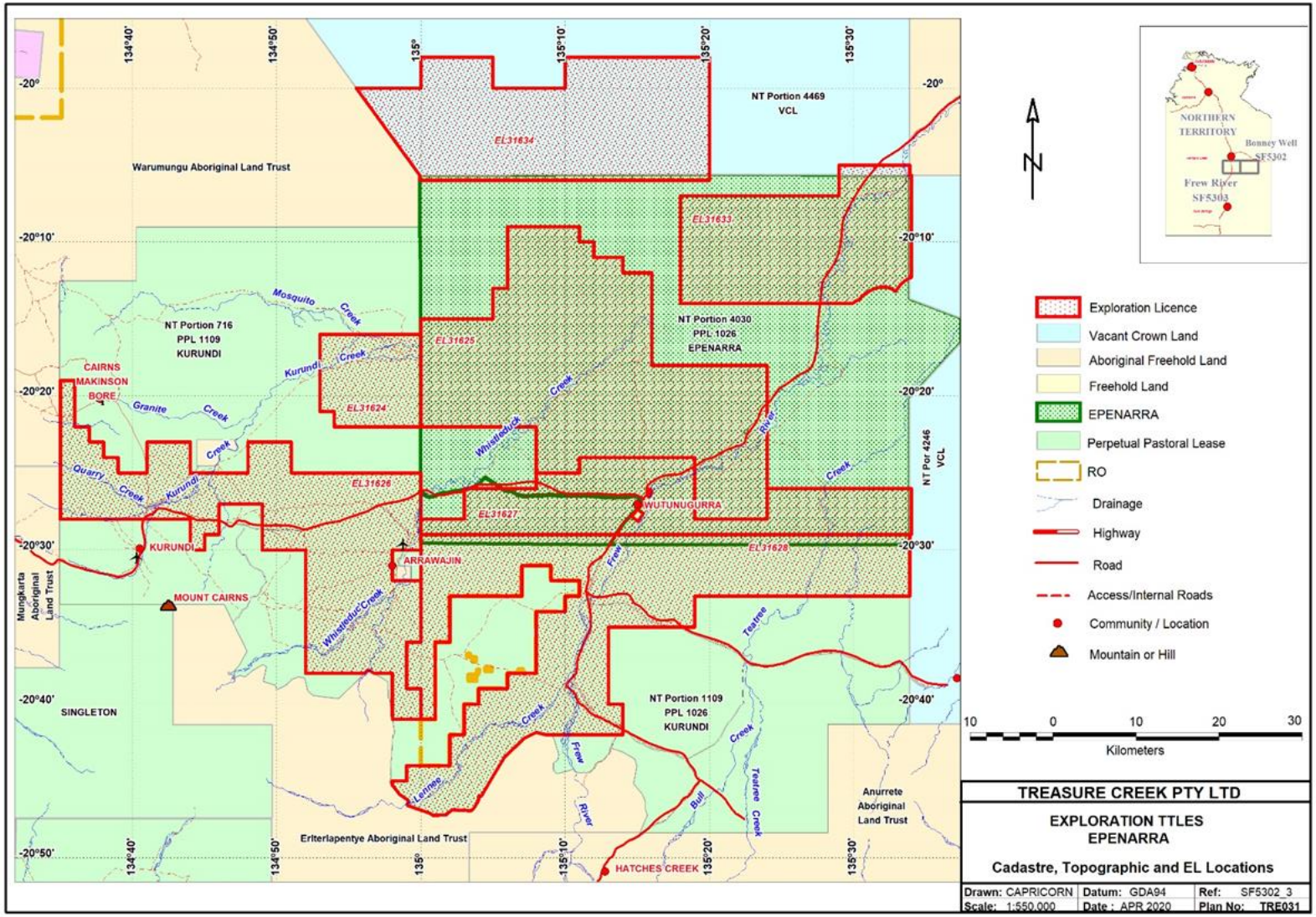


Figure 3: Tenement Location and cadastre

3. Regional Context

Regional geology

The area is located within the Tennant Creek Inlier which consists of a gneissic basement unconformably overlain by Proterozoic sediments, intruded by Proterozoic (syn-post tectonic) granites (the 1850Ma Tennant Creek Supersuite and the 1820-1810Ma Treasure Creek rocks) and subsequently overlain by Cambrian sediments. The Cambrian Georgina and Wiso Basins flank the Inlier to the east and west respectively (Figure below).

The Warramunga Formation (1860Ma) hosts the gold-copper-bismuth mineralisation of the Tennant Creek goldfield. The mineralisation is associated with ironstone. Gold mineralisation is still known to occur in younger units of the Ooragadigee Group but it is less common.

The Davenport Province, to the southeast, is a sub-tectonic unit of Tennant Creek Inlier and comprises of highly folded Proterozoic sediments and volcanics rocks of the Hatches Creek Group intruded by late Proterozoic granites.

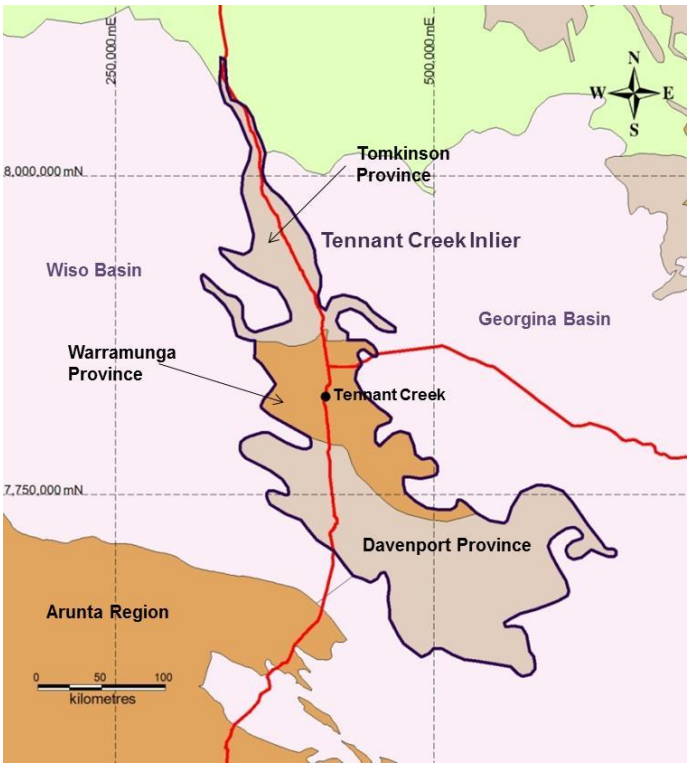


Figure 4 Tennant Inlier Provinces and Basins.

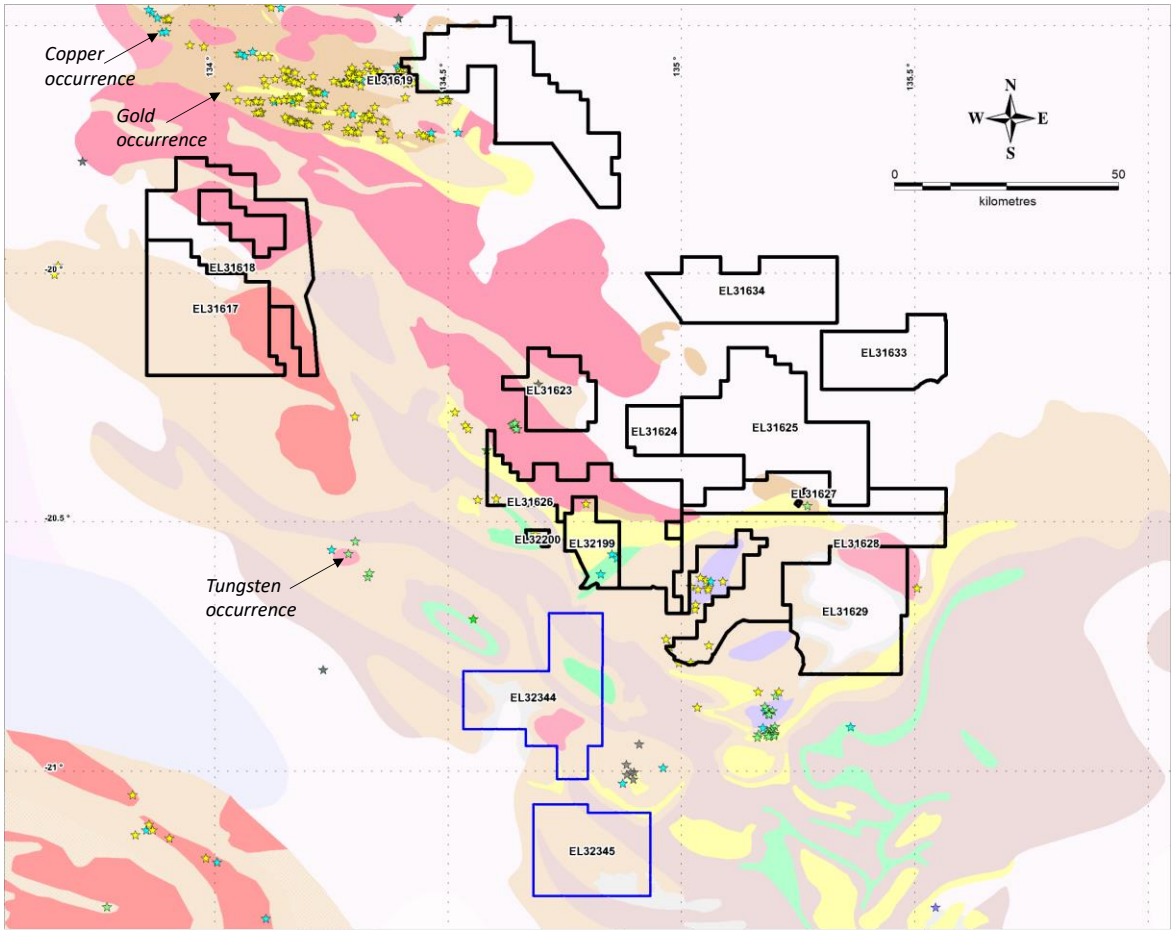


Figure 6 Regional Geology, KRR tenements and Mineral Occurrences

EL31633 and EL31634 are situated within the Tennant Creek to Mount Isa focused integrated study area (Figures 6) defined by an approximately northeast-trending corridor extending for 350 km and to the Queensland border (Figures 6 and 7). The area is almost completely covered by the Georgina Basin which obscures its potential to host mineral systems. The East Tennant area has been selected as an area for ongoing detailed geoscientific investigation through integration of new multi-disciplinary and multi-scale geoscience data (Australian Government Geoscience Australia, Exploring the future website

https://www.ga.gov.au/eftf/minerals/fis/east-tennant.

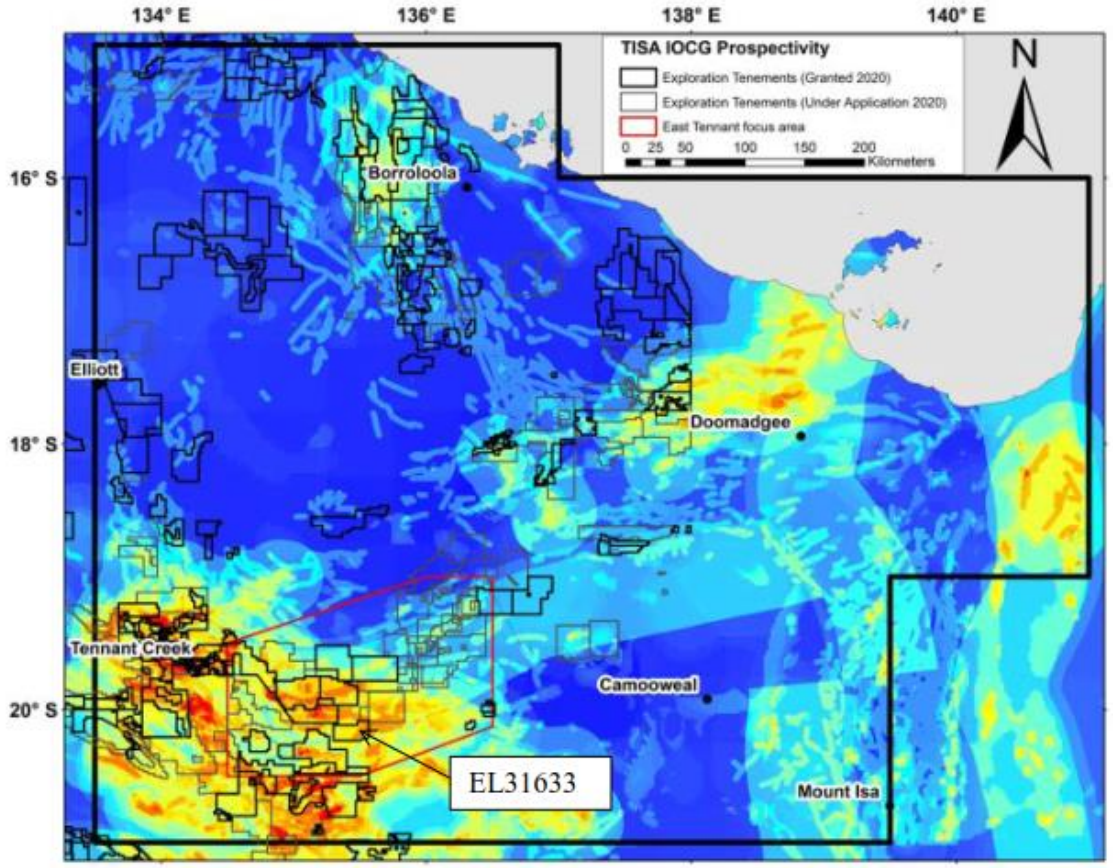


Figure 5: EFTF region IOCG mineral systems potential map with East Tennant Area shown in red (Hackney et al, 2020). EL31633 indicated.

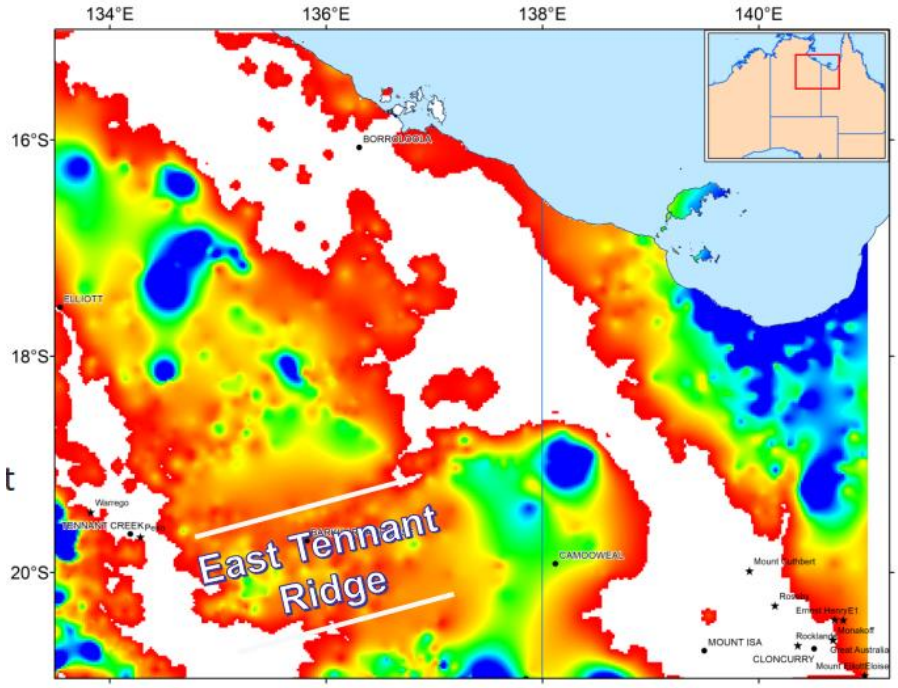


Figure 6 Tennant East Ridge undercover (Schofield 2019).

The prospectivity model was created using prioritised layers of input data (sources of ore metals, hydrothermal fluids, energy sources, crustal and mantle architecture, fluid/magma pathways and physiochemical gradients - figure 8), (Schofield 2019).

Igneous and sedimentary ages of the palaeo Proterozoic rocks under the Cambrian cover within the East Tennant area have been found to be of similar ages to Tennant Creek (Schofield 2109).

