

Company Update

26 August 2021



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Metallica Minerals Limited (ASX: MLM)
A Silica Sand development company

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Forward-looking statements are based on assumptions regarding Metallica Minerals Limited ("Metallica"), business strategies, plans and objectives of the Company for future operations and development and the environment in which Metallica may operate.

Forward-looking statements are based on current views, expectations and beliefs as at the date they are expressed and which are subject to various risks and uncertainties. Actual results, performance or achievements of Metallica could be materially different from those expressed in, or implied by, these forward-looking statements. The forward-looking statements contained in this presentation are not guarantees or assurances of future performance and involve known and unknown risks, uncertainties and other factors, many of which are beyond the control of Metallica, which may cause the actual results, performance or achievements of Metallica to differ materially from those expressed or implied by the forward-looking statements. For example, the factors that are likely to affect the results of Metallica include general economic conditions in Australia and globally; ability for Metallica to fund its activities; exchange rates; production levels or rates; demand for Metallica's products, competition in the markets in which Metallica does and will operate; and the inherent regulatory risks in the businesses of Metallica. Given these uncertainties, readers are cautioned to not place undue reliance on such forward looking statements.

Footnotes

1. See ASX Release 3 March 2021 "Revised 38 Mt of High Purity Silica Sand Resource"
2. See ASX Release 15 June 2021 "Mining Lease Application lodged for Cape Flattery Silica"
3. See ASX Release 22 April 2021 "Rights Issue Closes"
4. See ASX Release 22 June 2021 "Excellent Metallurgical Test results on Cape Flattery Silica Sand"

What we do



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Cape Flattery drill samples July/August 2021

Metallica Minerals is a growing Australian exploration and development company focussed on successfully delivering high purity silica sand to a diversified global customer-base. Energised by a new Board and executive team, we are committed to delivering increasing value for our shareholders.

Our project's prime location in Cape Flattery is recognised globally for its high purity silica sand.

Company Highlights



Cape Flattery Silica is **100% owned by Metallica Minerals**



Demand for Silica Sands expected to **grow significantly**



38Mt high purity Silica Sands resource¹



Mining Lease Application lodged²



Cape Flattery Silica is **within the current port boundary**



Successful Rights Issue and Placement **raised \$7m³**



Major drilling program completed



Excellent Metallurgical **test results received⁴**

The demand for silica sand continues to grow



- > IMARC Group announced the global market of high-purity silica sands achieved a compound annual growth rate (CAGR) of around 6% between 2010 and 2019.
- > IMARC also estimated the global silica sand market could grow from US\$8 billion to US\$20 billion in 2024⁵.
- > The Asia Pacific region accounts for **47 per cent of global demand for silica sand** and it has seen a boom in solar panel sales around the world as countries move toward green and zero-emissions economies⁶.
- > Post-COVID, many countries will embark on infrastructure projects to stimulate their economies, also increasing the demand for silica sand.



Unprocessed Cape Flattery Silica Sand

⁵ <https://www.imarcgroup.com/silica-sand-manufacturing-plant>

⁶ Freedonia Group

Demand for Silica Sand



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CNBC
MARKETS BUSINESS INVESTING TECH POLITICS CNBC TV WATCHLIST

A sand shortage? The world is running out of a crucial — but under-appreciated — commodity

PUBLISHED FRI, MAR 5 2021-1:14 AM EST | UPDATED FRI, MAR 5 2021-10:20 AM EST

Sam Meredith @SMEREDITH19

FINANCIAL REVIEW
PLATINUM 70 YEAR

Why sand shortage is a big problem

The Lex Column

Aug 9, 2020 - 8.11pm

Bloomberg Green

Green

Glass Shortage Threatens Solar Panels Needed for Climate Fix

Bloomberg News
November 5, 2020, 2:46 PM GMT+10
Updated on November 6, 2020, 12:00 PM GMT+10

STOCKHEAD

Mining

Silica sands is now a thing; here's why, and what to look for in a producer

July 26, 2021 | Bevis Yeo

Corporate snapshot



ASX Code	MLM
Share Price (as at 24 August 21)	3.4c
Ordinary Shares	567.7m
OPTIONS	
\$0.06	130.7m
Market Cap	\$19.3m
Cash (as at 30 June 2021)	\$7.5m
Debt	Nil

Top 20 shareholders hold 45.1% of Register

Top 4 Shareholders	Holding
1. Ilwella Pty Ltd	19.6%
2. Dostal Nominees Pty Ltd	6.1%
3. Rookharp Capital Limited	3.1%
4. Plan-1 Pty Ltd	1.9%

Theo Psaros Non-Executive Chairman

Appointed 1 February 2019

- > Experienced Director and Executive
- > More than 30 years' diverse global and local commercial experience in multiple business sectors and industries (publicly listed and private companies and government departments).

