

## Moogie Project Update

- **Coincident gravity, magnetic and electromagnetic (EM) anomaly identified north of Breccia prospect.**
- **Coincident structural, magnetic, and geochemical anomalies identified at Minni Ritchi and Ghallangee prospects.**
- **Detailed helicopter-borne EM survey over Breccia, Minni Ritchi and Ghallangee prospects scheduled to commence in September.**
- **Heritage notices to be lodged in September.**
- **Ground EM surveys scheduled for November.**
- **Regional surface sampling to recommence in November.**

Hannans Ltd (ASX:HNR) provides shareholders with an update from the 100% owned Moogie Gold and Nickel-Copper Project ("**Moogie**"), located approximately 260km north-west of Meekatharra and 300km east of Carnarvon in the East Gascoyne Region of Western Australia. Please refer to Figures 1-3 on pages 2-3 for state, regional and project location maps. <sup>1</sup>

Moogie represents a conceptual, greenfields exploration opportunity based on large-scale tectonic controls on mineralisation. The concept is that deep, long-lived crustal scale structures like major shear zones represent excellent tectonic settings for large scale mineralising events. Government seismic lines indicate the surface expression of a major structure occurs within Hannans' Moogie Project<sup>2</sup>.

The deposit models being assessed by Hannans can best be described as:

- hydrothermal silica-magnetite breccia systems with discreet magnetic anomalies that have potential for IOCG mineralisation-Breccia prospect; and
- mafic and ultramafic parts of the gneissic lithology with geochemistry indicative of magmatic fractionation of the protolith-Minni Ritchi and Ghallangee prospects. This process is key to development of magmatic sulphides generally, including nickel-copper sulphides.

Hannans completed a ground gravity survey over the Breccia prospect in August 2021. The gravity survey over the northern magnetic high at the Breccia prospect revealed several small gravity anomalies coincident with high magnetic features. By chance, a subtle airborne EM anomaly sits next to the western coincident magnetic/gravity anomaly. The EM anomaly was generated by an airborne survey completed in 2013 by the Geological Survey of WA with flight lines 5km lines apart. It was simply good fortune that the 2013 survey went straight over the coincident magnetic-gravity anomalies.

After consideration of the merits of several additional exploration techniques, it was determined that a regional and prospect scale airborne electromagnetic (EM) survey would be flown in September 2021. Hannans have engaged NRG to complete a 413 line kilometre high resolution EM and magnetic survey using their Xcite™ system. The line spacing over the Breccia, Minni Ritchi and Ghallangee

<sup>1</sup> A comprehensive introduction to the Project can be found [here](#). This was released to ASX on 3 June 2020.

<sup>2</sup> Refer ASX release dated 3 June 2020 for further information.

