3 March 2023

Maiden Inferred Mineral Resource of 12Mt at 99.15% SiO_2, 0.09% Fe_2O_3 Estimated for Cape Flattery Silica West Project

Highlights

- Maiden Inferred Mineral Resource of 12Mt estimated for the Cape Flattery Silica West Project on EPM25734 (refer to Table 1 for details)
- Resource estimated using data from twenty-three (23) auger holes completed by CFS in August 2022[1]
- Sand quality in the "Western Area" comparable to, or of higher purity than the silica sand resource contained within MLA project
- Scope to incrementally increase the resource area towards the western boundary of EPM25734

Metallica Minerals Limited (**Metallica**, ASX: MLM) is pleased to announce a Maiden Inferred Resource for the Cape Flattery Silica West Project (CFS West). The Inferred Resource of 12Mt is based on assay data from twenty-three (23) auger holes drilled on the Western part of EPM 25734 in August 2022, Figure 1.

Due to the sporadic nature of the exposed dunes, the auger holes were drilled on a 400m to 1,000m spacing. Although they were not drilled on a grid, the auger holes are well distributed across the resource area. LiDAR from a survey flown over CFS West in December 2022 was used as the topographic data, providing a reliable surface to interpret the dune profiles.

Mr Theo Psaros, Executive Chairman of Metallica Minerals said "*It is pleasing to announce this initial Inferred Resource for the CFS West Project. It increased our knowledge of what resources are contained within our EPM at Cape Flattery and more importantly the quality of the sand. Metallica Minerals will decide in due course how best to exploit this future resource but at this stage it will not be included in the DFS currently being finalized on the Eastern Resource area contained within MLA".*

The Mineral Resource Estimate was completed in accordance with the JORC Code (2012) guidelines with Micromine 2023 used to model and evaluate the resource. The block model for the resource was generated using blocks of 100m (L) x 100m (W) x 5m (H) with sub blocks of 5m (L) x 5m (W) x 1m (H). The blocks were constrained by the interpreted geological boundaries and populated by the Inverse Distance Weighting (IDW) estimation method to interpolate assay grades for each of the chosen elements (SiO_2, Fe_2O_3, Al_2O_3, LOI and TiO_2).

[1] First reported the ASX 20th September 2022 "Auger Drilling at the Western Areas of Cape Flattery Project Intersects High Purity Silica Sand" competent person Patrick Smith

To constrain the resource model, small low-lying dunes of less than 10,000t were excluded as it may be uneconomic to extract these small dunes. A topsoil or humus layer of 0.15m was also excluded from the model. No specific limit was used to guide geological continuity, instead the majority of the dune complex was incorporated in the resource due to adequate geological interpretation of resource above the regional topographic level.

