Cooletha Lithium Project Sampling and Rankin Dome Drilling Update

Australian Critical Minerals (**ASX:ACM**, "**Australian Critical Minerals**" **or** "**the Company**") provides an update to its announcement released 26 September 2023 "*Cooletha Lithium Project Sampling and Rankin Dome Drilling Update*". Updates include;

- Additional disclosure added to figure 7 – Billy Creek Pegmatite Specimens under ultra violet light (refer page 8 ***bold section***); and
- Addition of JORC table.

This release has been approved by the Board of Australian Critical Minerals Limited.

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Cooletha Lithium Project Sampling and Rankin Dome Drilling Update

Highlights

Cooletha:

- **Phase 1 sampling at Cooletha completed with 251 rock samples collected**
- **One quarter of the granted tenure was investigated with the remainder to be accessed in coming months**
- **Four priority areas identified by the consulting geologist as having fractionation textures and spodumene.**
- **Individual pegmatites present as dykes and sills**
- **Pegmatite sills have an extent of up to 40m wide and 400m long**
- **Billy Creek Pegmatites observed to dip into and below the basal unconformity of the Fortescue Group which substantially increases the available lithium pegmatite target size**
- **Reverse circulation drilling planned to test this new potentially substantial target**
- **Manganese rich shales 30cm to 1m thick identified near the base of the extensive Fortescue Group in Eastern Cooletha**

Rankin Dome:

- **Shallow Auger sampling program completed with 249 holes**
- **900m Reverse Circulation Drilling currently in progress**
- **Auger samples submitted to laboratory with results pending**

Australian Critical Minerals (**ASX:ACM**, "**Australian Critical Minerals**" **or** "**the Company**") is pleased to announce that Phase 1 sampling of Cooletha has been completed with approximately 65 km^2 covered. A higher definition shallow auger program was completed at Rankin Dome which was followed by a 900m Reverse-circulation drill program of 6 x 150m deep drillholes,

Managing Director, Dean de Largie said,

"We are pleased to update our shareholders of the encouraging observations from the Cooletha Project. Our field investigations have increased the potential area of prospectivity for lithium pegmatites, identified four prospects described as having large pavements of pegmatites and identified shale-hosted manganese.

Whilst lithium exploration will remain our priority, the addition of manganese to our portfolio of green energy commodities will be received well by our shareholders. As foreshadowed previously, Rankin Dome has progressed further with additional shallow auger sampling completed and RC drilling currently in progress.

Cooletha Lithium Project, Pilbara

The Cooletha Lithium Project, ACM's flagship lithium project, has over 100km² of lithium prospectivity with outcropping pegmatite swarms in the Pilbara lithium district. The Project is located south of significant discoveries at Pilbara Minerals' (**ASX:PLS**) Pilgangoora Lithium Project (223Mt @ 1.25% Li_2O), MinRes' (**ASX:MIN**) Wodgina Lithium Project (259Mt @ 1.17% Li_2O), and Global Lithium Resources' (**ASX:GL1**) Archer Lithium Deposit at Marble Bar (18Mt @ 1% L_2iO) (Figure 1).

The Cooletha project also sits 30km south of the Tambourah Lithium Project owned by Trek Metals (**ASX:TKM**), which has commenced its maiden 3,800m drill campaign following up on rock chip results up to 3.02% Li_2O.

