19 September 2023

Bulk metallurgical tests confirm High Purity Silica Sand at Cape Flattery

Highlights

- **High purity silica sand (HPSS) with Fe_2O_3 of 100ppm and SiO_2 of 99.9% suitable for production of solar PV glass**
- **HPSS can be produced via simple processing at Cape Flattery**
- **Yield achieved from the bulk sample was 85.6% after full processing of silica sand feed**
- **Bulk metallurgical testing confirms Process Flow Design used in the recently released Definitive Feasibility Study (DFS)**

Metallica Minerals Limited (**Metallica**, ASX: MLM) is pleased to announce that bulk metallurgical testing of an approximately 600 kilogram sample acquired from the August and December 2021 drilling programs at its 100% owned Cape Flattery silica sand project, has verified the process flow design used in the DFS released on 17th July 2023 (ASX announcement "Cape Flattery Silica DFS confirms excellent economics"), and produced a high purity silica sand product via simple processing methods.

Metallica Executive Chairman, Theo Psaros, said "These results show the CFS project can produce a high purity silica sand product using conventional, simple processing methods from a sample representative of the feed grade ore at the Project. It allows the Project team to finalise the process design flow sheet from the DFS and select a processing plant vendor. It also gives us a final product specification and samples to share with our potential customers. A hot acid leaching trial reduced iron levels to around 60ppm, indicating the potential for the product to be value added offshore by a trusted partner, which if successful should improve project economics and provide market diversity."

"Metallica has previously released metallurgical test results from targeted samples from the CFS Project (see ASX release 28 April 2022: Positive Metallurgical Test Work results). The results achieved from the latest metallurgical testing are the next step of gaining confidence of the CFS project producing a consistent product attractive in the market and are based on a more representative bulk sample from the planned mining area. This test work confirms that the CFS Project can deliver HPSS with iron levels below 120ppm."

The metallurgical testing was completed by Mineral Technologies at their Carrara laboratory in Queensland using spirals, attritioning, particle classification and magnetic separation. The product produced contained 99.9% SiO_2, 100ppm Fe_2O_3, 340ppm Al_2O_3, 200ppm TiO_2 whilst holding a mass yield of over 85%. The yield result supports the conservative average yield estimate of 81% used in the DFS. Particle size distribution was excellent with 98.15% of final product between 600 and 106 micron with a D_{50} of 218 micron. Direct engagement with the world's largest glass manufacturers in north Asia has confirmed this product quality is suitable for manufacture of solar PV glass, amongst other applications.

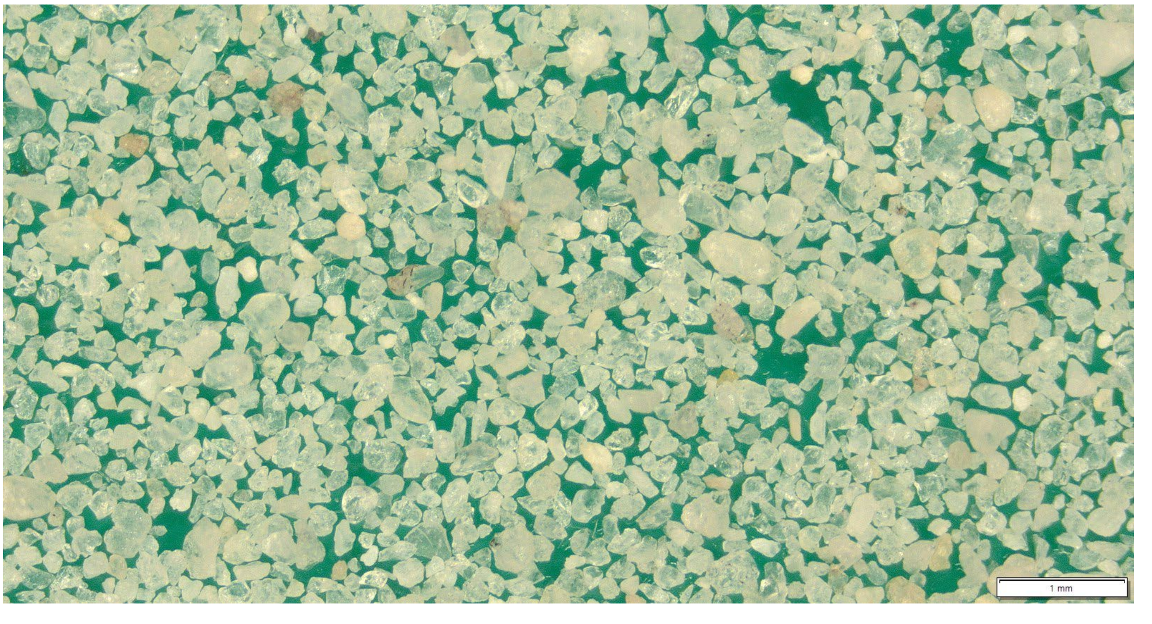
The focus of the CFS Project remains supplying product to higher value markets such as solar PV glass manufacturers. Potential exists for Metallica to market products derived from earlier processing streams with higher yield and lower quality, such as the spiral circuit product. These options will be firmed up through further engagement with customers, and engineering studies.

