



EXPLORATION TO TEST SHALLOW COPPER PORPHYRY TARGETS AT BOULIA

- Drill planning at Boulia Project in north Queensland has been completed following analysis of the previously reported results which show compelling copper porphyry targets at Boulia, see [ASX announcement dated 8 November 2023](#).
 - The Boulia region has recently become an area of significant exploration interest for copper, gold and base metals, with large projects being undertaken by Anglo American, these tenements adjoin & lie to the east of the Green Critical Minerals exploration project (Figure 1).
 - Soil sampling conducted by GCM indicates that the ore forming elements (copper, molybdenum, gold, antimony, arsenic and tellurium) are derived from shallowly buried intrusions that have magnetic bodies on their margins.
 - Multiple shallow gold, molybdenum, and copper porphyry targets have been defined, with peak zones of soils occurrences over these interpreted shallowly buried cretaceous porphyry and skarn magnetic features at the Lorna Downs station target (Figure 6).
 - Land access and native clearances have recently been completed, facilitating a maiden drilling program to test these exciting targets or conduct further exploration targeting given the new geological context from the area.
 - GCM exploited its first mover advantage in 2023 by lodging two contiguous EPM applications over the northern extensions of the inferred mineral belt, this first mover advantage secured tenure over several new large-scale targets under the alluvial cover and are expected to be granted H2 2024.
 - GCM is considering the most value accretive path forward for shareholders and will assess drilling the highly prospective targets or seeking strategic partners to progress exploration activities.
 - GCM re-engaging with synergetic groups in the area who have expressed interest previously.
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Green Critical Minerals Ltd ('GCM' or 'the Company') which holds a 100% interest in its Boulia copper gold molybdenum project ('**Boulia Project**') is pleased to provide an update on its recent and proposed exploration activities.

Project Permits and Location

The Boulia project located 200 km south of Mount Isa in northwest Queensland, comprises two granted exploration permits and three submitted applications, see **Error! Reference source not found.**, covering a total area of 1,597km².

The Boulia region has recently become an area of exploration interest for copper, gold and base metals, with large projects being undertaken by Anglo American, Sandfire, Rio Tinto, and a Plutonic – Lion Selection joint venture.

The Anglo American block of tenements lies immediately to the east of the Green Critical Minerals exploration project. The Sandfire, Rio, and Plutonic Lion Selection projects straddle the Queensland - Northern Territory border 120 km to the west.

