New geophysical interpretation confirms large magnetic targets at our Patmungala and Dumunzi areas in the West Arunta

Highlights

- A 3.5km wide, piped-shaped magnetic anomaly confirmed at Patmungula.
- LMS has initiated a key investment in a gravity survey programme to further assess this large anomaly to assist drillhole targeting.
- Northern Territory Geological Survey is supporting the deep drilling program of this target.
- Additional gravity survey to be completed over the Dumunzi magnetic target, north of Silver King, at the intersection of several prominent structures.
- Soil sampling of selected targets will compliment data acquisition for these gravity surveys.

Litchfield Minerals Limited (**"Litchfield"** or the **"Company"**) **(ASX:LMS)**, a company with a strategic emphasis on critical minerals, is pleased to announce the start of a ground gravity campaign at the Mt Doreen project by Planetary Geophysics. The main focus of the gravity survey is the Patmungala magnetic anomaly, that we have named megalith which could potentially represent an IOCG or deeply buried igneous intrusive complex (Figure 1). An additional survey will be completed at the Dumunzi target, located north of the Silver King prospect.

Patmungula megalith target

The megalith anomaly is a significant magnetic target identified through inversion modelling of Annie Springs Rio Tinto Aeromanetic survey from 1997[1] revealing a deep, 3.5km wide, sub-vertical anomaly of unknown origin in the Patmungala area of our Mount Doreen tenement package (EL31305) in the West Arunta. As announced on 11 June 2024[2], the Northern Territory Geological Survey (NTGS) has supported the megalith target with funding of up to $140,000 for drilling a deeper hole. We plan to complete this deep drilling once we receive all the data from the gravity, structural, and VTEM surveys in the coming months.

[1] Details of the Rio Tinto Magnetic Survey can be found at 1998. Annie Spring EL 9413. Second Annual Report for the Period ending 15th May 1998. Northern Territory Geological Survey, Open File Company Report CR19980436.
[2] Refer ASX Announcement – Drilling Grants Received from Northern Territory Government – 11/06/2024

