



20 December 2021

Cape Flattery Silica Sand Project Update

Highlights

- 24 hole infill drilling program successfully completed
- 410 drill samples sent to ALS laboratory in Brisbane with assay results expected in Q1 2022
- Pre-Feasibility Study (PFS) nearing completion with the report to be finalised in Q1 2022
- Right to Negotiate process to establish agreements with the Traditional Owners progressing positively

Metallica Minerals Limited (**Metallica**, ASX: MLM) is pleased to announce that it has successfully completed a twenty-four (24) hole infill drilling program at its 100% owned Cape Flattery Silica Pty Ltd (CFS) project.

Hole depths averaged approximately 16m with a maximum depth of 36m being drilled in hole CFS142 (see figure 2). These holes were drilled within the CFS Mining Lease Application area (MLA) using a vacuum-based drill rig (see figure 3). The combined database for the CFS Project now comprises 144 drill holes comprising approximately 2,000m of drilling.

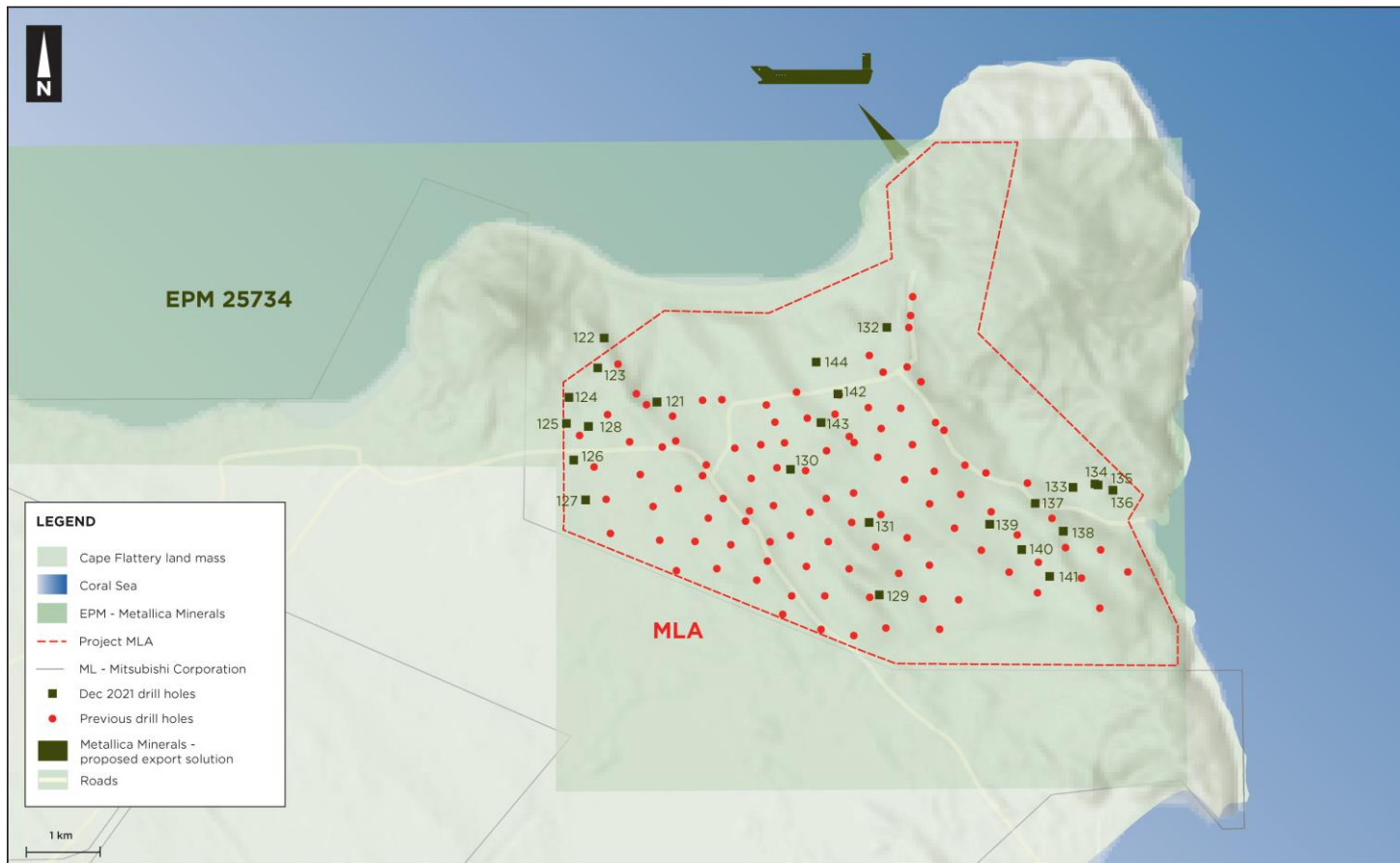


Figure 1: Drill hole location map in the Project's resource area, with Metallica's December 2020 drill holes shown in dark green and the prior program drill holes shown in red

Metallica Executive Chairman, Theo Psaros said “The infill drilling was designed to improve drill hole density within the existing Mineral Resources envelope. It is expected that this improvement in drill hole density and associated information will be sufficient to upgrade some of the Inferred resources to the Indicated category and to possibly increase the Measured resource category. We continue to be encouraged from the visual inspection of the samples collected which show a high proportion of clean white sand.”

