

11 August 2020

Moonshine Magnetite Resource Upgrade

Announcement Highlights

- **RCR Mining Technologies (subsidiary of NRW Holdings ASX: NRH) appointed to examine rail unloading infrastructure solution at Esperance Port**
- **Macarthur Minerals announces a resource upgrade for the Moonshine magnetite deposit at Lake Giles**
- **Measured Mineral Resource of approximately 53.9 Mt and Indicated Mineral Resources of 218.7 Mt**
- **Macarthur now has sufficient resources in the appropriate categories to progress its Feasibility Study**
- **Resource upgrade follows recently announced Proposal for development of a Commercial Track Access Agreement received from Arc Infrastructure and the announcement of plans to develop haul road and rail siding infrastructure near Lake Giles**

Macarthur Minerals Limited (TSX-V: MMS) (ASX: MIO) (the “Company” or “Macarthur”) is pleased to present the updated Mineral Resource estimate for the magnetite deposits at its Lake Giles Iron Project in Western Australia, which has been completed by CSA Global Pty Ltd (CSA Global).

The previous Mineral Resource estimates presented to the market between 2009¹ and 2019² consisted entirely of Inferred resources, including 710 million tonnes (“Mt”) at the Moonshine deposits. During 2019 the Company completed a program of infill drilling across some of the Moonshine deposit to upgrade the Mineral Resource category to include Indicated and Measured resources. The Mineral Resource upgrade has delivered sufficient resources in the appropriate categories to underpin the current Lake Giles Iron Project Feasibility Study.

The updated Mineral Resource estimates incorporate the recent drill assays and has resulted in an increase in the size of the Moonshine mineral resources including resource category upgrades to now include Measured and Indicated resources. Approximately 30% of the Moonshine resource is now classified as Indicated with approximately 7.5% classified in the Measured category.

Highlights of Mineral Resource estimates:

- Measured resources of **53.9 Mt at 30.8% Fe head grade and 66.0% Fe DTR concentrate grade**
- Indicated resources of **218.7 Mt at 27.5% Fe head grade and 66.1% Fe DTR concentrate grade**
- Inferred resources of **997.0 Mt at 28.4% Fe head grade and 64.6% Fe DTR concentrate grade**

Premium Australian iron ore



Cameron McCall, President and Executive Chairman of Macarthur Minerals commented:

“The completion of the updated Mineral Resource estimate for Macarthur’s magnetite deposits at its Lake Giles Iron Project is a major milestone for the Company as it progresses its Feasibility Study. The updated estimate includes an increase in the size of the Moonshine and Moonshine North Mineral Resource, with category upgrades including Measured and Indicated resources.

With a Measured Mineral Resource totalling 53.9 Mt and Indicated Mineral Resources of 218.7 Mt, Macarthur now has sufficient resources in the appropriate categories to progress its Feasibility Study.

Recent announcements concerning the Company’s applications to develop haul road and rail siding infrastructure near Lake Giles and the announcement that the Company has received a Proposal for development of a Commercial Track Access Agreement from Arc Infrastructure means that the Company is now edging closer than ever to making this Project real for shareholders.

The Company’s Board and Management are singularly focused on progressing through the key gateways to deliver the Project to maximise the opportunities presented in the current commodity cycle. With our focus now on the many more successes which need to follow, we have committed to a pathway of responsible, respectful and sustainable development. These are the principles and points of difference upon which the Company will focus as an emerging Australian iron ore producer. This is a great outcome for Macarthur and its shareholders.”

Mineral Resource Update

The Lake Giles Mineral Resource estimates have been updated by CSA Global and reported in accordance with the Canadian Institute of Mining, Metallurgy and Petroleum (“CIM”) Definition Standards.

The Mineral Resource estimate includes recent infill drilling conducted at the Moonshine deposits as previously disclosed on May 5, 2020 (see full release [here](#)).

Figures 1 and 2 show the distribution of the Mineral Resource categories within the domains hosting the Measured and Indicated Mineral Resources for the Moonshine deposits. Macarthur’s infill drilling program concentrated on just a portion of the previously reported Mineral Resource² to establish Measured and Indicated Mineral Resources to underpin the Feasibility Study of the Lake Giles Iron Project. Further drilling beyond the Measured Mineral Resource will be conducted as required however, the Company is confident it has established sufficient Mineral Resources to support its Feasibility Study.