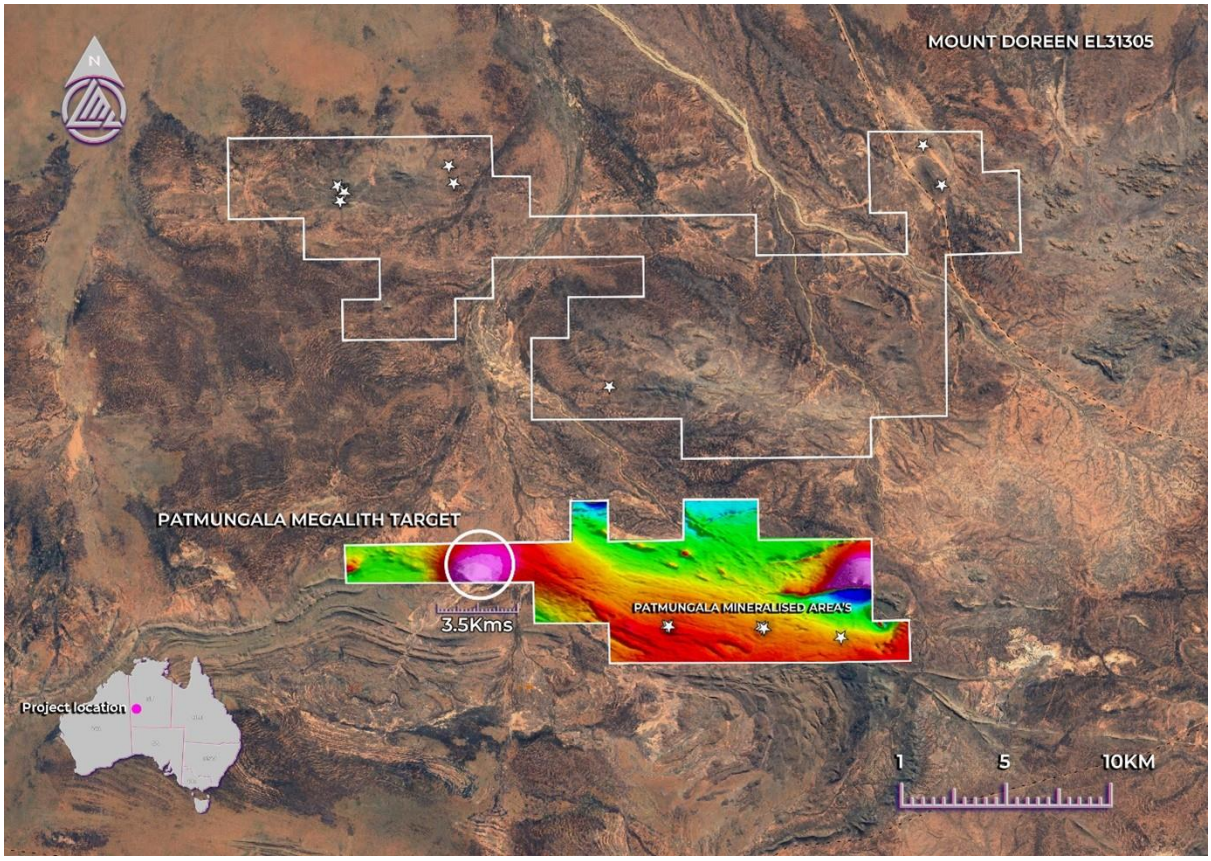

Figure 1 *– Total Magnetic Intensity (TMI) image of a 3.5km wide piped shape magnetic target in the Patmungala area.*

The magnetic target appears to have structures that extend southeast into known zones of base metal mineralisation within the Patmungala mineralisation zone. Historical exploration (Roebuck Resources[3]) identified copper and galena-bearing quartz veins with copper rock chips to 6.2% Cu and low-level Ag and Au (Figure 2). The area also contains numerous ferruginous, carbonate-rich horizons hosted within the volcano-sedimentary Patmungala Beds.

Ground gravity is currently underway by Planetary Geophysics to better delineate the structure and help refine drillhole targeting. We will provide more information on this target as we gather additional data in the coming weeks.

[3] Details of the Roebuck Resources geological and geochemical mapping have been supplied in the Litchfield Minerals Independent Geologist Report, January 24th, 2024. Refer to the Litchfield Minerals website for this report.



Figure 2 *– Quartz-malachite mineralization at the Patmungala copper prospect.*

Dumunzi target

Our recent aeromagnetic campaign has identified a significant magnetic target located north of the Silver King prospect (Figure 3). This target, named Dumunzi, is situated in a potential dilational zone at the intersection of several prominent geological structures[4] as mapped by the NTGS, 250k Mount Doreen geological interpretation. The target is completely covered by shallow alluvial sediments, less than 10 m deep.

Over the next few days, a gravity survey will be conducted over parts of this anomaly. In addition, the Litchfield team will be performing preliminary soil sampling in the area to test for base metal and rare earth element fertility.

[4] Details of the structure at Dumunzi can be found at the 1995, Mount Doreen, 250k Geological Map GIS Data. Northern Territory Geologicsal Survey, Open File Sheet SF5212