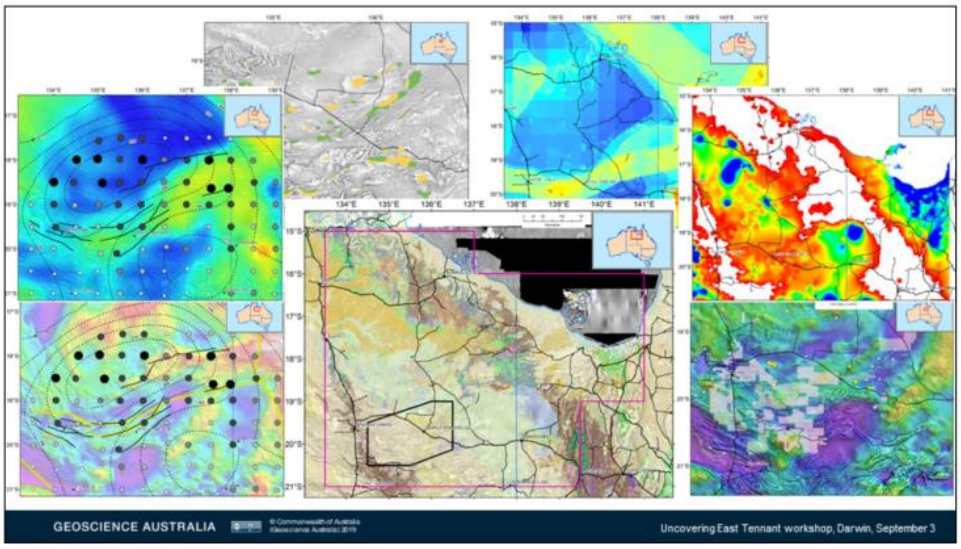


Figure 7 Tennant East Uncovering potential – combining layers of information (Schofield 2019).

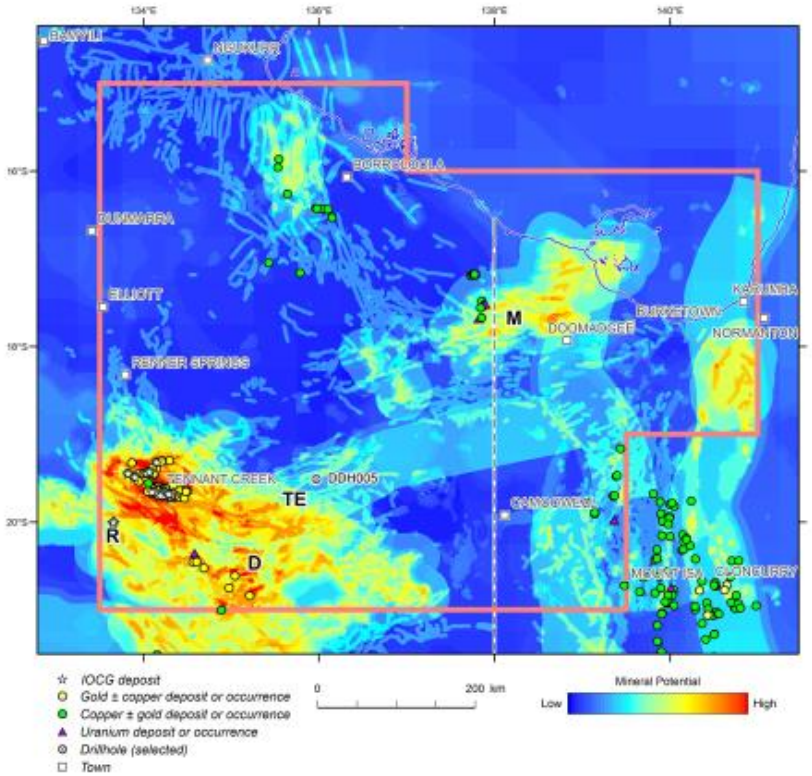
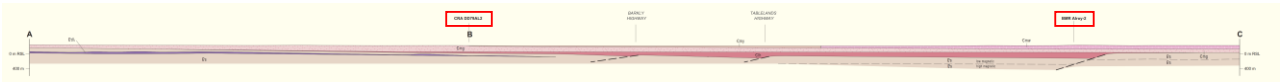


Fig. 10. Potential for pre-1800 Ma IOCG deposits in the Tennant Creek – Mt Isa study area (pink outline). Locations of significant IOCG deposits and Cu, Au and U mineral occurrences are shown to illustrate spatial correlations with the prospectivity results; deposits of other commodities such as Zn, Pb, not shown. Abbreviations: D – Davenport Province area; M – Murphy Inlier area; R – Rover area; TE – area east of Tennant Creek; DDH005 – location of studied drill hole. (For interpretation of the references to colour in this figure legend, the reader is referred to the web version of this article.)

Figure 8 IOCG Potential Map for Tennant Creek East (Skirrow et Al. 2019).

Project Area Geology

The project area lies in the Tennant East area. It is mapped to be entirely covered by Cambrian sediments (1:250K Frew River). The nearest exposed Palaeo-Proterozoic rocks are 25km to the south and 30km to the west of EL31633. These rocks are mapped as Warramunga Equivalent. Interpretation of depth of Cambrian cover suggests depths of up to 200m. This is based on 1:250k geological cross sections to the north of the project area (figure below), drilling at the western end of EL31634 (intersected the Paleo-Proterozoic at 67m). Government Regional EM sections suggests depths of less than 200m across both tenements (section 4, Figure 13). The Georgina Basin sediments within the tenement have been mapped as Cambrian Barkly Group limestones however Recent work has shown some areas have deeper Meso-Proterozoic basin units (MINEX CRC hole 10) and nearby 250K mapping (~9km) south west of EL31633 suggests Neoproterozoic sediments at surface.



DrillHole ID	Hole Name	Drilling Method	Drilling Type	Total Depth	Date Completed	Title ID	Report ID	Open File	HyLogged
8487937	DD79AL2	Diamond Drill	Exploration	310	00:00.0	EL2043	CR1980-0157	Yes	Yes
8487933	DD80AL3	Diamond Drill	Exploration	346		EL2043	CR1981-0125	Yes	Yes

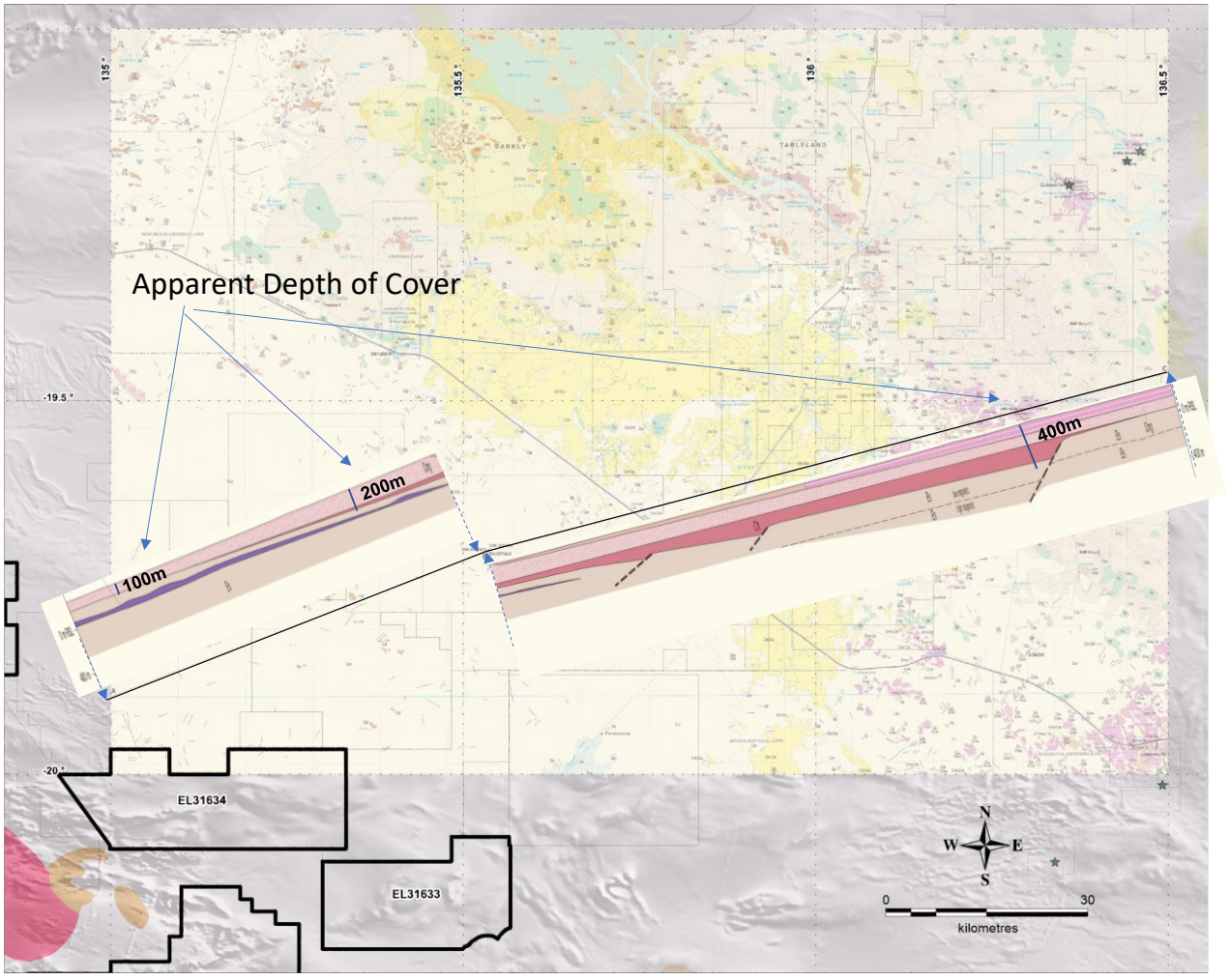


Figure 9 1:250K geological sections north of EL31633 and EL31634 suggest basin depth is approximately 100 to 200m deep.

Interpretation of magnetics and gravity data within EL31633 show a lensoidal magnetic complex and coincident gravity high region with a strike of +20km that strikes ENE through the centre of the tenement. This is likely to be a 'raft' of Palaeoproterozoic, Warramunga equivalent rocks between two felisic intrusives. The 'raft' is cut and bounded by NNE trending fault zones (Figure 10 and Figure 24), that are along strike of a major NE trending fault. Structural complexity is evident within the 'raft' with preferential rotation of magnetic bodies and also arcuate magnetic responses indicating intrusive bodies. There are no Modat mineral occurrences with 20km of the tenements (Figure 5).

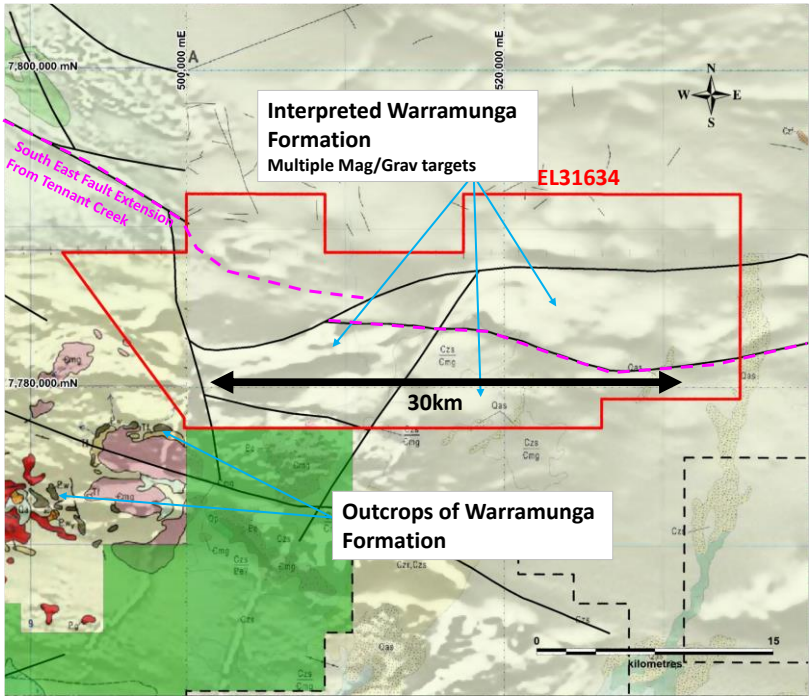


Figure 10 Magnetic high area within EL31634 interpreted to be Warramunga Formation equivalent stratigraphy under Cambrian cover

EL31634 covers a magnetic body of +30km interpreted to be the continuation of Warramunga formation sediments outcropping to the west, under Cambrian Cover (Figure 10). There are no Modat mineral occurrences with 20km of the tenements.

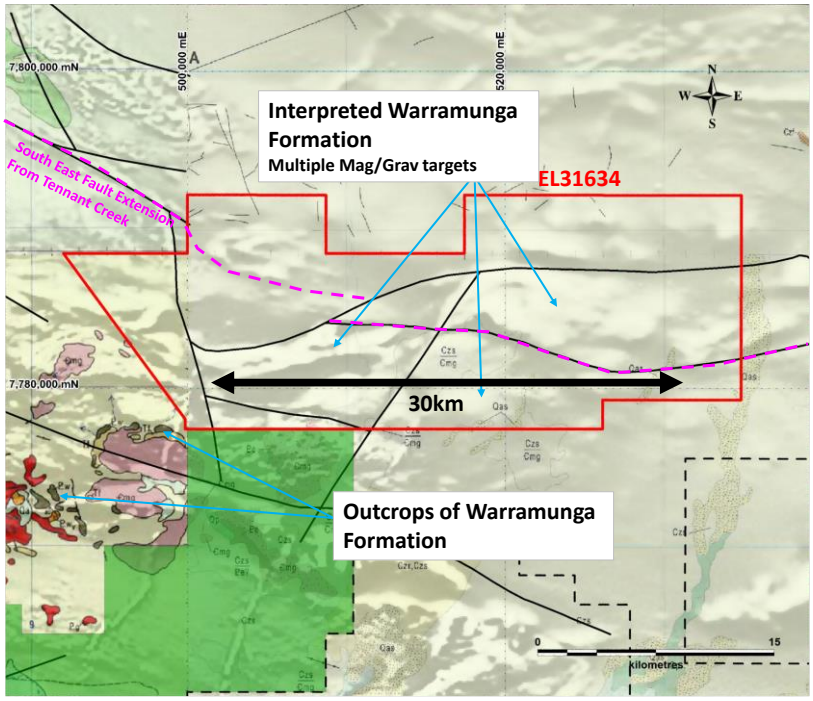


Figure 11 Magnetic high area within EL31634 interpreted to be Warramunga Formation equivalent stratigraphy under Cambrian cover

4. Previous Exploration

The tenements are within the East Tennant Area of the recent government “Exploring For The Future” initiative (Figure 5). The tenement has only been covered by semi-regional geophysical surveys data which includes 200m line spaced aeromagnetics flown in 1999, wide spaced 4km spaced gravity and regional AEM (AUSAEM) and MT (AUSLAMP).

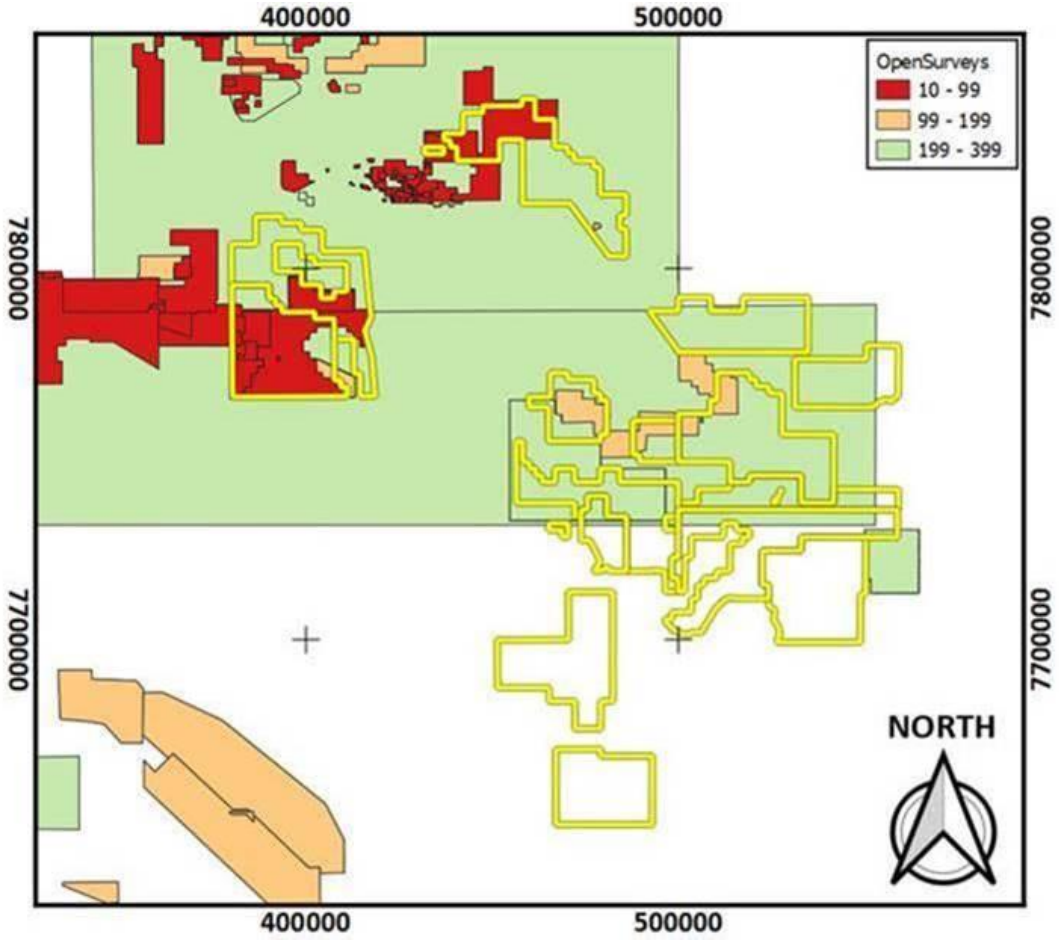


Figure 12 Geophysical Survey Line Spacing in Project Area

The tenement location is outside recently commissioned East Tennant 2km gravity and infill MT surveys, Figure below, with no higher resolution company airborne or ground survey data collected over the tenement.