The Inferred Mineral Resources in Moonshine North (western domains) are extended to beyond 200 m below the depth of drilling, with geological continuity at these depths implied based upon results from aeromagnetic surveys. The results from the aeromagnetic surveys covering Moonshine are less clear and there is therefore less confidence in the interpreted depth extension of the host Banded Iron Formation (BIF) unit where there is no drill hole support.

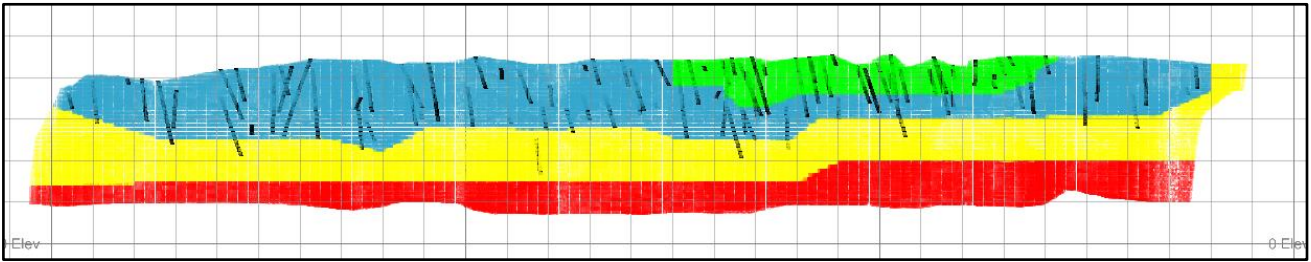


Figure 1 Longitudinal section of Moonshine (west) domain, showing Mineral Resource classification (green=Measured, cyan=Indicated, yellow=Inferred, red=unclassified), and drill hole intercepts (black traces). Grid square 100 m. View to east

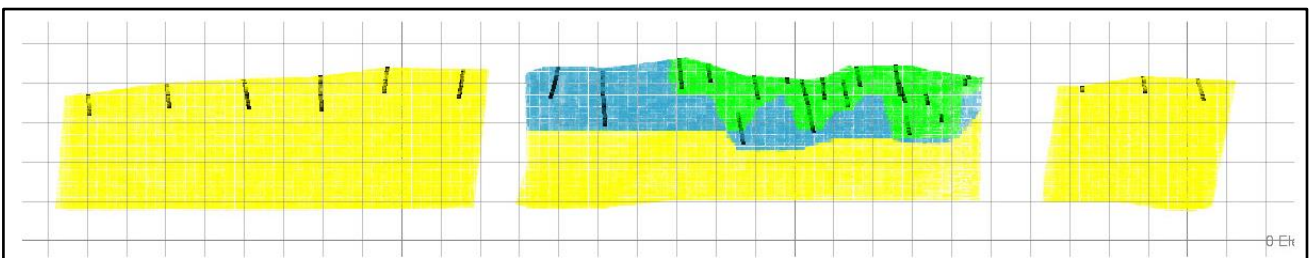


Figure 2 Longitudinal section of Moonshine North (west) domain, showing Mineral Resource classification (green=Measured, cyan=Indicated, yellow=Inferred), and drill hole intercepts (black traces). Grid square 100 m. View to east

¹ NI 43-101 Technical Report filed December 17, 2009, titled “NI 43-101 Technical Report on Lake Giles Iron Ore Project: Western Australia.”

² NI 43-101 Technical Report filed June 13, 2019, titled “NI43-101 Technical report, Macarthur Minerals Limited, Preliminary Economic Assessment Lake Giles Iron Project.”

Mineral Resource Estimates

The Mineral Resources are reported above a Davis Tube Recovery (“DTR”) mass recovery of 15% and presented in Tables 1-3. Previous resource estimates for the Snark, Clark Hill North, Clark Hill South and Sandalwood deposits¹ have been reviewed and reported in accordance with current CIM Definition Standards. Locations of the various deposits are presented in Figure 3.