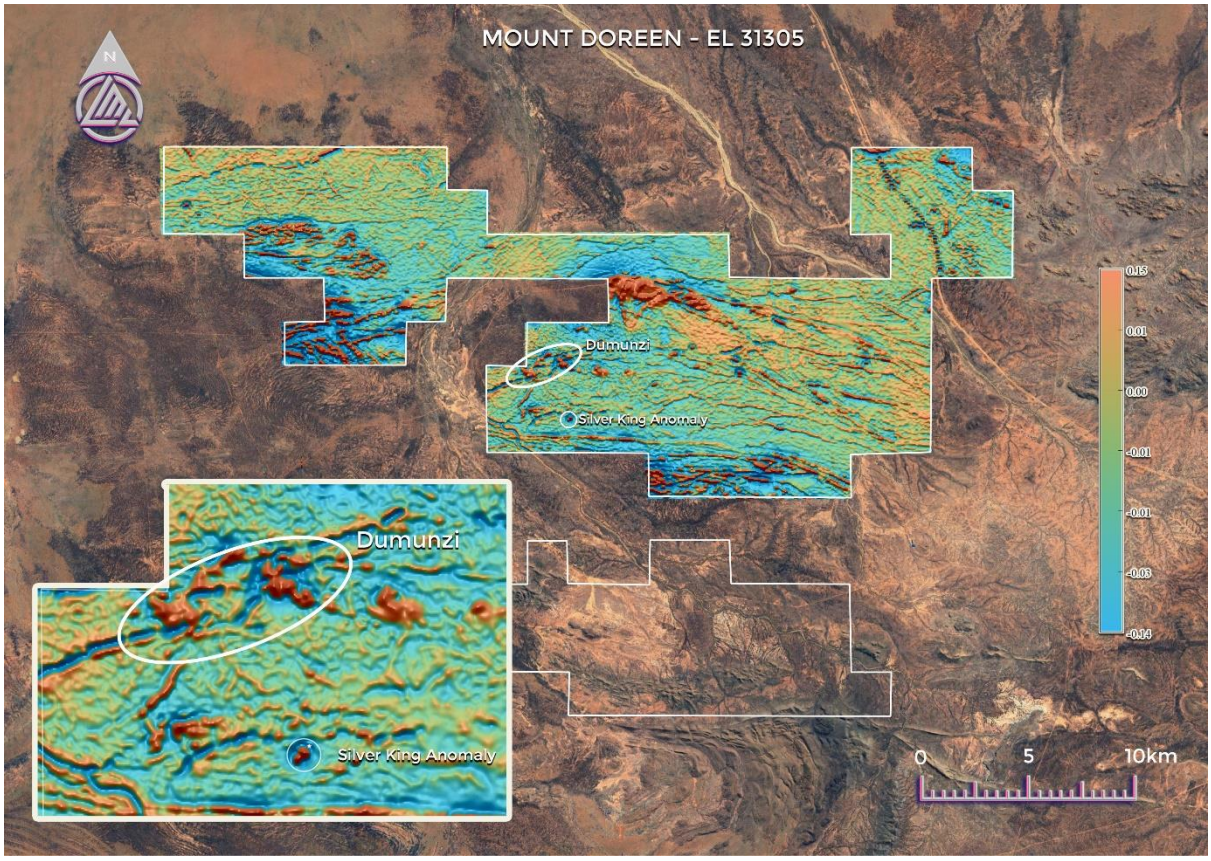

Figure 3 *– Dumunzi target represented by RTP 1VD SUN HEQ, north of Silver King.*

Cautionary Note – Visual Estimates of Mineralisation

Any references to visual results above, made in the Patmungula section, are based on observations from historical explorers. These visual observations, which identify mineralisation, are derived from historical reports. Accurate and representative estimates of copper and other metal content require laboratory assays.

About Litchfield Minerals

Litchfield Minerals is a critical mineral explorer, primarily searching for base metals and uranium out of the Northern Territory of Australia. Our mission is to be a pioneering copper exploration company committed to delivering cost-effective, innovative, and sustainable exploration solutions.

We aim to unlock the full potential of copper and other mineral resources while minimising environmental impact, ensuring the longevity and affordability of this essential metal for future generations.

We are dedicated to involving cutting-edge technology, responsible practices, and stakeholder collaboration drives us to continuously redefine the industry standards and deliver value to our investors, communities, and the world."

The announcement has been approved by the Board of Directors.

For further information please contact:

Matthew Pustahya
Matthew@litchfieldminerals.com.au

Jane Morgan
jm@janemorganmanagement.com.au

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Competent Person's Statement

The information in this Presentation that relates to Exploration Results is based on, and fairly represents, information and supporting documentation compiled by Mr Russell Dow (MSc, BScHons Geology), a Competent Person who is a Member of the Australian Institute of Mining and Metallurgy (AusIMM) and is a full-time employee of Litchfield Minerals Limited. Mr Dow has sufficient experience that is relevant to the style of mineralisation and types of deposits under consideration and to the activity being undertaken to qualify as a Competent Person as defined in the 2012 Edition of the "Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves" (JORC Code). Mr Dow consents to the inclusion in the report of the matters based on his information in the form and context in which it appears.

Forward-Looking Statements and Important Notice

Statements regarding plans with respect to Litchfield's project are forward-looking statements. There can be no assurance that the Company's plans for the development of its projects will proceed as currently expected. These forward-looking statements are based on the Company's expectations and beliefs concerning future events. Forward-looking statements are necessarily subject to risks, uncertainties, and other factors, many of which are outside the control of the Company, which could cause actual results to differ materially from such statements.

Mt Doreen Aeromagnetic Survey

Section 1 Sampling Techniques and Data

(Criteria in this section apply to all succeeding sections.)