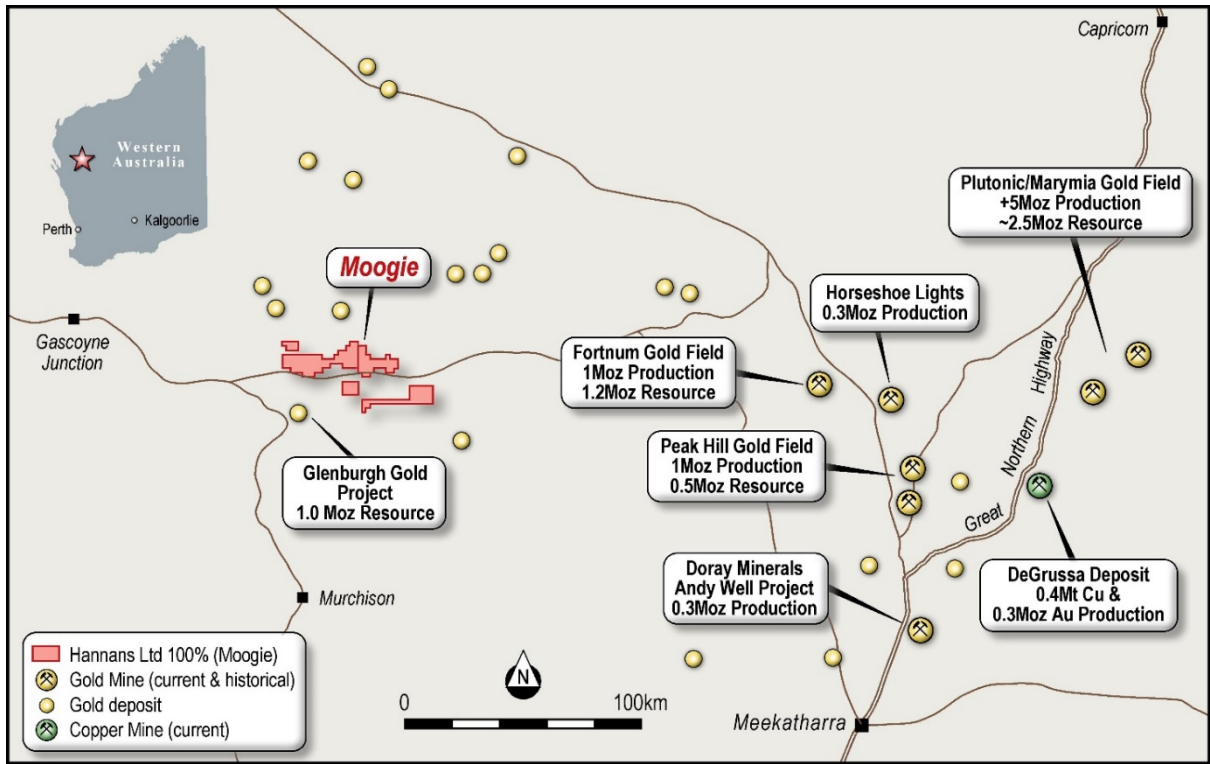


prospects will be 200m and the line spacing for the regional survey will be 400m. If justified, ground EM surveys will be completed over anomalous geochemical and geophysical responses. Ground EM surveys are being scheduled for November 2021. Targets generated at the end of this process will be drill tested after receipt of heritage clearances.

