# FURTHER SPG BATTERY ANODE POTENTIAL AT MCINTOSH GRAPHITE

## Highlights

- GCM is pleased to report that initial results from petrographic analysis at the Mcintosh Graphite Project, confirm that 4 out of 6 exploration targets have an average flake size between 75-150 µm, which is the desired flake size starting point to make Spherical Graphite (SPG) for Battery anode material
- The targets with SPG Battery Anode Potential are **Marlin, Marlin West, Threadfin and Cobia**
- A ~10,500 m RC drilling program is on track to commence in May 2023 to verify the Exploration Targets
- This fine flake potential for the EV battery market is highly strategic and would serve to supplement and diversify the premium coarse flake found at the Emperor deposit

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**Green Critical Minerals Pty Ltd** ("**GCM**" or "**the Company**") which holds earn-in rights for up to 80% of the advanced Ultra High Purity / High Quality McIntosh Graphite Project (the "Project"; see CML's announcement on 15 June 2022) is pleased to announce thin section petrographic results from rock chip samples collected at the Project in September 2022 (see GCM ASX announcement "ASSAYS-CONFIRM-EXTENSIVE-OUTCROPPING-GRAPHITE-MINERALISATION" dated 20 December 2022).

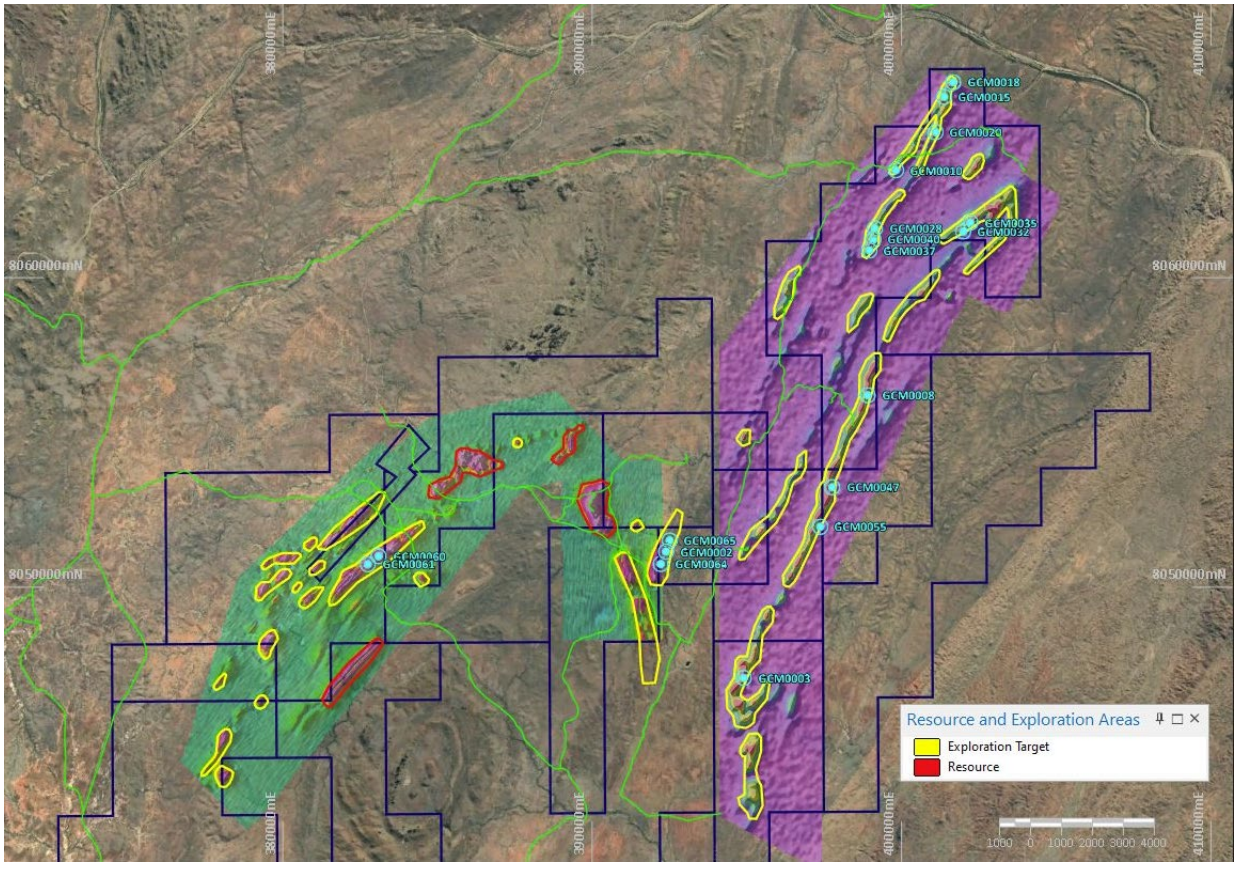
**PETROGRAPHIC SAMPLE RESULTS**

The locations and results of the petrographic samples are presented in Table 1 and Figure 1. Petrographic analysis was completed on a selection of rock chip samples that were collected during a prospecting program conducted in September 2022. The program focussed on areas of high electromagnetic (EM) response that have not been previously investigated, drilled or rock chip sampled. Out of the 65 rock chip collected, a representative selection of 18 were sent for petrographic analysis.