The mass yield and product quality of each option is summarised as follows:

Table 1 – Potential product options (UCC - up-current classifier, WHIMS – wet high intensity magnetic separation))

Potential Product Options	Mass Yield	Assay				
		SiO2	Al2O3	Fe2O3	TiO2	LOI 1000
	%	%	%	%	%	%
Spiral product	91.9	99.9	0.041	0.012	0.025	0.07
Attrition product and UCC	90.0	99.9	0.038	0.011	0.021	0.04
WHIMS non-magnetic product	85.6	99.9	0.034	0.010	0.020	0.03

Several high-resolution microscopic images were taken of the final non-mag product. An example is included below.



Hot Acid Leach (HAL)

Metallica will not be considering the use of HAL at the project site. A HAL test was completed on a sub-sample of the WHIMS non-magnetic product to evaluate the potential improvement in product quality that maybe achieved by partners located overseas. Multiple samples of the product were submitted for assay with the results in table 2 below. The results indicate improved quality and value uplift can be achieved with further processing.

Table 2: Hot Acid Leach product

Potential Product Options	Mass Yield	Assay				
		SiO2	Al2O3	Fe2O3	TiO2	LOI 1000
	%	%	%	%	%	%
HAL product	99.6	99.9	0.032	0.007	0.017	0.04

Particle size distribution (PSD)

PSD was attractive in a narrow range and did not vary markedly for any stage of the process. PSD and assay for final non-magnetic WHIMS product is in table 3 below. A narrow PSD is important for glass manufacturers as it improves furnace efficiency due to particles melting at a uniform rate.

Table 3: Particle size distribution and assay

T300 Final Non-mag WHIMS Product

Sieve size retained (µm)	% Distribution	Assay (%)										
		SiO_2	Fe_2O_3	TiO_2	$Al2O_3$	Cr_2O_3	CaO	Cu	K_2O	MgO	Na_2O	LOI_{1000}
600	0.33	99.9	0.008	0.021	0.026	3	0.004	<0.001	0.001	0.001	<0.001	0.070
425	7.03	99.9	0.008	0.021	0.026	3	0.004	<0.001	0.001	0.001	<0.001	0.070
300	18.0	99.9	0.009	0.019	0.028	3	0.004	<0.001	0.001	0.001	0.001	0.040
212	27.5	99.9	0.010	0.018	0.033	3	0.004	<0.001	0.002	0.001	0.002	0.050
150	29.3	99.9	0.010	0.019	0.038	3	0.004	<0.001	0.002	0.001	0.002	0.060
106	16.4	99.8	0.012	0.024	0.043	2	0.004	<0.001	0.002	0.002	0.003	0.060
	1.52											
Feed (total)	100.0	99.9	0.010	0.020	0.035	3	0.004	0	0.002	0.001	0.002	0.054