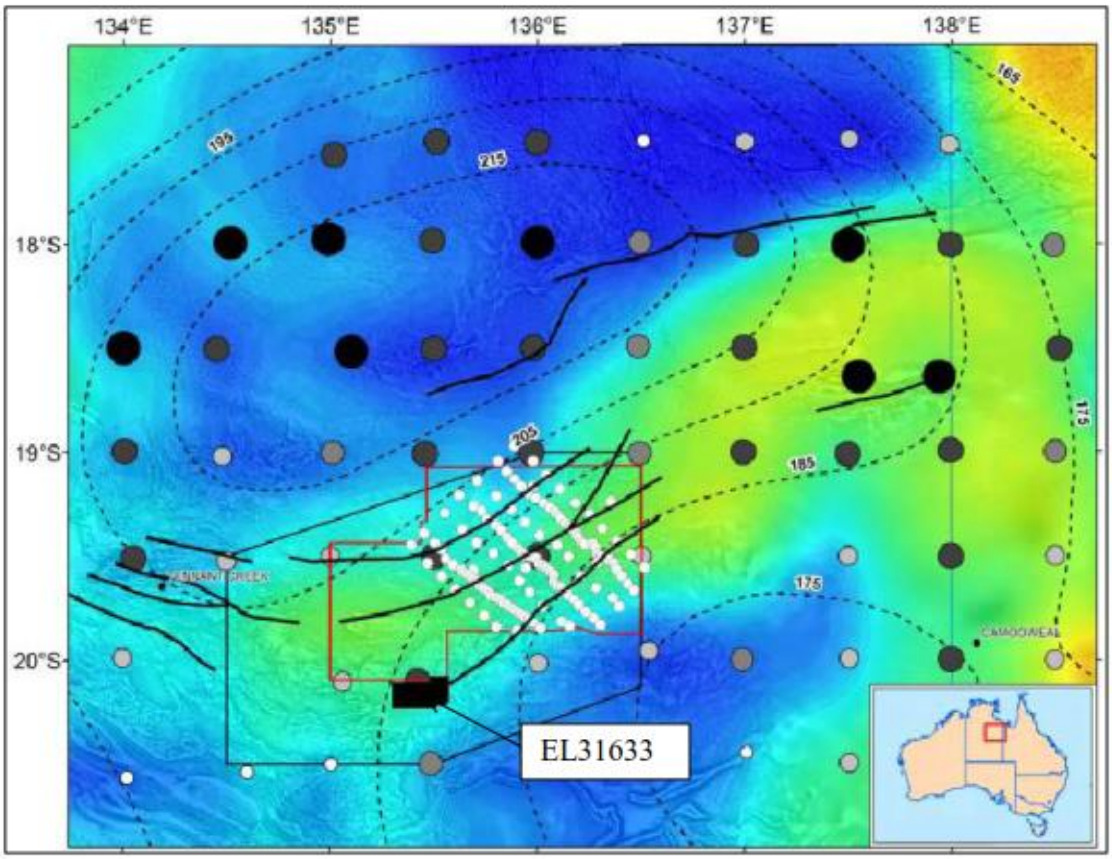


Figure 13 East Tennant Area infill gravity and MT survey locations (Hackney et al, 2020).

Government AusEM 2017-2018 Tempest Airborne EM surveys also cover the tenements and although it is not clear what is indicated by the conductivity highs, they suggest the depth of cover is less than 200m (Figure below).

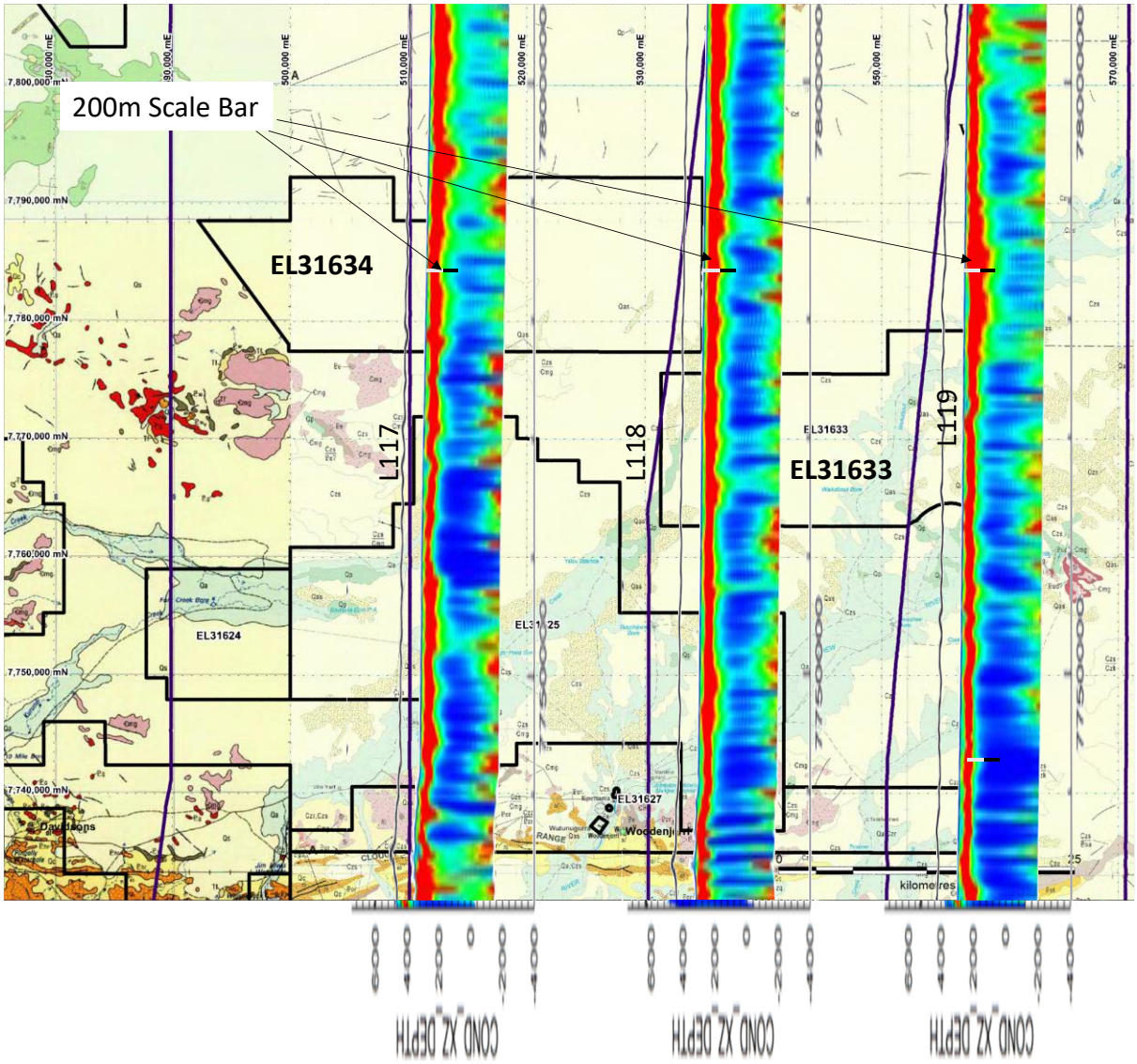


Figure 14 EM Surveys that cross EL31633 and EL31634 interpretation suggest cover depth is less than 200m.

Both EL31633 and EL31634 were well outside the recent 2020 MINEX CRC Drilling programme where 10 holes were drilled to provide precompetitive geological information (Figure below). Holes 5 and 10 were the closest (~40km NE) – hole 5 intersected 200m of Georgina basin cover with granitic basement rocks underneath. Whereas hole 10, only 13km further NE, intersected what is interpreted to be a thick sequence of Meso-Proterozoic basement rocks, beneath the Georgina Cambrian cover units, prior to intersecting basement rocks at ~700m depth.

The interpreted Meso Proterozoic basin appears to strike SW towards EL31633 and EL31634.

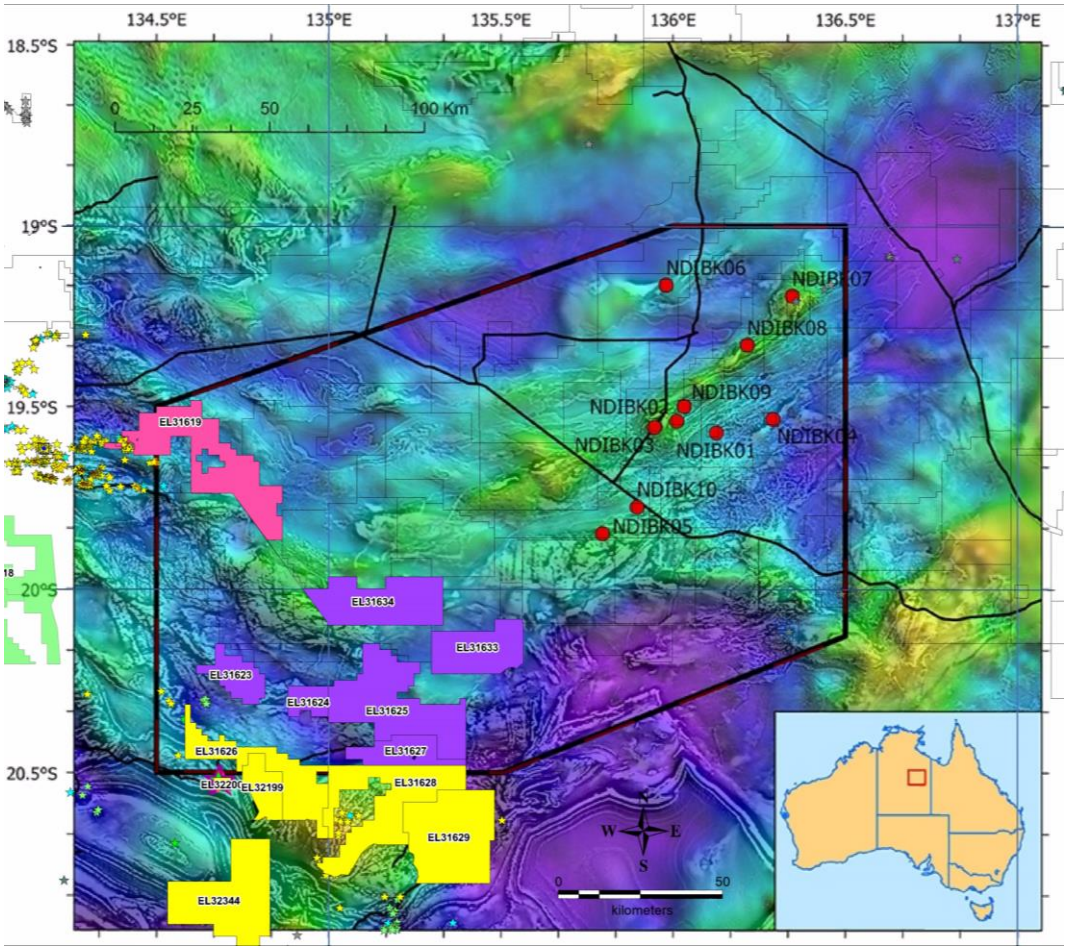


Figure 15 Location of Minex CRC 2020 drill holes in relation to KRR tenements (solid polygons).

Review of historic water bores in the area showed drilling failed to penetrate cover (figure below):

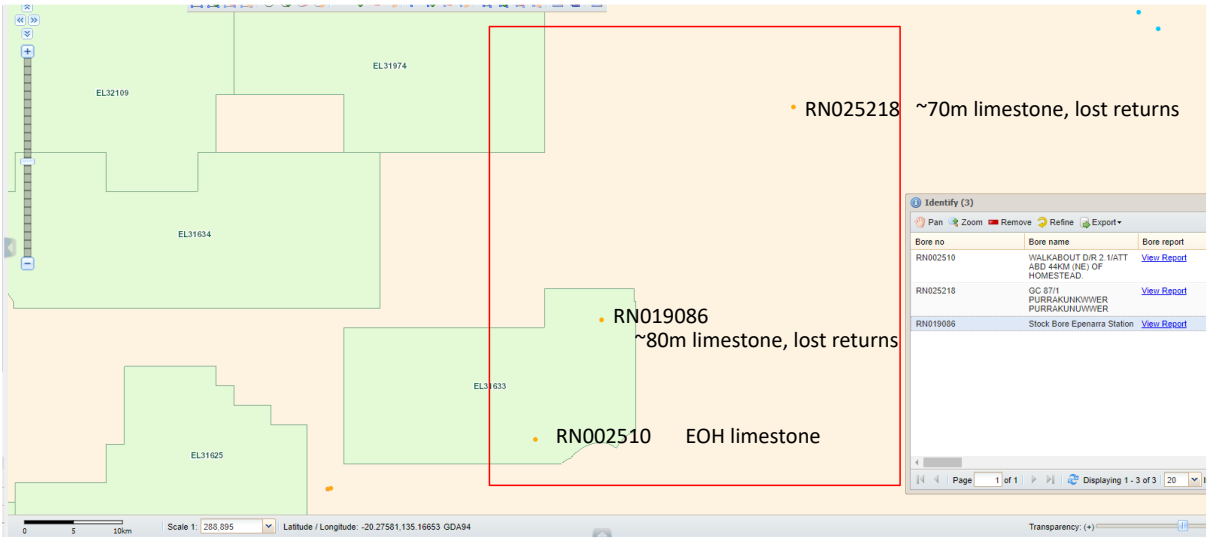


Figure 16 Map showing location of water bores, all ended in Cambrian cover units.

There has been little or no historical exploration over EL31633 with only 4 tenements granted between 2003 and 2013 that partially covered the tenement area. The table below lists the tenements and reports.

Table 1 Historical Reports over EL31633

Title ID	Reports	Link to Report/s	Holder	Grant Date	Cessation Date	Title status	Comments
EL27554	CR2013-0259, CR2012-1194, CR2012-0572, CR2011-1169, CR2010-1052	https://geoscience.nt.gov.au/gemis/ntgsjspui/simple-search?query=EL27554	NORTHERN MINERALS LIMITED	12/04/2010	22/03/2013	Historical	No exploration, pegged for Phosphate
EL23778	CR2005-0170	https://geoscience.nt.gov.au/gemis/ntgsjspui/simple-search?query=EL23778	ASIAN MINERALS PTY LTD	9/09/2003	19/11/2004	Historical	No exploration, pegged for IOCG
EL26775	CR2013-0001, CR2012-1194, CR2011-1169, CR2010-1052, CR2010-0051	https://geoscience.nt.gov.au/gemis/ntgsjspui/simple-search?query=EL26775	NORTHERN MINERALS LIMITED	6/02/2009	8/01/2013	Historical	No exploration, pegged for Phosphate

EL31634 has had 9 tenements granted between 1977 and 2013 (table below). Full exploration review revealed that a small RAB drill programme covered the western most corner of the tenement (EL8272, CR19980261). A single drill hole penetrated the Cambrian cover at 67m depth intersecting what is interpreted to be Warramunga equivalent sediments (Figure below).