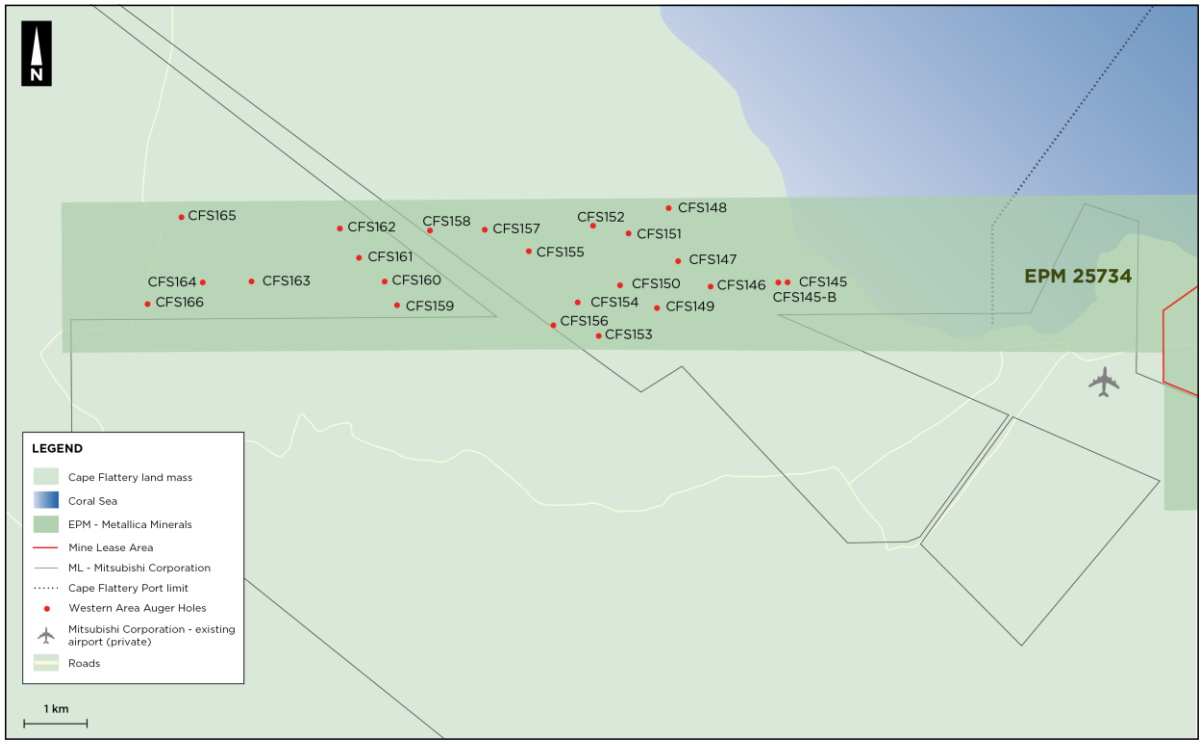

Figure 1. CFS West Project (Western Area of EPM25734), Auger Hole Locations

A silica (SiO_2 %) cut-off grade has not been used for the Western Resource Area, the number of samples below the conventional 98.5% SiO_2 cutoff are limited. Associated elements including TiO_2 were present in samples where SiO_2 is marginally below the conventional cutoff of 98.5%. Metallurgy assessment from the CFS Eastern Project and Resource Area suggests that elevated TiO_2 is readily removed from the silica sand by simple gravity processing therefore upgrading the sand concentration to in excess of the 98.5% SiO_2 COG previously applied to resources at Cape Flattery.

The density used for the resource estimated was 1.6 t/m^3 based on data collected from the Eastern Resource Area, where the density ranged from 1.50 to 1.66 t/m^3 with an average 1.6 t/m^3 from 39 different site locations. Due to the evident similarities in the silica sand material, this density has been adopted for the tonnage calculations in the CFS West Project.

For resource purposes the resource area has been subdivided into a “Western Area” and “Eastern Area”, with the two areas separated by the Mitsubishi infrastructure corridor which bifurcates the EPM. The resource for the CFS West Project is summarized in Table 1, a plan showing the Resources West and East of the adjacent ML infrastructure corridor is presented as Figure 2 and a cross section and longitudinal section through the resource model are presented in Figures 3 and 4 respectively.

Table 1. Cape Flattery Silica West Project

Resource Category	Silica Sand (Mt)	SiO_2 (%)	Fe_2O_3 (%)	TiO_2 (%)	LOI (%)	Al_2O_3 (%)	Density (t/m^3)	Silica Sand (Mm^3)
Inferred (East of the ML Infrastructure Corridor)	7	99.0	0.09	0.12	0.33	0.16	1.6	5
Inferred (West of the ML Infrastructure Corridor)	5	99.39	0.09	0.21	0.12	0.06	1.6	3
Inferred (Total)	**12**	**99.15**	**0.09**	**0.16**	**0.24**	**0.12**	**1.6**	**8**