Recommendations

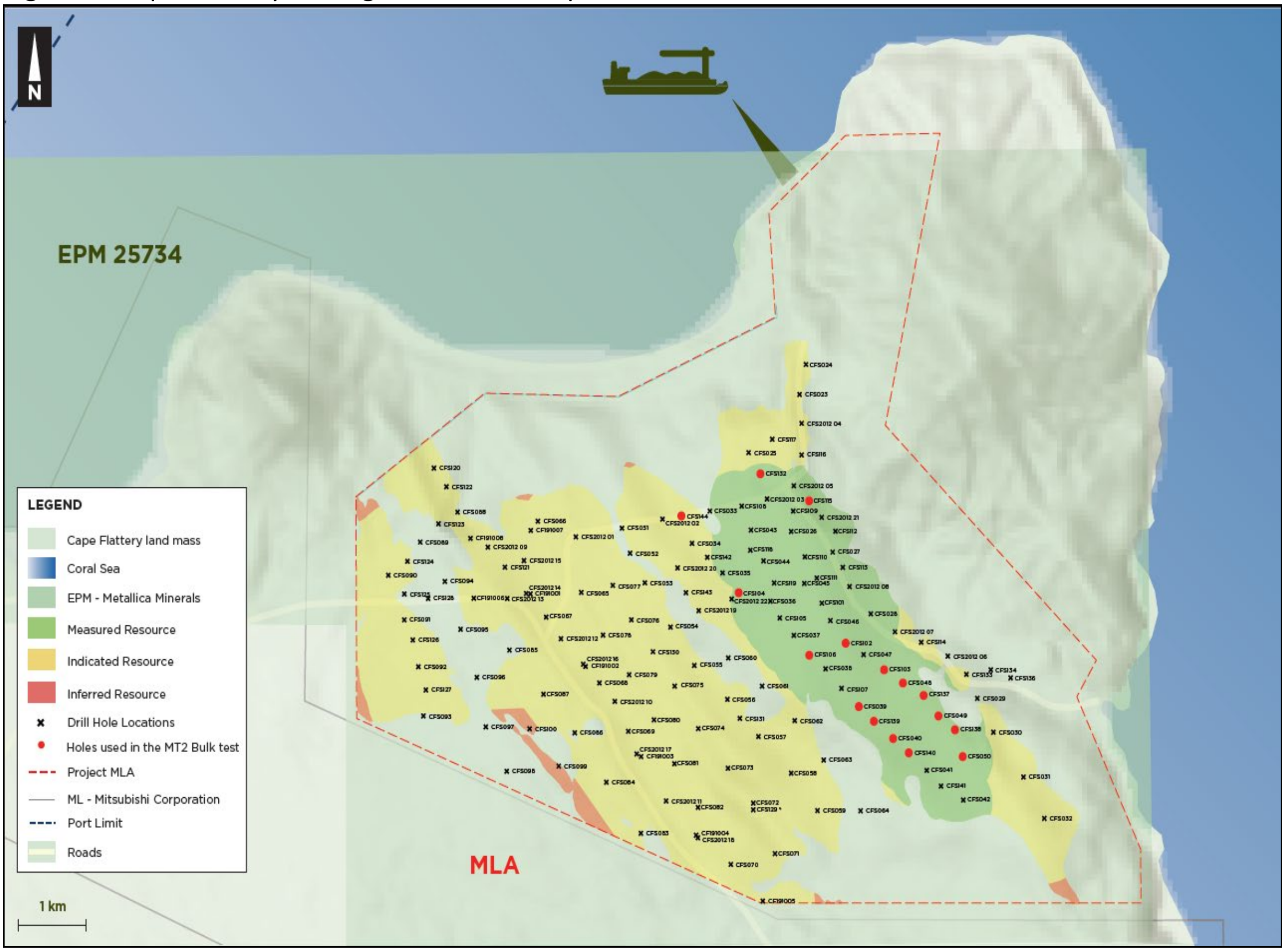
The following recommendations were made based on the results of the test work:

- The proposed flowsheet developed in the PFS, and used in the DFS is suitable for the current duty based on the sample provided. No additional stages or processes are needed to achieve the current product specifications.
- Further investigation is needed to evaluate the number of WHIMS required in the flowsheet to perform the required duty.
- Confirmatory thickener/water reclamation tests using the slimes captured during the test work program should be considered.

Sample

Metallica Minerals' Cape Flattery metallurgical test work bulk sample was derived from 15 drill holes completed in the August and December 2021 drilling programs, 14 of which were in the Measured Reserve and one from within the Indicated Resource as per the DFS released on 17th July 2023 (ASX announcement "Cape Flattery Silica DFS confirms excellent economics"). All of the Measured Reserve drill holes will form part of the first 10 years of mining. See Figure 1 below.

Figure 1: Cape Flattery mining lease with sampled drill holes in red



About the Cape Flattery silica sand project
A full description of the Cape Flattery silica sand project can be found in the ASX release dated 17 July 2023 “Cape Flattery Silica DFS confirms excellent economics”.

For further information, please contact:

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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.

Competent Person Statement 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 Sand 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, which has 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".

Cape Flattery Silica Sand Ore Reserves

The information in this report that relates to Ore Reserves at the Cape Flattery Silica Sand Project is based on information reviewed or work undertaken by Mr Carl Morandy. Mr Morandy is a Mining Engineer, the Managing Director of Ausrocks Pty Ltd and a Member of the Australasian Institute of Mining & Metallurgy. Mr Morandy has relied on Metallica Minerals Limited for marketing, environmental, economic, social and government permitting. Ausrocks Pty Ltd have been engaged by Metallica Minerals Limited to prepare this independent report and there is no conflict of interest between the parties. Mr Morandy has sufficient experience which is relevant to the style of mineralisation and type of deposit under consideration and to the preparation of mining studies to qualify as a Competent Person as defined in the 2012 edition of the Australasian Code for Reporting of Ore Reserves (The JORC Code). Mr Morandy consents to the inclusion in the report on the matters based on their information in the form and context in which it appears. The corresponding JORC 2012 Table 1 is attached in the Definitive Feasibility Study report (see ASX release 17 July 2023: Cape Flattery Silica DFS Confirms Excellent Economics).

Cape Flattery Silica Sand - Process Metallurgy

The technical information in this report that relates to process metallurgy is based on work completed by Mineral Technologies and information reviewed by Etienne Raffaillac (MAusIMM), who is a Principal Process Engineer and employee of Mineral Technologies. Mr Raffaillac 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 Raffaillac confirms there is no potential for a conflict of interest in acting as the Competent Person and consents to the inclusion in the report of the matters based on his information in the form and context in which it appears.