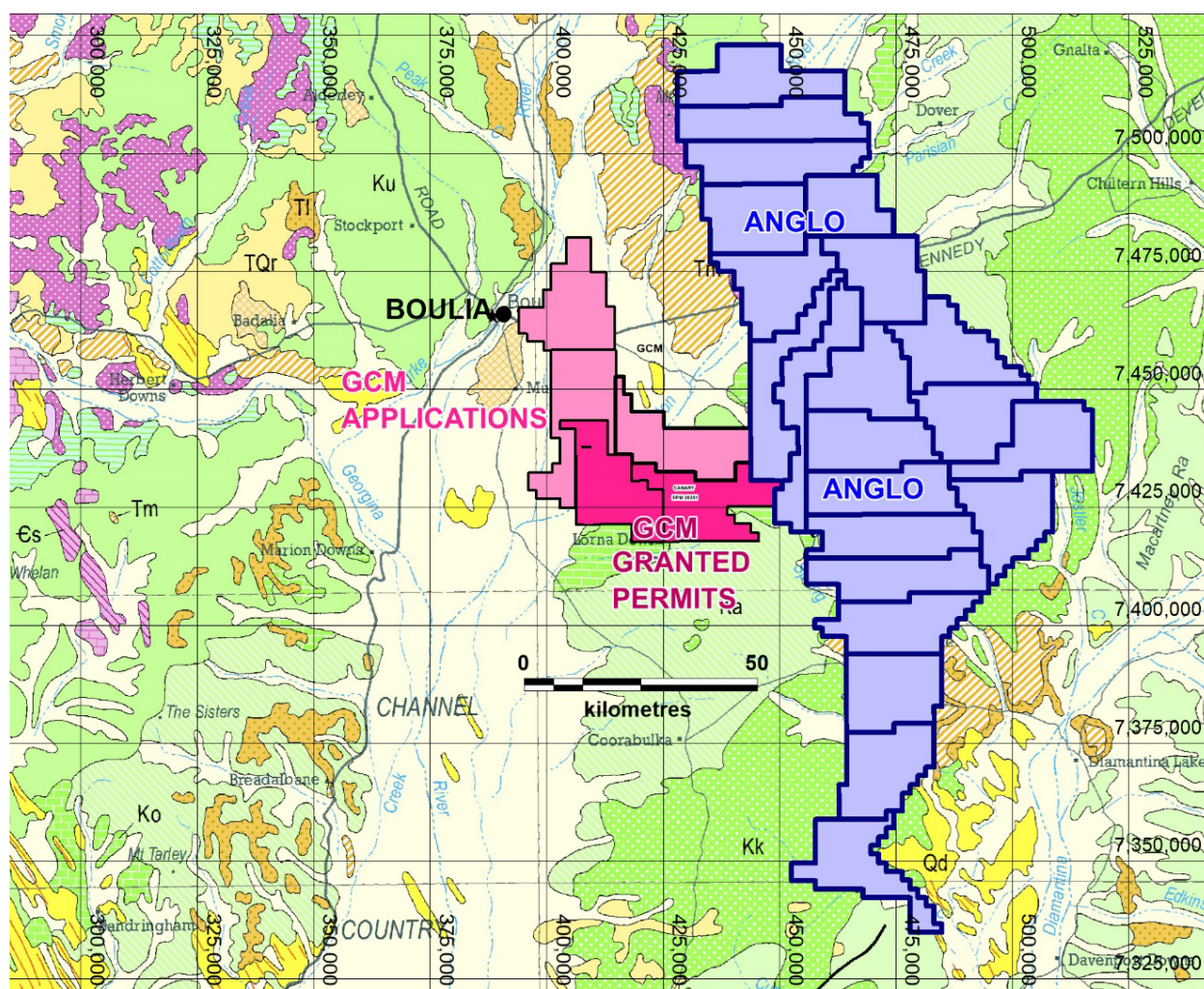


Figure 1 Boulia Project Exploration Permits

Recent Activity

In the second half of 2023 GCM undertook soil sampling activities to complement the 3D magnetic and gravity modelling, see ASX announcement dated 8 November 2023. These activities indicated exploration potential, including for copper, and subsequent to the completion of these activities GCM has been in discussions with relevant stakeholders and recently concluded the execution of access agreements and native title clearances to test these exciting large scale copper porphyry targets with an initial drilling program. The finalization of these activities provides the opportunity for the undertaking of this drilling program later this year.

Planned Drilling

GCM's initial drilling plan comprises four angled reverse circulation percussion holes, strategically designed to evaluate shallow magnetic, gravity, and geochemical anomalies identified through previous exploration work. GCM has identified two priority areas for the initial drilling on its granted tenement EPM 28253: **Paton Downs** in the north and **Lorna Downs** to the south.

Panton Downs

The Paton Downs drillholes, shown as Hole C and Hole D are designed to test the modeled magnetic body and a parallel gravity target, respectively (Figures 2-4).