**Table 1 – Results of petrographic analyses from September 2022 rock chip sampling program**

| Prospect | Sample ID | Easting | Northing | Elevation (m) | TGC (%) | Flake Range | Average Flake Size |
|---|---|---|---|---|---|---|---|
| Marlin West | GCM0010 | 399823 | 8063468 | 303 | 2.09 | 25-270 | 150 |
| | GCM0015 | 401379 | 8065835 | 301 | 0.6 | 60-650 | 150 |
| | GCM0018 | 401669 | 8066314 | 296 | 1.17 | 50-800 | 150 |
| | GCM0020 | 401101 | 8064703 | 288 | 2.67 | 25-100 | 50 |
| | GCM0028 | 399140 | 8061590 | 298 | 1.1 | 25-150 | 50 |
| | GCM0037 | 398965 | 8060885 | 294 | 2.54 | 20-80 | 30 |
| | GCM0040 | 399091 | 8061231 | 290 | 4.23 | 20-80 | 50 |
| Marlin | GCM0032 | 401669 | 8066314 | 291 | 3.37 | 25-300 | 150 |
| | GCM0035 | 402227 | 8061780 | 300 | 0.95 | 30-150 | 100 |
| Threadfin | GCM0047 | 397759 | 8053227 | 344 | 5.3 | 50-150 | 80 |
| | GCM0055 | 397376 | 8051946 | 342 | 2.34 | 15-60 | 20 |
| | GCM0008 | 398908 | 8056203 | 335 | 4.06 | 25-170 | 100 |
| Cobia | GCM0060 | 383096 | 8051001 | 406 | 6.65 | 25-300 | 150 |
| | GCM0061 | 382748 | 8050736 | 417 | 4.52 | 25-250 | 150 |
| Trevally | GCM0064 | 392214 | 8050745 | 358 | 4.94 | 5-25 | 15 |
| | GCM0065 | 392506 | 8051507 | 357 | 3.08 | 5-25 | 15 |
| | GCM0002 | 392387 | 8051147 | 360 | 3.32 | 10-15 | 12 |
| Mahi Mahi | GCM0003 | 394902 | 8047074 | 401 | 2.16 | 40 | 40 |

**Figure 1 – Map of petrographic analyses location from September 2022 rock chip sampling program**



The results are preliminary and not indicative of overall trends. Further focussed petrology work will need to be conducted to better understand the flake characteristics of the individual target areas following drilling. Its further worth noting that with an industrial mineral like graphite, it's properties such as crystallinity, purity and flake size are typically more important than other mining metrics such as grade.

**GCM CEO, Mark Lynch-Staunton commented** "GCM is encouraged by the potential to serve both the coarse flake and fine flake markets. This provides product diversity which ultimately de-risks selling into a single market. In addition, having discrete and separate fine flake and coarse flake deposits will allow unique mine planning and sequencing advantages that sets Mcintosh apart from other graphite peers"

**NEXT STEPS**

The following works are underway as a matter of priority to advance the McIntosh Graphite Project:

- Maiden drill program – on track for commencing May 2023
- Preliminary Ore sorting study
- Metallurgical testwork campaign
- Battery Anode qualification testwork commencement
- Downstream Processing Facility Scoping Study including a site selection study
- Delivery of updated McIntosh Upstream Pre-Feasibility study

**Authorisation**

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

Green Critical Minerals confirms that it is not aware of any new information or data that materially affects the exploration results contained in this announcement.

**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 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.

**Competent Person Statement**

The information in this report that relates to the exploration activities are based on information compiled by Mr. S Nicholls, who is a Member of the Australian Institute of Geoscientists and full time employee of APEX Geoscience Australia Pty Ltd. Mr Nicholls has sufficient experience which is relevant to the style of mineralisation and type of deposit under consideration 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, Mineral Resources and Ore Reserves'.