Production Targets

Information in relation to the CFS Definitive-Feasibility Study production targets included in this report is extracted from an ASX Announcement dated 17 July 2023 (ASX announcement "Cape Flattery Silica DFS confirms excellent economics"). The Company confirms that all material assumptions underpinning the production target set out in the announcement released on 17 July 2023 continue to apply and have not materially changed.

JORC Code, 2012 Edition – Table 1 Report

Cape Flattery Silica Project - Eastern Resource Area

Ore Reserve Estimate – Probable, May 2023

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.*	• Sampling was primarily one (1) metre drill samples, with the exception of two holes (CFS003 and CFS004) which were sampled at 0.5m intervals and a limited number of one (1) metre hand auger samples. • One (1) auger program was completed in 2019 comprising of eight (8) holes. • Three (3) main programs of drilling were completed, twenty two (22) drill holes in December 2020, ninety eight (98) drill holes in July/August 2021 and twenty four (24) drill holes in December 2021. • A total of 152 holes were drilled, comprising vacuum (144) and auger (8) drill holes totalling 2,564m of drilling. • Drilling was completed using a tractor mounted vacuum rig, with samples collected every one meter. Except for holes CFS003 and CFS004. Occasionally samples of less than one meter were collected (usually at the top of the holes first metre). The drilled sand was collected from a cyclone and 100% of the sample was collected and placed into a pre-numbered sample bag, with each sample having a mass of between 2.5 to 4kg. • Seven hand auger samples from a 2019 programme were used in the Mineral Resource Estimate. The hand auger holes

Criteria	JORC Code explanation	Commentary
		samples were between 1-2kg in weight (~50%) of drill material returned via the auger) and collected and bagged. Care was taken to remove possible contamination from the Shell Auger. • In the case of the drill samples the entire 1m sample was collected on site and dispatched to the laboratory for splitting and analysis (2021 programme). In the 2020 programme a spear sample of the 1m was taken and submitted for assay. • Sampling techniques are mineral sands "industry standard" for dry aeolian sands with low levels of induration and slime. • Samples from the drilling programmes have been selected for metallurgical testwork. These samples were composited to form a bulk sample.
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).*	• Two (2) drilling techniques were used to collect samples for the Updated Mineral Resource Estimate, namely hand-auger samples collected by Metallica and vacuum drilling operated by Yearlong Drilling Contractors. All holes were drilled vertically. • Vacuum drilling was by a 4x4 tractor mounted drill rig with a blade drill bit diameter of 60mm equivalent to NQ sample size, using 1.8m rods. • Holes were terminated in a basement layer (clay/coloured sands) or when damp sand or water was intersected.
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 was completed onsite as drilling progressed. • Vacuum drilling is low disturbance and low impact, minimising drill hole wall impact and contamination. • Samples were collected in a cyclone which has a clear perspex casing allowing visual inspection of sample as they are being collected.

Criteria	JORC Code explanation	Commentary
		• Regular cleaning of cyclone and drill rods was carried out to prevent sample contamination. • No known sample bias occurred between sample recovery and grade. • Sample recovery of between 90 to 100% was achieved. Only 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.* • *Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc) photography.* • *The total length and percentage of the relevant intersections logged.*	• Geological logging was completed onsite by a geologist as drilling progressed, with retention of each one (1) sample in chip trays to provide a record of the drilling and to allow geological and data logging. • The total hole was logged at 1m intervals; logging includes qualitative descriptions of colour, grain size, sorting, induration and estimates of HM, slimes and oversize utilising panning. • Photographs of each chip tray were taken to provide a digital record. • Logging has been captured through field drill log sheets and transferred through to an excel spreadsheet which was then transferred to a central database and storage.
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*	• Hand-auger holes were sampled in 1m intervals with 1-2kg (~50% of drill material returned via the auger) collected and bagged. • For the vacuum drilling programs, samples for the entire 1m interval were collected from the cyclone. • The entire one-meter (1) sample were placed in a pre-numbered calico bag (2021 program), or subsamples of approximately 500g were speared (2020 program) and separately numbered, bagged in plastic bags and sealed ready for assaying prior to being placed in a poly-weave sack for dispatch to the laboratory.