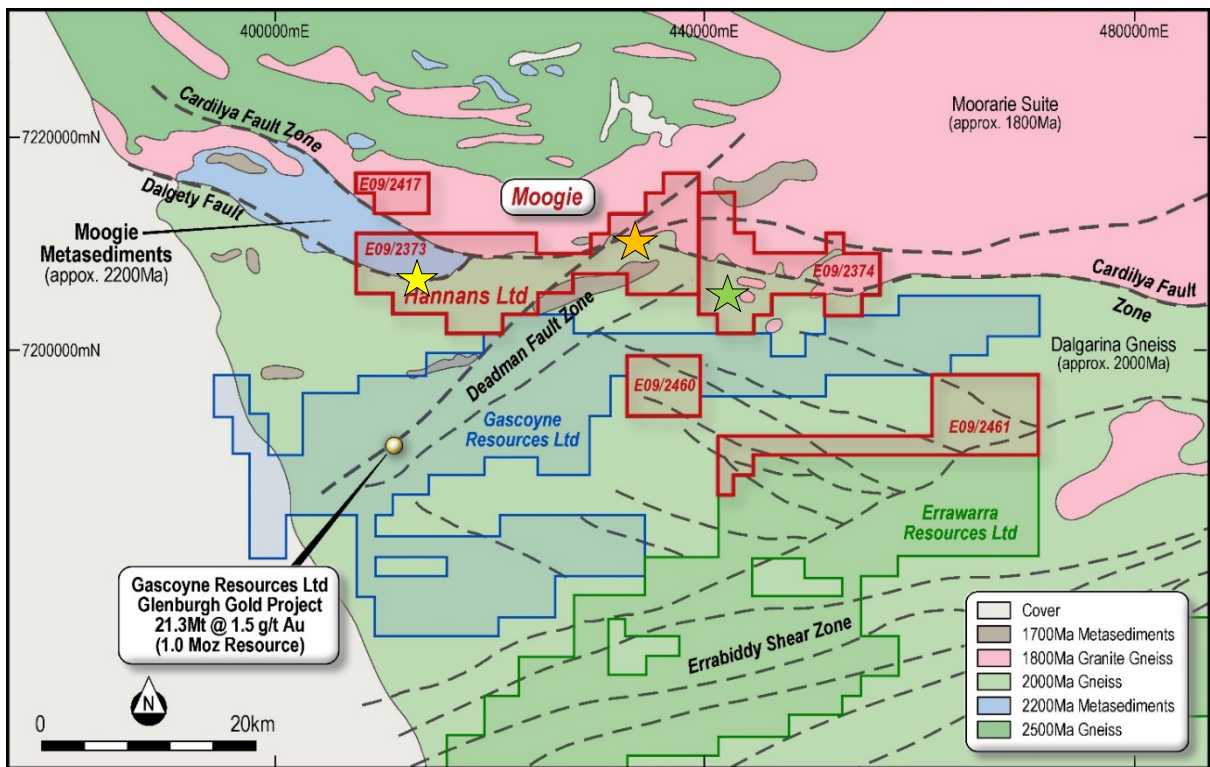
The final phase of a project mapping / soil sampling program will be completed in November along with prospect scale mapping. This activity was scheduled for August (then September) however persistent rain in the region has seen the program delayed until November.