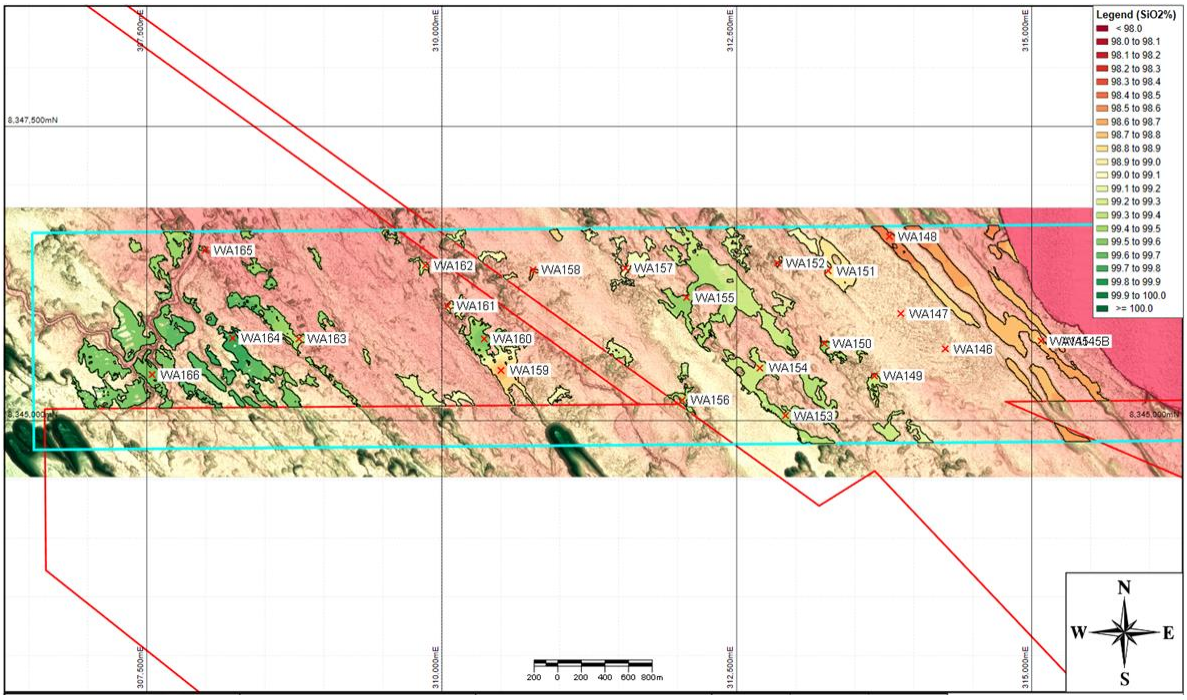

Figure 2. Overview of auger holes and resource areas

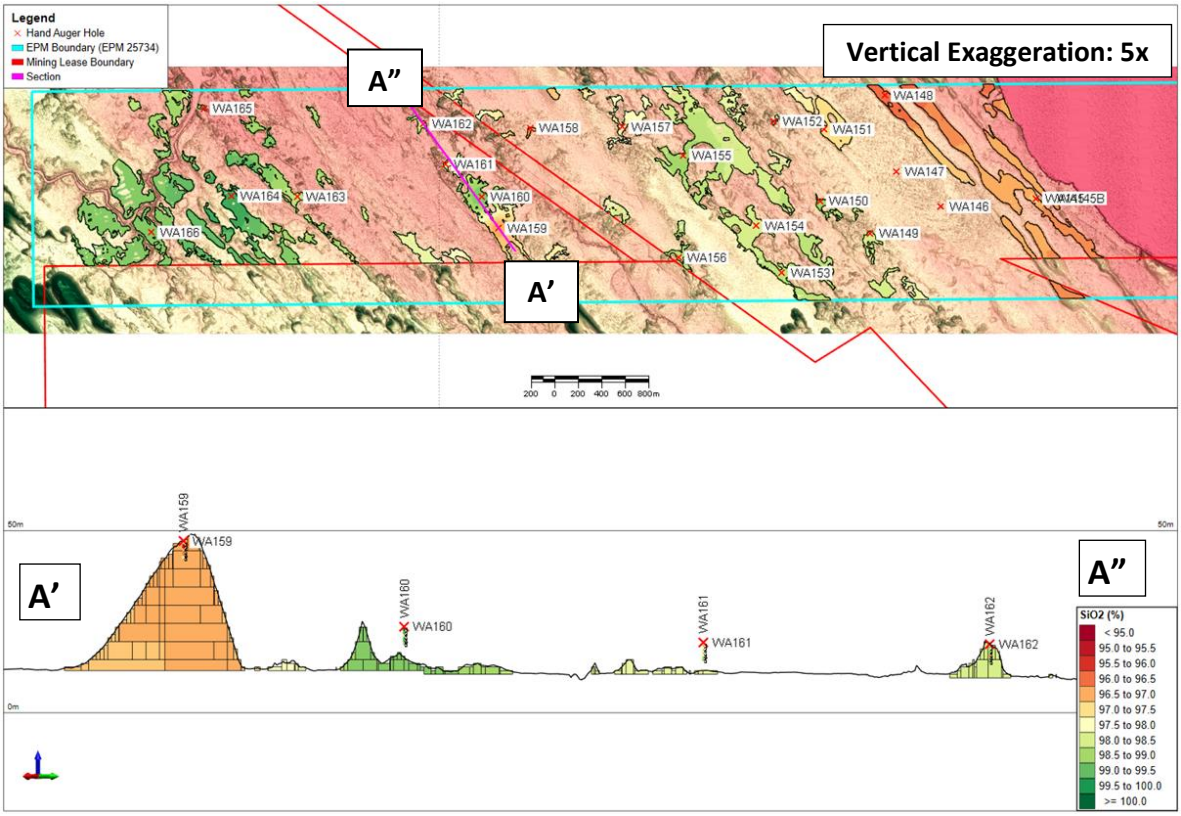

Figure 3. Section through dune axis

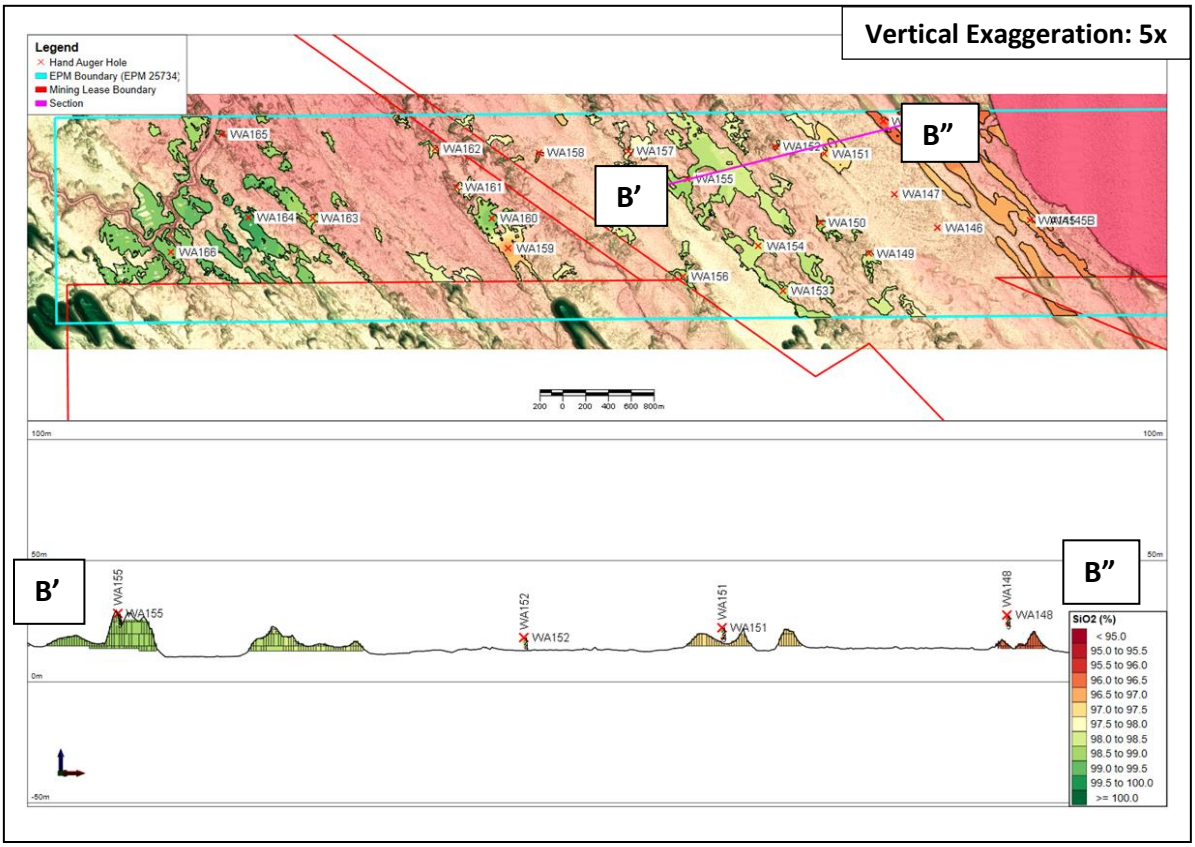

Figure 4. Cross Section (West to East4) through CFS West Project Block Model

This announcement has been approved in accordance with the Company's published continuous disclosure policy and has been approved by the Board.

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Competent Person Statement

Cape Flattery Silica Sand 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.

CFS West - Silica Sand Resource

The information in this report that relates to the CFS West 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 CFS West 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".

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.

JORC Code, 2012 Edition – Table 1 Report

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.*	• Drilling samples were collected from a hand auger, (shell auger) with samples collected at 1m intervals down hole. The entire 1m sample was collected from the auger and placed in a calico bag. The samples were collected in a pre-numbered sample bag, with each sample having a mass of between 2.5 to 4kg. • The entire 1m sample was collected on site and dispatched to the laboratory for splitting and analysis. • Samples were submitted to ALS Laboratories in Brisbane for drying, splitting and pulverization in a tungsten carbide bowl, and XRF analysis. • Sampling techniques are mineral sands "industry standard" for dry aeolian sands with low levels of induration and slime. • As the targeted mineralization is silica sand, geological logging of the drill material is a primary method for identifying mineralisation. • Samples from this drilling programme will be selected for Metallurgical testwork. These samples will be composited to form a bulk sample.

Criteria	JORC Code explanation	Commentary
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).*	• The "drilling technique" was hand auguring using a hand auger, which was 50mm in diameter. The hand auguring was undertaken by Metallica Minerals Geologists and Field Assistants. • Holes were terminated at a depth of 5m, as this was a deep as the augers could be physically drilled to by hand.
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 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.*	• Visual assessment and logging of sample recovery and sample quality. • Auger drilling is low disturbance and low impact, minimising drill hole wall impact and contamination. • Samples are collected from the shell auger at 1m intervals as the hole was being drilled. • Cleaning of the auger "shell" was done after every 1m, to avoid contamination. • No sample bias occurred between sample recovery and grade. • The consistent weight of the samples indicates that recovery of between • 90 to 100% was achieved, lower recoveries (less than 80%) were recorded in the top 1m of each hole due to the presence of organic matter and topsoil
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.*	• Geological logging of the total hole by field geologist, with retention of sample in chip trays to allow subsequent re-interpretation of data if required.