Table 2 Historical Reports over EL31634

Title ID	Reports	Link to Report/s	Holder	Grant Date	Cessation Date	Title status
EL8272	CR1998-0570, CR1998-0261, CR1997-0178, CR1997-0033, CR1996-0335, CR1996-0121, CR1995-0131	https://geoscience.nt.gov.au/gemis/ntgsjspui/simple-search?query=EL8272	ANDROMEDA METALS LIMITED	15/12/1993	14/12/1999	Historical
EL8920	CR1998-0021	https://geoscience.nt.gov.au/gemis/ntgsjspui/simple-search?query=EL8920	ANDROMEDA METALS LIMITED	19/08/1996	30/07/1997	Historical
EL10178	CR2004-0239, CR2003-0012	https://geoscience.nt.gov.au/gemis/ntgsjspui/simple-search?query=EL10178	IMAGE RESOURCES NL	23/01/2002	12/01/2004	Historical
EL1184	CR1980-0233, CR1980-0028, CR1979-0062	https://geoscience.nt.gov.au/gemis/ntgsjspui/simple-search?query=EL1184	Not Recorded	19/12/1977	28/12/1980	Historical
EL5024	CR1990-0258, CR1989-0277, CR1989-0124, CR1988-0031	https://geoscience.nt.gov.au/gemis/ntgsjspui/simple-search?query=EL5024	Not Recorded	16/01/1987	17/01/1990	Historical
EL24887	CR2010-0986, CR2010-0669, CR2010-0437, CR2009-0748, CR2009-0529, CR2008-0380, CR2007-0363	https://geoscience.nt.gov.au/gemis/ntgsjspui/simple-search?query=EL24887	CASTILE RESOURCES LTD	08/08/2006	19/11/2010	Historical
EL24258	CR2005-0414	https://geoscience.nt.gov.au/gemis/ntgsjspui/simple-search?query=EL24258	RED METAL LIMITED	24/11/2004	21/10/2005	Historical
EL26818	CR2013-0001, CR2012-1194, CR2011-1169, CR2010-1052, CR2010-0052	https://geoscience.nt.gov.au/gemis/ntgsjspui/simple-search?query=EL26818	NORTHERN MINERALS LIMITED	06/02/2009	08/01/2013	Historical
EL26775	CR2013-0001, CR2012-1194, CR2011-1169, CR2010-1052, CR2010-0051	https://geoscience.nt.gov.au/gemis/ntgsjspui/simple-search?query=EL26775	NORTHERN MINERALS LIMITED	06/02/2009	08/01/2013	Historical

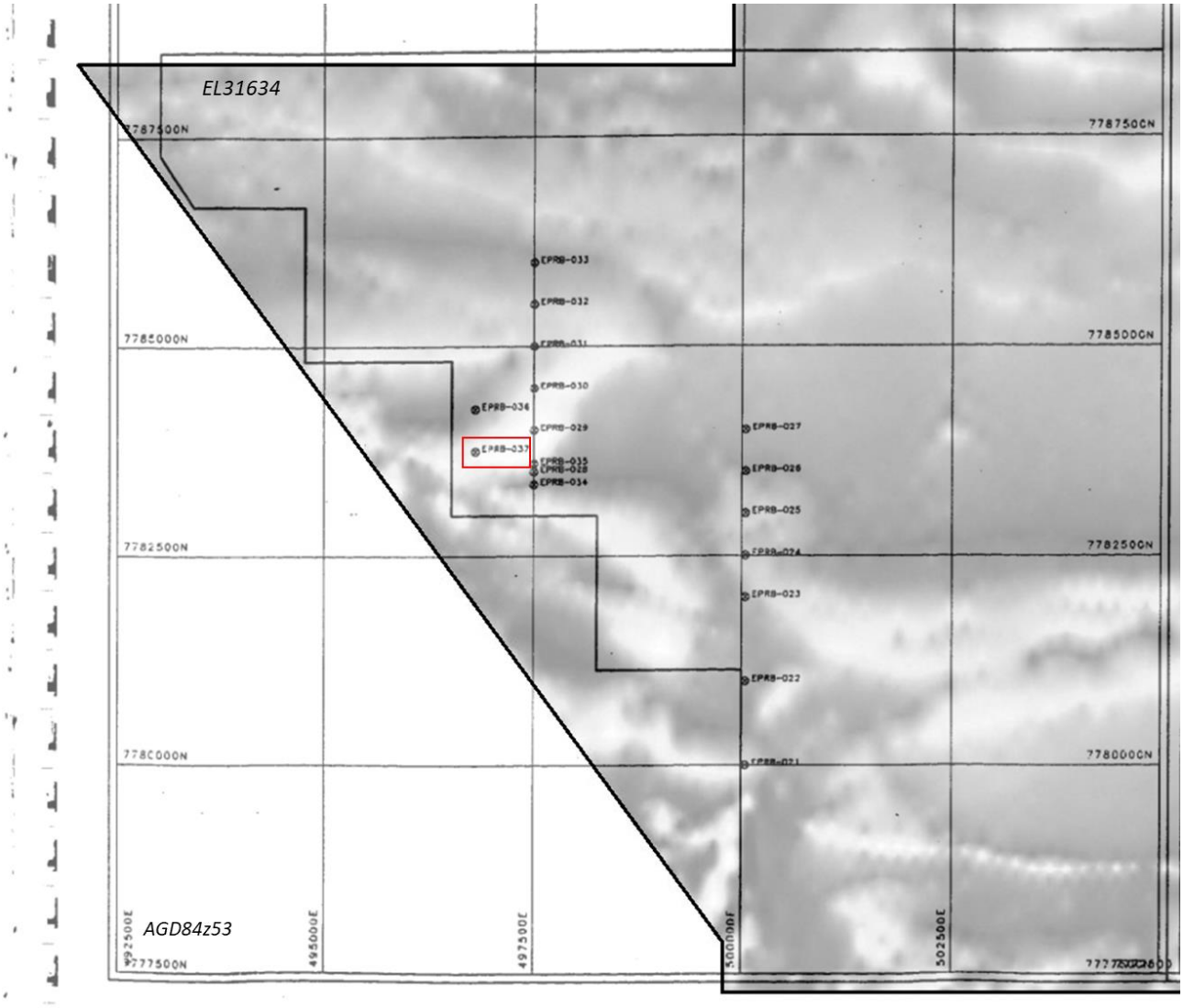


Figure 17 Location of historical drilling western most end of EL31634, to be used for an orientation line for the Tromino Passive Seismic.

Treasure Creeks Recent Exploration

Treasure Creek undertook geophysical exploration over EL31633 and EL31634 as part of round 13 of the collaborations. The geophysical work was planned in preparation for and to allow the effective drill testing of the interpreted Paleo-Proterozoic rocks beneath Cambrian cover sequences over EL31633 and EL31634.

The programme included a Tromino Passive Seismic Survey (over EL31633 and EL31634) and a regional scale, detailed, airborne magnetic survey (over EL31633 and EL31634):

- Detailed airborne magnetic survey over the whole of EL31633 (100m line spacing, 30m survey height). 4,336 line km
- Passive Seismic survey over EL31633 and EL31634 to assist in evaluating the depth of Cambrian cover (10-20km line spacing, 500m stations) 170 stations (182 total but some removed due to noise).

The detailed airborne magnetics provided excellent resolution of the area. The work much more clearly defined the contrast of the main magnetic body (lensoidal complex ~20km strike) and the surrounding granites and internal positions and structures of the main higher magnetic zone.

On EL31633 the interpretation is that the large higher magnetic zone is a raft of Warramunga Formation equivalent units surrounded by granite. It is hoped that some of these magnetic high zones are influenced by ironstone/IOCG bodies. The nature and positions of the targets originally identified in the application document are much more defined and details within higher zones are now evident.

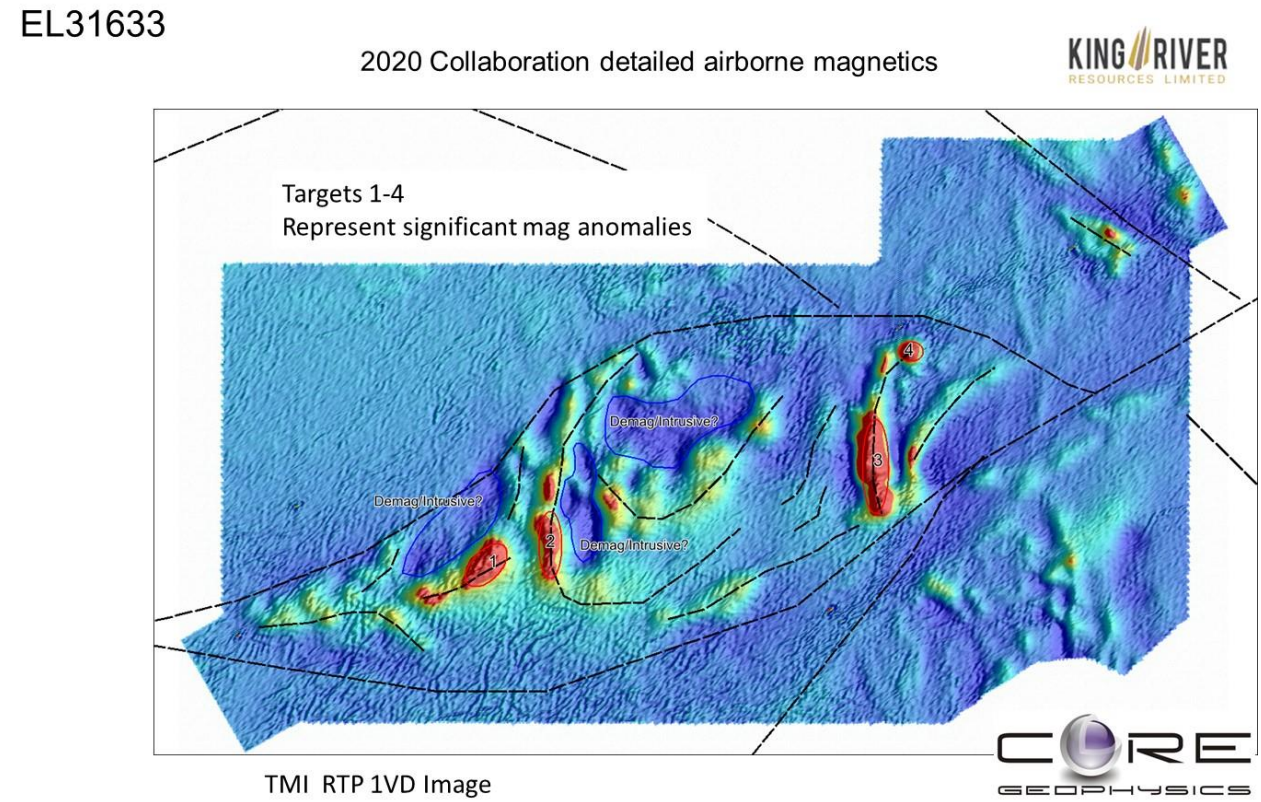
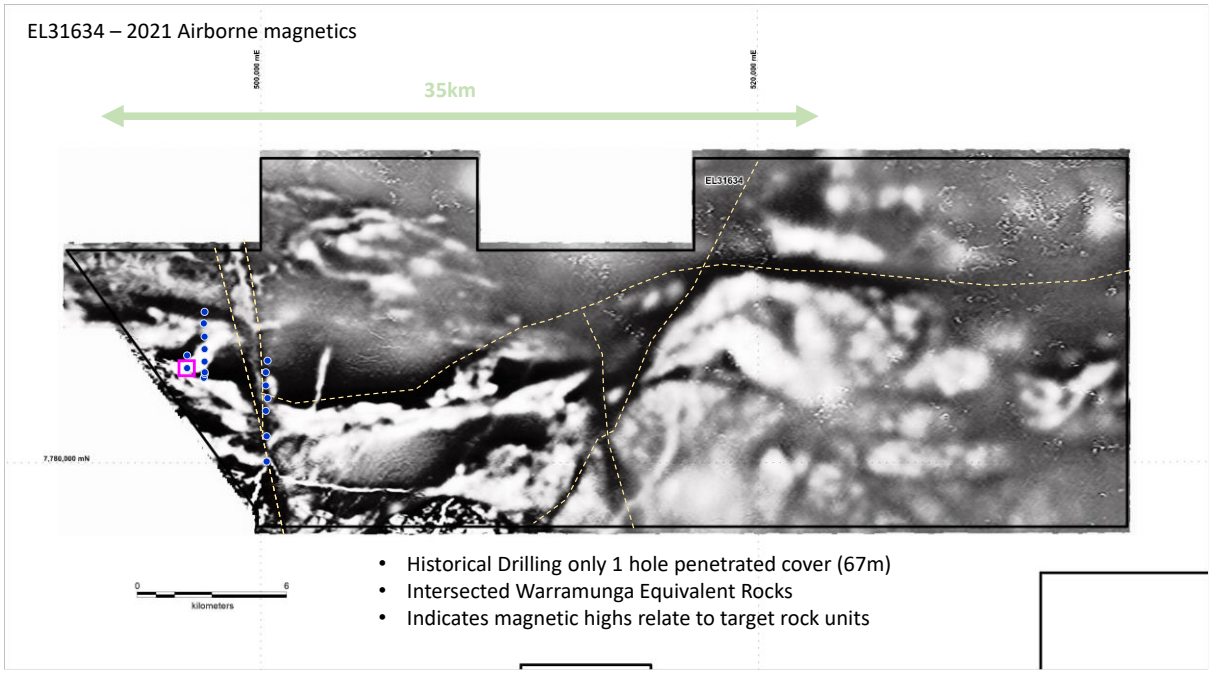


Figure 18 Treasure Creeks airborne magnetics over EL31633, TMI RTP 1VD results and 4 main targets.

On EL31634 the detailed airborne magnetics have provided excellent resolution of the area. The Work has much more clearly defined the contrast of the main trends throughout the tenement and delineated the surrounding granites and internal positions and structures.

The detailed survey has identified numerous discrete high magnetic anomalies along structural and lithological trends. KRR is confident that these anomalies are associated with Warramunga equivalent rock units which are host to the IOCG gold deposits of the Tennant Creek Gold field. Fifteen historical holes were drilled at the western end of the tenement of which only one hole penetrated the cover (at 67m) intersecting a few metres of what was interpreted to be Warramunga Formation equivalent rocks before ending. Cover rocks are interpreted to range from only 67m to 100m across the tenement. These anomalies present quality IOCG targets within rocks shown to be Warramunga equivalent.



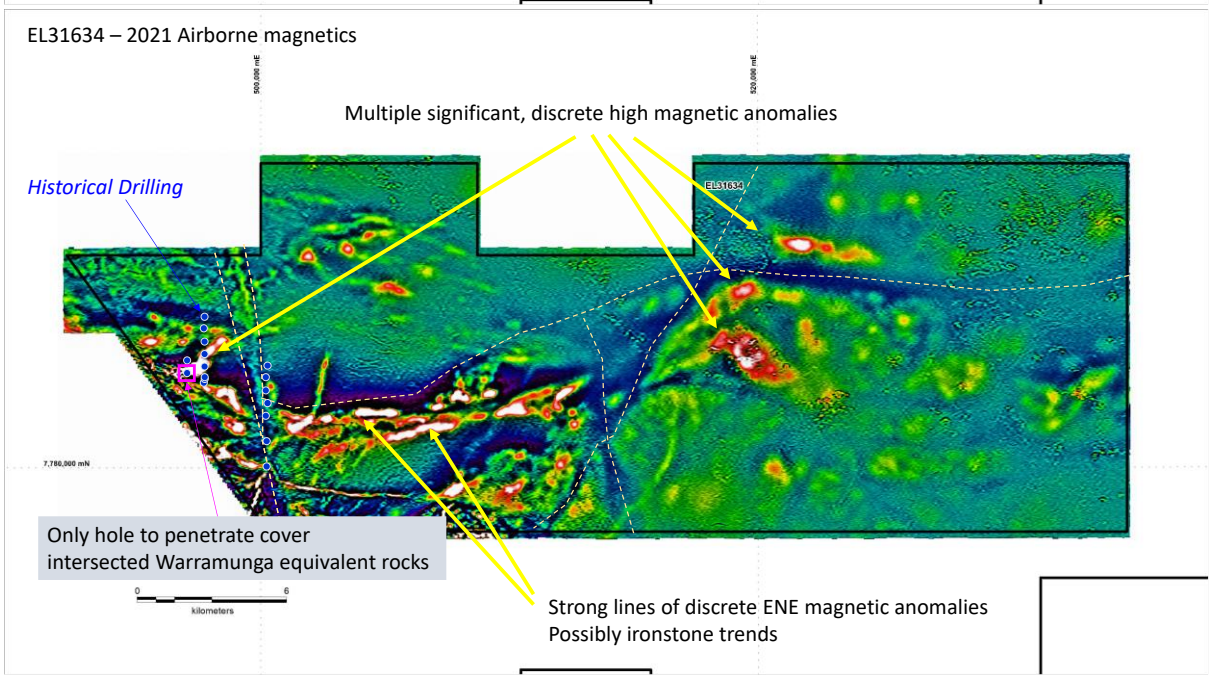


Figure 19 Total Magnetic Intensity 1st VD, 2021 survey.

Overall, the passive seismic work has provided an excellent model for the base of Cambrian cover. Estimated depths range from 80 to 150m with depths varying possibly due to palaeo-topography and faulting. Below is a discussion of the results from the Respot Report.

The figure below shows the normalised HVSR cross-section for passive seismic survey line 05, overlaid by traces from the two historic drillholes (ERPB-037 and ERPB-029) along the survey line. The drillhole lithology is coloured to show transported cover in yellow and weathered regolith cover in orange. The blue coloured section at the base of drillhole EPRB-037 is a siltstone unit of the Warramunga Formation. Drillhole ERPB-029 ended at 71m downhole (vertical hole) but did not intersect the Warramunga Formation. Areas of high acoustic impedance contrast are represented by hot colours and areas of little

to no acoustic impedance contrasts are represented by cool colours. The interpreted bedrock topography is highlighted by a sub-horizontal dashed black line.