Table 1 Mineral Resource estimate, Moonshine and Moonshine North, where DTR>15%

Category	Tonnes (MT)	Head Grades (%)					Concentrate Grade (%)					
		Fe	P	SiO ₂	Al ₂ O ₃	LOI	DTR	Fe	P	SiO ₂	Al ₂ O ₃	LOI
Measured	53.9	30.8	0.05	45.4	1.6	2.7	32.2	66.0	0.031	6.2	0.2	-0.7
Indicated	218.7	27.5	0.046	51.1	1.4	1.6	31.0	66.1	0.017	6.7	0.1	-0.1
Sub-total	272.5	28.1	0.047	50.0	1.4	1.8	31.2	66.1	0.02	6.6	0.2	-0.2
Inferred	449.1	27.1	0.047	52.6	1.0	1.4	29.2	65.0	0.026	8.4	0.1	0



Table 2 Mineral Resource estimate, Sandalwood, Clark Hill North, Clark Hill South and Snark, where DTR>15%

Deposit	Category	Tonnes (MT)	Head Grades (%)				Concentrate Grade (%)					
			Fe	SiO ₂	Al ₂ O ₃	LOI	DTR	Fe	P	SiO ₂	Al ₂ O ₃	LOI
Sandalwood	Inferred	334	31.1	48.4	1.5	-0.6	33.1	64.7	0.03	9.5	0.06	-2.7
Snark	Inferred	69	27.8	49.8	1.6	2.4	23.4	66.2	0.03	7.5	0.13	-2.8
Clark Hill North	Inferred	130	25.8	42.6	1.7	0.14	33.2	62.4	0.04	12.1	0.16	-2.6
Clark Hill South	Inferred	15	32.3	47.0	0.6	0.02	31	63.8	0.02	9.8	0.14	0.0

Table 3 Mineral Resource estimate, all deposits, where DTR>15%

Category	Tonnes (MT)	Head Grades (%)					Concentrate Grade (%)					
		Fe	P	SiO ₂	Al ₂ O ₃	LOI	DTR	Fe	P	SiO ₂	Al ₂ O ₃	LOI
Measured	53.9	30.8	0.05	45.4	1.6	2.7	32.2	66.0	0.031	6.2	0.2	-0.7
Indicated	218.7	27.5	0.046	51.1	1.4	1.6	31.0	66.1	0.017	6.7	0.1	-0.1
Sub-total	272.5	28.1	0.047	50.0	1.4	1.8	31.2	66.1	0.02	6.6	0.2	-0.2
Inferred	997.0	28.4	0.05	49.6	1.3	0.6	30.6	64.6	0.03	9.2	0.1	-1.5

Notes (for all Tables):

- Figures contained within the Tables have been rounded.
- Resource estimates are based on block models constructed using three dimensional geological wireframes.
- Mineral Resources are reported from the block models above a DTR cut-off grade of 15%
- Mineral Resources are not Mineral Reserves and do not have demonstrated economic viability.