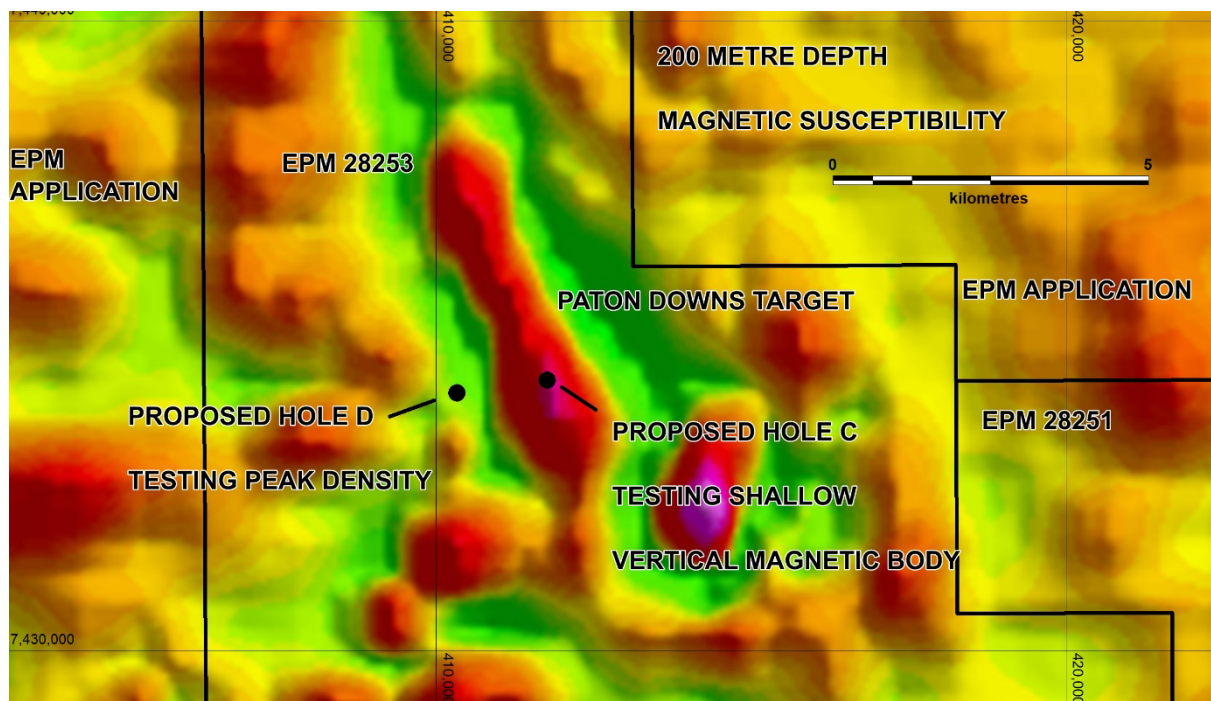


Figure 2 Paton Downs drillholes on 200m depth magnetic susceptibility

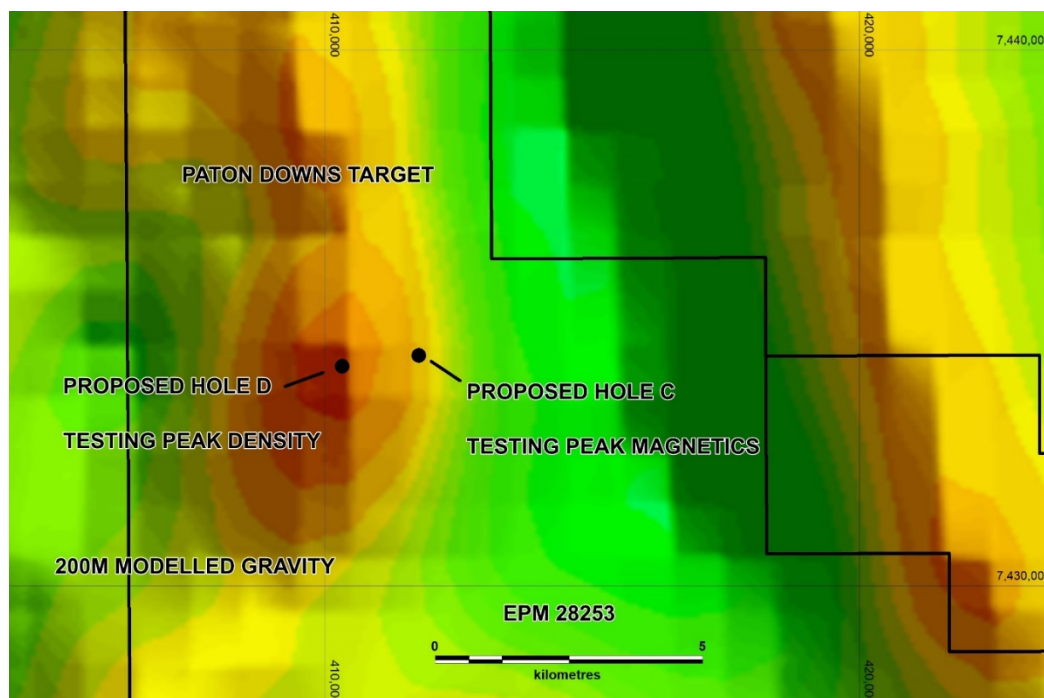


Figure 3 Paton Downs drillholes on 200m depth modelled gravity.