Criteria	JORC Code explanation	Commentary
Sampling techniques	• *Nature and quality of sampling (eg cut channels, random chips, or specific specialised industry standard measurement tools appropriate to the minerals under investigation, such as down hole gamma sondes, or handheld XRF instruments, etc). These examples should not be taken as limiting the broad meaning of sampling.* • *Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.* • *Aspects of the determination of mineralisation that are Material to the Public Report.* • *In cases where 'industry standard' work has been done this would be relatively simple (eg 'reverse circulation drilling was used to obtain 1 m samples from which 3 kg was pulverised to produce a 30 g charge for fire assay'). In other cases more explanation may be required, such as where there is coarse gold that has inherent sampling problems. Unusual commodities or mineralisation types (eg submarine nodules) may warrant disclosure of detailed information.*	• No drilling reported in this release. • LMS is reporting a new airborne survey at the Mt Doreen project. • The airborne magnetic and radiometric survey was conducted by MagSpec Airborne Surveys. MagSpec acquired the data with a fixed-wing aircraft (Cessna 210). • 100m survey line spacing and 30m flying height above ground level (Mt Doreen North), 50m line spacing and 30m flying height for Mt Irene and Silver King. • Sample spacing 3.5m for magnetics and 35m radiometrics. • Magnetometers: G-823A cesium vapour magnetometer. • Gamma Ray Spectrometer: RSI RS-500 gamma-ray spectrometer with 1024 Channels, incorporating 2x RSX-4 detector packs (32L). • GPS: Integrated Novatel OEM719 DGPS receiver, 555 Channel with L1/L2 + GLONASS Multi Frequency. • Altimeter: Bendix/King KRA 405 radar altimeter and Renishaw ILM-500R laser altimeter. • Data Acquisition System: Integrated Novatel OEM DGPS receiver, High precision cesium vapour magnetometer (sample rates 20Hz).

Criteria	JORC Code explanation	Commentary
Drilling techniques	• *Drill type (eg core, reverse circulation, open-hole hammer, rotary air blast, auger, Bangka, sonic, etc) and details (eg core diameter, triple or standard tube, depth of diamond tails, face-sampling bit or other type, whether core is oriented and if so, by what method, etc).*	• No drilling was conducted.
Drill sample recovery	• *Method of recording and assessing core and chip sample recoveries and results assessed.* • *Measures taken to maximise sample recovery and ensure representative nature of the samples.* • *Whether a relationship exists between sample recovery and grade and whether sample bias may have occurred due to preferential loss/gain of fine/coarse material.*	• Not applicable as no sampling conducted or reported.
Logging	• *Whether core and chip samples have been geologically and geotechnically logged to a level of detail to support appropriate Mineral Resource estimation, mining studies and metallurgical studies.* • *Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc) photography.* • *The total length and percentage of the relevant intersections logged.*	• Not applicable for aeromagnetic survey.
Sub-sampling techniques and sample preparation	• *If core, whether cut or sawn and whether quarter, half or all core taken.* • *If non-core, whether riffled, tube sampled, rotary split, etc and whether sampled wet or dry.* • *For all sample types, the nature, quality and appropriateness of the sample preparation technique.* • *Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.* • *Measures taken to ensure that the sampling is representative of the in situ material collected, including for instance results for field duplicate/second-half sampling.* • *Whether sample sizes are appropriate to the grain size of the material being sampled.*	• Not applicable for aeromagnetic survey.

Criteria	JORC Code explanation	Commentary
Quality of assay data and laboratory tests	• *The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total.* • *For geophysical tools, spectrometers, handheld XRF instruments, etc, the parameters used in determining the analysis including instrument make and model, reading times, calibrations factors applied and their derivation, etc.* • *Nature of quality control procedures adopted (eg standards, blanks, duplicates, external laboratory checks) and whether acceptable levels of accuracy (ie lack of bias) and precision have been established.*	• The survey quality control (QC) parameters and tolerances are listed in below table:

Stream	Parameter	Specification
Navigation	Model Type	Integrated Novatel OEM719 DGPS receiver
Altimeters	Model Type	Bendix/King KRA 405 radar altimeter
	Resolution	0.3 m
	Sample Rate	20 Hz
	Range	0-760 m
	Model Type	Renishaw ILM-500R laser altimeter
	Resolution	0.01 m
	Sample Rate	Up to 20 Hz
	Range	0-500 m
Magnetics	Model Type	G-823A cesium vapour magnetometer
	Resolution	0.001 nT resolution
	Sensitivity	0.01 nT sensitivity
	Sample Rate	20 Hz (approximately 3.5 m)
	Compensation	3-axis fluxgate magnetometer
Radiometrics	Model Type	RSI RS-500 gamma-ray spectrometer incorporating 2x RSX-4 detector pac
	Total Crystal Volume	32 L
	Channels	1024
	Sample Rate	2 Hz (approximately 35 m)
	Stabilization	Multi-peak automatic gain
Base Station	Model Type	GEM GSM-19 Overhauser & Scintrex Envi-Mag proton precession
	Resolution	0.01 / 0.1 nT
	Accuracy	0.1 / 0.5 nT
	Sample Rate	1.0 / 0.5 Hz