High purity silica sand was intersected in 17 of the 24 holes with the high-grade sand occurring consistently as predicted by the resource model. The infill drilling indicates that the existing geological model is robust. The chip tray samples from hole CFS142 (being 36m in depth), is shown in Figure 2 below. This sample shows a high proportion of clean white sand.



Figure 2: Chip tray samples from hole C142 (being 36m in depth)

Mr Psaros added “We are very pleased that our team, including clan representatives from the Dingaal and Nguurruumungu peoples worked very efficiently to support the completion of the additional holes. We now turn our attention to non-field activities to progress the PFS while the drilling samples are being assessed by ALS.”

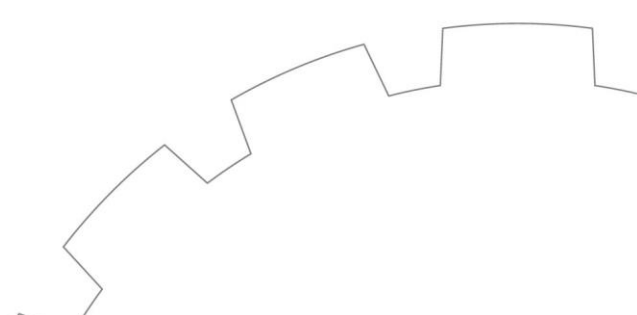


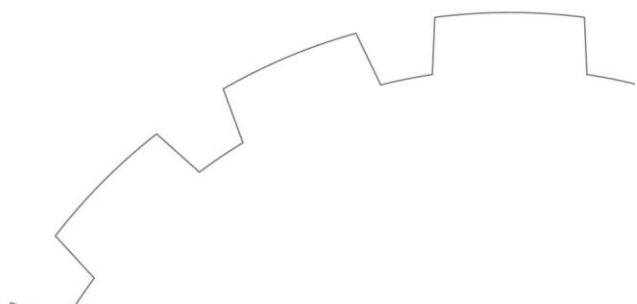


Figure 3: photo of Yearlong Contractors vacuum-based drill rig working at CFS project

Pre-Feasibility Study Update

Metallica's team of consultants are progressing well towards the completion of the Pre-Feasibility Study (PFS) in Q1 2022. The PFS is designed to demonstrate the economic potential of the Cape Flattery Silica Sand project and to build on the successful results of the Updated Scoping Study (see ASX release: 10 November 2021 "Cape Flattery Silica Sand Project Production Target"), which estimated a project NPV of \$235 million (before tax) over a 22-year mine life and IRR of 38%.