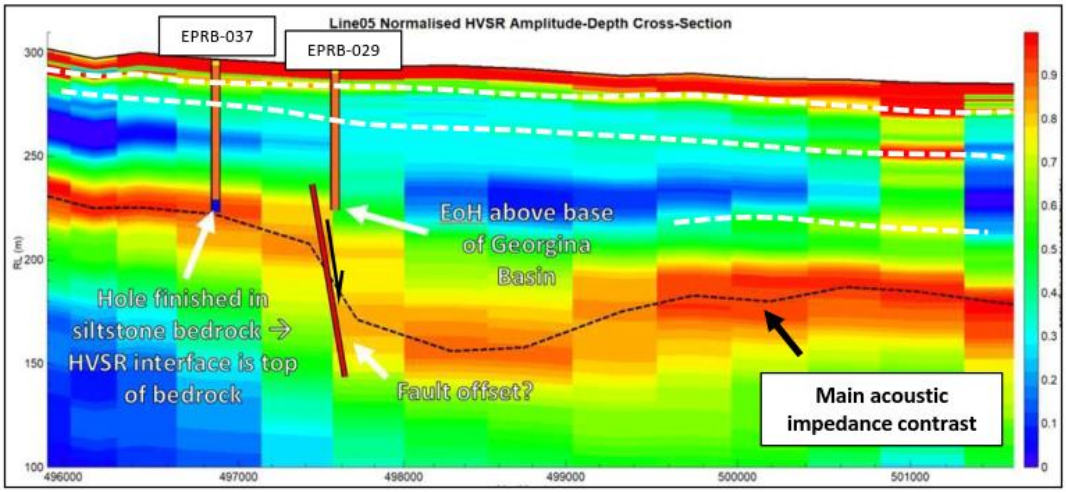


Figure 20 Passive Seismic - Line 5 - Normalised HVSR Amplitude-Depth Cross Section with historic holes

The normalised HVSR cross section for line 05 has resolved shallow acoustic bedrock at a depth of around 70m on the southwestern end of the line (left), which agrees with the drilled depth to Warramunga Formation in EPRB-037. HVSR stations acquired in close proximity to drillhole EPRB-029 resolved a vertical offset of the acoustic bedrock of approximately 75m and this is interpreted as a fault. According to the HVSR survey data, drillhole EPRB-029 might have needed to be extended to 150m downhole to intersected Warramunga Formation bedrock. Subtle HVSR responses above the main acoustic impedance contrast layer (dashed white profiles) could be associated with layering within the overlying weathered regolith cover.

HVSR survey line 03 was the longest traverse carried out in this survey program (29.5 km) and the normalised HVSR cross-section for this line is shown to the bottom right of the page. The HVSR survey data along this line has resolved a saw-tooth pattern acoustic bedrock interface, and this pattern is likely related to a series of faults (figure below).

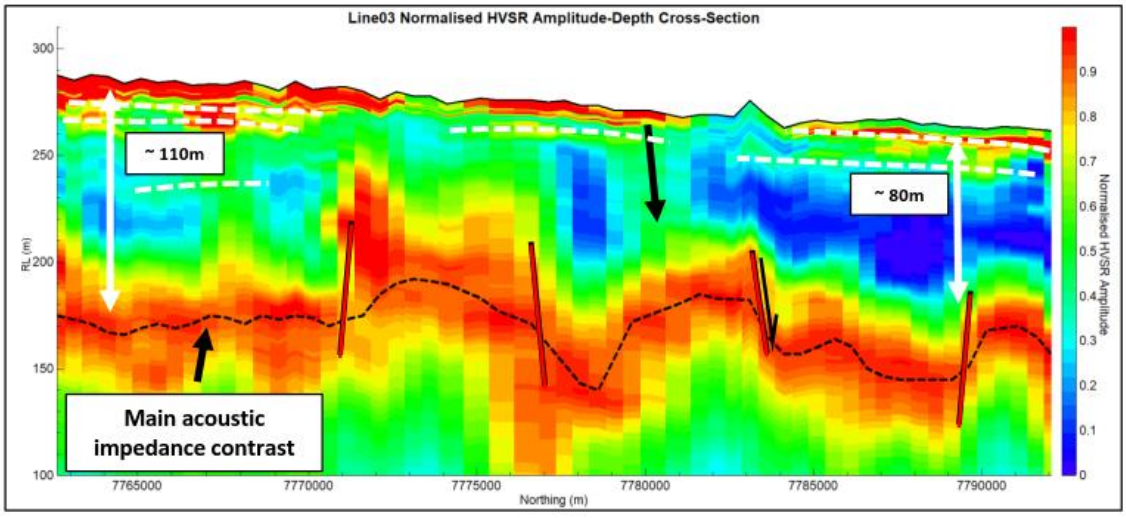


Figure 21 Passive Seismic - Line 3 - Normalised HVSR Amplitude-Depth Cross Section with depth estimation. Interpreted faults shown as red lines.

The figure below shows the depth to 'basement' for the individual passive seismic stations.

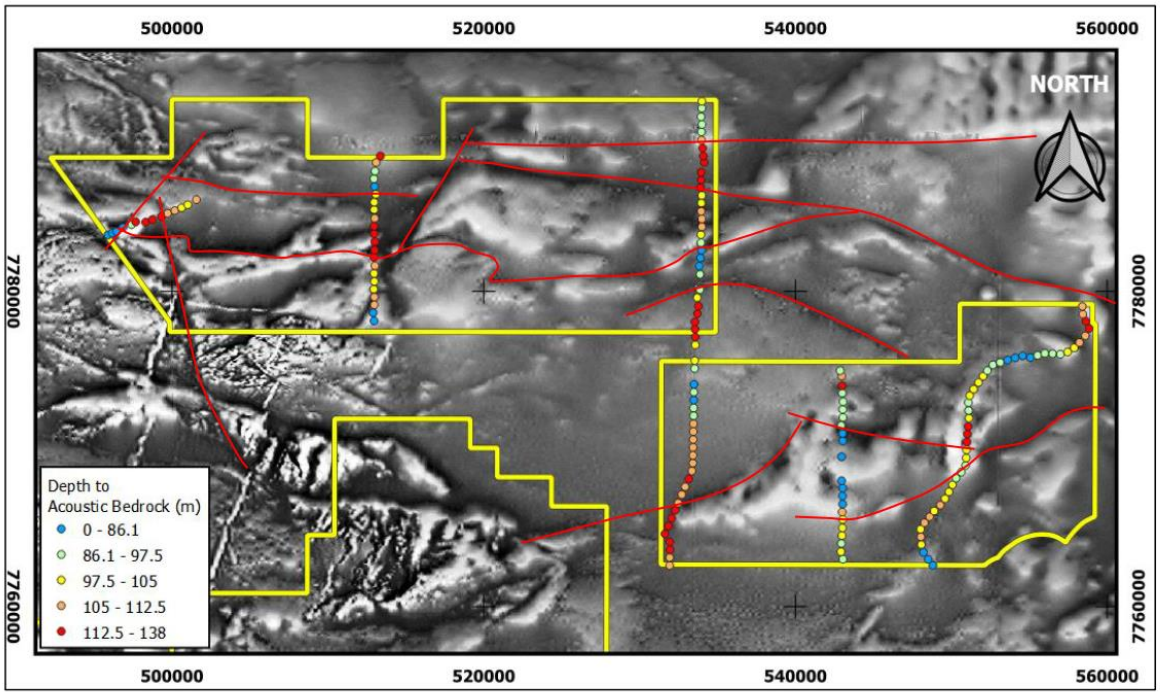


Figure 22 Total Magnetic Intensity 1st VD image with interpreted major structures and depth to acoustic bedrock estimates for each passive seismic station.

5. Exploration Concept

Exploration Model

King River Resources is exploring for IOCG style mineralisation, most likely of the Tennant Creek Style. For this collaboration application, exploration is targeting the classic magnetite rich ironstone model. The company is also considering potential for Stratiform Copper mineralisation within the basin sediments.

Traditional exploration methods for Tennant Creek IOCG deposits have targeted coincident magnetic and gravity highs where dense ironstone and magnetite bodies have formed (Figure below) but copper-gold mineralisation may also be associated with hematite bodies with little/no magnetite (a gravity high without a magnetic high). Known deposits such as Nobles Nob, Troy and Marathon (discovered in 1990s) had very weak if no magnetic signature.

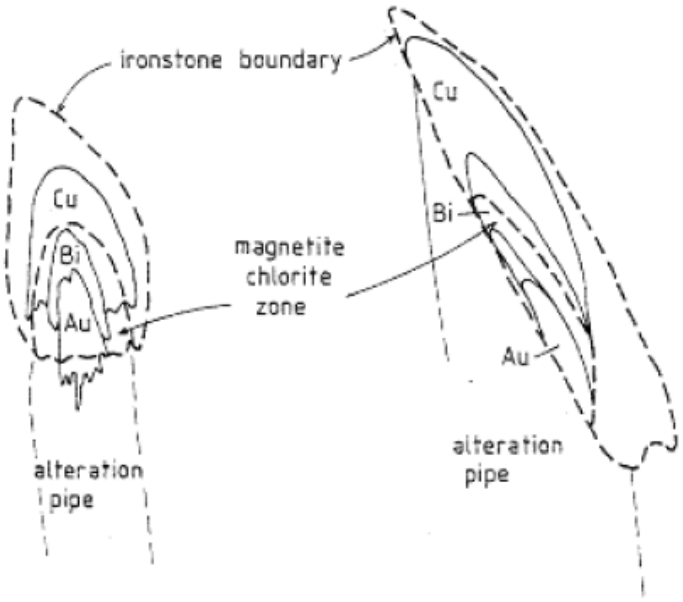


Figure 23 Traditional Tennant Creek Model, metal zonations in Typical Tennant Creek Ironstone (Large 1991).

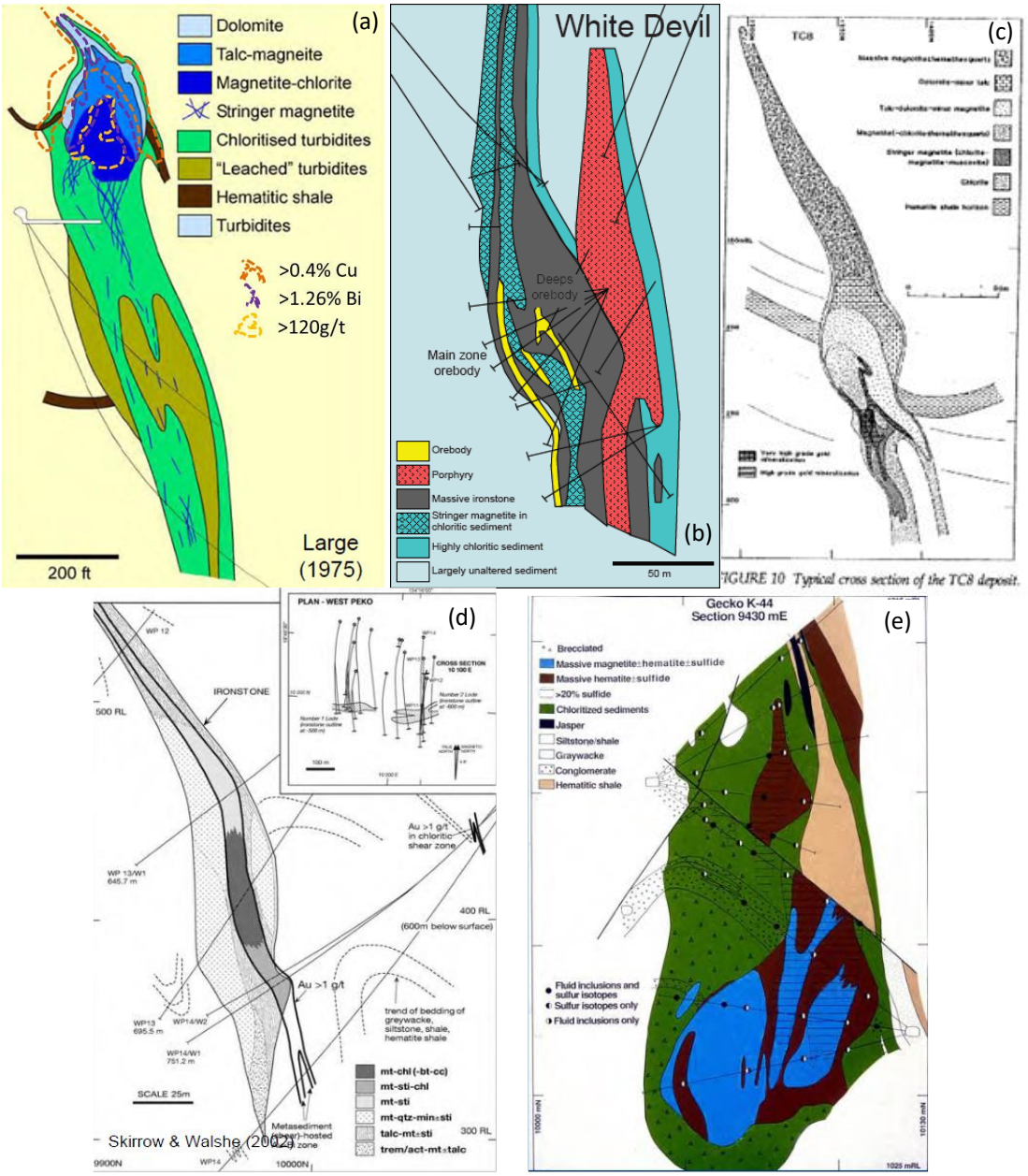


Figure 24 Different Tennant Creek Style IOCG deposits (a) Juno (Hudson et al. 2006), White Devil Deposit Section (Huston et al. 2006), TC8 Deposit Section (Large 1991), Peko Deposit Type Section (Huston et al. 2006), Gecko Type Deposit Cross section (Huston et al. 2006).

Stratigraphically, all the Tennant Creek IOCG deposits are within the Warramunga Formation making it the primary target stratigraphy, however there are indications that potential exists for significant gold mineralisation to be hosted in younger units, evidence includes the younger age of the quartz vein gold mineralisation at Tennant Creek, younger age of Hatches Creek and Kurinelli gold mineralisation, and the theory that the younger Treasure Suite granites are the main mineralising source (Wyborn et al 1998).

Interpretation of magnetic and gravity imagery indicates that EL31633 and EL31634 cover large areas of Warramunga Formation (the stratigraphy that is host to the Tennant Creek Gold Field) adjacent to granite units of the Tennant Creek and Treasure Creek Suites, under cover sediments of the Cambrian Georgina Basin.

The project offers excellent IOCG exploration potential with the following factors:

- The granitic bodies (evident in the magnetics) could have provided energy sources/driving mechanisms for mineralisation and possibly also the source of mineralising fluids.
- The major structures and internal structural complexity of the lensoidal magnetic complex provides excellent fluid flow regimes and trap sites for mineralisation.
- The host stratigraphy is interpreted to be Warrramunga formation or stratigraphically equivalent units.
- The depth of cover is interpreted to be less than 200m which means a discovery would be of drillable and of reasonable economic depths (dependant on discovery size).
- The area is untested

Stratiform Copper

Recent exploration by Middle Island Resources Limited (MIR) has discovered significant surface copper mineralisation on EL32297 within the Georgina Basin in the Barkly/East Tennant region. The mineralisation is within a 130m table drain with composite samples aggregating to 130m @ 0.76% Cu. The mineralisation is interpreted to represent secondary copper mineralisation that has migrated up growth faults that extend from primary copper-gold mineralisation within the Proterozoic basement rocks (Yeates, 2020). However, stratiform copper mineralisation is also a possibility.

Previously the parts of the Georgina Basin has been explored for syngenetic exhalative sediment-hosted base metals, Zambian-style stratiform Cu and stratabound Cu mineralisation (Kruse et al. 2013). Of note is Mt Skinner where visible surface copper mineralisation, consisting of malachite-stained rocks and float, extends for several kilometres along strike. Stratigraphic work identified the host stratigraphy as Neo-Proterozoic (Kruse et al. 2013). Stratiform Copper deposit Models include characteristics such as basinal red-bed sandstones, carbonates and shales, fault structures, seals and reducing environments for trap sites of mineral rich brines. These characteristics are all present in the Georgina basin.

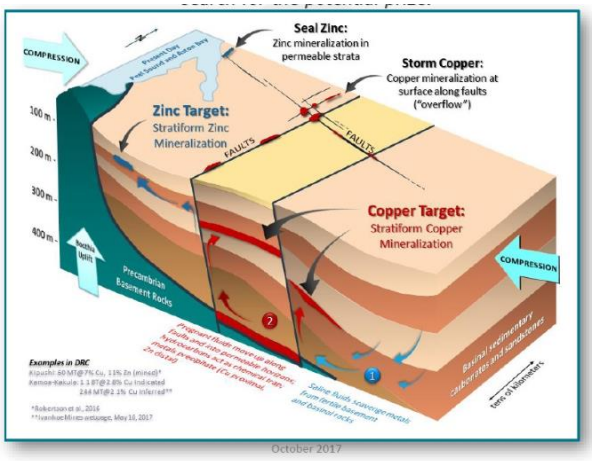


Figure 25 Stratiform Copper exploration model concept diagram, (from website, Aston Bay 2017)

2020 Minex CRC hole 10 identified a relatively narrow belt of deep Meso Proterozoic basin sediments under the 200m deep Cambrian deep sequence to a depth of 700m – this hole is within 4km of the MIR's surface copper discovery. The deeper Mesoproterozoic section of the basin appears to be quite narrow (5km) and strikes SW towards EL31633 and EL31634 in the regional magnetics.