Criteria	JORC Code explanation	Commentary
	• *Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc) photography.* • *The total length and percentage of the relevant intersections logged.*	• The total hole is logged in 1m intervals; logging includes qualitative descriptions of colour, grain size, sorting, • Photographs of each chip tray were taken so a digital visual record of each of the drill holes was obtained. • Logging has been captured through field drill log sheets and transferred through to an excel spreadsheet which was uploaded into a central database for storage prior to being provided to a third party consultant for resource estimation.
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.*	• The sample for the entire 1m interval was collected from the auger at 1m intervals. • The sample was placed in a numbered calico bag, prior to being placed in a poly-weave sack for dispatch to the laboratory. • Each sample weighed between 2.5 to 4.0Kg. • The samples were split to 100gram samples for analysis in the laboratory under laboratory-controlled methods. • The sample size is considered appropriate for the grain size of material, average grain size (87% material by weight between 0.125mm and 0.5mm • The Competent Person considers the sample preparation to be appropriate for the drilling program. • The Competent Person considers the sample sizes to be appropriate for the type of material being sampled. Appropriate sample sizes and pulverisation of the entire sample support good representivity.

Criteria	JORC Code explanation	Commentary
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.*	• Hand Auger samples were submitted to ALS Brisbane, where they were dried, weighed and split. • Analysis was undertaken by ALS Brisbane utilising a Tungsten Carbide pulverization, ME-XRF26 (whole rock by Fusion/XRF) and OA- GRA05(H_2O/LOI by TGA furnace). • Samples were assayed primarily for SiO_2, Fe_2O_3, Al_2O_3 and TiO_2 and a range of other elements. • Analysis undertaken determined by a sample code which correlates to drill logs to ensure no sample bias. • QC procedures – No duplicates were collected due to this being the early reconnaissance stage of exploration for the western areas. bias.
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.*	• Significant intersections validated against geological logging and local geology/ geological model. • No auger holes have been twinned, one hole WA145 was redrilled as the initial hole was subject to collapse • All data captured and stored in both hard copy and electronic format. • No assay data had to be adjusted. • All digital data is verified by the Competent Person. • No adjustments were made to assay data.
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.*	• All holes initially located using handheld GPS with an accuracy of 5m for X, Y.

Criteria	JORC Code explanation	Commentary
	• *Specification of the grid system used.* • *Quality and adequacy of topographic control.*	• UTM coordinates, Zone 55L, GDA94 datum. • Topographic surface was generated from LiDAR captured over the project area in December 2022. • Auger drillholes were draped onto the LiDAR surface for modelling.
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.*	• Auger drilling was completed on existing tracks or exposed areas of the dunes, no tracks were cleared and no areas were disturbed • Auger spacing, and distribution is sufficient to allow valid interpretation of geological and grade continuity for an Inferred Mineral Resource. • There has been no sample compositing.
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.*	• The dune field has ridges dominantly trending 320º - 330°. • Silica deposition occurs as windblown sand dunes which are primarily sub-horizontal. With some dune faces or sides with angle of rest ranging up to 35 degrees. • Drilling orientation is appropriate for the nature of deposit and to facilitate sample recovery.
Sample security	• *The measures taken to ensure sample security.*	• Sample collection and transport from the field was undertaken by company Personnel following company procedures.

Criteria	JORC Code explanation	Commentary
		• Samples were aggregated into larger polyweave bags and sealed with plastic zip ties, Bags were labelled and transported in a helicopter to Cooktown where they were put into palette-crates and sealed prior to being shipped to ALS Townsville. • Samples were delivered directly to ALS Brisbane for sample preparation and analysis
Audits or reviews	• *The results of any audits or reviews of sampling techniques and data.*	• An internal review was conducted internally by Metallica Minerals Ltd personnel

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 land tenure status	• *Type, reference name/number, location and ownership including agreements or material issues 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.*	• The Cape Flattery Silica Sands Project is located within EPM 25734 in Queensland and is held by Metallica Minerals Ltd through subsidiary company Cape Flattery Silica Pty Ltd. • A compensation and conduct agreement is in place with the landholder (Hopevale Congress) and native title party. • The tenement is in good standing and there are no impediments to conduct exploration programs on the tenements.
Exploration done by other parties	• *Acknowledgment and appraisal of exploration by other parties.*	• Previous exploration has been carried out in the Eastern Target area during the 1970's and 80s by Cape Flattery Silica Mines (CFSM). CFSM reported seven (7) holes drilled for 84 meters. These holes intersected sand dunes between 10 and 20 meters in thickness.

Criteria	JORC Code explanation	Commentary
		• No exploration by other parties is known to occur within the Western and Central Target Areas. • Metallica Minerals carried out a campaign from helicopter in 2018 to collect grab samples and auger samples to a maximum depth of 1.2m. 18 samples were collected within the Western and Central Target areas, with many of these coinciding with the latest Auger drilling campaign. No historical grab samples were used in this Mineral Resource Estimation. • All current exploration programs are managed by Metallica Minerals
Geology	• *Deposit type, geological setting and style of mineralisation.*	• The geology comprises variably re-worked aeolian sand dune deposits associated with Quaternary age sand-dune complex. • Mineralisation occurs within aeolian dune sands
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.*	• A tabulation of the material auger holes is included in the body of this report as Table 1.