Criteria	JORC Code explanation	Commentary
	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.*	• Each one-meter sample weighed between 2.5 to 4.0kg. • 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 sample sizes are considered appropriate for the type of material being sampled.
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.*	• All assaying has been carried out by ALS Mineral Laboratories, Brisbane. ALS is a global leader with over 71 laboratories worldwide providing laboratory testing, inspection certification and verification solutions. ALS Quality Assurance and all ALS geochemical hub laboratories are accredited to ISO/IEC 17025:2017 for specific analyses, which includes their Townsville and Brisbane laboratories. ALS is NATA Accredited, Corporate Accreditation No. 825, Corporate Site No. 818. • The samples were split to 100-gram samples for analysis in the laboratory under laboratory-controlled methods. • XRF was chosen as the most cost-effective assaying method for silica and minor elements for all exploration samples. • Analysis was undertaken by ALS Brisbane utilising a Tungsten Carbide pulverization preparation technique, ME-XRF26 (whole rock by Fusion/XRF) for analyses of major and minor elements and OA-GRA05 (H_2O/LOI by TGA furnace) for Loss of Ignition (LOI) for organic matter. • A total of 2,592 %SiO_2 assays were completed on 1m downhole intervals over various drilling programs. • Assaying was primarily to determine the silica (SiO_2%) percentage, but as part of the method results were obtained for a range of minor elements, namely Al_2O_3, BaO, CaO, Cr_2O_3, Fe_2O_3, K_2O, MgO,

Criteria	JORC Code explanation	Commentary
		MnO, Na2O, P2O5, SO3, SrO, TiO2. • Internal laboratory QAQC checks include the analyses of standards, blanks and duplicates. • QA/QC identified assay issues with holes CFS001 to CFS022 which were re-assayed with a focus on Fe2O3 grades. This work was completed in November 2022 and updated assays were incorporated to the 2023 Resource Model. The changes did not materially alter the Mineral Resource Estimate. • External umpire laboratory checks have been carried out against the original assay intersections, including checks of assay methods (XRF vs ICP). • Acceptable levels of precision and accuracy were established.
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 were independently validated by Ausrocks Pty Ltd against geological logging and the geological model. • Five (5) holes have been twinned with vacuum and hand-auger to check repeatability of drill results. To date, there is a strong correlation between results from different type holes and different assay batches. Downhole variability is matched in different drill programs and different assay batches. • Significant intersections were validated against geological logging and local geology/geological model. • The semi-gridded and infill drilling in 2021 validated the 2020 program as the intercepts and grade of the silica were consistent along the various sections. • 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*	• All holes initially located using handheld GPS with an accuracy of 5m

Criteria	JORC Code explanation	Commentary
	used in Mineral Resource estimation. • *Specification of the grid system used.* • *Quality and adequacy of topographic control.*	for X, Y. • UTM coordinates, Zone 55L, GDA94 datum. • LiDAR topography and imagery with a vertical accuracy of <10cm was used as the topographic surface. Collar RL's draped against this surface verifies the accuracy of the hole locations. The Lidar imagery which was produced by Aerometrex.
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.*	• Drilling was completed on existing tracks and newly cleared lines which are 100m to 200m apart. The lines are orientated approximately NW – SE, along with a number of determined orthogonal cross lines. • The holes were spaced approximately 200 meters apart and in some areas were infilled to 100m and 50m centres. • Drill spacing and distribution is sufficient to allow valid interpretation of geological and grade continuity. • Drill spacing and interpreted geological continuity has allowed three resource categories to be defined which have been estimated in accordance with the JORC Code (2012) and are defined as follows: • Measured Mineral Resource: Area with drill holes at a semi-gridded spacing <150m x 150m ending in basement (clay/coloured sands) or when very damp sand or water was intersected. • Indicated Mineral Resource: Area with drill holes at a confirmatory level spacing (150m-250m) ending in basement (clay/coloured sands) or when very damp sand or water was intersected. • Inferred Mineral Resource: Areas with drill holes at a scout level spacing (250m-400m). • No sample compositing was undertaken.

Criteria	JORC Code explanation	Commentary
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°. • The drill access tracks typically run along or sub-parallel to dune ridges, with some cross-dune tracks linking the ridges were also drilled. • Silica deposition occurs as windblown with angle of rest approximately sub-horizontal and locally up to 35º. Drilling orientation is appropriate for the nature of deposition. • The orientation of the drilling undertaken is assessed to provide representative intersections and unbiased data for the deposit. All drilling is vertical, intersecting the dune field geology essentially normal or at 90 degrees to the dune sand formation.
Sample security	• *The measures taken to ensure sample security.*	• Sample collection and transport from the field was undertaken by company personnel as the drilling progressed and following company procedures. • Samples in calico bags were aggregated into larger polyweave bags and sealed with plastic zip ties. Bags were labelled and put into palette-crates and sealed prior to being road transported to Cairns where they were transferred to another freight truck and delivered to ALS Laboratories in Brisbane for sample preparation and analysis.
Audits or reviews	• *The results of any audits or reviews of sampling techniques and data.*	• Ongoing reviews were conducted internally by Metallica Minerals Ltd and by third-party consultant, Ausrocks Pty Ltd prior to undertaking a Mineral Resource Estimates.

Section 2 Reporting of Exploration Results

(Criteria listed in the preceding section also apply to this section.)