Scott Waddell Executive Director, CFO and Company Secretary

Appointed 1 February 2019

- > More than 28 years' resources experience gained through positions with Metro Mining Limited, Cape Alumina Limited, Anglo Coal and Rio Tinto Alcan.

Andrew Gillies Non-Executive Director

Appointed 1 February 2019

- > Geologist with 35 years' experience and more than 20 years combined experience as a Director of ASX listed junior resource companies
- > Expertise in resource and mineral exploration, company management, project feasibility, project development and governance.

Brad Sampson Non-Executive Director

Appointed 13 May 2021

- > Brisbane-based Director and mining professional with more than 30 years resources industry experience
- > Significant mine development and operating experience along with listed company governance experience across multiple international jurisdictions.

Mark Bojanjac Non-Executive Director

Appointed 13 May 2021

- > Perth-based Director with more than 20 years' experience in ASX resource companies
- > Executive Chairman of PolarX Limited (ASX: PXX), Non-executive Director of Kula Gold Limited (ASX: KGD).

Nicholas Villa General Manager, Cape Flattery

Appointed 14 June 2021

- > More than 20 years' mining industry experience
- > Experience in Queensland resource project approvals processes including Environmental Studies and Native Title negotiations
- > Project Manager which delivered Metro Mining's Bauxite Hills mine in Northern Cape York to full production.

Cape Flattery Silica



> *Our Cape Flattery Silica project in Cape Flattery, Queensland, is home to some of the best high-purity silica sand in the world and is located in a designed port area.*

Mining Lease Application²

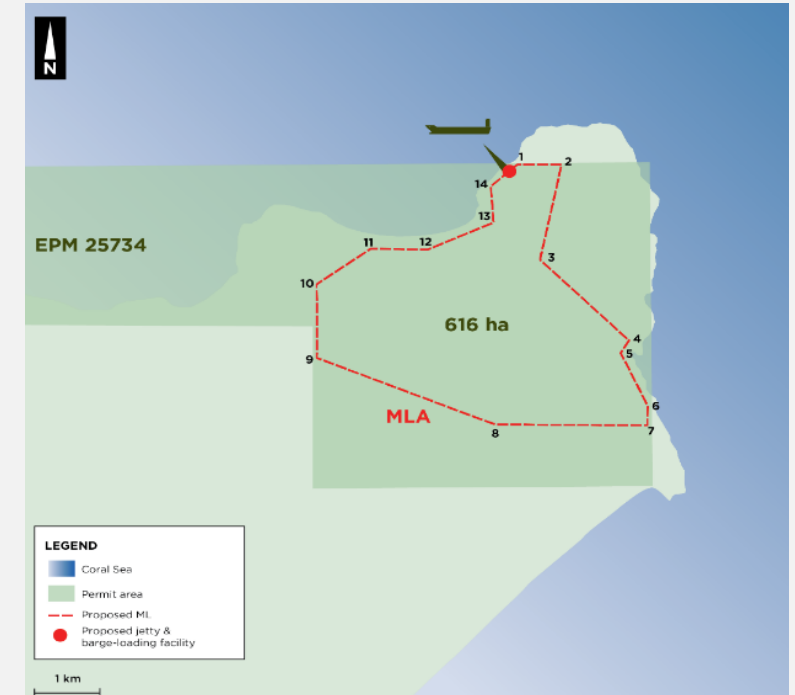


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- > Mining Lease Application (ML 100284) has been lodged with the Queensland Department of Resources
- > The MLA area of 616 Hectares contains the current JORC Mineral Resource