- A dedicated PC-based notebook computer was used as a workstation to process and image geophysical and navigation data acquired during the survey, producing semi-final, preliminary levelled grids and maps.
- Flight path plots were generated from the GPS data to verify the completeness and accuracy of each day's flight(s).
- The Geosoft software system permitted preliminary maps to be

Criteria	JORC Code explanation	Commentary
		quickly and efficiently created for errors and coherency checks.
Verification of sampling and assaying	• *The verification of significant intersections by either independent or alternative company personnel.* • *The use of twinned holes.* • *Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.* • *Discuss any adjustment to assay data.*	• Flight data quality and completeness were assured by both statistical and graphical means on a daily basis (Digital Data Verification). • Sampling and assay verification not applicable for aeromagnetic survey.
Location of data points	• *Accuracy and quality of surveys used to locate drill holes (collar and down-hole surveys), trenches, mine workings and other locations used in Mineral Resource estimation.* • *Specification of the grid system used.* • *Quality and adequacy of topographic control.*	• The coordinates were confirmed as being WGS84 UTM zone 52S. • On-board DGPS positioning of all data locations. • Traverse lines were surveyed at an average spacing of 100m. • Control tie lines on block were surveyed at an average spacing of 1000m. • The survey was planned at 30m above ground at one dimensional tight drape. The target accuracy for the aircraft was± 10m from the planned elevation.

Data spacing and distribution	• *Data spacing for reporting of Exploration Results.*
	• *Whether the data spacing and distribution is sufficient to establish the degree of geological and grade continuity appropriate for the Mineral Resource and Ore Reserve estimation procedure(s) and classifications applied.*
	• *Whether sample compositing has been applied.*
		• The pre-processed data sampling rates for the sub-systems are:
		  ○ Magnetic data (20Hz)
		  ○ Radiometric data (2Hz)
		  ○ Airborne GPS (20Hz)
		  ○ Base station magnetometer (0.5Hz).

Orientation of data in relation to geological structure	• *Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type.* • *If the relationship between the drilling orientation and the orientation of key mineralised structures is considered to have introduced a sampling bias, this should be assessed and reported if material.*	• Magnetic survey lines were flown 090-270 degrees (E-W). • Drilling orientation not applicable for aeromagnetic survey.
Sample security	• *The measures taken to ensure sample security.*	• A report of daily activity covering the total acquisition period prepared. The report covers production figures, flight duration

Criteria	JORC Code explanation	Commentary
		times and daily comments on data QA/QC. • All data collected under strict security measures by contractor.
Audits or reviews	• *The results of any audits or reviews of sampling techniques and data.*	• All digital airborne magnetic and radiometric data was subject to auditing by independent geophysical contractor, Xcalibur Airborne Geophysics. • No other audits or reviews were reported.

Section 2 Reporting of Exploration Results

(Criteria listed in the preceding section also apply to this section.)

Criteria	JORC Code explanation	Commentary
Mineral tenement and land tenure status	• *Type, reference name/number, location and ownership including agreements or material issues with third parties such as joint ventures, partnerships, overriding royalties, native title interests, historical sites, wilderness or national park and environmental settings.* • *The security of the tenure held at the time of reporting along with any known impediments to obtaining a licence to operate in the area.*	• The mineral tenement is held by Litchfield Minerals Limited (ASX: LMS). • The area has a granted Exploration License (EL31305) granted by the NTGS on 6/6/2018, expires 5/6/2026.
Exploration done by other parties	• *Acknowledgment and appraisal of exploration by other parties.*	• Refer to Section 6 and 7 in the Independent Geologists Report (IGR) by Ross *et al.*, 2023 for further detail. A summary of previous exploration and mining is presented below. • 1930- 1956: Minor amounts of copper and tungsten extracted from Silver King, Clark, Mount Irene and Wolfram Hill. • 1969: NT Mines & Water Resources diamond drilling at Clark workings. • 1987 – 2006: White Industries/Mareeba Mining, Bruce and Mules, MIM Exploration/Roebuck Resources, Track Minerals, Poseidon Gold/Yuendumu Mining, BHP, Homestake Gold, Rio Tinto