KRR's 2020 collaboration passive seismic survey alluded to narrow zones of deeper basin within both EL31633 and EL31634, also nearby (<9km) 250k mapping suggested Neo-Proterozoic sediments at surface.

Main Targets

EL31633

Five strong magnetic anomalies ranging in strike length from 500m to 3km are evident within EL31633 and are considered prospective IOCG targets for follow up work, see - Figure below.

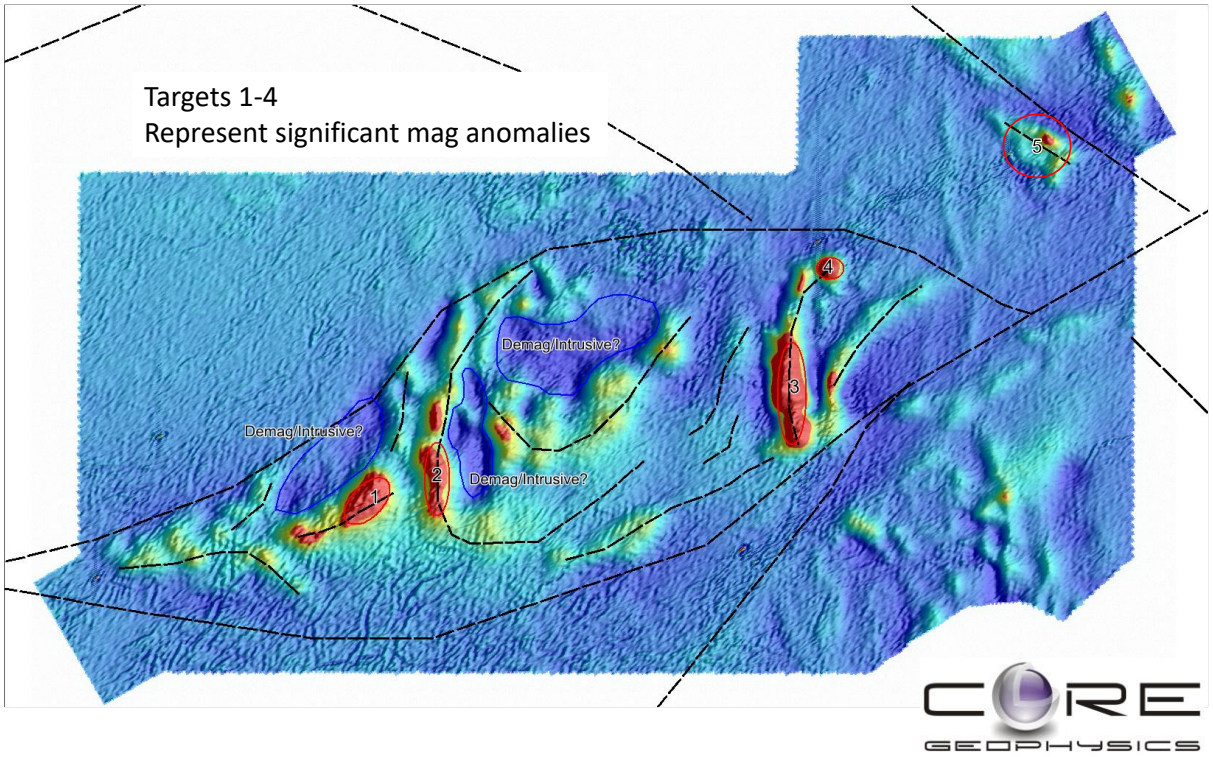


Figure 26 Total Magnetic Intensity 1st VD image with interpreted major structures and magnetic anomalies of interest

Inversion modelling of the 2020 data gave 5 significant bodies; magnetic estimated depth to basement for each are summarised in the Figure below. The magnetic amplitudes correspond to published values for IOCG deposits such as Carapateena of 200-300nT (Vella, 2007). The depth of these magnetic anomalies are substantially deeper than the estimated basin depth. This raises questions as to the nature of these magnetic features and the nature of the basement immediately beneath the basin cover.

The VTEM survey was primarily designed to cover basin sediments over interpreted basement units and major faults. The eastern/northern side of the tenement of higher priority being closer to interpreted Neo Proterozoic basin sediments and further from the south western basin margin. VTEM was planned to help identify conductive units that could be massive sulphide mineralisaiton, low conductive units, faults, basin geomorphology and other criteria suitable for both IOCG and Stratiform Cu mineralisaiton.

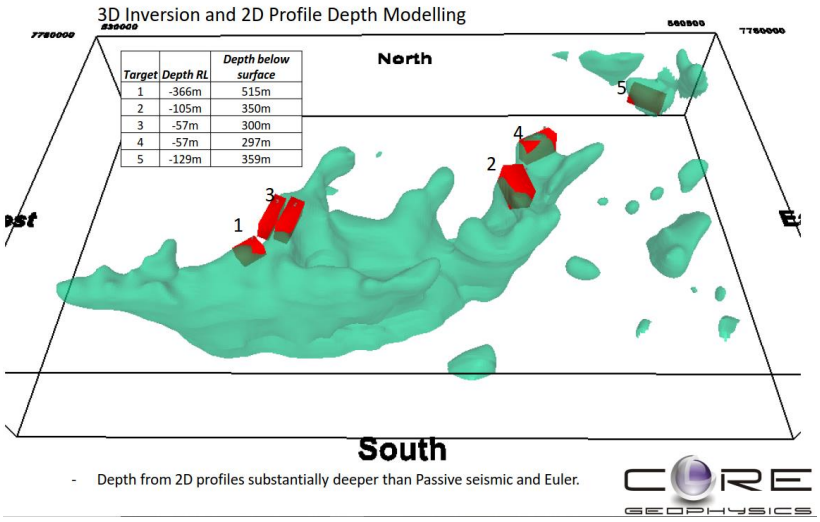


Figure 27 Inversion modelling of magnetic anomalies of interest, with estimated depths to target.

EL31634

There are multiple magnetic target areas within EL31634 forming a rough east west trend. These are interpreted to be associated with Warramunga equivalent rock units based on a historic drill hole at the western end of the tenement.

As with EL31633 the survey was designed to primarily cover basin sediments over interpreted basement units and major faults. VTEM can help identify conductive units that could be massive sulphide mineralisaiton, low conductive units, faults, basin geomorphology and other criteria suitable for both IOCG and Stratiform Cu mineralisaiton.

Rationale

King River Resources proposed a combined geophysical approach in preparation for drill testing of the magnetic bodies with airborne VTEM and ground gravity surveys - following on from the 2020, Round 13 and 14 collaboration ground passive seismic and airborne magnetic surveys.

The goal of the proposed programme was to assess:

- The depth and litho-structural nature of the Georgina Cambrian/Meso-Proterozoic? Basin cover units over the lensoidal magnetic complex in EL31633 (interpreted to be Warramunga formation rocks).
- The nature of the basement and strongest magnetic highs within the lensoidal complex in EL31633 and the east west trend in EL31634.
- Test potential for both basement hosted IOCG and basin hosted stratiform copper mineralsation.

As there has been effectively no IOCG exploration over this tenement other than the historic air magnetic surveys in 1999 it is reasonable to initially target the more magnetite rich bodies of the tenant Creek style IOCG deposits.

VTEM can help identify conductive units that could be associated with massive sulphide mineralisaiton, low conductive units, marker horizons within the basin, faults, basin geomorphology and other criteria suitable for both IOCG and Stratiform Copper mineralisaiton.

It is hoped that the exploration by KRR will identify a new area of Warramunga equivalent rocks previously untested and will better delineate the major regional structures clearly evident where cover is absent to the west. It will also allow comparison of geophysical methods of evaluating depth of Cambrian cover using Tempest EM, passive seismic and magnetics and give insight to the nature of the basin and basement. This knowledge and exploration methodology can then be applied to other KRR tenements such as EL31619, EL31623 and EL36124 which are also in the Tennant East Area as well as EL31617/18 east of Rover.

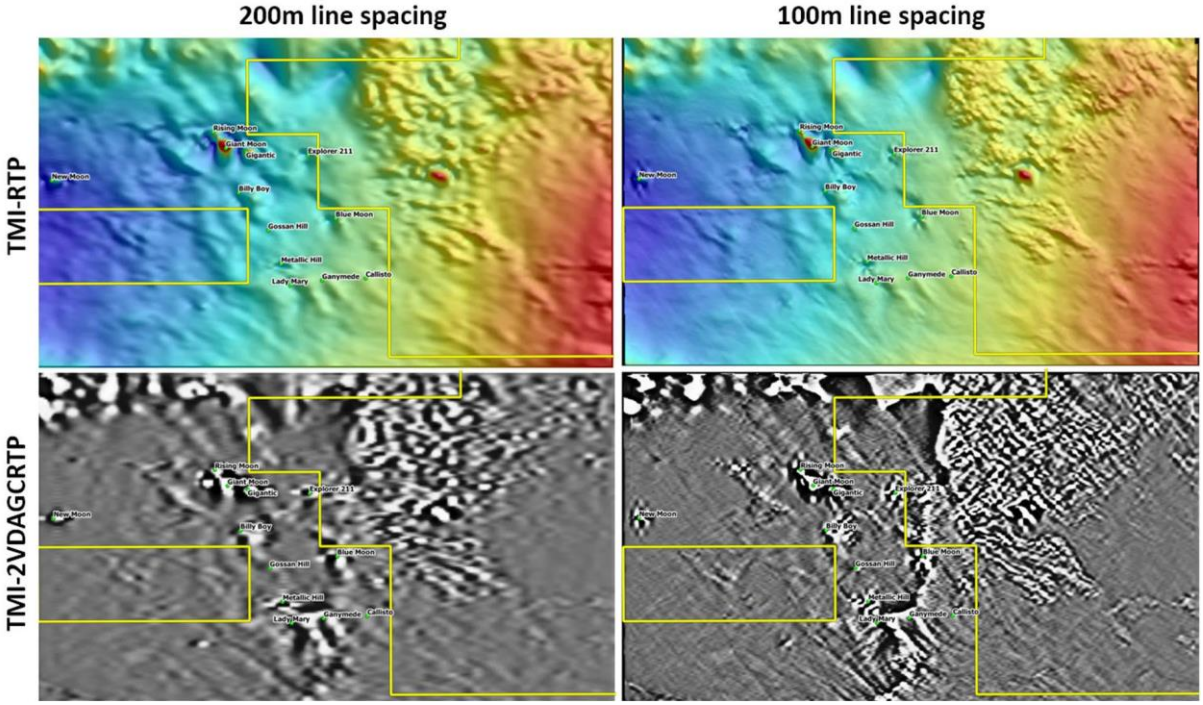


Figure 28 Reduction of airmag data from 100m to 200m lines pacing over the Tennant Creek Lonestar Area..

The images below are from the 2020 collaboration airborne magnetic survey over EL31633 and clearly shows the improvement gained from the detailed survey work.

The image below shows a closer view of target areas 2 and 4. With the new spacing there is a lot more detail and definition to the shapes and smaller anomalies of 100-200m become evident that were not seen at the previous spacing. This is important given the typical small size of Tennant Creek style IOCG's.

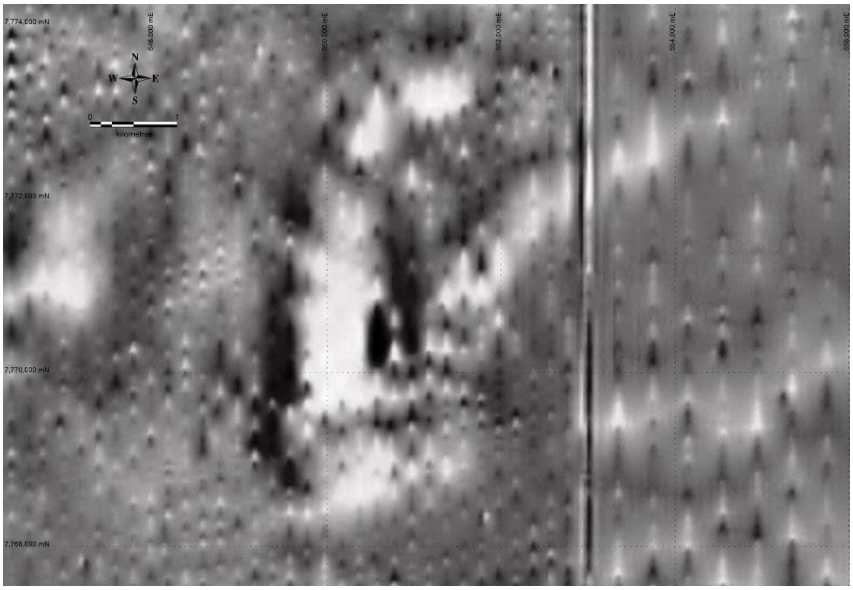


Figure 29 Total Magnetic Intensity 2nd^{t} VD image close up of anomaly 2 and 4 – prior to 2020 survey

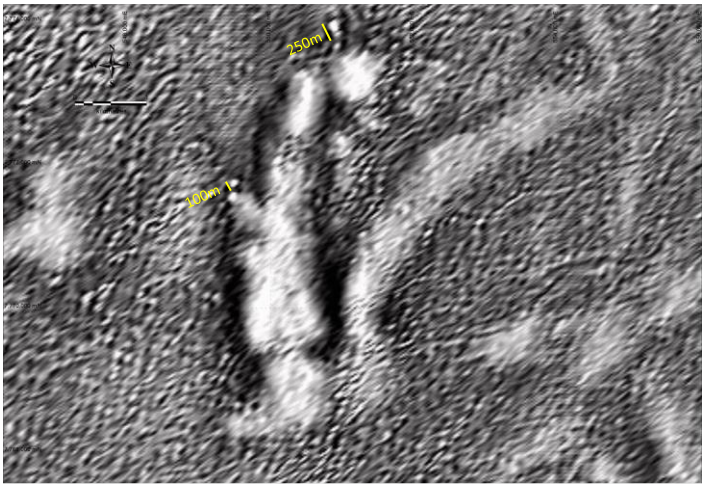


Figure 30 Total Magnetic Intensity 2nd^{t} VD image close up of anomaly 2 and 4 – 2020 survey

Given the expected and unknown depth of cover (which would supress geophysical details required for effective targeting), the small nature of the targets, the large untested area (+20km strike length) and the reliance on the interpretation that the magnetic bodies are Palaeo- Proterozoic Warramunga equivalent rock sequences then a combined geophysical approach following the Tromino Survey (to test Cambrian cover depth) and detailed 100m magnetic survey (to identify/characterise and locate magnetic bodies) is warranted prior to drill testing.

It is hoped that the programme will identify a new area of Warramunga equivalent rocks previously untested and to better delineate the eastern extension of major NNE structures clearly evident where cover is absent to the west, as well as identify/define any intrusive units. This knowledge can then be applied to other KRR tenements such as EL31619, EL31623 and EL36124 which are also in the Barkly/East Tennant Area as well as on EL31617/18 east of Rover.

6. Program Details

The proposed collaboration application was ongoing from work done in 2020 as part of round 13 collaborations. The application was for geophysical work in preparation for and to allow the effective drill testing of the interpreted Palaeo-Proterozoic rocks beneath Cambrian cover sequences over EL31634.

The proposal was a regional scale (>500km^2) airborne magnetic survey.

- Detailed airborne magnetic survey over the whole of EL31634 (100m line spacing, 30m survey height); 597km^2, 6,035 line km.

Details of each survey are given below, and maps/data are provided in Appendix A:

VTEM Max Survey:

A VTEMmax airborne electromagnetic survey was carried out by UTS-Geotech (UTS) between the 14th-22nd July 2022, over the Epenarra Project tenements EL31633+31634, figure 4. The survey was flown in two blocks with 400m spaced survey lines oriented 090-270° for 793-line km within EL31633 and 000-180° for 669-line km within EL31634 comprising for a total of 116 lines and 1462-line km.

The VTEMmax system is a helicopter-borne time-domain electromagnetic (HTDEM) system that incorporates the acquisition of electromagnetic (EM) and magnetic data in a helicopter platform, figure 3. The VTEMmax system incorporates a coincident transmitter and receiver configuration measuring the X,Y and Z components of the EM field. dB/dt data was acquired at a base frequency of 25Hz with B-field data being post-processed from the measured dB/dt data.

The equipment specifications are summarised in Table 1 below, with full technical specifications of this system provided in Appendix.

