

12 October 2021

## FEASIBILITY STUDY UPDATE: Geotechnical analysis and mine planning work advances

**Macarthur Minerals Limited (ASX: MIO) (TSX-V: MMS) (OTCQB: MMSDF)** (the **Company** or **Macarthur**) is pleased to provide an update on the steady progress being made on the Feasibility Study for its high-grade magnetite Lake Giles Iron Project. The mine planning work for the Feasibility Study is advancing, with the geotechnical drill programme of work almost complete. The drill core from the programme is required to determine the basis for mine pit slopes and finalisation of mine planning work.

The Company recently provided updates to the market regarding the progress of the Feasibility Study on 1 October 2021 (see announcement regarding the progress of metallurgical and non-process infrastructure design [here](#)) and 7 October 2021 (see announcement regarding the progress of development of the rail and port concept plan of operations [here](#)). The following summary sets out details of current progress on mine planning work as the Feasibility Study advances closer to completion.

### Mine planning update

- **Geotechnical slope design:** Geotechnical drill core is expected to be delivered to Bureau Veritas for completion of lab analysis by late October. Lab analysis of this core will clear the way for completion of the necessary rock mass and structural model work by PSM Consult Pty Ltd to provide the basis for the mine pit slope parameters which will, in turn, facilitate the completion of the important mine planning work which is being undertaken by Orelogy Consulting Pty Ltd.
- **Mine planning:** The geotechnical analysis will be finalised after completion of the drill programme and facilitate the completion of detailed mine planning work by Orelogy, including pit optimisation, mine design and life of mine (LOM) mine scheduling. This study component includes:
  - Development of preferred equipment selection in conjunction with mining contractors;
  - Completion of a blasting study defined by the geotechnical rock parameters;
  - Optimisation of pit shells using updated parameters (mining costs, geotechnical slope design, process and non-process operating costs);
  - Reviewing the staging sequence and developing detailed designs for final and interim pit stages;
  - Developing a LOM schedule based on a total material movement basis;
  - Developing designs for all mining related infrastructure (i.e., ROM pad, waste dumps, roads, stockpiles etc);
  - Evaluating submissions from mining and haulage contractors;
  - Completing development of a detailed cost model that will feed into the detailed financial model being developed by Macarthur for the whole Lake Giles Iron Project;
  - Developing a grade control philosophy and associated cost estimate;
- **Financial outputs:** FTI Consulting Pty Ltd is aggregating data from the study outputs to progress the completion of the detailed economic model that will accompany the delivery of the final study reports.
- **Qualified Person Site Visit:** The final Feasibility Study for the Lake Giles Iron Project will require sign-off by Qualified Persons for the purposes of compliance with National Instrument 43-101 (which governs standards of disclosure for mineral projects). A Qualified Person site visit is expected to be conducted at Lake Giles during early November.

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The current geotechnical drilling programme of works is nearing completion with a target end date of 22 October 2021. The drill programme has exceeded the original target end date of the end of September with the contributing factors including wet weather, challenging ground conditions, and the addition of a further drill hole which has been requested by consultants outside of the original test work plan. Following completion of drilling, core samples will be submitted to the lab for assessment prior to the data being used to finalise the mine planning work being undertaken by Orelogy. Although the extended drilling period may moderately affect the timeline for mine planning in the study schedule, the overall resultant impact is not currently anticipated to be material, and the additional drilling work that has been requested is anticipated to enhance the quality of the Study outputs.

**Andrew Bruton, CEO of Macarthur Minerals commented:**

*“The mine planning component of the Feasibility Study is very important to determining accurate operating cost estimates for the high-grade magnetite mine that Macarthur intends to develop at Lake Giles. It is one of the most fundamental bodies of work that is required to complete the final Feasibility Study and the detailed economic model for the project so that the key financial outputs can be presented to the market and potential funders.*

*Macarthur looks forward to continuing to release further details of the material progress that has been made on the Feasibility Study on a progressive basis over the coming weeks.”*

**On behalf of the Board of Directors, Mr Cameron McCall, Chairman**

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**Company profile**

Macarthur is an iron ore development, gold and lithium exploration company that is focused on bringing to production its Western Australia iron ore projects. The Lake Giles Iron Project mineral resources include the Ularring hematite resource (approved for development) comprising Indicated resources of 54.5 million tonnes at 47.2% Fe and Inferred resources of 26 million tonnes at 45.4% Fe; and the Lake Giles magnetite resource of 53.9 million tonnes (Measured), 218.7 million tonnes (Indicated) and 997 million tonnes (Inferred). The JORC reporting tables and Competent Person statement for the magnetite and hematite mineral resources have previously been disclosed in ASX market announcements dated 12 August 2020 and 5 December 2019. Macarthur has prominent (~721 square kilometre tenement area) gold, lithium and copper exploration interests in Pilbara region of Western Australia. In addition, Macarthur has lithium brine Claims in the emerging Railroad Valley region in Nevada, USA.

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