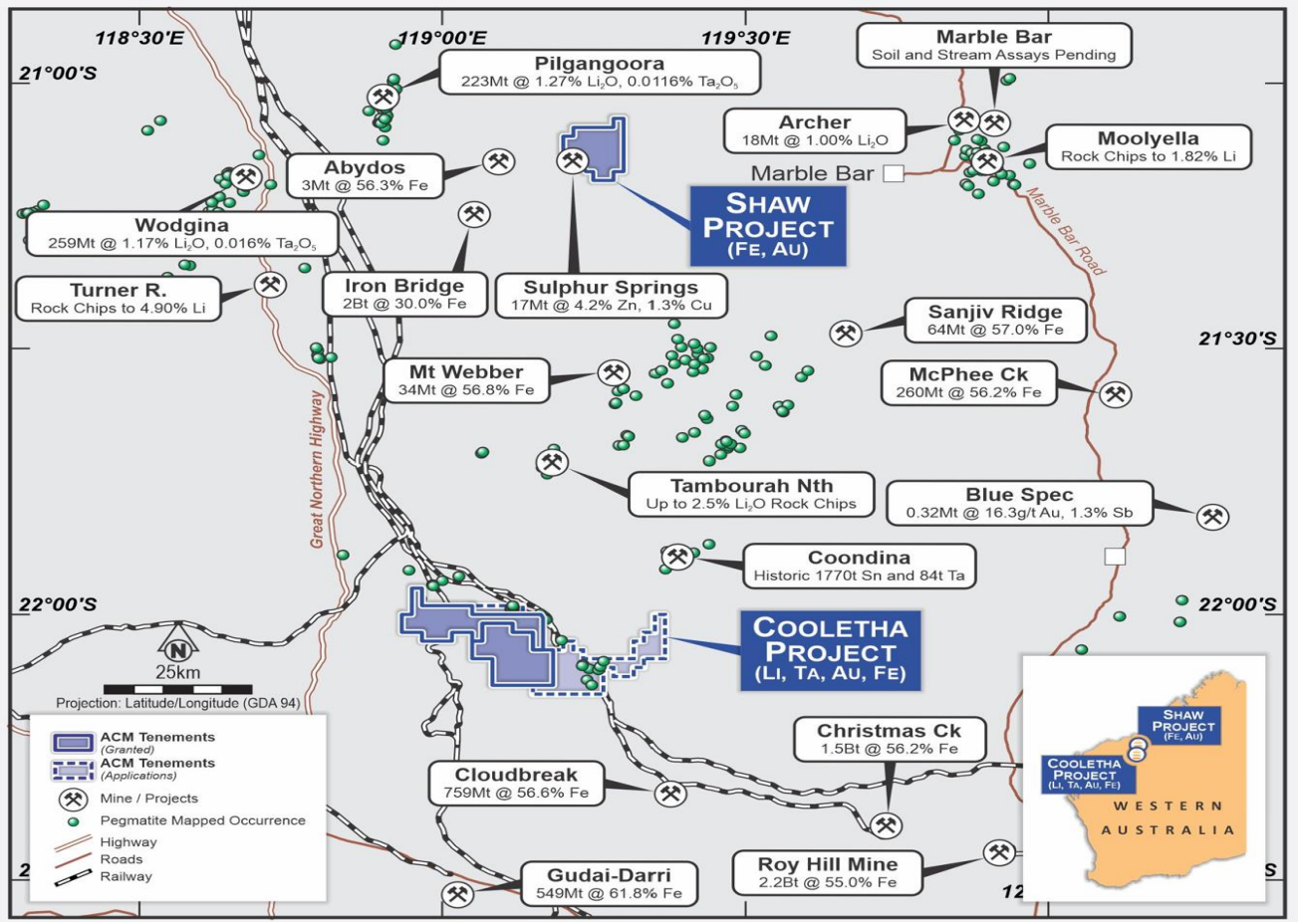

Figure 1 – The location of the Cooletha Lithium Project in the Pilbara region, Western Australia.

To date, Australian Critical Minerals has identified four areas named Bloodwood, Echo Valley, Burnt Ridge and Billy Creek as priority future work areas. The mapping and sampling program amassed 251 rock samples which have been delivered to Labwest for analysis.