Table 3 VTEMmax system specification summary

Aircraft	AS350B Series helicopter
Transmitter Loop Size	34.6 diameter (4 turns)
Base Frequency	25Hz
Duty Cycle	50%
EM Loop Clearance	~40m
Recording Sample	50 recordings per second
Waveform	Trapezoid, pulse width 7.18ms
Peak Current	187A
Peak Dipole Moment	703,380 NIA
Receiver	X,Y and Z
Receiver Area (effective)	19.69m^2 (X+Y) , 113.0m^2 (Z)
Receiver Configuration	Concentric to Tx
Channel Time	0.021 – 10.667ms after turn off
Coordinate System	WGS84 UTM Zone 53

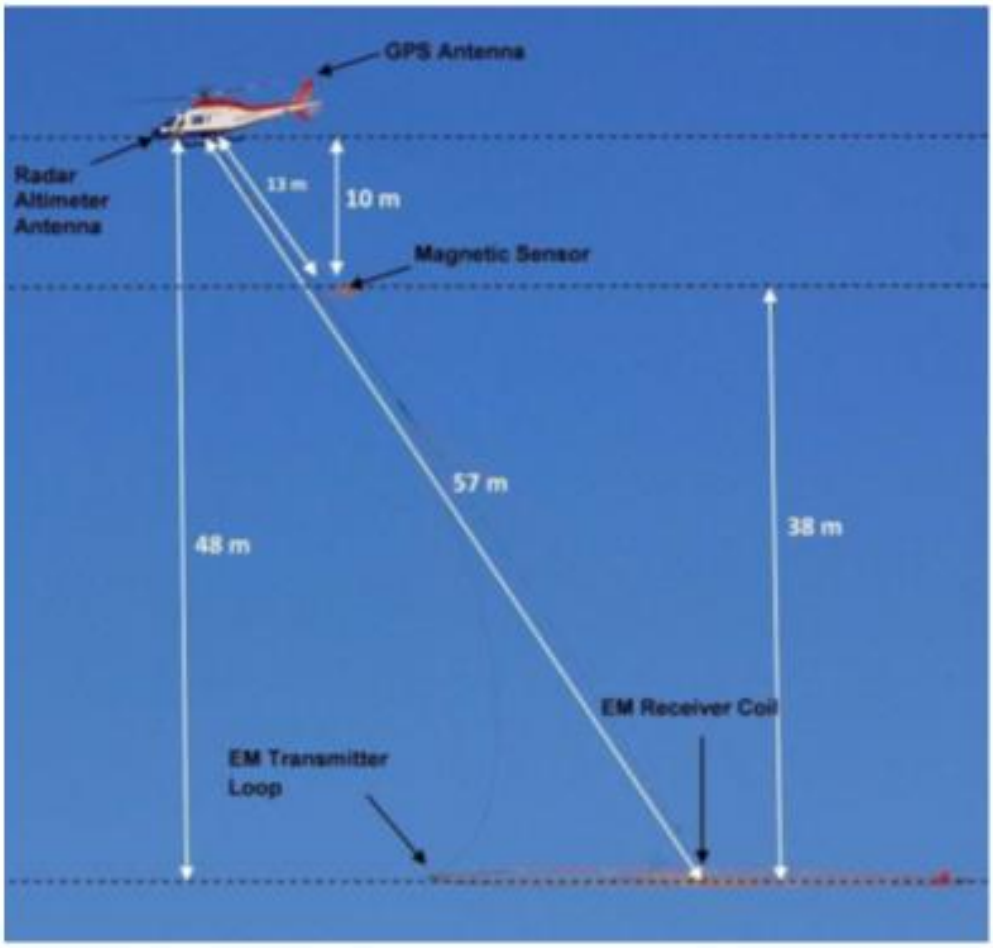


Figure 31 : VTEMmax system configuration.

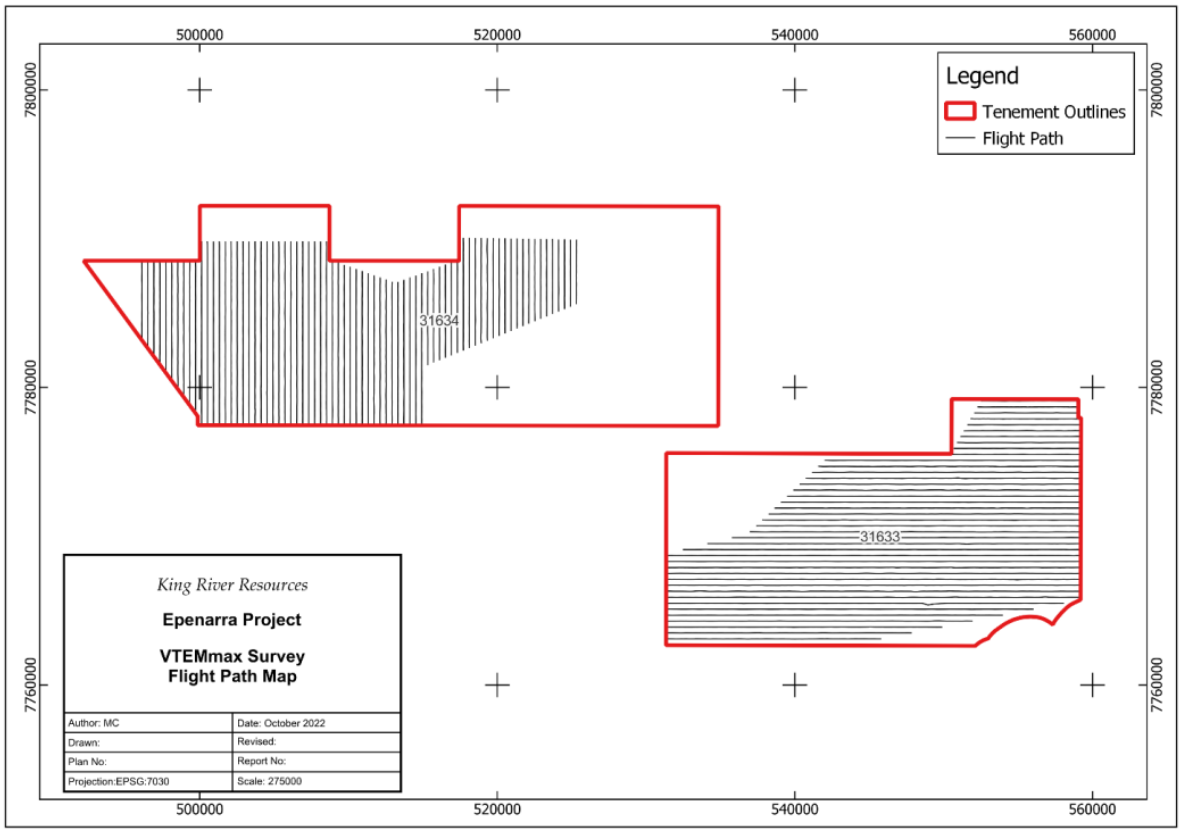


Figure 32 Epenarra project VTEMmax survey flightpath map.

7. Results and Interpretations

All data, images and method/survey reports are included in Appendix A.

VTEM Max

The VTEM Max Survey has provided a number of significant targets within the tenements, both basinal stratigraphic and discrete basement targets. Overall, the VTEM max results indicate the survey area comprises of sporadic conductive cover material overlying more resistive basement.

The VTEM shows variable correlation to the wide space EFTF Inversion and Passive seismic results. It confirms in part an undulating cover with increasing thickness to the east. A better correlation may be achievable if layered earth inversions were completed on the VTEM, rather than the contractor generated RDI. LEI's can provide a better result where flat or shallowly dipping geology is expected.

EL31634

Analysis of the profile data, EM imagery and inversions has generated fourteen target anomalies. Of these five have been assigned a high priority, with the remaining assigned medium to low priority. High priority has been assigned to discrete profile responses associated with a magnetic feature or trend. Medium to low priority has been assigned to conductors that are considered to represent regolith responses or conductors within the Georgina Basin sediments.

The five high priority anomalies are situated in significant structural and geophysical positions in units likely to be Warramunga equivalent rocks. They are situated on roughly east west magnetic trends, close to a major NW trending structures and smaller NE trending zones.

Table 4 EL31634 VTEMmax target anomalies of interest.

Target	Easting	Northing	EM	Magnetics	Comment	Priority
EPW_AEM01	496250	7783135	Strong broad EM response	Variable, appears surficial over volcanics	Northern portion best, otherwise regolith response	High
EPW_AEM02	500425	7778620	Discrete broad EM response	No magnetic anomaly	Potentially regolith	High
EPW_AEM03	500974	7779395	Weak double peak EM response	On mag trend (dyke) along structure	Located in prospective location	High
EPW_AEM04	503115	7778775	Discrete, broad middle to late time response	Close to dyke like feature	Stratigraphic anomaly 3km long	High
EPW_AEM05	502594	7781829	Broad mid to late time response	Discrete magnetic anomaly	Coincident AEM/Mag response	High
EPW_AEM06	511743	7778249	Broad weak late time response	Mag low	EM response at intersection of structures	Moderate
EPW_AEM07	514465	7779146	Broad weak late time response	Mag Low	EM response along mag structure	Low
EPW_AEM08	513259	7782733	Broad mid to late time response	Mag Low	EM response along mag structure	Low
EPW_AEM09	515609	7783846	Early to late time response	On mag structure	EM response along mag structure	Low
EPW_AEM10	510475	7787526	Broad mid to late time response	n/a	EM response along mag structure	Low
EPW_AEM11	521856	7784434	Weak broad early to late time response	Magnetic structure	Likely regolith	Low
EPW_AEM12	524546	7785764	Weak broad early to late time response	Above weakly magnetic basement	Over deep Georgina, likely regolith	Low
EPW_AEM13	521608	7789753	Weak broad early to late time response	North of mag feature	Likely regolith	Low
EPW_AEM14	524020	7789506	Weak broad early to late time response	North of mag feature	Likely regolith	Low

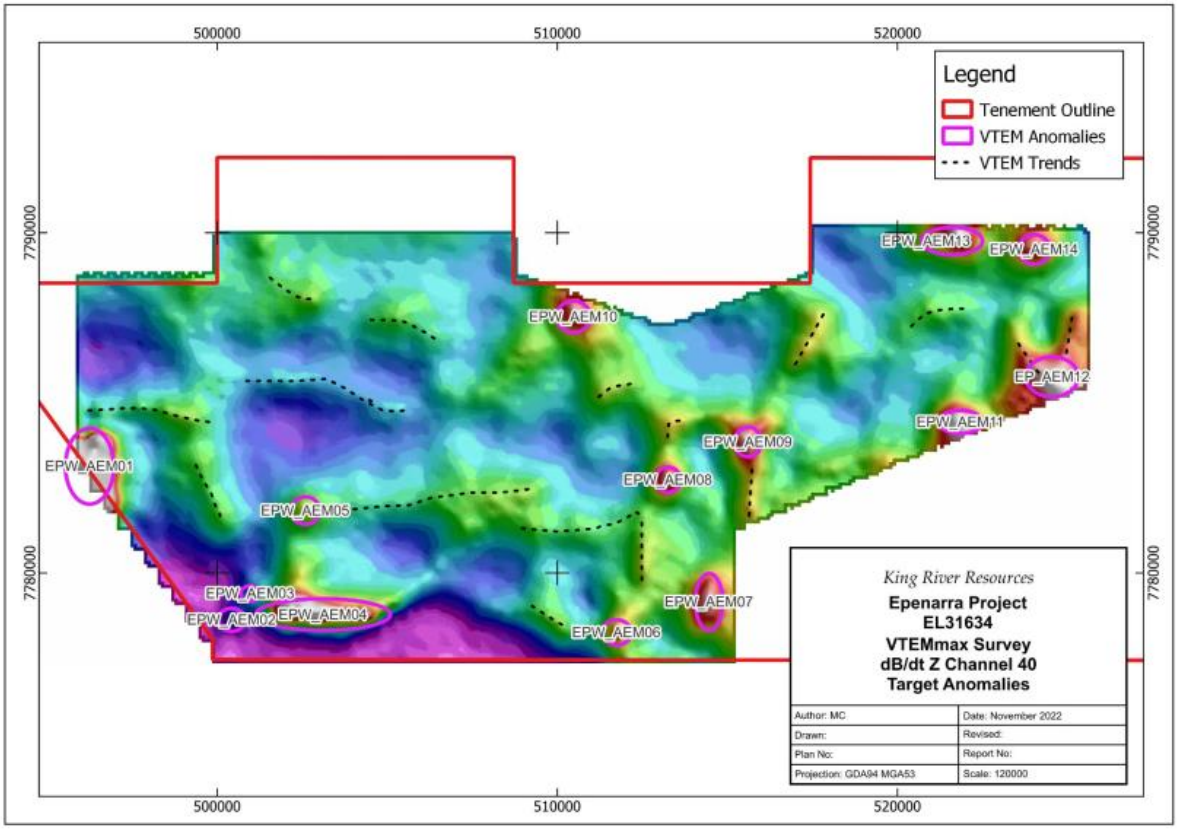


Figure 33 Epenarra EL31634 VTEMmax survey B-Field Z channel 40 image, highlighting anomalies and conductor trends.

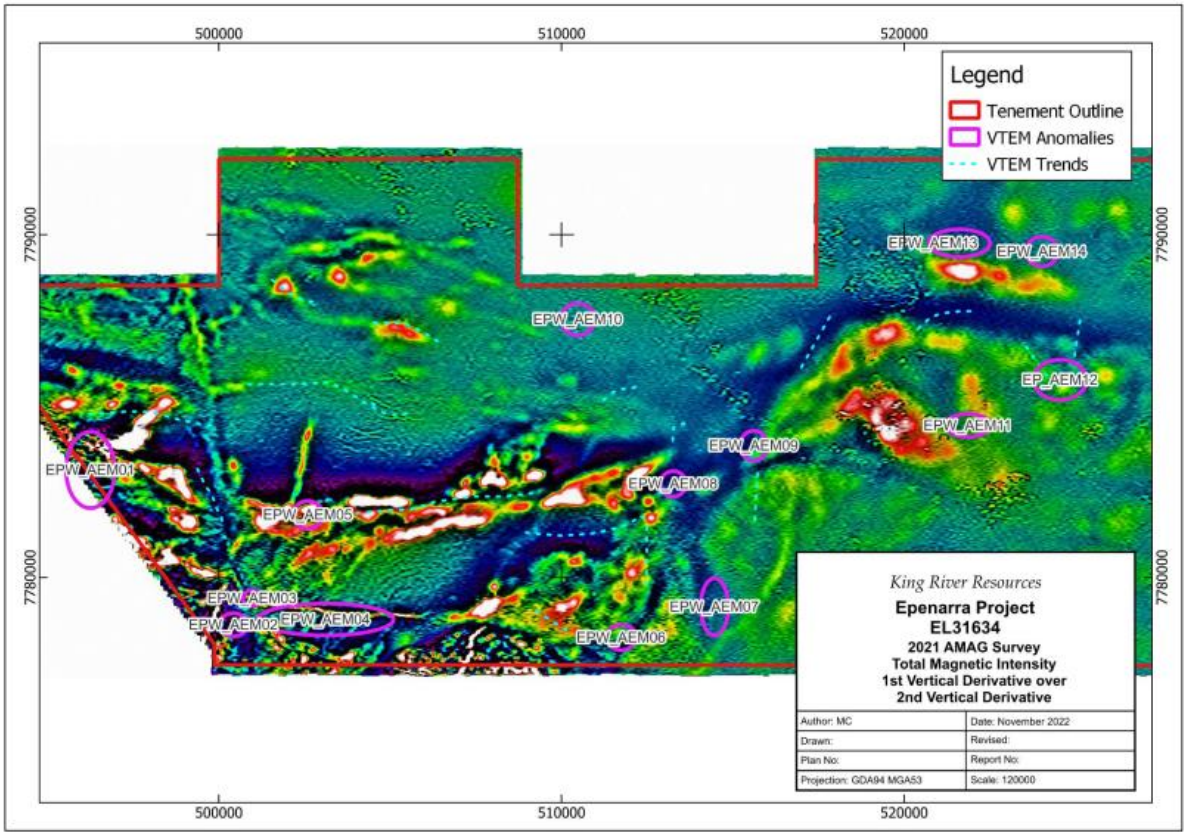


Figure 34 Epenarra EL31634 AMAG survey TMI1VDover2VD image, highlighting anomalies and conductor trends