Drilling at the Cape Flattery Project and MLA area

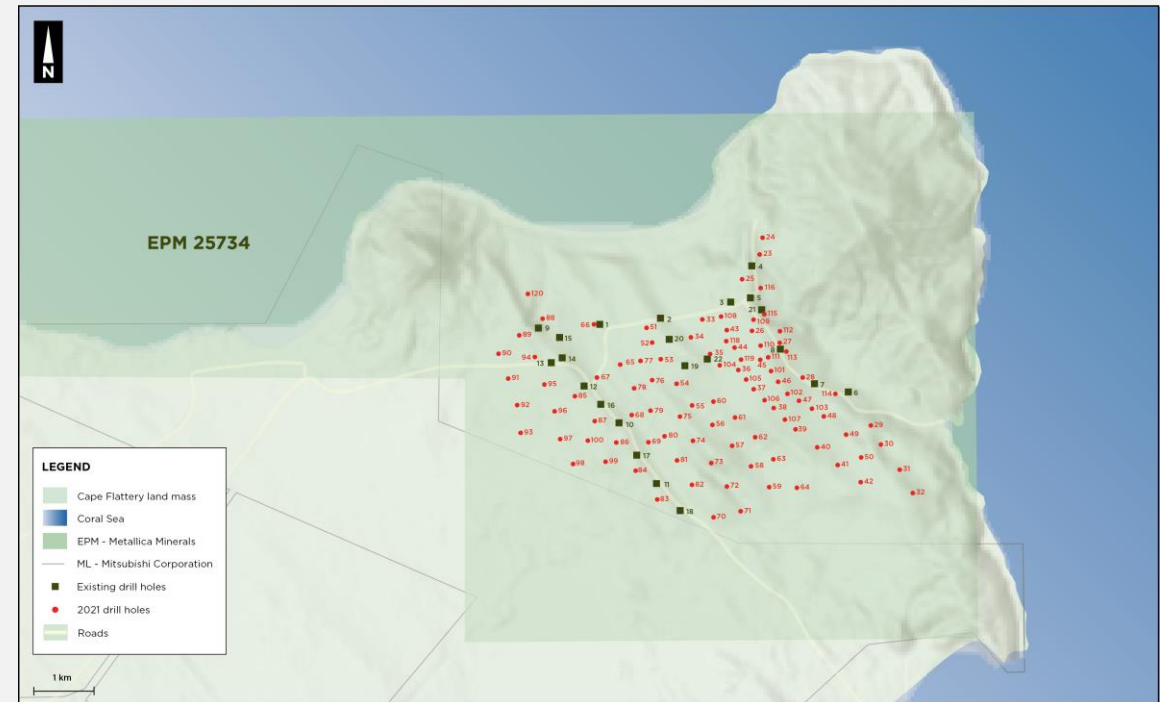


JORC Resource¹



- > High purity silica sand resource increased to 38.3Mt @ 99.0% SiO₂
- > 22 Drill hole program completed in December 2020
- > 98 Drill hole program completed in August 2021
- > In-situ SiO₂ averages 99% at an 98.5% cut-off grade

Cape Flattery Silica Sand Classification	Silica Sand (mt)	Silica Sand (Mm ³)	Density (t/m ³)	SiO ₂ %	Al ₂ O ₃ %	Fe ₂ O ₃ %	TiO ₂ %	LOI %
Indicated Resource	5.4	3.4	1.6	99.1	0.04	0.09	0.13	0.13
Inferred Resource	32.9	20.5	1.6	99.0	0.07	0.12	0.15	0.11
TOTAL	38.3	23.9	1.6	99.0	0.06	0.12	0.15	0.12



CFS Project – Eastern Resource Area – completed Drill holes July/August 2021

For further details, see ASX Release on 2 March 2021 titled “38 Mt of High Purity Silica Sand Resource at Cape Flattery Silica Sands Project”.

Metallurgical Test work⁴



- > Bulk sample metallurgical testing confirms high quality silica sand product
- > The test work confirmed a product with 99.8% SiO₂, 170ppm Fe₂O₃ and 450ppm Al₂O₃
- > Further work included a successful test of process to reduce Fe₂O₃ from 170ppm to 70ppm Fe₂O₃
- > The work demonstrated a relatively low contaminant product with an attractive narrow particle size distribution and a high-moderate yield
- > Further metallurgical testing will be undertaken with bulk samples from the July/August 2021 drilling program based on white sand samples to investigate further enhancement of the processed product