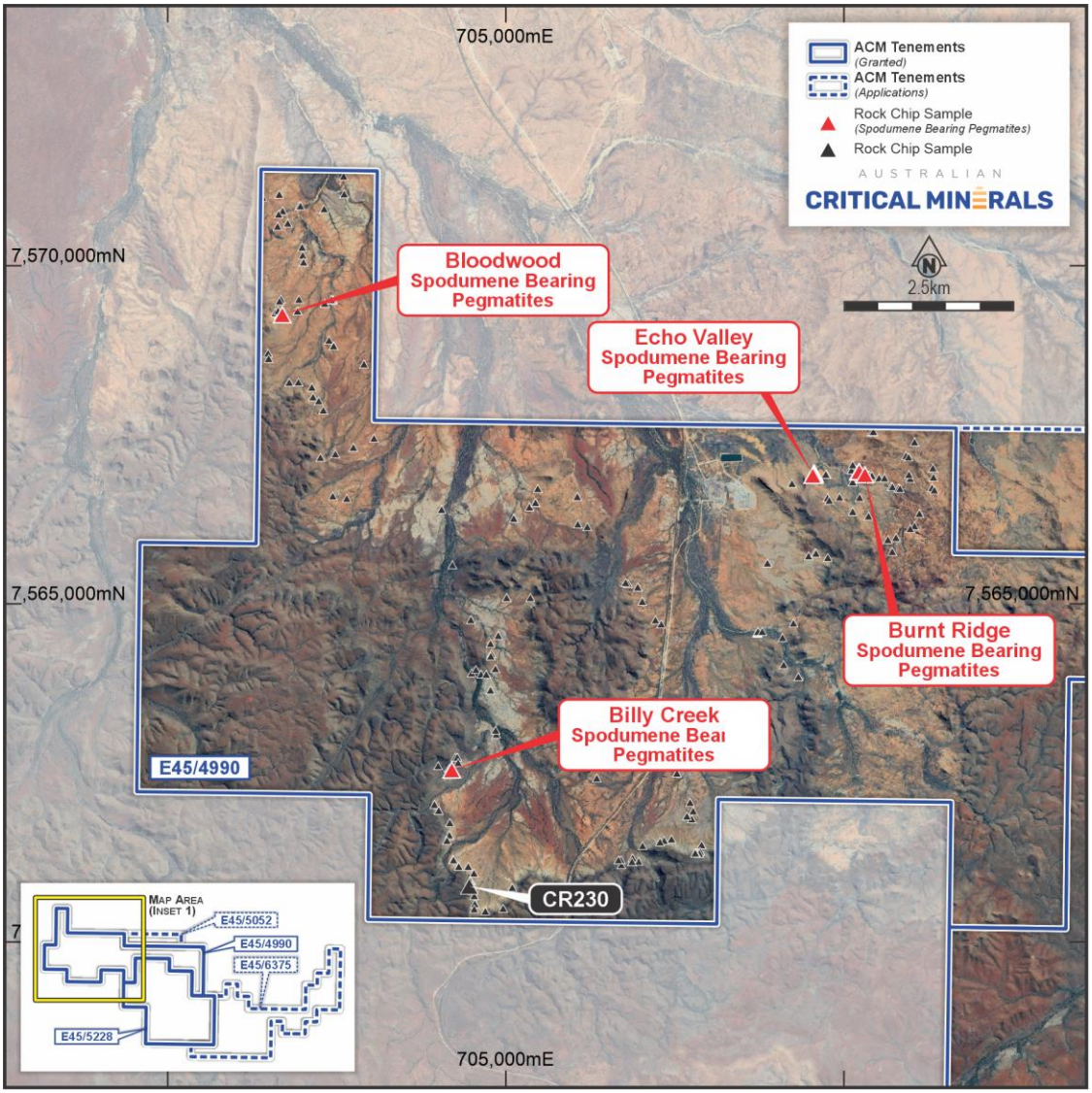

Figure 2 – Four lithium pegmatite prospects have been identified as priority areas during recent sampling at Cooletha.

The pegmatites occur as dykes and broad pavements striking for several hundred metres and often with substantial widths (Figure 3). The pegmatites are hosted in the Tambourah Monzogranite which is a large domal batholith and part of the Split Rock Supersuite which regionally hosts lithium and tantalum bearing pegmatites.