Criteria	JORC Code explanation	Commentary
	• *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.*	
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 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.*	• A silica (SiO_2 %) grade cut-off has not been used for this Resource Area, the number of samples below the conventional 98.5% SiO_2 cutoff are limited. • The grade is highly consistent, and the aggregate intercepts use a simple arithmetic average. • No top cuts were applied to the data. • No metal equivalents reported.
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').*	• As the mineralisation is associated with aeolian dune sands the majority of which are sub-horizontal, some variability will be apparent on dune edges and faces.

Criteria	JORC Code explanation	Commentary
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.*	• A map of the drill collar locations is incorporated with the main body of the report.
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.*	• All exploration results are reported in a balanced manner. All results are supported by clear and extensive diagrams and descriptions. No assays or other relevant information for interpreting the results have been omitted.
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.*	• Geological observations are consistent with aeolian dune mineralisation. • No groundwater was intersected during the auger drilling due to the shallow nature of the drilling, i.e. maximum hole depth was only 5m. • The mineralisation is unconsolidated sand. • A sample may be composited from the individual samples to provide material for metallurgical test work. • There are no known deleterious substances. • All exploration results detailed in attached report.
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 exploration utilising a vacuum drill may be undertaken, particularly in the higher dunes. • The next stage of exploration on the EPM will be to further assess the western areas by drilling deeper holes into the sand dunes.

Section 3 Estimation and Reporting of Mineral Resources

(Criteria listed in section 1, and where relevant in section 2, also apply to this section.)

Criteria	JORC Code explanation	Commentary
Database integrity	• *Measures taken to ensure that data has not been corrupted by, for example, transcription or keying errors, between its initial collection and its use for Mineral Resource estimation purposes.* • *Data validation procedures used.*	• The database was originally constructed, validated and electronically provided by Metallica Minerals to Ausrocks Pty Ltd. • Ausrocks reformatted the database into appropriate file formats checking the veracity of the assay results. The data was further validated and cross checked against the geological logs and the chip tray photographs. • Micromine 2023 validated the files which were used for the Mineral Resource Estimate.
Site visits	• *Comment on any site visits undertaken by the Competent Person and the outcome of those visits.* • *If no site visits have been undertaken indicate why this is the case.*	• No site visit has been completed by the Competent Persons (B Mutton, C Ainslie & C Morandy) to this particular location of the dunefield complex due to difficult site access. Notwithstanding the competent persons have made several visits over the wider dunefield complex and have experience of the dunefield geology. • B Mutton completed a site visit to the nearby CFS Project on 30 October 2020 and 13th -18th Dec 2020 which enabled an appraisal of the regional/local dune geology and setting. • C Ainslie & C Morandy completed a site visit to the nearby CFS Project on 20th October 2021 which enabled an appraisal of the regional/local dune geology and setting.

Criteria	JORC Code explanation	Commentary
Geological interpretation	• *Confidence in (or conversely, the uncertainty of) the geological interpretation of the mineral deposit.* • *Nature of the data used and of any assumptions made.* • *The effect, if any, of alternative interpretations on Mineral Resource estimation.* • *The use of geology in guiding and controlling Mineral Resource estimation.* • *The factors affecting continuity both of grade and geology.*	• The CFS West project is dominated by several chaotic dunes rising in elevation to the southeast. The deposit is by far dominated by high-grade silica (quartz) sand. The sands are mainly very fine-grained and pure white in colour and in places a slight creamy colour. Based on current exploration, the depth of clean white high-grade sand ranges up to a maximum thickness of ~38m. The high-grade silica sand overly to varying depths, yellow-orange-brown (coloured) high silica sands mainly representing the podzolised B2 horizon and/or in part, the flatter heavily weathered parts of the basement Devonian and Jurassic age formations. Some augering intersected coloured sands. Sand colouration is from surface coating on sand grains of Iron (Fe) rich clay material including Fe_2O_3. It only takes a trace percentage of Fe_2O_3 to colour the sand, with cream and orange-coloured sands being in excess of 98.5% SiO_2, several intervals below the 98.5% grade are being investigated further to determine viability. In several places these coloured sands are exposed on surface. • The CFS West Project has been adequately defined by drilling and the geological controls are reasonably well understood for an Inferred Mineral Resource. • The known nature and formation of the dune sands, together with consistent high silica grades achieved in the auger holes, places appropriate level of confidence in the geological interpretation for an Inferred Mineral Resource. • No major factors affect continuity both of grade and geology. • Geological controls were applied to multiple cross and long sections to constrain the final resource wireframe. • Prior to interpolating and assigning assay values to each block, a solid was generated to model the overall deposit shape and volume

Criteria	JORC Code explanation	Commentary

		by applying the following parameters:
		• Top surface - defined as the base of topsoil which is 0.15m below surface topography.
		• Bottom surface – determined from the regional topography level. The model was further controlled by cross section checks.
		• Boundary – the resource boundary was defined by the following considerations:
		  ○ Surface dune extents based on imagery and interpretation.
		  ○ Geological interpretation of auger holes.
		  ○ The area where the top and bottom surfaces intersected.
		  ○ Area of influence around auger holes determined by confidence level.
		• Several iterations were run to cross check boundary sensitivities.