Criteria	JORC Code explanation	Commentary

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. • The project is located in Far North Queensland, approx. 220km north of Cairns and approx. 50km north of Cooktown and lies within EPM 25734. EPM 25734 is held by Cape Flattery Silica Pty Ltd, a wholly owned subsidiary of Metallica Minerals Pty Ltd and comprises 11 contiguous subblocks covering the very northern end of the extensive Cape Bedford/Cape Flattery dunefield complex. The dunefield complex is characterised by large northwest trending transgressive elongate and parabolic sand dunes, stretching inland from the coastline for kilometres. • 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 area during the 1970's and 1980's 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. • The historical exploration data is of limited use since as it was never assayed for SiO_2 and with a focus on iron oxide content. Further, there is poor survey control to determine exact locations of historical holes. • All current exploration programs are managed by Metallica Minerals.
Geology	• *Deposit type, geological setting and style of mineralisation.*	• The CFS Sand Project is a large surface deposit of overlying sand dunes that lies in the northern most part of the Quaternary age Cape Flattery-Cape Bedford dunefield complex. • The geology comprises variably re-worked aeolian sand (silica) dune deposits associated with Quaternary age sand-dune complex. The mineralisation is high grade quartz (silica) and it occurs as sand deposits within an aeolian dune complex. • Cape Flattery Silica Mines, which also lies at the northern end of the dune field, has been in operation since 1967 and is Queensland's largest producer of world class silica and the highest production of silica sand of any mine in the world.

Criteria	JORC Code explanation	Commentary
		• The linear sand dunes developed predominantly during the dry Pleistocene glacial and interglacial periods when the sea-level receded and fluctuated approx. 100m below present. Prior to sea level rises in the Holocene (10,000 years before present) sand was blown inland by the prevailing south-easterly winds to form linear dunes and is now interspersed with numerous lakes and swamps. The land sand masses form mainly as elongate parabolic and longitudinal dunes. Multiple episodes of dune building are evident. Most dunes are stabilised by vegetation, but some active dune fronts occur. Periods of water level table fluctuations, erosion and depositional phases have occurred. • Silica sand mineralisation occurs as 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.*
	• *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.*
		• A tabulation of the material drill holes used in this Mineral Resource Estimation is attached to this JORC Table 1.
		
		• No additional drilling has been undertaken since the April 2022 Mineral Resource Estimate.
		
		• Previous Drilling:
		  ○ Eight (8) shallow (5m) hand auger holes drilled in 2019
		  ○ Twenty-two (22) vacuum drill holes drilled in December 2020
		  ○ Ninety-eight (98) vacuum drill holes drilled between July and August 2021
		  ○ Twenty-four (24) vacuum drill holes drilled in December 2021

Data aggregation	• *In reporting Exploration Results, weighting averaging techniques, maximum and/or*	• Overall the silica grade is highly consistent over appropriate length intercepts throughout each individual drill hole.

Criteria	JORC Code explanation	Commentary
methods	*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.*	• No top cuts were applied to the data. • Metal equivalents are not applicable and therefore not 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').*	• All drilling was vertical (-90°) intersecting undulating flat-lying aeolian dune sands. • Down hole length correlates with apparent true width. • As the mineralisation is associated with aeolian dune sands the majority sub-horizontal, some variability will be apparent on dune edges and faces.
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 in public releases and within the main body of the report.

Criteria	JORC Code explanation	Commentary
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. • 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. All exploration results are detailed in the MRE report. • Drilling was terminated in approximately 47 drill holes due to hitting damp/wet drilling conditions where drill penetration became difficult. Several holes, especially in lower elevation collar positions, were terminated due to intersecting and returning water. It is assessed that the majority of dam/wet hole terminations were due to intersecting saturated sand and or sandy/clay layers well above the true underlying project groundwater level. This implies that high-quality sand may extend, in places, deeper than currently determined for this resource assessment. • The relationship of the groundwater intersected during drilling terminating holes to the regional groundwater table is unknown. It is likely that the true groundwater table is well below the termination depth of the majority of current drill holes. • Initially, IHC Robbins completed a bulk laboratory sample in early 2021. The bulk sample was composited from the individual samples over a full drill hole and/or groups of drill holes over the wider resource for metallurgical testwork. This bulk sample testwork did not achieve the target product specification. • In 2021/2022 Mineral Technologies completed a bulk sample focussed on samples from 20 holes in the Measured Resource area, representing the first 5 years of the project life. This bulk sample testwork did not achieve the target product specification due to inclusion of several elevated Fe_2O_3 samples that skewed the results. • In 2022/2023 Mineral Technologies completed a characterisation study focussed on the first 5 years of project life. This characterisation study was designed to link in-ground grade to indicative plant product grade. Testing was carried out to produce a product with the following specifications: ○ 99.90% SiO_2