Lorna Downs

Drillholes shown as Hole A and Hole B (**Figure 4-6**) will investigate an area exhibiting maximum copper, gold, molybdenum, arsenic, zinc, tellurium, and antimony anomalism, **where magnetic modeling has revealed a donut-shaped feature typical of a porphyry system with magnetic alteration on its margins.**

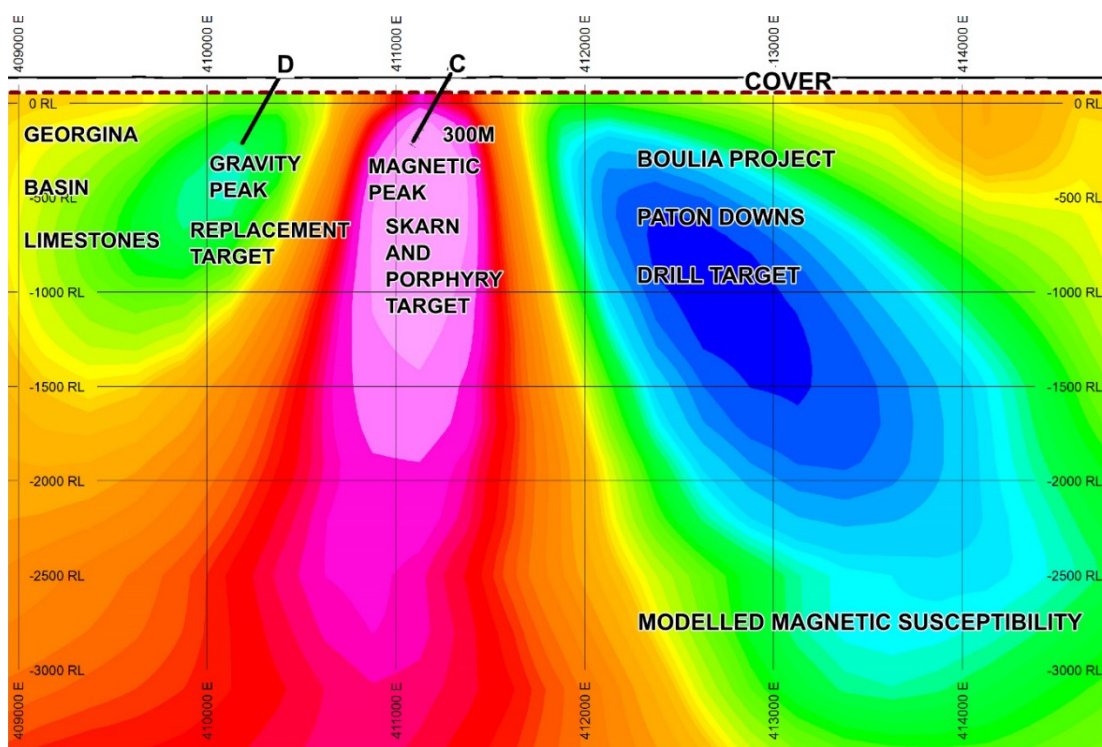


Figure 4 Cross section of the Paton Downs drilling targets on magnetic susceptibility