Dimensions	• *The extent and variability of the Mineral Resource expressed as length (along strike or otherwise), plan width, and depth below surface to the upper and lower limits of the Mineral Resource.*	• The extent and variability of the Mineral Resource is expressed in terms of the full Resource Area • **Max Length (along strike):** 2.7km • **Max Width:** 8.8km • **Area:** The Mineral Resource covers an area of approximately 235ha. • **Average Depth:** The average thickness of the total resource within the Resource Area is 3.1m.

Criteria	JORC Code explanation	Commentary
		• **Top of Resource:** The top of the resource corresponds to the topography ranging from 8mRL to 49mRL. • **Bottom of Resource:** The base of the resource corresponds to basement ranging from 8mRL to 18mRL.
Estimation and modelling techniques	• *The nature and appropriateness of the estimation technique(s) applied and key assumptions, including treatment of extreme grade values, domaining, interpolation parameters and maximum distance of extrapolation from data points. If a computer assisted estimation method was chosen include a description of computer software and parameters used.* • *The availability of check estimates, previous estimates and/or mine production records and whether the Mineral Resource estimate takes appropriate account of such data.* • *The assumptions made regarding recovery of by-products.* • *Estimation of deleterious elements or other non-grade variables of economic significance (eg sulphur for acid mine drainage characterisation).* • *In the case of block model interpolation, the block size in relation to the average sample spacing and the search employed.* • *Any assumptions behind modelling of selective mining units.* • *Any assumptions about correlation between variables.* • *Description of how the geological interpretation was used to control the resource estimates.*	• The Mineral Resource Estimate was completed in accordance with JORC 2012 guidelines with Micromine 2023 used to model and evaluate the resource. • Using Micromine 2023, Statistical and Geostatistical analyses was undertaken on silica (SiO2) and the key impurities (Fe2O3, TiO2, LOI, and Al2O3) of the dataset. Assay methods also returned results for Al2O3, BaO, CaO, Cr2O3, Fe2O3, K2O, MgO, MnO, Na2O, P2O5, SO3, SrO, TiO2 but they were not examined due to their very low grades (at or near detection range). • All sample intervals underwent basic statistical analysis (minimum, maximum, mean etc.). All variables showed that there were no requirements for top or bottom cutting. • The raw data distribution for silica and the key impurities (Fe2O3, TiO2, LOI, and Al2O3) were analysed in detail and used in the block modelling. • The surface boundary was generated by a combination of the interpreted geological boundaries, Mining Lease and EPM boundaries. A topsoil or humus layer of 0.15m was excluded from the model. Geological continuity, surface observations and knowledge of the dunefield complex was used to constrain the model where information became sparse or non-existent. Multiple cross section iterations were used to further define and constrain the model where data was minimal.

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	• *Discussion of basis for using or not using grade cutting or capping.* • *The process of validation, the checking process used, the comparison of model data to drill hole data, and use of reconciliation data if available.*	• The base of the resource model was determined from the regional topography level. The model was further controlled by cross section checks. • Due to the limited depth of a hand auger (5m max depth), the basement of the resource is not fully defined. Where holes occur in the peak of high dunes, the extrapolation of resource base has been assumed to the regional floor level. There may be sand below auger holes elsewhere in the Resource Area but this has not been tested. • Parent blocks of 100mE (X direction) by 100mN (Y direction) by 5mRL (Z direction) were used with sub-blocking splitting these blocks by 5m in the X direction, 5m in the Y direction and 1m in the Z direction. All sub-blocks have the same interpolated values as their parent blocks. • The blocks were constrained by the model boundaries and populated by the Inverse Distance Weighting (IDW) estimation method to interpolate assay grades for each of the chosen elements (SiO_2, Fe_2O_3, Al_2O_3, LOI and TiO_2). Volumetric assessment using the upper and lower surfaces as a boundary was used to check the model and yielded similar results. • The block model was validated by comparing basic statistics and histograms of modeled data (block model) against the input data (hand auger assay data) which showed similar means, range of data and data distribution. Additionally, cross-section throughout the block model were compared with the same sections through the hand auger assay data showing that the modeling completed was indicative of the input data and the mineralisation. • Grade cutting or capping was not applicable as no SiO_2 values exceeded 100%.