Criteria	JORC Code explanation	Commentary
		○ 120ppm Fe_2O_3 ○ 340ppm Al_2O_3 ○ 200ppm TiO_2 ○ +30 to +140 mesh (600µm to 106µm) with 0% -106µm • Mass yield of 78.8% (Whims) to 84.8% (attritioning) • In September 2023 Mineral Technologies completed the second bulk characterisation test work where 14 of 15 samples used were representative of the first 10 years mining within the Measured Resource, with the 15th sample from the Indicated Resource zone. Test work produced a product with the following specifications: ○ 99.99% SiO_2 ○ 100ppm Fe_2O_3 ○ 340ppm Al_2O_3 ○ 200ppm TiO_2 ○ D_{50} of 215um • Mass yield of 85.6% (WHIMS) • Produced from feed grades of $\leq$600ppm Fe_2O_3 • Iron (Fe_2O_3) in various forms potentially acts as a contaminant for very high-quality "processed" end products and examined in test work. • A range of test work concluded TiO_2 and Al_2O_3 product specifications are likely to be achieved over a wide range of feed grades.
Further work	• *The nature and scale of planned further work (eg tests for lateral extensions or depth*	• Only a limited amount of further infill drilling is required, especially on dune edges and to close a few areas of wider drill spacing. However, it is considered highly unlikely that this drilling will materially change overall results.

Criteria	JORC Code explanation	Commentary
	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.*	• The likely next steps for geological assessment is grade control drilling prior to production, followed by production reconciliation. • Targeted and/or infill drilling to investigate the distribution of higher Fe_2O_3 zones.

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 was used to validate the files 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.*	• A site visit was carried out by Ausrocks Brice Mutton (Competent Person) from 13th -18th Dec 2020 during the 2020 drilling program. • A site visit was carried out by Ausrocks Chris Ainslie and Carl Morandy from 19th - 20th October 2021. • Both site visits have enabled an appraisal of the dune geology and setting, facilitating the geological modelling and resource estimation.

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 Cape Flattery Silica Sand Deposit has been well defined by drilling and the geological controls are reasonably well understood. • The known nature and formation of the dune sands, together with consistent high silica grades achieved in drill holes, places a high degree of confidence in the geological interpretation. Continuity of geology (chip tray photographs) and grade (assays) can be readily identified and traced between all drill holes. • The interpreted geology of the Cape Flattery Silica Sand Deposit is robust, and any alternative interpretation of the deposit is considered unlikely to have a significant influence on the total Mineral Resource Estimate undertaken. • The CFS project is dominated by several elongate dunes rising in elevation to the northwest. 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 the Mineral Resource Estimate, the depth of clean white high-grade sand within the model from surface averages 10.3m in thickness and up to a maximum drilled thickness of 35m. • Sand colouration is from surface coating on the grains or as interstitial material in cracks and fissures in the 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. In several places these coloured sands are exposed on the surface. • Isolated coloured intervals within the dominant white sand profile are interpreted to be blown in from these older exposed sands. • 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

Criteria	JORC Code explanation	Commentary

		solid was generated to model the overall deposit shape and volume by applying the following parameters:
		• Top surface - defined as the base of topsoil which is 0.5m below surface topography.
		• Bottom surface – a gridded surface based on drillhole depths and geological interpreted boundary points.
		• Boundary – the resource boundary was defined by the following considerations:
		  ○ Surface dune extents based on imagery and interpretation.
		  ○ Geological interpretation of drill holes.
		  ○ The area where the top and bottom surfaces intersected.
		  ○ Area of influence around drill 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):** 2.4 km • **Max Width:** 2.3km • **Area:** The Mineral Resource covers an area of approximately 315ha. • **Drill Hole Thickness:** The sand intercept (SiO_2) thickness ranges from 2m to 36m averaging 19m. • **Top of Resource:** The top of the resource corresponds to the

Criteria	JORC Code explanation	Commentary
		topography ranging from 10mRL to 105mRL. • **Bottom of Resource:** The base of the resource corresponds to basement/water table ranging from 5mRL to 85mRL.
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.* • *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*	• The Mineral Resource Estimate was completed in accordance with The JORC Code, 2012 Edition guidelines with Micromine 2023 used to model and evaluate the resource. • Using Micromine 2023, Statistical and Geostatistical analyses was undertaken on silica (SiO_2) and the key impurities (Fe_2O_3, TiO_2, Al_2O_3 and LOI) of the dataset. Assay methods also returned results for BaO, CaO, Cr_2O_3, K_2O, MgO, MnO, Na_2O, P_2O_5, SO_3 and SrO 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 (Fe_2O_3, TiO_2, Al_2O_3 and LOI) were analysed in detail and used in the block modelling. • The surface boundary was generated by a combination of the interpreted geological boundaries and Mining Lease boundaries. A topsoil or humus layer of 0.5m was excluded from the model. A 400m limit was used to guide drillhole continuity where information became sparse or non-existent. Multiple cross section iterations were used to further define and constrain the model where data was minimal. • The base of the resource model was determined from selected drillhole depths (>98.5% silica grade), then modelled and adjustments made for intersections with surface topography and other continuity limits. The model was further controlled by cross section checks. • Low grade silica sand (LGSS or 'waste') was modelled separately