***Appendix 1: JORC Code, 2012 Edition - 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.*<br>• *Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.*<br>• *Aspects of the determination of mineralization that are Material to the Public Report.*<br>• *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 mineralization types (eg submarine nodules) may warrant disclosure of detailed information.* | • The Green Critical Minerals Ltd (GCM) rock samples were collected from visibly mineralized outcroppings on the McIntosh Project, WA. Samples were collected by a geologist from APEX Geoscience Australia Pty Ltd (independent geological consultancy). Samples were submitted to ALS in Perth, WA for sample preparation and analysis. |
| *Drilling techniques* | • *Drill type (eg core, reverse circulation, open-hole hammer, rotary air blast, auger, Bangka, sonic, etc) and details (eg core diametre, 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).* | • This release does not contain drilling results |
| *Drill sample recovery* | • *Method of recording and assessing core and chip sample recoveries and results assessed.*<br>• *Measures taken to maximise sample recovery and ensure representative nature of the samples.*<br>• *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.* | • This release does not contain drilling results |
| *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.* | • The GCM rock samples and sample locations were qualitatively logged and registered by geologists from Apex Geoscience.<br>• Geological logging is qualitative in nature.<br>• Rock samples are spot samples and not interval samples. |

| Criteria | JORC Code explanation | Commentary |
|---|---|---|
| | • *Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc) photography.*<br>• *The total length and percentage of the relevant intersections logged.* | • |
| *Sub-sampling techniques and sample preparation* | • *If core, whether cut or sawn and whether quarter, half or all core taken.*<br>• *If non-core, whether riffled, tube sampled, rotary split, etc and whether sampled wet or dry.*<br>• *For all sample types, the nature, quality and appropriateness of the sample preparation technique.*<br>• *Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.*<br>• *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.*<br>• *Whether sample sizes are appropriate to the grain size of the material being sampled.* | • The GCM rock samples were collected between 0.5-1 kg and were of sufficient size to represent the outcrop area of interest. The sample sizes and analysis size are considered appropriate to correctly represent the mineralization based on the style of mineralization, the sampling methodology and assay value ranges for the commodities of interest. Samples were submitted to ALS where they were run through a jaw crusher and then pulverized down to 80% passing 75 microns.<br>• 18 of the rock samples collected by GCM in 2022 were sent to Minerex services for polished thin section preparation and then shipped to Pathfinder Exploration Pty Ltd in Cable Beach, WA, for petrographic analysis.<br>• The results of the petrographic analysis are preliminary and not indicative of overall trends |
| *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.*<br>• *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.*<br>• *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 GCM rock chip samples were crushed before undergoing analysis for Graphitic Carbon (C-IR18), Total Carbon (C-IR07) and Total Sulphur (S-IR08). The assay method and laboratory procedures were appropriate for this style of mineralization. ALS inserts its own standards and blanks at set frequencies and monitors the precision of the analyses. As well, the lab performs repeat analyses at random intervals, which return acceptably similar values to the original samples. Laboratory procedures are within industry standards and are appropriate for the commodities of interest.<br>• |
| *Verification of sampling and assaying* | • *The verification of significant intersections by either independent or alternative company personnel.*<br>• *The use of twinned holes.*<br>• *Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.*<br>• *Discuss any adjustment to assay data.* | • GCM samples were collected by APEX Geoscience field geologists, a third party well established consultant group. These are reconnaissance results, not significant intersections – no verification required.<br>• No twinned holes – no drilling reported<br>• Rock sample data recorded in excel recorded in spreadsheet<br>• No adjustments to assay data has been made. |
| *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.*<br>• *Specification of the grid system used.*<br>• *Quality and adequacy of topographic control.* | • The GCM rock chip sample locations were determined by handheld GPS, considered to be accurate to ± 5 m. All coordinates were recorded in MGA Zone 52 datum GDA94. Topographic control is provided by a the two previously completed VTEM surveys and handheld GPS elevations.<br>• The map projection used is the Australian Geodetic MGA 94 Zone 52 |

| Criteria | JORC Code explanation | Commentary |
|---|---|---|
| | | • Control is adequate for reconnaissance rock samples |
| *Data spacing and distribution* | • *Data spacing for reporting of Exploration Results.*<br>• *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.*<br>• *Whether sample compositing has been applied.* | • The GCM reported rock sampling is of a reconnaissance nature, and thus, only visibly mineralized rocks were targeted for sampling at irregular spacing. The reported data is insufficient to support or establish any resource definition.<br>• No sample compositing has been applied. |
| *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.*<br>• *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.* | • The GCM sampling was reconnaissance based and targeted areas of visible mineralization. Sampling revealed a number of graphite outcrop occurrences that had not previously been identified or sampled.<br>• No consideration was given to sampling orientation. It is not intended or expected that this sampling be unbiased. |
| *Sample security* | • *The measures taken to ensure sample security.* | • For the GCM samples the sample security consisted of the rock chip samples being collected from the field into pre numbered calico bags and loaded into polyweave bags for transport to the laboratory. The chain of custody for samples from collection to delivery at the laboratory was handled by APEX Geoscience Australia personnel. The sample submission list was submitted by email to the laboratory, where the sample counts and numbers were checked by laboratory staff. |
| *Audits or reviews* | • *The results of any audits or reviews of sampling techniques and data.* | • For the GCM rock chip sampling, no formal audits or reviews have been performed on the project, to date.<br>• The GCM rock chip work was carried out by reputable companies and laboratories using industry best practice.<br>• |