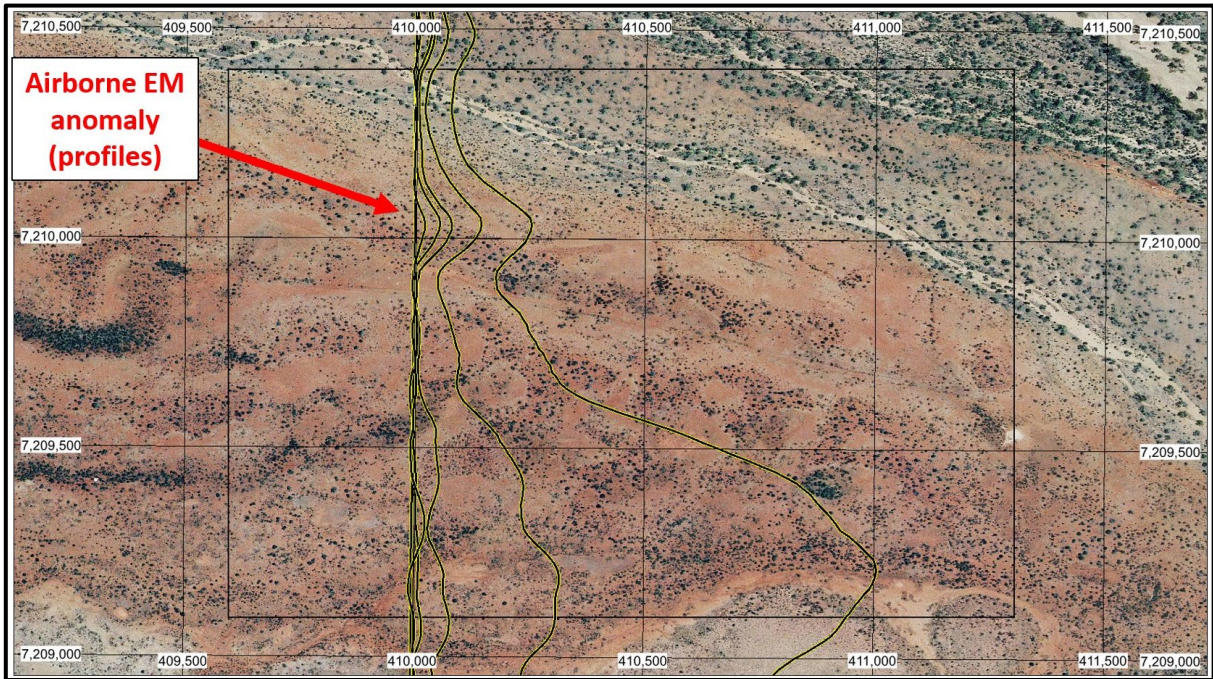
Figure 1: Project location map



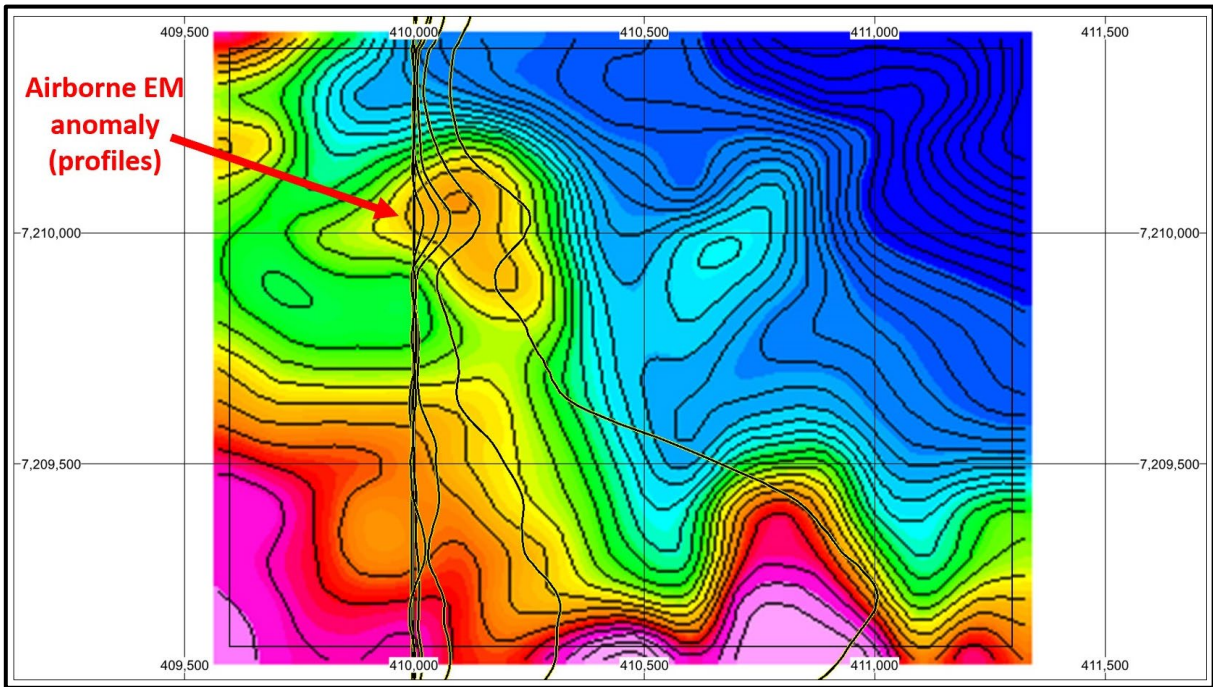
**Figure 2:** Regional location map showing Moogie and its proximity to several current and historic mines.