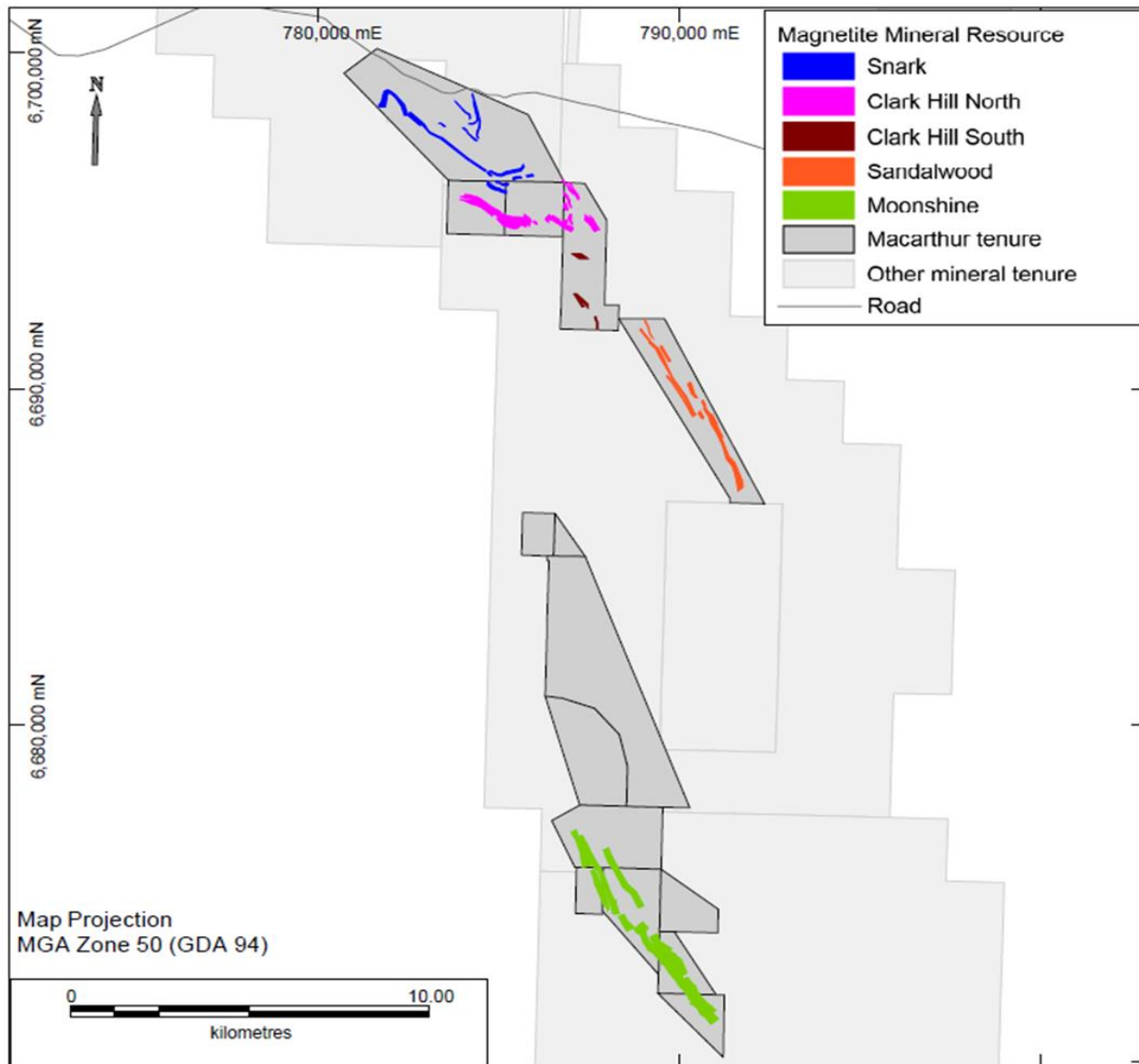


Figure 3 Plan view of the Mineral Resources of the Lake Giles Iron Project

A supporting NI43-101 Technical Report will be filed on SEDAR at www.sedar.com within 45 days.

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

For more information please contact:

Joe Phillips
CEO & Director
+61 7 3221 1796
communications@macarthurminerals.com

Investor Relations – Australia
Advisir
Sarah Lenard, Partner
sarah.lenard@advisir.com.au

Investor Relations - Canada
Investor Cubed
Neil Simon, CEO
+1 647 258 3310
info@investor3.ca



Qualified person

The Mineral Resources for the Lake Giles Magnetite Project disclosed in the press release have been estimated by Mr. David Williams, BSc (Hons), a member of the Australian Institute of Geoscientists. Mr. Williams, an employee of CSA Global Pty Ltd and an Independent Qualified Person, has reviewed and approved the above technical information relating to the Mineral Resource estimates contained in this release, in the form and context in which it appears.

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). Macarthur has prominent (~721 square kilometer 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.

This news release is not for distribution to united states services or for dissemination in the United States

Caution Regarding Forward Looking Statements

Certain of the statements made and information contained in this press release may constitute forward-looking information and forward-looking statements (collectively, "forward-looking statements") within the meaning of applicable securities laws. All statements herein, other than statements of historical fact, that address activities, events or developments that the Company believes, expects or anticipates will or may occur in the future, including but not limited to statements regarding expected completion of the Feasibility Study; conversion of Mineral Resources to Mineral Reserves or the eventual mining of the Project, are forward-looking statements. The forward-looking statements in this press release reflect the current expectations, assumptions or beliefs of the Company based upon information currently available to the Company. Although the Company believes the expectations expressed in such forward-looking statements are based on reasonable assumptions, such statements are not guarantees of future performance and no assurance can be given that these expectations will prove to be correct as actual results or developments may differ materially from those projected in the forward-looking statements. Factors that could cause actual results to differ materially from those in forward-looking statements include but are not limited to: unforeseen technology changes that results in a reduction in iron or magnetite demand or substitution by other metals or materials; the discovery of new large low cost deposits of iron magnetite; the general level of global economic activity; failure to complete the FS; inability to demonstrate economic viability of Mineral Resources; and failure to obtain mining approvals. Readers are cautioned not to place undue reliance on forward-looking statements due to the inherent uncertainty thereof. Such statements relate to future events and expectations and, as such, involve known and unknown risks and uncertainties. The forward-looking statements contained in this press release are made as of the date of this press release and except as may otherwise be required pursuant to applicable laws, the Company does not assume any obligation to update or revise these forward-looking statements, whether as a result of new information, future events or otherwise.