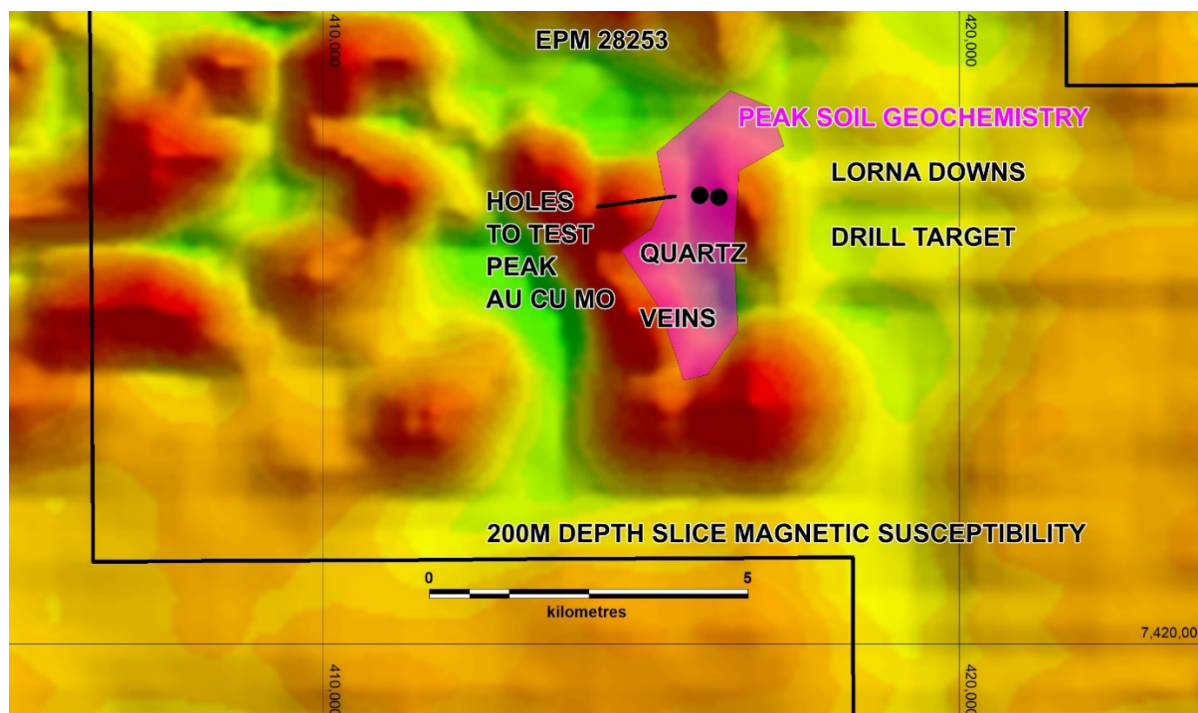


Figure 5 Lorna Downs drilling plan on 200m deep magnetic susceptibility

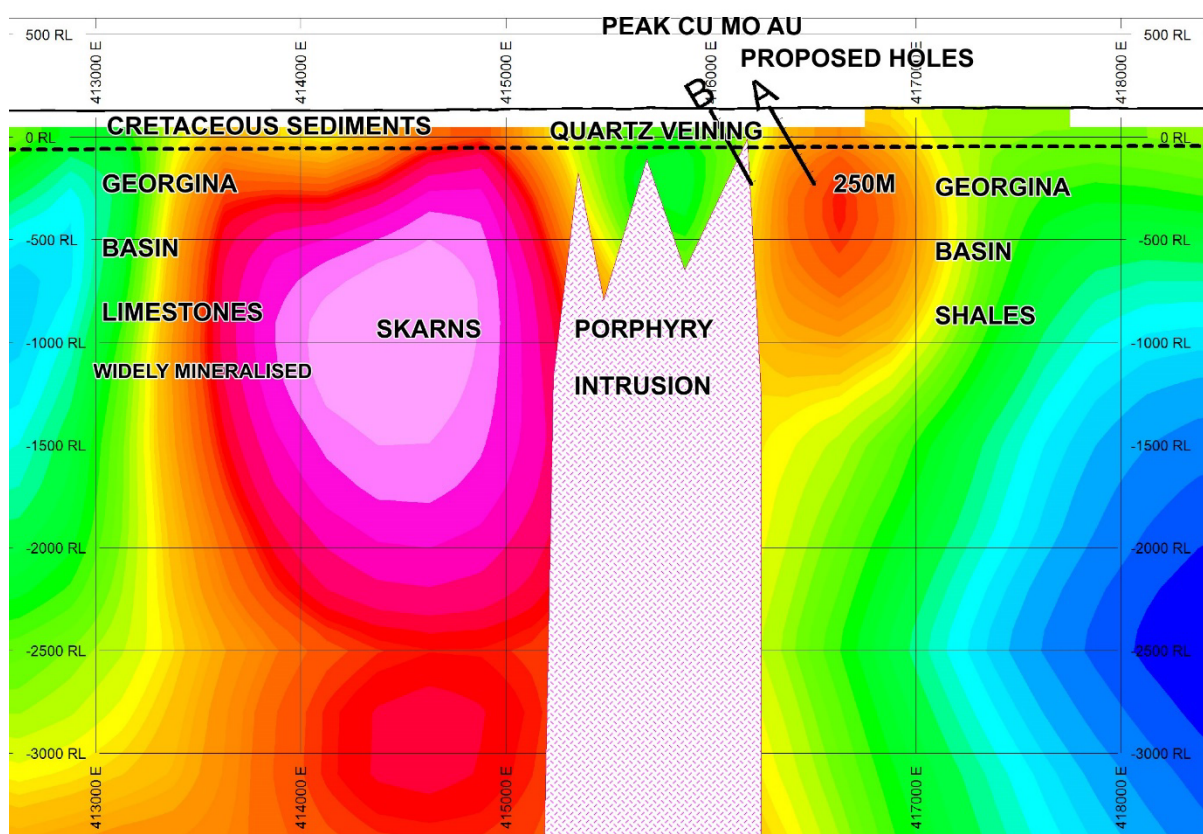


Figure 6 Lorna Downs drilling target cross section with interpreted porphyry and deep skarns



Boulia Exploration Potential

The Boulia region, extending northwards towards the renowned Mount Isa-Cloncurry mineral belt, hosts widespread low-grade copper, lead, and zinc mineralization associated with vein and breccia systems controlled by fault structures. These structures have also contributed to the formation of epithermal veining and brecciation in the overlying Eromanga Basin sediments.

GCM's interpretation suggests that the widespread mineralization and veining observed in the area may be driven by porphyry intrusions, manifested as unexplained shallow magnetic bodies within the project area. This interpretation has gained significant support from the Geoscience Australia Heavy Mineral Survey, which identified the regional maximum values of high-grade copper sulphide minerals chalcocite and bornite, as well as the aluminum sulphate mineral alunite, in a sample collected from the Hamilton River running through the project area.

The chalcocite-alunite association is a strong indicator of the upper portions of porphyry copper deposits, further reinforcing GCM's exploration model. Additionally, a nearby sample site revealed enrichment in skarn minerals such as diopside, garnet, and wollastonite, lending credence to the potential presence of skarns under the alluvial cover.

Competent Person Statement