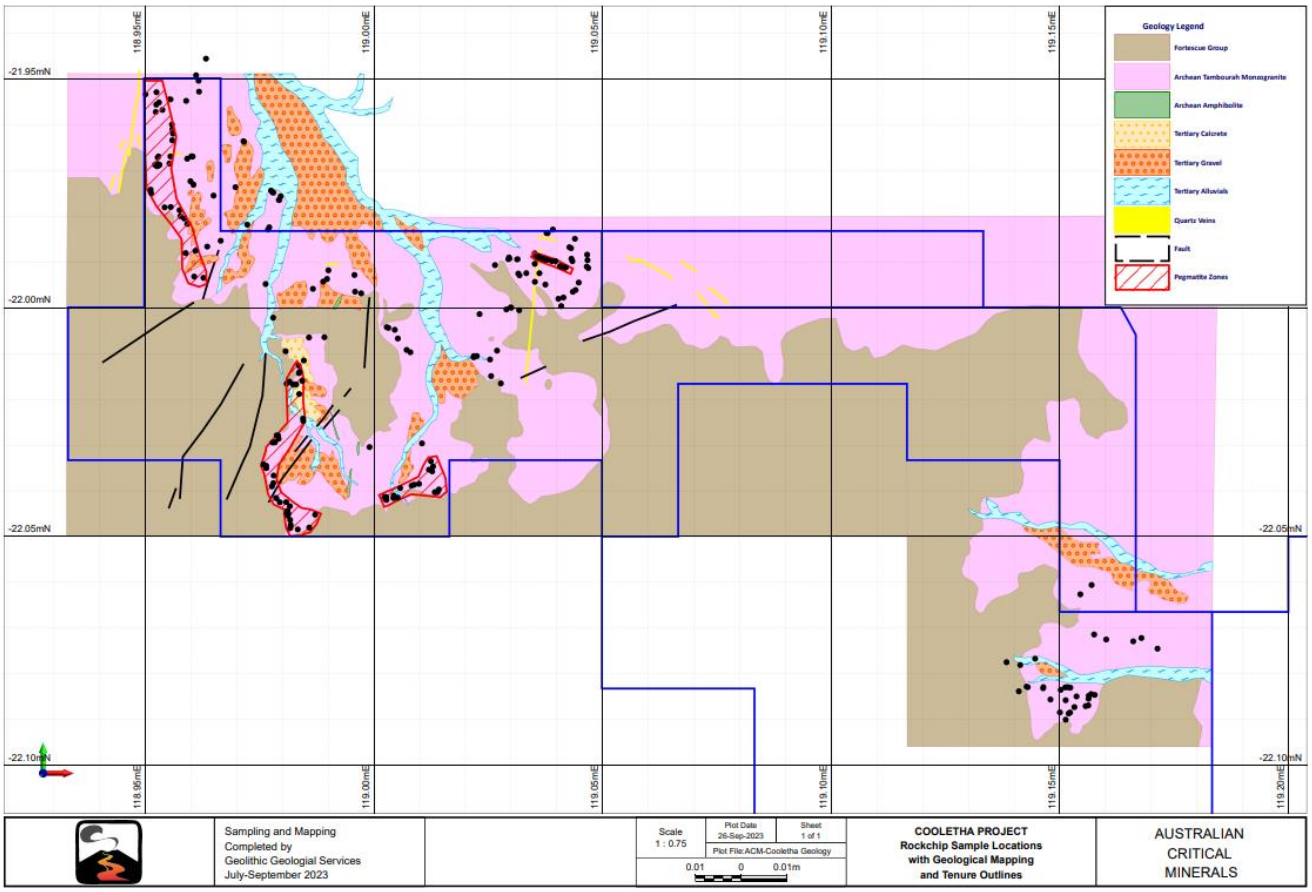

Figure 3 Geology mapping at Cooletha showing several pegmatite priority areas.

The pegmatites sampled consisted of coarse to very coarse grained orthoclase-albite-quartz-biotite rich crystalline rocks within Tambourah Monzogranite (TMG). Some sampling of the basal Fortescue Group sedimentary rocks was also carried out together with sampling of amphibolite rafts within the TMG. The pegmatite samples mainly consisted of coarse to very coarse (up to 50cm size) crystalline orthoclase-quartz rich rocks often with graphic textures which indicate that fractionation processes have been at play. Unconformably overlying the TMG are basal units of the Fortescue Group: The unconformity between the TMG and the basal Tumbiana Formation of the Fortescue Group is an irregular surface marked by ridges of pegmatitic TMG south of Redmont and in the Billy Ck area SW of Redmont the upper level of the TMG is calcretised and boulders of pegmatite occur within the basal Fortescue Group conglomerate (Figure 4).

Pegmatite morphology occurs as dykes and sills with sills occasionally presenting as extensive pavements. This style is common on the western side of Cooletha (Figure 5).

Figure 4 - Graded bedding from cobbles to sandstone observed in boulder south of Redmont

Figure 5 – Billy Creek Pegmatite pavement

The observation that the pegmatite sills at Billy Creek dip below the Fortescue Group indicates that the lithium pegmatite target may be larger than originally postulated. (Figure 6).

Figure 6 – Thick Billy Creek pegmatite sills (left side of photo) dip beneath the Fortescue Group rocks