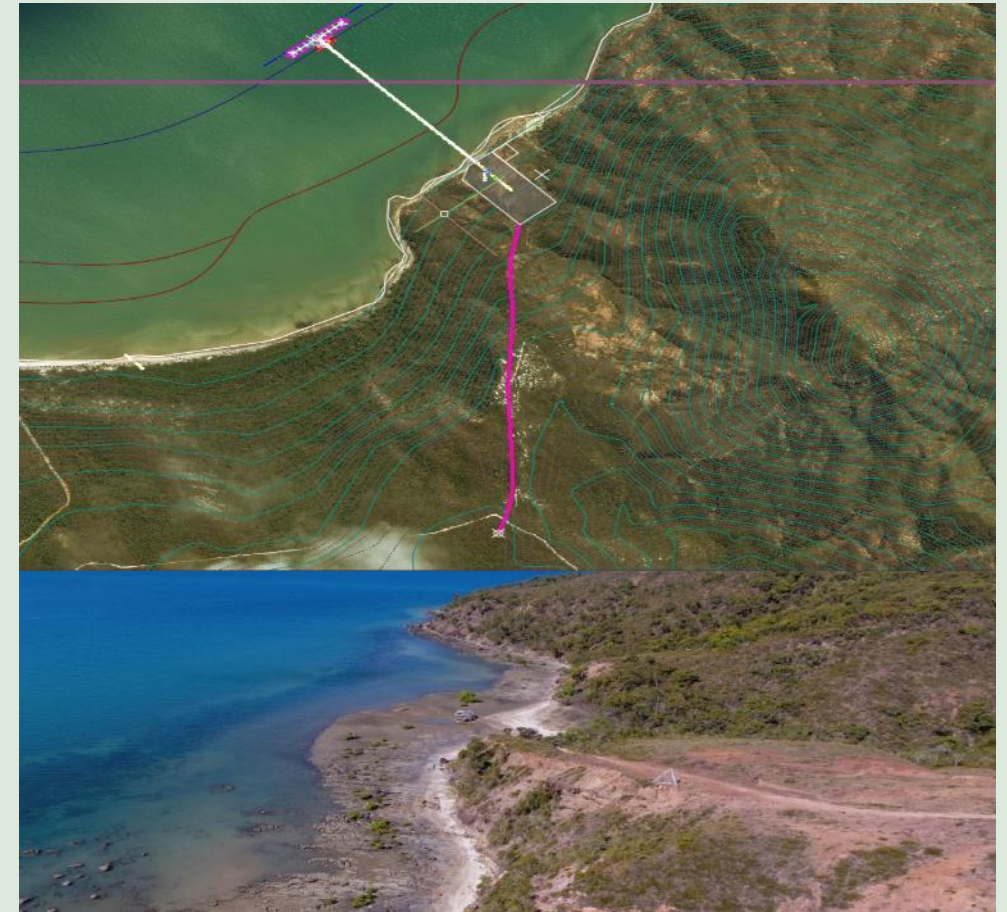
Potential Product Options	Mass Yield	Assay				
		SiO ₂	Al ₂ O ₃	Fe ₂ O ₃	TiO ₂	LOI 1000
	%	%	ppm	ppm	ppm	%
Feed Preparation Sand	97.6	99.7	715	760	1225	0.07
Spiral Product	84.0	99.9	500	240	260	0.10
UCC Product	77.4	99.8	450	170	210	0.05



Planned Infrastructure



- > A key advantage is the project being located in the designated Cape Flattery Port Area
- > Queensland Government legislation does not allow for new ports being built outside the designated port areas
- > Potential to truck our product less than 1km to our own proposed jetty or a third party jetty for barging operations provides significant commercial advantages
- > Ports North has identified swing basin areas for ships (up to Panamax size vessels) close to this site
- > Close to deep water suitable for barge loading
- > Initial support from Traditional Land Owners has been obtained for this location



Cape Flattery headland – potential jetty and barge loading area

Scoping Study highlights



- > Supports the continuation of the evaluation & development of the Cape Flattery Silica (CFS) project
- > CFS continues to maintain positive relationships with Traditional Landowners
- > The proximity of the project to a potential jetty location for barging/transhipping is a key advantage for the project
- > CAPEX estimates range between AUD\$56m and AUD\$75m
- > OPEX estimates range between AUD\$29/t and AUD\$33/t
- > Potential sale price for the silica sand is between US\$40/t and US\$55/t
- > Recently completed drilling will provide more knowledge on the project's resource