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Moisture	• *Whether the tonnages are estimated on a dry basis or with natural moisture, and the method of determination of the moisture content.*	• All samples were placed into bags and sealed so samples would be received with slightly less than in-situ moisture. • Estimations assume a moisture content of 2.5%.
Cut-off parameters	• *The basis of the adopted cut-off grade(s) or quality parameters applied.*	• A silica (SiO2 %) grade cut-off has not been used for this Resource Area, the number of samples below the conventional 98.5% SiO2 cutoff are limited. High contaminants including TiO2 were present in samples where SiO2 is marginally below the conventional cutoff of 98.5%. Metallurgy assessment from the Eastern Resource Area suggests that elevated TiO2 has the potential to improve yield. Therefore, further metallurgy from samples in the Western and Central area is required to determine if a relevant cutoff grade is warranted. • A topsoil layer from surface (0.0m to 0.15m) was excluded from the Mineral Resource Estimate.
Mining factors or assumptions	• *Assumptions made regarding possible mining methods, minimum mining dimensions and internal (or, if applicable, external) mining dilution. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider potential mining methods, but the assumptions made regarding mining methods and parameters when estimating Mineral Resources may not always be rigorous. Where this is the case, this should be reported with an explanation of the basis of the mining assumptions made.*	• It is expected that mining will be conducted with Dozer and Wheel Loader from the face, which will load a grizzly & feed bin. Material will then be pumped via slurry to the processing plant. This mining method is flexible and is considered suitable for the deposit and is not likely to unnecessarily constrain the Mineral Resources. • Dilution was not considered in the Mineral Resource Estimate. • A topsoil thickness of 0.15m has been assumed and excluded from the Mineral Resource Estimate. • To constrain the resource model, small low-lying dunes of less than <10,000t were excluded from the model as it may be uneconomic to extract these small dunes.

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Metallurgical factors or assumptions	• *The basis for assumptions or predictions regarding metallurgical amenability. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider potential metallurgical methods, but the assumptions regarding metallurgical treatment processes and parameters made when reporting Mineral Resources may not always be rigorous. Where this is the case, this should be reported with an explanation of the basis of the metallurgical assumptions made.*	• No metallurgical factors were deemed required for this Resource Estimate.
Environmental factors or assumptions	• *Assumptions made regarding possible waste and process residue disposal options. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider the potential environmental impacts of the mining and processing operation. While at this stage the determination of potential environmental impacts, particularly for a greenfields project, may not always be well advanced, the status of early consideration of these potential environmental impacts should be reported. Where these aspects have not been considered this should be reported with an explanation of the environmental assumptions made.*	• No environmental factors or assumptions were deemed required for this Resource Estimate. • From 0-0.15m, it is assumed to be a soil and vegetation layer that would be scalped when mining the deposit and re-used for rehabilitation. • Due to the high-grade nature of the deposit, it is expected that there will be a small portion of tailings produced through processing and thus minimal disposal in the voids.
Bulk density	• *Whether assumed or determined. If assumed, the basis for the assumptions. If determined, the method used, whether wet or dry, the frequency of the measurements, the nature, size and representativeness of the samples.* • *The bulk density for bulk material must have been measured by methods that adequately account for void spaces (vugs, porosity, etc), moisture and differences between rock and alteration zones within the deposit.*	• Thirty-nine density measurements have been completed over the adjacent CFS Project in February 2021 and December 2021 returning an average density of 1.6 t/m^3 which has been used to convert all volumes to tonnes.

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	• *Discuss assumptions for bulk density estimates used in the evaluation process of the different materials.*	
Classification	• *The basis for the classification of the Mineral Resources into varying confidence categories.* • *Whether appropriate account has been taken of all relevant factors (ie relative confidence in tonnage/grade estimations, reliability of input data, confidence in continuity of geology and metal values, quality, quantity and distribution of the data).* • *Whether the result appropriately reflects the Competent Person's view of the deposit.*	• Auger hole spacing (scout level) and interpreted geological continuity has allowed **Inferred Mineral Resources** areas to be defined. • The result appropriately reflects the Competent Persons view of the deposit.
Audits or reviews	• *The results of any audits or reviews of Mineral Resource estimates.*	• No previous Mineral Resource Estimates have been completed.
Discussion of relative accuracy/ confidence	• *Where appropriate a statement of the relative accuracy and confidence level in the Mineral Resource estimate using an approach or procedure deemed appropriate by the Competent Person. For example, the application of statistical or geostatistical procedures to quantify the relative accuracy of the resource within stated confidence limits, or, if such an approach is not deemed appropriate, a qualitative discussion of the factors that could affect the relative accuracy and confidence of the estimate.* • *The statement should specify whether it relates to global or local estimates, and, if local, state the relevant tonnages, which should be relevant to technical and economic evaluation. Documentation should include assumptions made and the procedures used.* • *These statements of relative accuracy and confidence of the estimate should be compared with production data, where available.*	• It is the opinion of the Competent Person that the relative accuracy and confidence level across the reported geological intervals is adequate, given the hand auger density and continuity of geochemical samples. • No production data is available at present as this is a Greenfields project. However, Cape Flattery Silica Mine lies in the same adjoining coastal dunes immediately to the South, suggesting potential viability.