Criteria	JORC Code explanation	Commentary
		• Rio Tinto Exploration, 1998. Annie Spring EL 9413. Second Annual Report for the Period ending 15th May 1998. Northern Territory Geological Survey, Open File Company Report CR19980436. • • Exploration and Tanami Gold completed geological mapping, geochemical sampling, airborne and ground geophysical surveys, and drilling programs. •
Geology	• *Deposit type, geological setting and style of mineralisation.*	• Refer to Section 5 in the Independent Geologists Report (IGR) by Ross *et al.*, 2023 for further detail. In summary: • Mount Doreen is located in the southern portion of the Paleoproterozoic Aileron Province of the Arunta Region. • The oldest rocks at Mount Doreen are the multiply deformed and metamorphosed siliciclastic sediments of the Lander Rock Formation. The younger volcano sedimentary Patmungala Beds lie in the south of the tenement, and both are intruded by the Yarunganyi Granite. Numerous major faults strike close to east-west and often contain veins or vein swarms of quartz, forming ridges. Neoproterozoic to Palaeozoic sedimentary rocks of the Ngalia Basin overlie the Aileron basement in the southwest of the tenement and along the southern boundary. • Mineralisation is considered to be epigenetic intrusion-related breccia and vein mineralisation with polymetallic copper-lead-zinc-silver-molybdenite and tungsten. Mineralisation is interpreted to be from varied sources and associations as evidenced from mineralisation dating.

Criteria	JORC Code explanation	Commentary
		• The most prominent mineralisation is supergene copper at Silver King with varying lead-zinc-silver- in quartz veins and shear zones.

Drill hole Information	• *A summary of all information material to the understanding of the exploration results including a tabulation of the following information for all Material drill holes:*
	  ○ *easting and northing of the drill hole collar*
	  ○ *elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar*
	  ○ *dip and azimuth of the hole*
	  ○ *down hole length and interception depth*
	  ○ *hole length.*
	• *If the exclusion of this information is justified on the basis that the information is not Material and this exclusion does not detract from the understanding of the report, the Competent Person should clearly explain why this is the case.*
		• Not applicable as no drilling is reported.

Data aggregation methods	• *In reporting Exploration Results, weighting averaging techniques, maximum and/or minimum grade truncations (eg cutting of high grades) and cut-off grades are usually Material and should be stated.* • *Where aggregate intercepts incorporate short lengths of high grade results and longer lengths of low grade results, the procedure used for such aggregation should be stated and some typical examples of such aggregations should be shown in detail.* • *The assumptions used for any reporting of metal equivalent values should be clearly stated.*	• Not applicable, as no drill assay or similar interval results are reported.
Relationship between	• *These relationships are particularly important in the reporting of Exploration Results.*	• Not applicable as no drilling or sampling reported.

Criteria	JORC Code explanation	Commentary
mineralisation widths and intercept lengths	• *If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported.* • *If it is not known and only the down hole lengths are reported, there should be a clear statement to this effect (eg 'down hole length, true width not known').*	• This release has no reference to previously unreported drill results, sampling, assay, etc.
Diagrams	• *Appropriate maps and sections (with scales) and tabulations of intercepts should be included for any significant discovery being reported These should include, but not be limited to a plan view of drill hole collar locations and appropriate sectional views.*	• The diagram in the body of this release is derived from the airborne geophysical survey undertaken by MagSpec Airborne Surveys.
Balanced reporting	• *Where comprehensive reporting of all Exploration Results is not practicable, representative reporting of both low and high grades and/or widths should be practiced to avoid misleading reporting of Exploration Results.*	• This report provides the total information available to date and is considered to represent a balanced report.
Other substantive exploration data	• *Other exploration data, if meaningful and material, should be reported including (but not limited to): geological observations; geophysical survey results; geochemical survey results; bulk samples – size and method of treatment; metallurgical test results; bulk density, groundwater, geotechnical and rock characteristics; potential deleterious or contaminating substances.*	• No additional data is reported.
Further work	• *The nature and scale of planned further work (eg tests for lateral extensions or depth extensions or large-scale step-out drilling).* • *Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.*	• Data modelling and completion of lithostructural interpretation. Identified targets to be tested with surface geochemical techniques and drilling.