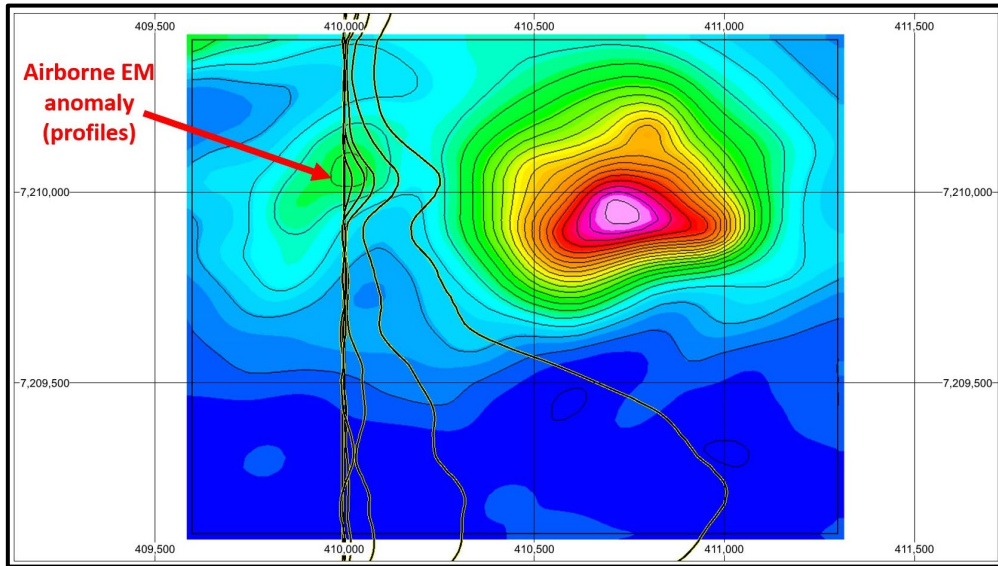
**Figure 3:** Project location map showing Hannans tenement applications E09/2373 and E09/2374 highlighted by the yellow stars. An airborne magnetic (gradiometer) and radiometric survey will be flown over these tenements in March 2021. Gold star represents approximate location of Moogie Breccia, the orange star Minni Ritchi and the green star Ghallangee.



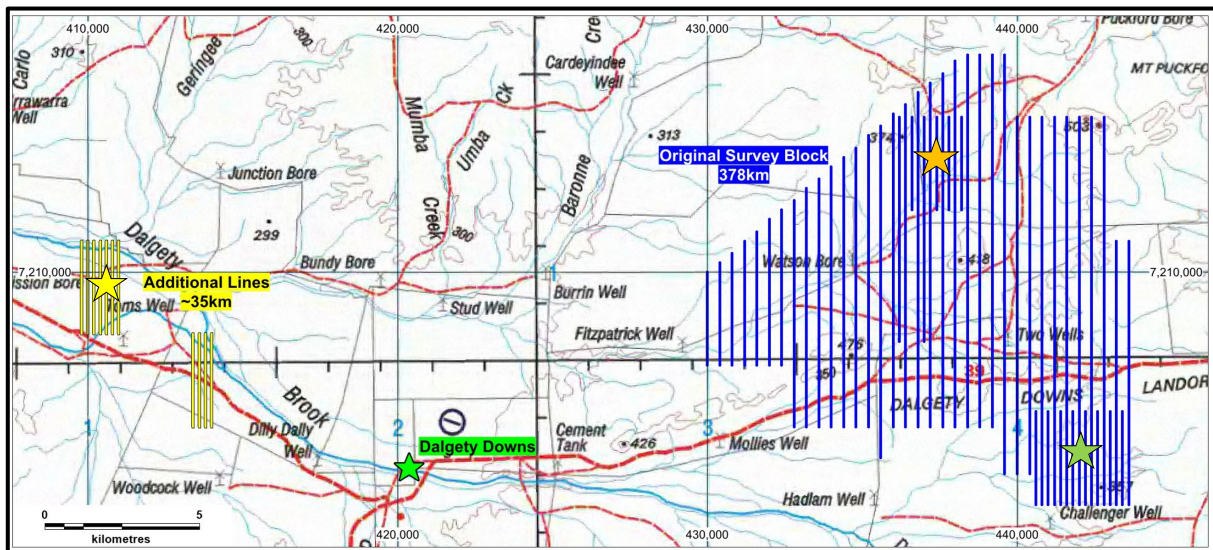
**Figure 4:** Northern Breccia prospect, aerial image.



**Figure 5:** Northern Breccia prospect, gravity, Bouguer image.



**Figure 6:** Northern Breccia prospect, magnetics (TMI)



**Figure 7:** Proposed flights lines for airborne EM survey scheduled to commence in September 2021. Blue lines cover the regional, Minni Ritchi and Ghallangee prospects. Yellow lines cover the Breccia prospect. Gold star represents approximate location of Moogie Breccia, the orange star Minni Ritchi and the green star Ghallangee.