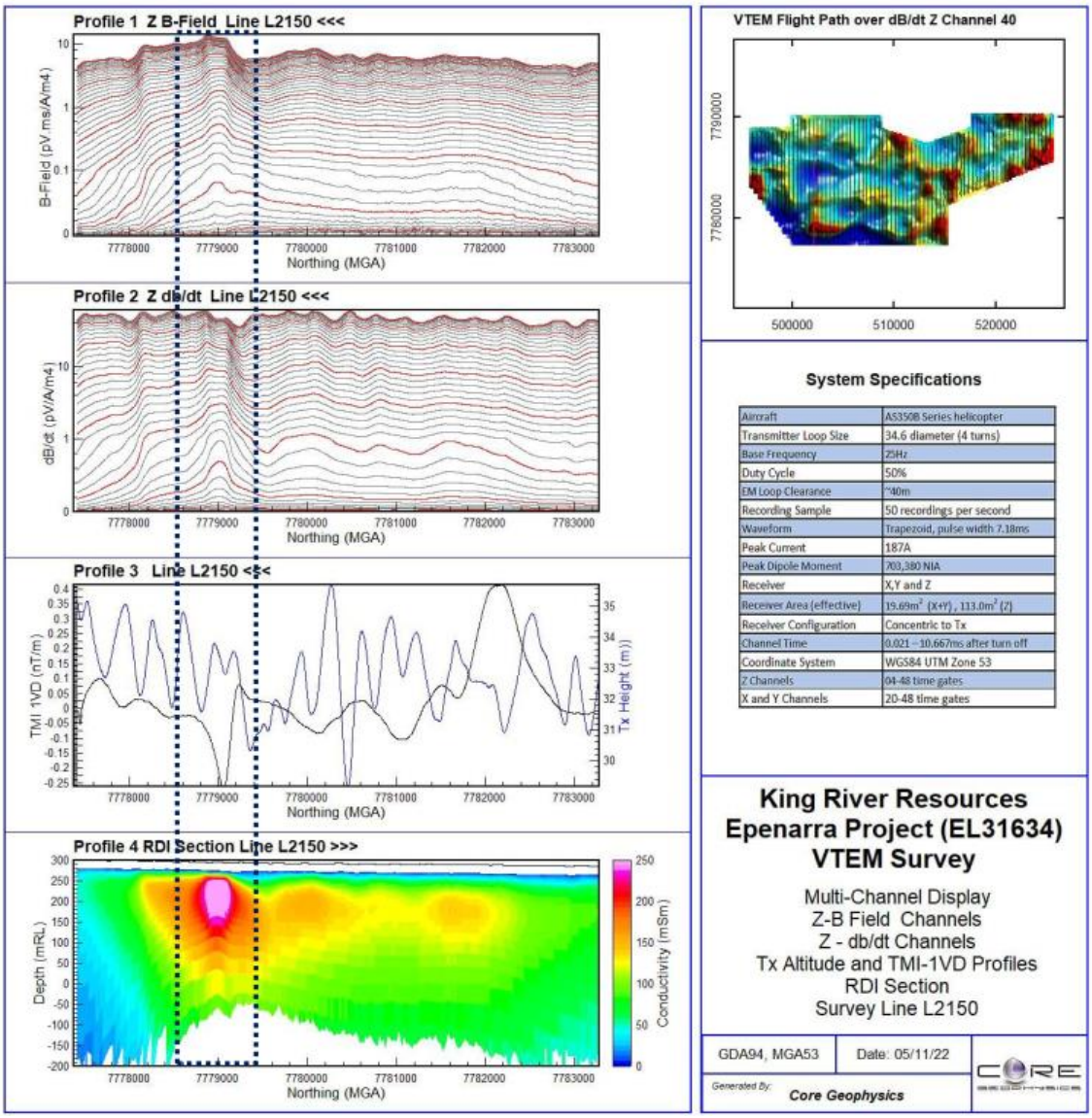


Figure 35 Anomaly EPW-AEM04 (highlighted) profile response and RDI section.

EL31633

Analysis of the profile data, EM imagery and inversions has generated twelve target anomalies. Of these four have been assigned a high priority, with the remaining assigned medium to low priority. High priority has been assigned to discrete profile responses associated with a magnetic feature or trend. Medium to low priority has been assigned to conductors that are considered to represent regolith responses or conductors within the Georgina Basin sediments.

All four high priority anomalies are within the main magnetic lensoidal complex. They are situated on the edges of the discrete but large magnetic highs within this complex.

Table 5 EL31633 VTEMmax target anomalies of interest

Target	Easting	Northing	EM	Magnetics	Comment	Priority
EPE_AEM01	537063	7766656	Broad mid to late time response	Crosses magnetic anomaly	Semi-coincident AEM/Mag response	High
EPE_AEM02	540477	7767471	Strong broad EM response	Variable, appears surficial over volcanics	Semi-coincident AEM/Mag response	High
EPE_AEM03	541000	7769094	Discrete single peak low amplitude response	On mag trend along structure	Semi-coincident AEM/Mag response	High
EPE_AEM04	545055	7765820	Discrete, broad middle to late time response	Close to dyke like feature	Likely regolith	Low
EPE_AEM05	547814	7765050	Weak broad early to late time response	no magnetic anomaly	Strike extensive (2km) Likely regolith	Low
EPE_AEM06	545350	7769488	Discrete broad EM response	In between magnetic anomalies	Semi-coincident AEM/Mag response	High
EPE_AEM07	547469	7771101	Discrete single peak low amplitude response	On edge of magnetic anomaly	Likely regolith	Low
EPE_AEM08	550063	7772308	Discrete single peak low amplitude response	On edge of magnetic trend	EM response at intersection of structures	Medium
EPE_AEM09	549297	7775093	Broad mid to late time response	n/a	N-S trending EM response, regolith(?)	Low
EPE_AEM10	552971	7772931	Discrete single peak low amplitude response	On mag structure	EM response along mag structure	Medium
EPE_AEM11	555036	7773268	Discrete single peak low amplitude response	No magnetic anomaly	On possible N-S structure	Medium
EPE_AEM12	556922	7777092	Discrete single peak low amplitude response	On edge of magnetic anomaly	EM response along mag structure	Low

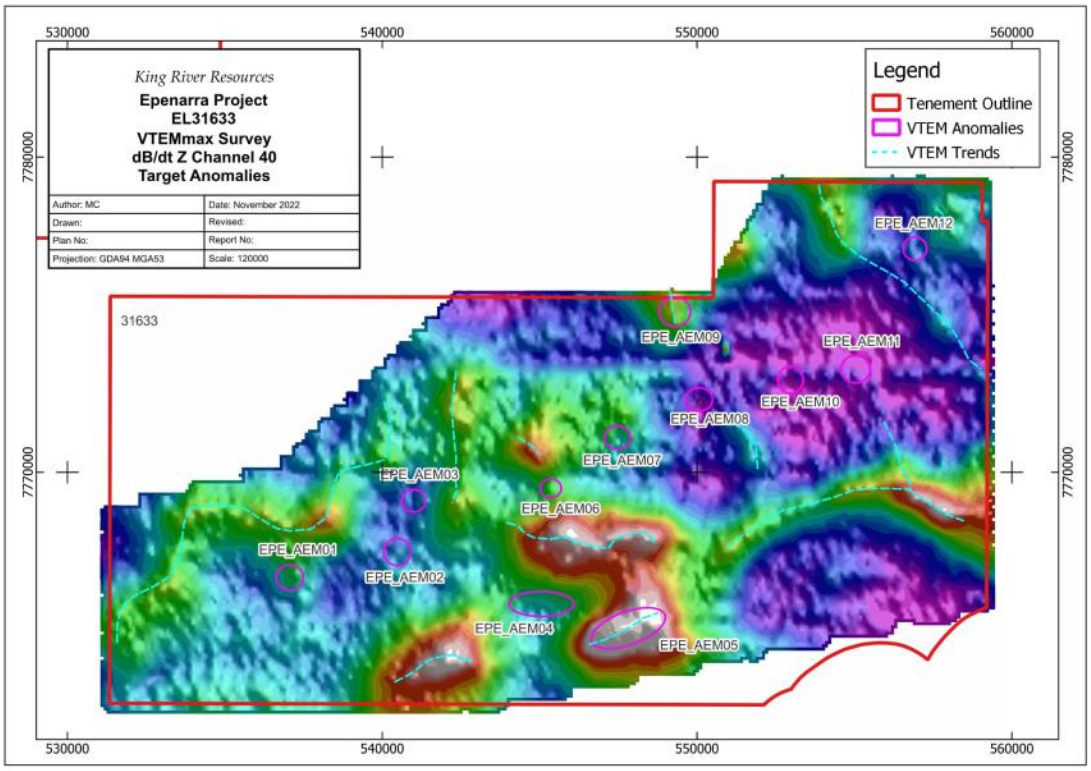


Figure 36 Epenarra EL31633 VTEMmax survey dB/dt Z channel 40 image, highlighting anomalies and conductor trends

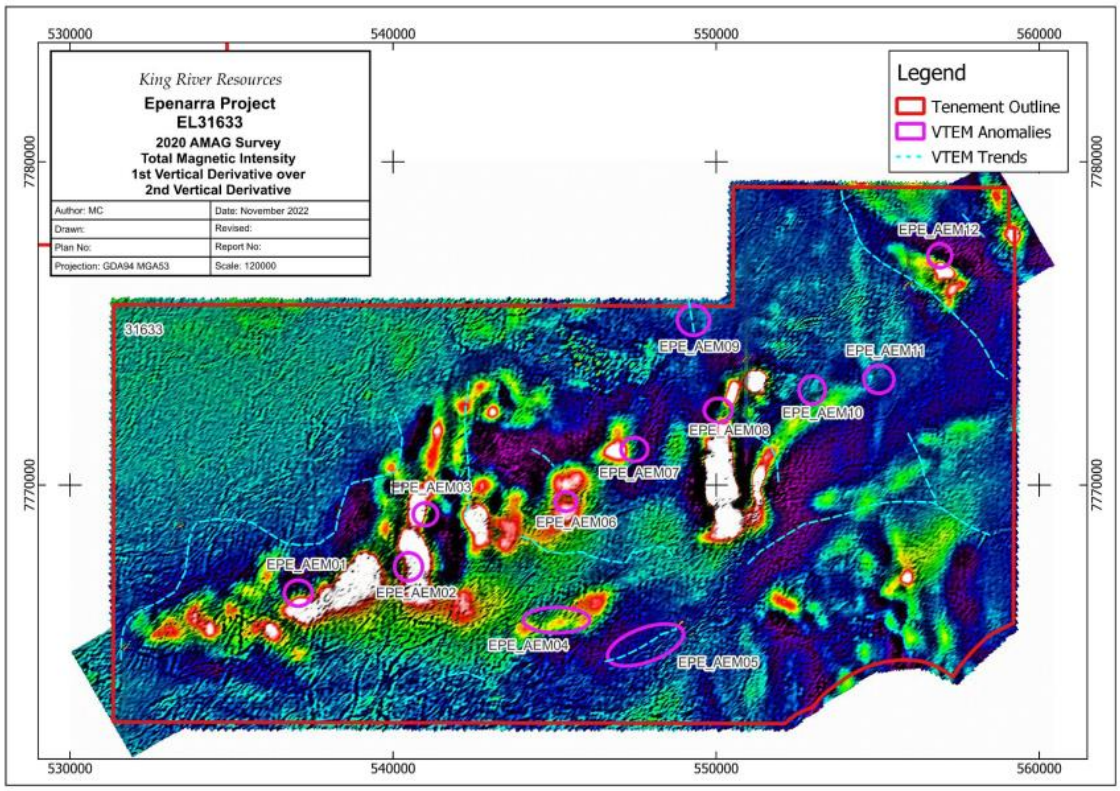


Figure 37 Epenarra EL31633 AMAG survey TMI1VDover2VD image, highlighting anomalies and conductor trends.

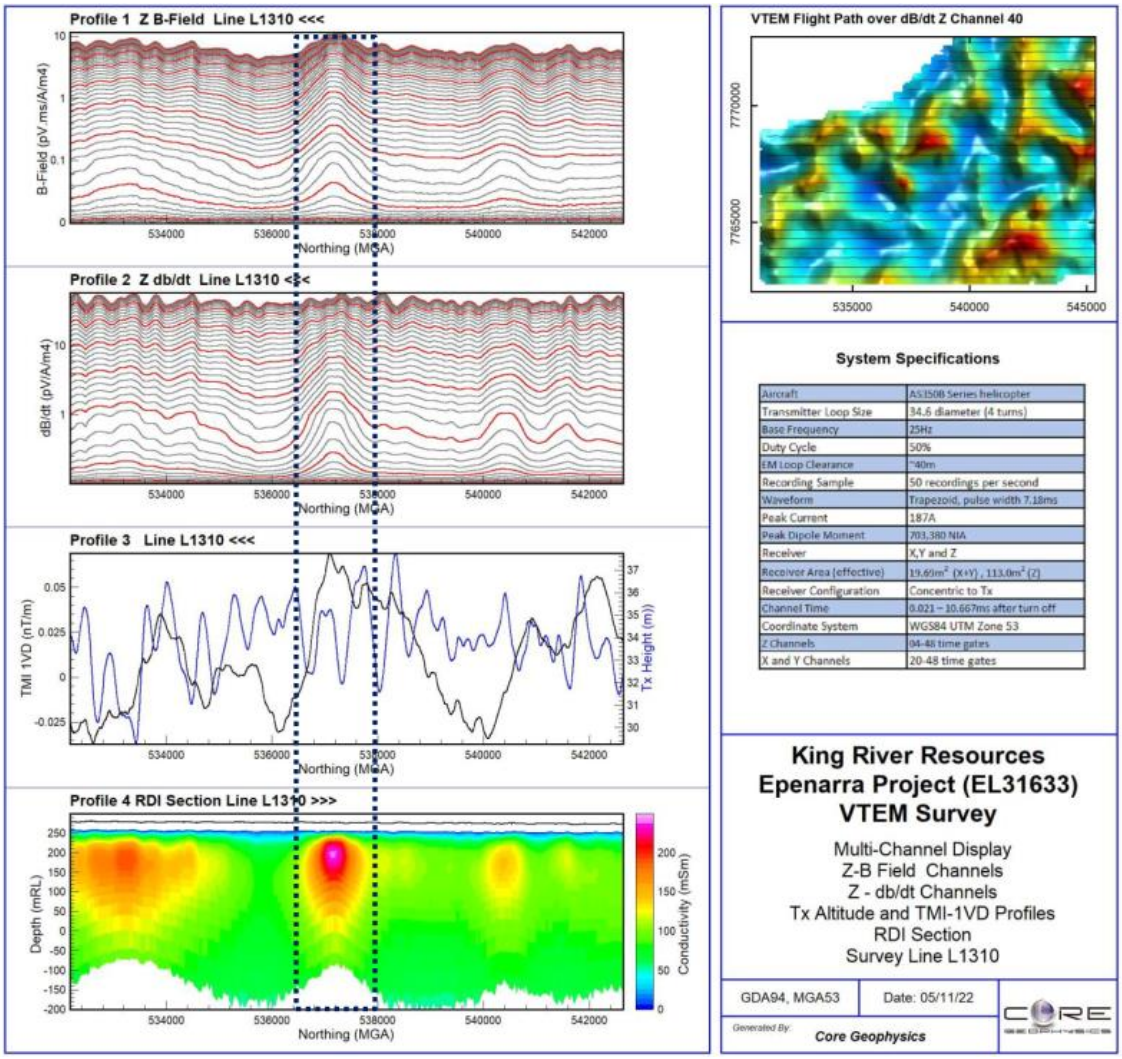


Figure 38 Anomaly EPE-AEM01 (highlighted) profile response and RDI section

8. Conclusion

A VTEMmax airborne electromagnetic (AEM) survey was successfully completed over King River Resources Epenarra Project (EL31633/EL31634) located approximately 135km southeast of Tennant Creek in the Northern Territory.

The survey was completed between the 4th-22nd July 2022 with 400m spaced survey lines oriented 090-270° (EL31633) and 000-180° (EL31634) for a total of 116 lines and 1462-line km over the project area.

The purpose of the survey was to identify conductive units that could be associated with massive sulphide mineralisation, low conductive units, marker horizons within the Georgina Basin, faults, basin geomorphology and other criteria suitable for both IOCG and Stratiform Copper mineralisation.

The VTEMmax survey shows that the tenement areas comprise of sporadic conductive cover material overlying more resistive basement. Analysis of the profile data, EM imagery and inversions has generated twenty-six anomalies of interest.

Near surface conductive features are more apparent to the east within EL31633, likely due to recent drainages within the Georgina Basin sediments and controlled by topography.

Basin stratigraphic and discrete conductive responses within the project have been delineated. Some are likely due to clays and increased conductivity within the near surface, with some considered to represent targets for further investigation.

Significant anomalies associated with basement units have been assigned a high priority with four in EL31633 and five in EL31634. These high priority anomalies are situated in significant litho-structural positions.

Further modelling and geological interpretation is recommended which may assist to increase target prospectivity before conducting ground investigations. Ground investigation should include gravity and induced polarisation surveys, which will detect dense and polarizable copper sulphide and base metal mineralisation and assist in delineating drill targets.

9. References

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10. Appendices

Appendix A – VTEM MAX Survey Data and Reports

AppendixA

CG-KRR-1122-01_Epenarra_VTEM_Survey_Report.pdf

UT210140_Report.pdf

EL31633ImagesandVectors.zip – relevant location images of survey EL31633

EL31634ImagesandVectors.zip – relevant location images of survey EL31634

ProfilePlots.zip – Conductivity profile plots of survey

GeophysicalData.zip