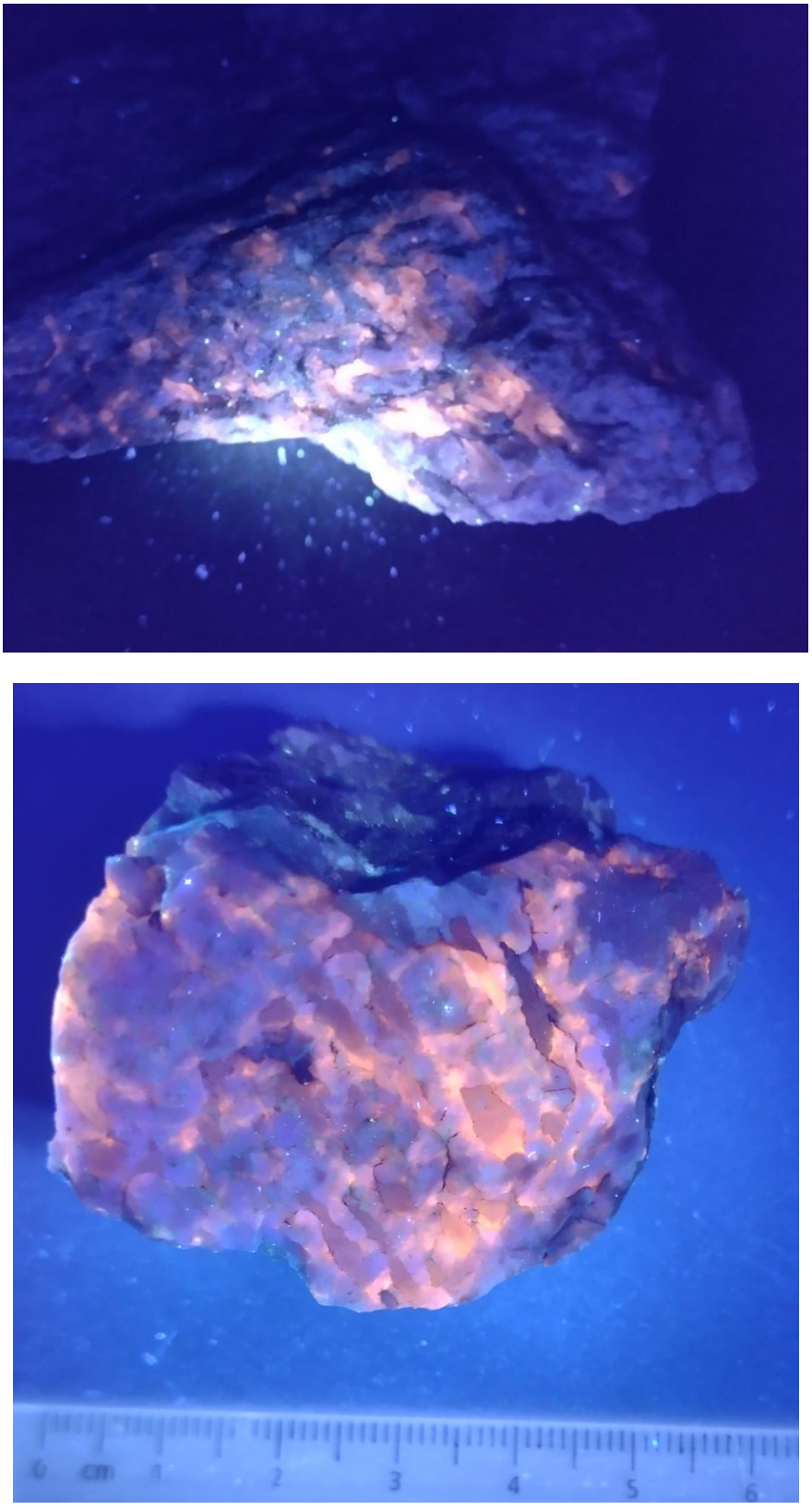

Figure 7 – Billy Creek Pegmatite specimens under Ultra Violet light. The glowing pink is interpreted to be spodumene (to be confirmed by assay analysis)

In relation to the pegmatite specimens in figure 7 the upper photo is sample No CR205 and was described in the field as orthoclase-quartz graphic textured pegmatite outcrop 20m below the basal Fortescue Group contact. The lower photo is sample NoCR230 and field described as orthoclase-quartz pegmatite outcrop with strong N/S fabric. Field description are qualitative and named in order of relative abundance. Precise abundances were not measured as at this stage of exploration the task is to identify fertile pegmatite areas for more detailed investigation.

The Company expects the assay results from the collected rock chip samples in four weeks but may take up to six weeks.

Visual estimates of mineral abundance should never be considered a proxy or substitute for laboratory analyses where concentrations or grades are the factor of principal economic interest. Visual estimates also potentially provide no information regarding impurities or deleterious physical properties relevant to valuations.

Figure 8 – Pegmatite sills and irregular bodies at Bloodwood.

Figure 9 - Amphibolite raft within the Tambourah monzogranite at Billy Hill with the Fortescue Group in the background

Figure 10 – Manganiferous shale sample eastern Cooletha

Rankin Dome Project, Yilgarn

A 249 hole shallow auger soil program has completed at Rankin Dome (Figure 11). The auger program was performed on a 100m x 100m grid over the northwestern portion of the REE anomaly previously reported. The program will better define the REE anomaly geometry and provide improved orientation information to guide future drilling. Sampling was standardised across the region with the interval 1m to 2m being sampled. This is anticipated to provide a more robust geological interpretation when assays are received.

The area covered by the grid has scant outcrop and thus lacks bedrock depth information. The grid program included 1 in 10 holes drilled to refusal to gain further information including bedrock depth.