The information in this release that relates to exploration results is based on information compiled by Mr Neil Wilkins M.Sc. Exploration and Mining Geology, who is a Member of The Australian Institute of Geoscientists. Mr Wilkins is employed by Ascry Pty Ltd, which provides consultancy services to GCM. Mr Wilkins has previously worked in the Boulia Project area and has more than five years' experience which is relevant to the styles of mineralisation and types of deposit mentioned in this report and to the activity, which he is undertaking to qualify as a Competent Person as defined in the 2012 Edition of the 'Australasian Code for Reporting of Exploration Results, Minerals Resources and Ore Reserves' (the JORC Code). This public report is issued with the prior written consent of the Competent Person as to the form and context in which it appears. Mr Wilkins holds shares in Green Critical Minerals Limited.

Authorisation

The provision of this announcement to the ASX has been authorised by the Board of directors of Green Critical Minerals Limited.

Forward Looking Statements

Statements contained in this release, particularly those regarding possible or assumed future performance, costs, dividends, production levels or rates, prices, resources, reserves or potential growth of Green Critical Minerals Limited, are, or may be, forward looking statements. Such statements relate to future events and expectations and, as such, involve known and unknown risks and uncertainties. Actual results and



developments may differ materially from those expressed or implied by these forward-looking statements depending on a variety of factors.