**Figure 8:** NRG survey using Xcite system.

**Table 1:** Development and exploration timeline of Moogie Project

Phase	Explanation
Concept	Can the position and nature of the major structure at Moogie be defined, and its mineral potential explored? Hannans is targeting discovery of a large, long-life, low cost gold, copper and or nickel-copper-PGE deposits (Tier 1). The deposit models being investigated include both: orogenic Au and or Cu; and intrusion hosted Ni-Cu-PGE. (October 2019)
Proof of Concept	Detailed aeromagnetic data collection and interpretation, geochemical sampling and interpretation, mapping and thin section analysis resulted in proof of concept. (December 2019 – June 2020)
Deposit Models	Following the collection of additional geochemical data, mapping, and interpretation plus a detailed review of all historic and modern data, focus has turned to deposit models best described as: hydrothermal silica-magnetite breccia systems (Moogie Breccia); and mafic and ultramafic intrusive systems hosting magmatic sulphides (Minni Ritchi and Ghallangee) (E09/2373, E09/2374 and E09/2417). The opportunity for orogenic gold mineralisation also remains in tenements (E09/2460 and E09/2461) (July 2020 – June 2021).
Field Work	A ground gravity survey was completed over the Breccia prospect in August 2021. The NRG airborne EM and magnetic survey over the Breccia, Minni Ritchi and Ghallangee prospects is scheduled for September 2021. Regional surface sampling and prospect scale surface sampling at Minni Ritchi and Ghallangee is scheduled to recommence in November 2021.

This ASX announcement has been authorised for released by Mr Damian Hicks, Executive Director.

For further information, please contact:

**Damian Hicks**  
**Executive Director**

**Competent Person**

The information in this document that relates to exploration results is based on information compiled by Amanda Scott, a Competent Person who is a Member of the Australian Institute of Mining and Metallurgy (Membership No.990895). Amanda Scott is a full-time employee of Scott Geological AB. Amanda Scott is also a non-executive director of Hannans and holds both shares and options in Hannans. Amanda Scott has sufficient experience, which is relevant to the style of mineralisation and types of deposits under consideration and to the activity which has been 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). Amanda Scott consents to the inclusion in the report of the matters based on her information in the form and context in which it appears.

## JORC Code, 2012 Edition – Table 1 report

### Section 1 Sampling Techniques and Data

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

Criteria	JORC Code explanation	Commentary
<b>Sampling techniques</b>	<p>Nature and quality of sampling (e.g. 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.</p> <p>Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.</p> <p>Aspects of the determination of mineralisation that are Material to the Public Report.</p> <p>In cases where 'industry standard' work has been done this would be relatively simple (e.g. '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 (e.g. submarine nodules) may warrant disclosure of detailed information.</p>	<p>Ground gravity survey completed at 100x100m grid spacing by Atlas Geophysics using a Scintrex CG-5 Autograv gravity meter. A total of 966 new gravity stations were acquired with 2.5% repeat readings.</p>
<b>Drilling techniques</b>	<p>Drill type (e.g. core, reverse circulation, open-hole hammer, rotary air blast, auger, Bangka, sonic, etc.) and details (e.g. 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.).</p>	<p>No drilling is being reported in this announcement.</p>
<b>Drill sample recovery</b>	<p>Method of recording and assessing core and chip sample recoveries and results assessed.</p> <p>Measures taken to maximise sample recovery and ensure representative nature of the samples.</p> <p>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.</p>	<p>No drilling is being reported in this announcement.</p>
<b>Logging</b>	<p>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.</p> <p>Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc.) photography.</p> <p>The total length and percentage of the relevant intersections logged.</p>	<p>No drilling is being reported in this announcement.</p>
<b>Sub-sampling techniques and</b>	<p>If core, whether cut or sawn and whether quarter, half or all core taken.</p>	<p>No drilling is being reported in this announcement.</p>