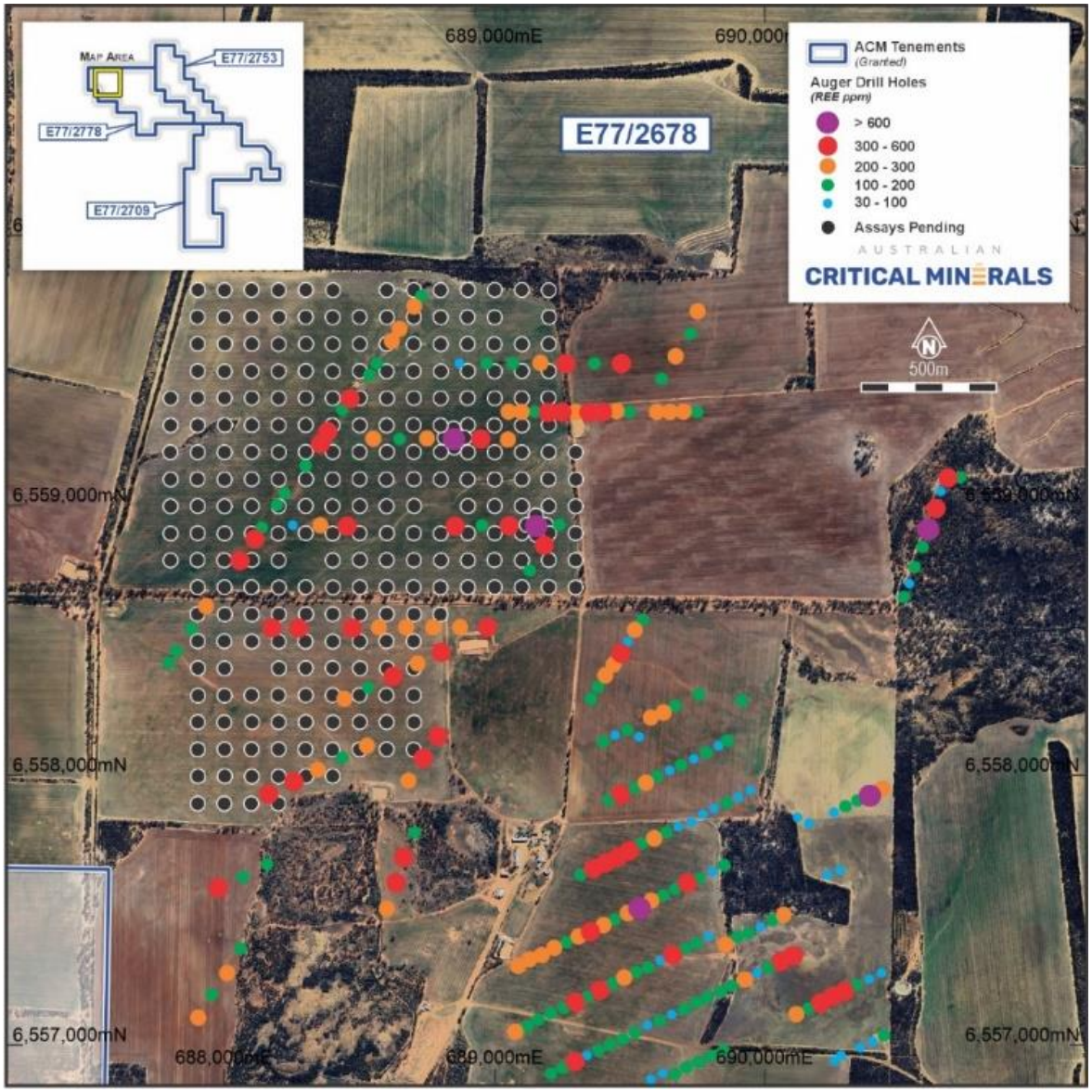

Figure 11 – 100m gridded shallow auger at Rankin Dome

Strongly anomalous results from the work performed by Kula Gold (**ASX: KGD**) was on sample lines of various orientations. To reduce interpretation bias resulting from the various sample line orientations ACM increased sample density and used the 100m by 100m grid. Auger samples have been submitted and assays are awaited.

A 900m RC drill program is currently in progress on the NW section of Rankin Dome. Bedrock is close to surface at this location. The RC drilling will test areas of REE anomalism in soils (Figure 12).