The PFS will provide further detail on the mine design as well as infrastructure required for building the operation.



In October of this year, a team of consultants and engineers visited the CFS project to gain first-hand knowledge of the project location and attributes. Representatives from Mineral Technologies, WAVE and Ausrocks were led by the CFS project management. Importantly, valuable discussions were held with Traditional Landowner representatives, whose input and feedback on the preferred location of key operational components was of significant benefit.

Planning is also underway for a Definitive Feasibility Study (DFS) that is anticipated to follow completion of the PFS.

Environmental Studies Update

Regular site visits are being conducted by the independent environmental consultants. Aquatic and Marine studies have been completed with reports being prepared for inclusion to the Environmental Application submission planned for early 2022. Surface and Ground water monitoring continues with data being collected to establish baseline parameters.



Figure 4: Metallica's EPM 25734 location and orientation at Cape Flattery and within the Cape Flattery Port limit

Traditional Landowner Agreements

The first of two meetings have been held with the Dingaal and Nguurruumungu clan members. The latest meeting was held on 14 December 2021 in Hope Vale where the terms of a Negotiation Protocol document was finalised and each clan's representation for the negotiation process was also agreed upon.

Mr Psaros stated “we are grateful for the conduct of the meetings and the willingness to not only understand our development plans but to engage and discuss opportunities for the community in years to come. Engagement with the Dingaal and Nguurruumungu clan members has been very positive to date. We look forward to progressing the Mine Agreement and Cultural Heritage Agreement in 2022.”

Metallurgical Studies

Further metallurgical studies on the silica sand samples are expected to be completed early in 2022. This testing builds on the work previously undertaken (see ASX release: 22 June 2021 “Excellent Metallurgical Test Results on Cape Flattery Silica”) and will prove up the design of the processing plant as part of the PFS work.

Activities planned for Q1 2022

The following are the activities planned for Q1 2022:

- Completion of the Pre-Feasibility Study, metallurgical studies and resource upgrade
- Complete the environmental studies and submit an Environmental Authority application
- Progress negotiations and work toward finalising agreements with the Traditional Owners
- Progress work to finalise Definitive Feasibility Study planning and seek Board approval to progress with DFS
- Progress work on off-take agreements for the sale of Cape Flattery silica sand.

About the Cape Flattery Silica Sand (CFS) Project

Metallica’s 100% owned Cape Flattery Silica Sands (CFS) project is adjacent to the world class Cape Flattery Silica Sand mining and shipping operation owned by Mitsubishi. Exploration drilling to date has now confirmed that the sand dunes within EPM 25734 contain high purity silica sands with an in-situ quality which is understood to be comparable to Mitsubishi’s Cape Flattery Silica Mine.

On 21 October 2021, the Company released an upgraded resource in the CFS Eastern Resource Area estimated and summarised in Table 1, as follows (see ASX release: “Revised 40% Increase of the Cape Flattery Resource to 53.5Mt”).

Resource Category	Silica Sand (Mt)	SiO ₂ (%)	Fe ₂ O ₃ (%)	TiO ₂ (%)	LOI (%)	Al ₂ O ₃ (%)	Density (t/m ³)	Silica Sand (Mm ³)
Measured	9.6	99.29	0.10	0.13	0.18	0.08	1.6	6.0
Indicated	38.2	99.15	0.13	0.14	0.19	0.12	1.6	23.9
Inferred	5.7	99.26	0.11	0.11	0.18	0.16	1.6	3.5
Total	53.5	99.19	0.12	0.14	0.19	0.12	1.6	33.4

¹ Table 1 – EASTERN RESOURCE Area Cape Flattery Silica Project

The Resource has been prepared in accordance with the JORC Code 2012 – A cut-off grade 98.5% has been defined based on the surrounding data. These results show there is good potential to produce a premium grade silica product using standard processing techniques.