Criteria	JORC Code explanation	Commentary
<b>sample preparation</b>	<p>If non-core, whether riffled, tube sampled, rotary split, etc. and whether sampled wet or dry.</p> <p>For all sample types, the nature, quality and appropriateness of the sample preparation technique.</p> <p>Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.</p> <p>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.</p> <p>Whether sample sizes are appropriate to the grain size of the material being sampled.</p>	
<b>Quality of assay data and laboratory tests</b>	<p>The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total.</p> <p>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.</p> <p>Nature of quality control procedures adopted (e.g. standards, blanks, duplicates, external laboratory checks) and whether acceptable levels of accuracy (i.e. lack of bias) and precision have been established.</p>	No assays are being reported in this announcement.
<b>Verification of sampling and assaying</b>	<p>The verification of significant intersections by either independent or alternative company personnel.</p> <p>The use of twinned holes.</p> <p>Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.</p> <p>Discuss any adjustment to assay data.</p>	No assaying is being reported in this announcement.
<b>Location of data points</b>	<p>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.</p> <p>Specification of the grid system used.</p> <p>Quality and adequacy of topographic control.</p>	Location of gravity stations acquired using roving and base station GNSS receivers with an accuracy of <5cm. The grid system used was GDA94 / MGA zone 51.
<b>Data spacing and distribution</b>	<p>Data spacing for reporting of Exploration Results.</p> <p>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.</p> <p>Whether sample compositing has been applied.</p>	Surface gravity surveying was completed at a 100x100m grid spacing.
<b>Orientation of data in relation to geological structure</b>	<p>Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type.</p>	Gravity survey lines were designed to be oriented normal (or close to normal) to the structure of the bedrock geology, which was interpreted from the aeromagnetic and from reconnaissance mapping throughout the area. The gravity survey was oriented with north-south lines.



Criteria	JORC Code explanation	Commentary
	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.	
<b>Sample security</b>	The measures taken to ensure sample security.	All data were acquired by Atlas Geophysics. Precision Geophysics provided data analysis, which was then reported to the Company's representatives.
<b>Audits or reviews</b>	The results of any audits or reviews of sampling techniques and data.	No drilling is being reported in this announcement.

## Section 2 Reporting of Exploration Results

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

Criteria	JORC Code explanation	Commentary
<b>Mineral tenement and land tenure status</b>	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.	Reed Exploration Pty Ltd (REX) is a wholly owned subsidiary of Hannans Ltd, and the registered holder of the relevant granted tenements being E09/2373 and E09/2374.  The Moogie Project is located on the Dalgety Downs pastoral station.
<b>Exploration done by other parties</b>	Acknowledgment and appraisal of exploration by other parties.	The Moogie Project area has received relatively little previous exploration and has largely been limited to stream sediment sampling.
<b>Geology</b>	Deposit type, geological setting and style of mineralisation.	Targeting orogenic lode gold and magmatic intrusion related nickel-copper mineralisation.
<b>Drill hole Information</b>	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.	No drilling is being reported in this announcement.
<b>Data aggregation methods</b>	In reporting Exploration Results, weighting averaging techniques, maximum and/or minimum grade truncations (e.g. 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	No drilling is being reported in this announcement.

Criteria	JORC Code explanation	Commentary
	<p>aggregation should be stated and some typical examples of such aggregations should be shown in detail.</p> <p>The assumptions used for any reporting of metal equivalent values should be clearly stated.</p>	
<b>Relationship between mineralisation widths and intercept lengths</b>	<p>These relationships are particularly important in the reporting of Exploration Results.</p> <p>If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported.</p> <p>If it is not known and only the down hole lengths are reported, there should be a clear statement to this effect (e.g. 'down hole length, true width not known').</p>	No drilling or assays are being reported in this announcement.
<b>Diagrams</b>	<p>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.</p>	Refer to figures and tables in the body of the ASX release.
<b>Balanced reporting</b>	<p>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.</p>	All results of the gravity surveying have been presented.
<b>Other substantive exploration data</b>	<p>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.</p>	A 11,500 line km airborne magnetic and radiometric survey was completed over the project in December 2019.
<b>Further work</b>	<p>The nature and scale of planned further work (e.g. tests for lateral extensions or depth extensions or large-scale step-out drilling).</p> <p>Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.</p>	Further work is planned as stated in this announcement.