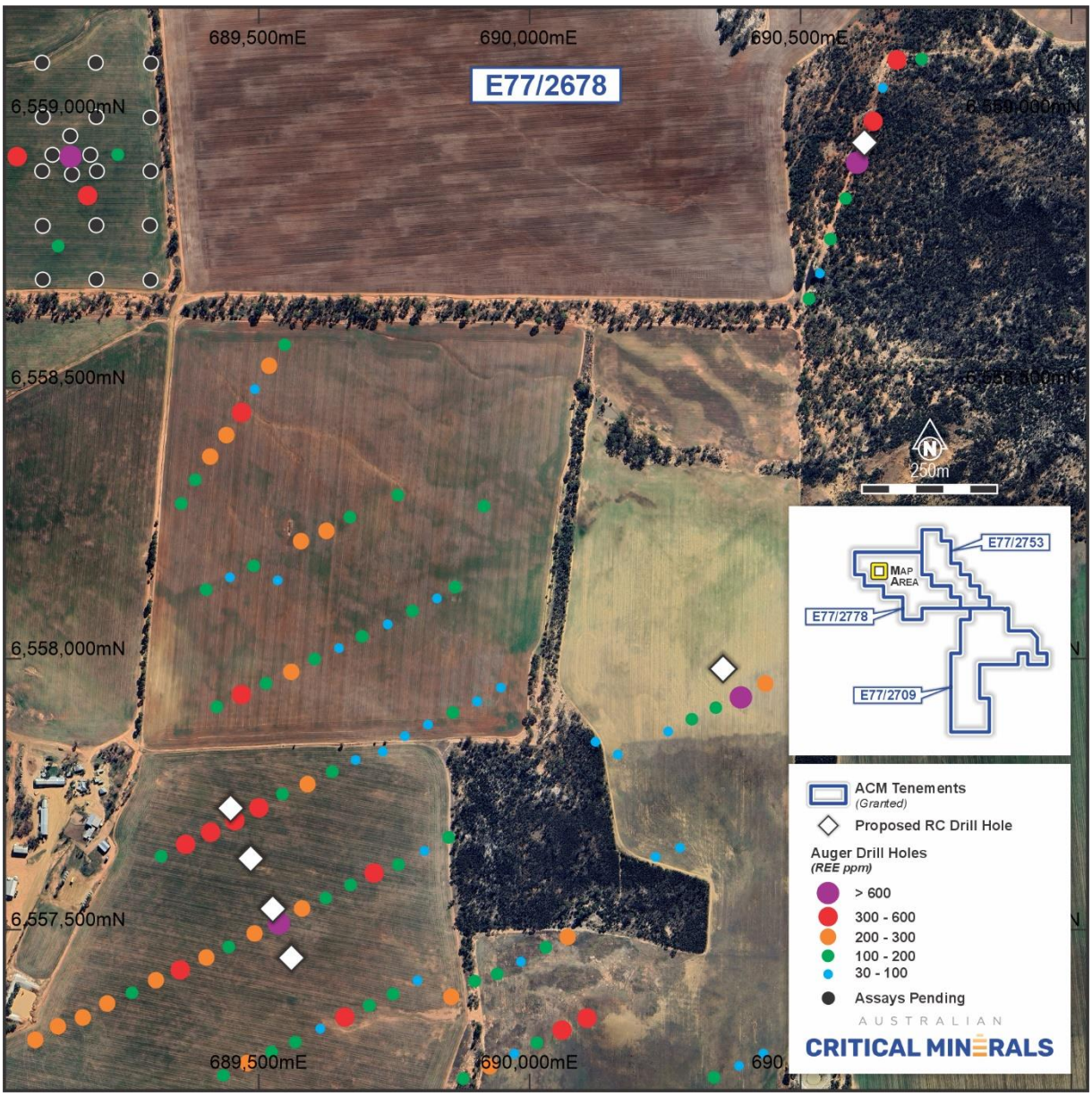

Figure 12 – RC Drillhole collar locations Rankin Dome

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About Australian Critical Minerals

Australian Critical Minerals is an exploration company focused on developing a quality portfolio of critical minerals projects in Western Australia. The key projects are Cooletha (Pilbara) Lithium Project and Rankin Dome (Southern Cross) Rare Earth Project.

Battery metals, including rare earths and lithium are fundamental in the clean energy transition to net zero transmissions. ACM intends to play a pivotal role in delivering the processed minerals needed for a clean energy future.

ACM has established a highly experienced management team with a proven track record of exploration and corporate success in the mining industry.

Reference to Previous Announcements

Investors can refer to the Company's Prospectus for further disclosure on information in this Announcement and all of the Company's Projects. Investors should also refer to the Company's release 28 August 2023 "Cooletha Exploration Update" for more information on the pegmatite outcrops (and relevant samples).

Competent Persons Statement

The information in this report that relates to Exploration Targets and Exploration Results is based on information compiled by Mr. Dean de Largie. Mr. de Largie is the Managing Director of Australian Critical Minerals Limited and is a Fellow of the Australian Institute of Geoscientists and has sufficient experience relevant to the styles of mineralisation under consideration and to the activity being reported 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. Mr. de Largie have verified the data disclosed in this release and consent to the inclusion in this release of the matters based on the information in the form and context in which it appears.

Forward Statement

This news release contains "forward-looking information" within the meaning of applicable securities laws. Generally, any statements that are not historical facts may contain forward-looking information, and forward looking information can be identified by the use of forward-looking terminology such as "plans", "expects" or "does not expect", "is expected", "budget" "scheduled", "estimates", "forecasts", "intends", "anticipates" or "does not anticipate", or "believes", or variations of such words and phrases or indicates that certain actions, events or results "may", "could", "would", "might" or "will be" taken, "occur" or "be achieved." Forward-looking information is based on certain factors and assumptions management believes to be reasonable at the time such statements are made, including but not limited to, continued exploration activities, commodity prices, the estimation of initial and sustaining capital requirements, the estimation of labour costs, the estimation of mineral reserves and resources, assumptions with respect to currency fluctuations, the timing and amount of future exploration and development expenditures, receipt of required regulatory approvals, the availability of necessary financing for the project, permitting and such other assumptions and factors as set out herein.