On 15 June 2021 the Company announced that it had lodged a Mine Lease Application (MLA) for the project (see map below and ASX release MLA lodged for Cape Flattery Silica).

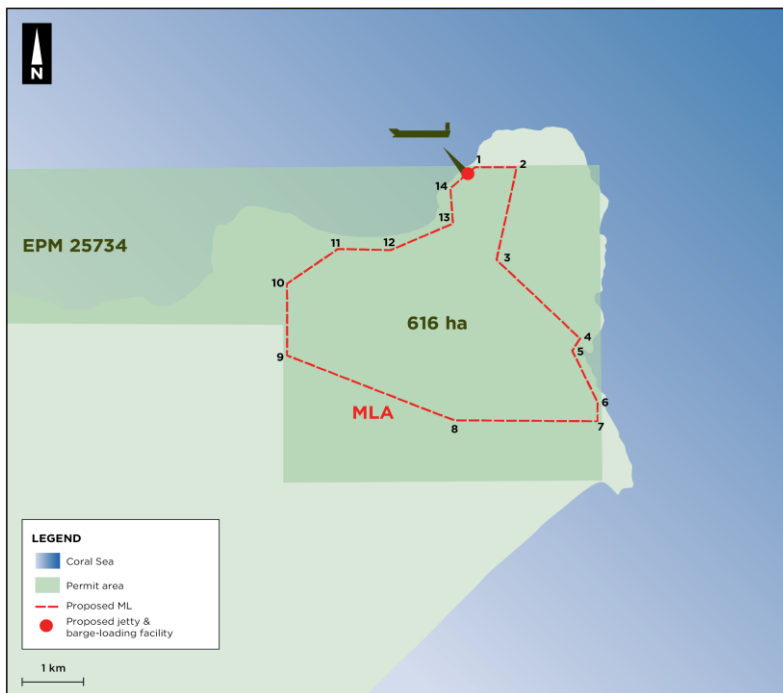


Figure 6: Cape Flattery Silica Sand project MLA area boundary and EPM

Competent Person Statements

Cape Flattery Silica Sands Exploration Results

The information in this report that relates to the Exploration Sampling and Exploration Results is based on information compiled by Mr Patrick Smith, a Competent Person who is a Member of the Australian Institute of Mining and Metallurgy.

Mr Smith is the owner and sole Director of PSGS Pty Ltd and is contracted to Metallica Minerals as their Exploration Manager. Mr Smith confirms there is no potential for a conflict of interest in acting as the Competent Person. Mr Smith 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”.

Mr Smith consents to the inclusion of this information in the form and context in which it appears in this release/report.

Cape Flattery Silica Sands Mineral Resource

The information in this report that relates to the Cape Flattery Silica Project – Eastern Resource Area is based on information and modelling carried out by Chris Ainslie, Project 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 Mutton consent to the disclosure of information in the form and context in which it appears in this 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”.

The corresponding JORC 2012 Table 1 is attached to the ASX Release “Revised 40% Increase of the Cape Flattery Resource to 53.5Mt” 21 October 2021.

Cape Flattery Silica Sands metallurgy

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.

Reference to Previous Releases

Scoping Study results were released to the ASX on 18 August 2021 “Scoping Study for Cape Flattery Silica Sand Project” and 10 November 2021 “Cape Flattery Silica Sand Project Production Target” and the results in this announcement are to be read in conjunction with these ASX releases.

Drilling, resource estimates and metallurgical results referred to in this announcement have been previously announced to the market in reports dated; 2nd March, 15th June, 22nd June, 12th August and the 21st October 2021 and are available to view and download from the Company’s website: <https://metallicaminerals.com.au>.

The Company confirms that it is not aware of any new information or data that materially affects the information included in the original announcements. Metallica confirms that the form and context in which the Competent Person’s findings are presented have not been materially modified from the original market announcements.

Forward-looking statements

Forward-looking statements are based on assumptions regarding 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 funds 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.