Cape Flattery drilling July/August 2021

Upcoming work plan



- > Preliminary discussions with Off-Take buyers
- > Further investigation of infrastructure options to reduce CAPEX +/- OPEX
- > Pre-Feasibility Study underway (completion early 2022)
- > Continued community engagement
- > Environmental Application to be lodged
- > Continue Environmental studies
- > Further Metallurgical test work to be undertaken following July/August drilling
- > Traditional Landholder Agreements to be progressed



Cape Flattery drilling July/August 2021



Metallica in the news



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proactive

view Metallica Minerals Limited

Metallica Minerals returns strong test results on Cape Flattery silica sand

It is planning further metallurgical testing to investigate further enhancement of the processed product from the project.

Cairns Post+

Mine offers positive future for FNQ jobs

PETE MARTINELLI

The Market Herald

FIRST WITH THE NEWS THAT MOVES MARKETS

Metallica Minerals (ASX:MLM) plans \$4.9M renounceable rights issue

Mining
ASX:MLM MCAP \$18.40M

Ashleigh Melanko
Markets Reporter

The Market Herald

FIRST WITH THE NEWS THAT MOVES MARKETS

Metallica Minerals (ASX:MLM) gets pleasing metallurgical results from Cape Flattery

Materials
ASX:MLM MCAP \$18.40M

Jessica De Freitas
Markets Reporter
jessica.defreitas@themarketherald.com.au
23 June 2021 05:00 (AEST)

f t in e

The Market Herald

FIRST WITH THE NEWS THAT MOVES MARKETS

Metallica Minerals (ASX:MLM) near-quadruples MRE at Cape Flattery

Materials
ASX:MLM MCAP \$18.40M

Simone Grogan
simone.grogan@themarketherald.com.au
02 March 2021 13:00 (AEST)

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Competent Persons



Cape Flattery Silica Sands

The information in this announcement that relates to the Cape Flattery Silica Project-Eastern Exploration Target and this Resource Estimation was based on results and data collected and compiled by Mr Neil Mackenzie-Forbes, who is a Member of the Institute of Geoscientists and is a Consulting Geologist employed by Sebrof Projects Pty Ltd and engaged by Metallica Minerals Ltd. Mr Mackenzie-Forbes has more than 20 years mining and exploration experience in Australia with major mining and junior exploration companies. Mr Neil Mackenzie-Forbes consents to the inclusion of this information in the form and context in which it appears in this release/report.

The information in this announcement that relates to the Cape Flattery Silica Project - Eastern Resource Area is based on information and modeling undertaken by Mr Chris Ainslie, Geotechnical Engineer, who is a full-time employee of Ausrocks Pty Ltd and a Member of the Australasian Institute of Mining & Metallurgy. The work was supervised by Mr Carl Morandy, Mining Engineer who is Managing Director of Ausrocks Pty Ltd and a Member of the Australasian Institute of Mining & Metallurgy and also by Mr Brice Mutton who is a Senior Associate Geologist for Ausrocks Pty Ltd. Mr Mutton is a Fellow of the Australasian Institute of Mining & Metallurgy and a Fellow of the Australian Institute of Geoscientists. Mr Morandy and Mr Ainslie and Mr Mutton are employed by Ausrocks Pty Ltd who have been engaged by Metallica Minerals Ltd to prepare this independent report, there is no conflict of interest between the parties. Mr Morandy, Mr Ainslie and Mr Mutton consent to the disclosure of information in the form and context in which it appears in this release/report.

The overall resource work for the Cape Flattery Silica Project - Eastern Resource Area is based on the direction and supervision of Mr Mutton who has sufficient experience that is relevant to the style of mineralisation and type of deposits under consideration and to the activity being undertaken 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".

Technical Information

The technical information in this report that relates to process metallurgy is based on information reviewed by Arno Kruger (MAusIMM) and work completed by IHC Mining. Mr Kruger is a metallurgical consultant and an employee of IHC Mining. Mr Kruger has sufficient experience that is relevant to the type of processing under consideration and to the activity being undertaken to qualify as a Competent Person as defined by the JORC Code 2012. Mr Kruger consents to the inclusion in the report of the matters based on his information in the form and context in which it appears.

Our project is located in the world class
Cape Flattery Dune field



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