Forward-looking information is subject to known and unknown risks, uncertainties and other factors that may cause the actual results, level of activity, performance or achievements of the Company to be materially different from those expressed or implied by such forward-looking information, including but not limited to: risks related to changes in commodity prices; sources and cost of power and water for the Project; the estimation of initial capital requirements; the lack of historical operations; the estimation of labour costs; general global markets and economic conditions; risks associated with exploration of mineral deposits; the estimation of initial targeted mineral resource tonnage and grade for the project; risks associated with uninsurable risks arising during the course of exploration; risks associated with currency fluctuations; environmental risks; competition faced in securing experienced personnel; access to adequate infrastructure to support exploration activities; risks associated with changes in the mining regulatory regime governing the Company and the Project; completion of the environmental assessment process; risks related to regulatory and permitting delays; risks related to potential conflicts of interest; the reliance on key personnel; financing, capitalisation and liquidity risks including the risk that the financing necessary to fund continued exploration and development activities at the project may not be available on satisfactory terms, or at all; the risk of potential dilution through the issuance of additional common shares of the Company; the risk of litigation.

Although the Company has attempted to identify important factors that cause results not to be as anticipated, estimated or intended, there can be no assurance that such forward-looking information will prove to be accurate, as actual results and future events could differ materially from those anticipated in such information. Accordingly, readers should not place undue reliance on forward-looking information. Forward looking information is made as of the date of this announcement and the Company does not undertake to update or revise any forward-looking information this is included herein, except in accordance with applicable securities laws.

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.*	• Rock sample are taken by hammer and chisel of rock outcrop. Samples were localized and care was taken to achieve a representative sample of each site. Samples were placed in a numbered calico sample bag. Secured in Polyweave sacks and delivered for assay by ACM personnel.
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).*	• Reverse Circulation drilling used a 4½" diameter" RC hammer with a 5½ "drillbit performed by Stark Drilling • Auger drilling used a 4" diameter soil auger and performed by Sahara Sahara Operations Australia custom equipment for open auger drilling
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*	• Sample recovery was 100% and representative. No assays have been reported in this press release.

Criteria	JORC Code explanation	Commentary
	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.*	
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.*	• Rock chip samples and soil samples have been, and, are being logged in the field at the time the samples have been collected by an appropriately experienced geologist. Logging is qualitative. • UV light fluorescence in Figure 7 is qualiatative and although indicative of spodumene, lithium concentration is to be confirmed by assay. Results are pending.
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.*	• RC samples are being collected on 1-meter intervals through an RC cyclone. • Duplicates were taken of all 1m intervals for future requirements.
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.*	• No assays have been reported

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 assays have been reported
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.*	• Location data was recorded using UTM coordinates in the GDA94 zone 50 grid
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.*	• No mineral resource has been estimated as current program is at an early exploration stage
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.*	• Where identifiable structures were apparent, samples were taken across said structure.
Sample security	• *The measures taken to ensure sample security.*	• Samples were secured in cable tied poly-weave sacks locked in ACM vehicles or facilities and remained in ACM custody from site to delivery to assay laboratory
Audits or reviews	• *The results of any audits or reviews of sampling techniques and data.*	• No audits or reviews. Stark industry procedures of drilling and sampling were used

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	• *Type, reference name/number, location and ownership including agreements or material issues*	• No results have been reported • Cooletha tenements are owned by

Criteria	JORC Code explanation	Commentary
land tenure status	*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.*	an ACM subsidiary Proterozoic Gold Pty Ltd. • Rankin Dome Project is a 51% earn-in agreement with Kula Gold Ltd ASX:KGD • No impediments to tenure exist
Exploration done by other parties	• *Acknowledgment and appraisal of exploration by other parties.*	• Kula Gold Auger results are reflected in the figures within this update and disclosed in the ACM Prospectus
Geology	• *Deposit type, geological setting and style of mineralisation.*	• Cooletha Project is prospective
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.*	• Shallow auger sampling (251 locations) and RC drilling collar locations (6) are identifiable in the figures within this update. • RC Drilling is in progress and therefore no downhole information is available. • Tabulated drill collar location, orientation and downhole data and assays will be available in approximately 6 weeks after submittal of samples to the lab. This information is currently not available as RC drilling is in progress. • Auger sampling was conducted on a 100m by 100m grid. Tabulated data will be provided when assays are received by the laboratory. • Not including the tabulated locations of the gridded shallow auger sampling program at this stage does not detract from the understanding of the update as key information relating to area of auger sampling to previous auger results has been explained in the this update and the locations of auger samples identifiable in the associated figures in this update.
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*	• No results have been reported,in this press release.

Criteria	JORC Code explanation	Commentary
	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.*	
Relationship between mineralisation widths and intercept lengths	• *These relationships are particularly important in the reporting of Exploration Results.* • *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').*	• No downhole data reported and drilling currently is in progress.
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.*	• Appropriate diagrams have been included in the report reflecting the work being performed.
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.*	• No geochemistry has been reported
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.*	• All material information has been reported in the press release. Tabulated information will be provided when assays are received.
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.*	• Further sampling is planned at Cooletha. Final versions of the plan will be determined after assays are received and reviewed.