List of attachments

Appendix 1: JORC Table 1



JORC Code, 2012 Edition – Table 1 report template

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.	- Soil sampling by GCM involved sampling at a 10cm depth at mostly 500m and 1 kilometre intervals. The 1 kg samples were from clear sites located by GPS in GDA94 zone 54. The sieve size used here was the ultrafine fraction (75 microns). - Much of the project area has alluvial cover where the geochemical results are subdued or not useful. - The GCM samples were dried and sieved by Australian Laboratory Services prior to analyses in Perth by ALS Geochemistry, using sample prep code SCR-41f
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).	Not applicable
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	Not applicable



Criteria	JORC Code explanation	Commentary
	<i>whether sample bias may have occurred due to preferential loss/gain of fine/coarse material.</i>	
Logging	<i>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.</i> <i>Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc) photography.</i> <i>The total length and percentage of the relevant intersections logged.</i>	Not applicable
Sub-sampling techniques and sample preparation	<i>If core, whether cut or sawn and whether quarter, half or all core taken.</i> <i>If non-core, whether riffled, tube sampled, rotary split, etc and whether sampled wet or dry.</i> <i>For all sample types, the nature, quality and appropriateness of the sample preparation technique.</i> <i>Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.</i> <i>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.</i> <i>Whether sample sizes are appropriate to the grain size of the material being sampled.</i>	The GCM samples were dried and sieved by Australian Laboratory Services prior to analyses in Perth by ALS Geochemistry, using sample prep code SCR-41f
Quality of assay data and laboratory tests	<i>The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total.</i> <i>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.</i> <i>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.</i>	- Two analytical methods were applied, both considered the most appropriate. - MS1L-REE for rare earths - ME-MS41L multi element super trace lowest detection limit aqua regia digest ICP-MS finish. - Blanks and duplicates run by ALS Geochemistry.



Criteria	JORC Code explanation	Commentary
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.	No GCM drilling samples.
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.	Hand held GPS.
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.	Sufficient to outline large scale (> 4 sq. km.) initial targets under cover.
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.	Not applicable
Sample security	The measures taken to ensure sample security.	Delivered directly to ALS in Mount Isa by GCM employed personnel.
Audits or reviews	The results of any audits or reviews of sampling techniques and data.	Results are consistent between two batches of sampling. Follow up results agreed with first pass results over the target area.



(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 results are from 100% owned Green Critical Minerals EPMs 28251 and 28253. The EPMs are subject to native title under standard conditions. - EPM 28251 has a gas pipeline easement on the eastern edge, otherwise there are no known access restrictions. Drilling is not permitted in the river channels, as is standard in Queensland.
Exploration done by other parties	Acknowledgment and appraisal of exploration by other parties.	- Previous work by Hartz Rare Earths Pty Ltd under EPMs 25158, 25159, 25160 and 25295 was restricted to stream sediment sampling which outlined rare earths and ore element anomalism. The sources of the metals were not located. - Jacaranda Minerals Ltd conducted uranium exploration under EPMs 15234, 15235, and 15236. This culminated in a wide spaced shallow aircore drilling campaign. This did not test the current targets.
Geology	Deposit type, geological setting and style of mineralisation.	Postulated intrusion related gold deposits and copper gold molybdenum porphyry with skarns.
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	Not applicable



Criteria	JORC Code explanation	Commentary
	<i>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.</i>	
Data aggregation methods	<i>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.</i> <i>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.</i> <i>The assumptions used for any reporting of metal equivalent values should be clearly stated.</i>	Not applicable
Relationship between mineralisation widths and intercept lengths	<i>These relationships are particularly important in the reporting of Exploration Results.</i> <i>If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported.</i> <i>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').</i>	Not applicable
Diagrams	<i>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.</i>	Not applicable
Balanced reporting	<i>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.</i>	Not applicable
Other substantive exploration data	<i>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</i>	- Public magnetic data sourced from the Qld government has been depth modelled by the GeoDiscovery Group on behalf of Green Critical Minerals. - Public Heavy Mineral data was quoted in support. This is from publicly available Geoscience Australia Record 2022/43



Criteria	JORC Code explanation	Commentary
	<i>deleterious or contaminating substances.</i>	Occurrences of copper lead and zinc were derived from publicly available Geological Survey of Qld digital compilations of reported company geochemistry – Northwest Qld East.
Further work	<i>The nature and scale of planned further work (eg tests for lateral extensions or depth extensions or large-scale step-out drilling).</i> <i>Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.</i>	The company plans to conduct first pass drilling during mid 2024.