# 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.*<br>• *The security of the tenure held at the time of reporting along with any* | • These tenements are held by McIntosh Resources Pty Ltd who is a wholly owned subsidiary of Hexagon Energy Materials Limited (HXG).<br>• Green Critical Minerals Ltd (GCM) has the right to earn up to an 80% interest in McIntosh from Hexagon Energy Materials Limited (HXG)<br>• HXG entered into a joint venture arrangement with Mineral Resources Ltd (MRL) who are the managers of exploration on the project. |

| Criteria | JORC Code explanation | Commentary |
|---|---|---|
| | *known impediments to obtaining a licence to operate in the area.* | • There are no known impediments. |
| *Exploration done by other parties* | • *Acknowledgment and appraisal of exploration by other parties.* | • The East Kimberley has been largely explored for base metals and diamonds with no active previous exploration for graphite. Graphite had been noted by Gemutz during regional mapping in the Mabel Downs area for the BMR in 1967, by Rugless mapping and RAB drilling in the vicinity of Melon Patch bore, to the east of the Great Northern Highway in 1993 and has been located during nickel exploration by Australian Anglo American Ltd, Panoramic Resources Ltd and Thunderlarra Resources Ltd over the last 20 years. |
| *Geology* | • *Deposit type, geological setting and style of mineralization.* | • The McIntosh Project graphite schist horizons occur in the high grade metamorphic terrain of the Halls Creek Mobile Zone of Western Australia.<br>• The host stratigraphy is the Tickalara Metamorphics which extend for approximately 130 km along the western side of the major Halls Creek Fault.<br>• The metamorphic rocks reach granulite metamorphic facies under conditions of high-temperature and high pressure although the metamorphic grade in the McIntosh Project area appears to be largely upper amphibolite facies with the presence of key minerals such as sillimanite and evidence of original cordierite.<br>• Hexagon has identified graphite schist horizons and accompanying aerial EM anomalies over a strike length in excess of 15 km within the granted tenements, with potential for another 35 km strike length of graphite schist in EL applications. The McIntosh target areas contain graphite and include seven (7) identified exploration target areas – Mackerel, Cobia, Wahoo, Barracuda, Emperor, Rockcod and Trevally. |
| *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:*<br>  ○ *easting and northing of the drill hole collar*<br>  ○ *elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar*<br>  ○ *dip and azimuth of the hole*<br>  ○ *down hole length and interception depth*<br>  ○ *hole length.*<br>• *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 – equivalent parameters for reconnaissance samples presented in table in body of report. |

| Criteria | JORC Code explanation | Commentary |
|---|---|---|
| *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.*<br>• *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.*<br>• *The assumptions used for any reporting of metal equivalent values should be clearly stated.* | • For the rock chips sampling conducted by GCM no weighting or averaging of the data has been applied.<br>• No high cuts have been applied.<br>• Metal equivalent values are not being reported. |
| *Relationship between mineralization widths and intercept lengths* | • *These relationships are particularly important in the reporting of Exploration Results.*<br>• *If the geometry of the mineralization with respect to the drill hole angle is known, its nature should be reported.*<br>• *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').* | • Reconnaissance rock samples (point samples) are being reported. This information is not relevant. |
| *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.* | • An appropriate exploration map has been included in the release showing the Green Critical Minerals rock chip samples alongside the locations of the rock chip samples analysed via petrographic analysis. |
| *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.* | • A table containing the rock chip sample assays, average graphite flake size, graphite flake range and locations of all rock chip samples analysed via petrographic analysis has been included in the release. All sample locations and rock chip sample assays for all rock chip samples collected in September 2022 are displayed on the plans. |
| *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.* | • The September 2014 VTEM Supermax and 2016 XCite electromagnetic survey over the McIntosh Flake Graphite Project identified numerous high priority anomalies. Five of these were previously identified by induced polarisation (IP) and confirmed to be flake graphite schist by geological field mapping, petrographic analysis, rock chip sampling and exploration drilling.<br>• VTEM geophysical work was completed by Geotech Limited with the data validated and processed by Southern Geoscience Consultants (SGC). |
| *Further work* | • *The nature and scale of planned further work (eg tests for lateral extensions or depth extensions or large-scale step-out drilling).*<br>• *Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.* | • Future work under GCM entails a heritage survey and drilling to test the depth and strike extensions to observed surficial graphite mineralisation. |