Criteria	JORC Code explanation	Commentary
	available.	from within Resource. The drillholes with LGSS intervals (excluding holes with no resource or where open at depth) were loaded into Global Mapper and a Voronai/Thiessen Diagram was generated from the point features. Each LGSS area was given an individual attribute based on the LGSS interval data and the blocks were loaded back into Micromine. A 1m (height) buffer was placed on the top and bottom of the waste zones to represent dilution. The LGSS blocks were populated using nearest neighbour method. • Parent blocks of 25mE (X direction) by 25mN (Y direction) by 4mRL (Z direction) were used with sub-blocking splitting these blocks by 1m in the X direction, 1m 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 Ordinary Kriging (OK) estimation method to interpolate assay grades for each of the chosen elements (SiO_2, Fe_2O_3, Al_2O_3, TiO_2 and LOI). Inverse Distance Weighting (IDW - 2:1) 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 (drilling 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 drillhole data showing that the modelling completed was indicative of the input data and the mineralisation. • Grade cutting or capping was not applicable as no SiO_2 values exceeded 100%.
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 used for density measurement were placed into bags and sealed so samples would be received with slightly less than in-situ moisture. • Tonnage estimated assuming a moisture content of 2.5%.

Criteria	JORC Code explanation	Commentary
Cut-off parameters	• *The basis of the adopted cut-off grade(s) or quality parameters applied.*	• An initial cut-off grade of 98.5% silica has been used to define the base of the resource model, differentiating the low grade silica sand (LGSS or 'waste') from within Resource. This base was clearly defined visually by a colour and SiO_2 content change. • To meet end product specifications, based on the metallurgical testwork the cutoff was modified to take account of three controlling factors including colour (white variants, subjectively determined), Fe/Ti ratio (>1.5), Fe_2O_3 grade (<4000ppm). These three controlling factors guided the selection of significant intercepts for each drill hole. With a limited range of intercepts as low as 95% SiO_2 taking account of one or more of the above factors. This cutoff was used to define the LGSS ('waste') intervals that guided the 'waste block model'. • The surface to one (1) metre interval consistently returned a <98.5% silica assay and returned higher than normal LOI. This logged interval included topsoil and organic material which caused minor contamination. This one (1) metre interval was adjusted by adopting the succeeding one metre assay (1-2m interval) grade. A topsoil layer from surface (0.0m to 0.5m) was excluded from the Mineral Resource Estimate as it will be used for rehabilitation. • The initial silica grade cut-off of 98.5% SiO_2 remains robust and was subsequently modified to account for three factors to complete resource modelling and Mineral Resource Estimate, for all reporting levels.
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*	• It is expected that mining will be conducted with Wheel Loader from the face, which will load a feed bin fitted with a grizzly screen. The feed bin will then transfer sand to a trommel and target sands will fall into a slurry bin for pumping 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. • A 1m (height) buffer was placed on the top and bottom of the Interburden low grade silica sand ('waste') zones to represent dilution. Estimated dilution is approximately 31% of the low grade

Criteria	JORC Code explanation	Commentary
	made.	silica sand ('waste') model, or approximately 2.5% of the total Mineral Resource. • Low grade silica sand ('waste') occurs as overburden and interburden. These zones will be mined separately using truck and shovel method. Due to the colour differential • Based on the sample assays and geological logs, the top 0.5m of the deposit has been excluded from the Mineral Resource Estimate as it is assumed that this would be a soil and vegetation layer and would be scalped when mining the deposit and re-used for rehabilitation.
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.*	• Metallurgical testing was conducted and the results were used to guide the Mineral Resource Assessment. • The main factors or assumptions used to guide the Mineral Resource Estimate were: ○ SiO_2 grade (primarily to define floor) ○ Colour ○ Fe_2O_3 grade ○ Fe/Ti Ratio
Environmen-tal 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*	• Early environmental studies have been carried out to support development applications to the Commonwealth and the State. Whilst baseline technical studies have identified matters of State and National Environmental Significance that are potentially impacted by the Project, the design and operational approach has been to seek to avoid and/or mitigate the scale of environmental impacts where possible. As a result, no areas have been excluded from the resource until these areas have been accurately categorized. • Due to the high-grade nature of the deposit, it is expected that there will be a small portion of low grade silica sand produced through

Criteria	JORC Code explanation	Commentary
	an explanation of the environmental assumptions made.	processing, this material will be used as backfill in the mined voids as part of the rehabilitation strategy.
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.* • *Discuss assumptions for bulk density estimates used in the evaluation process of the different materials.*	• Thirty-nine density measures have been completed over the wider resource area 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. • The field density measurements appear adequate but need to be confirmed by certified testing.

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.*
		• Drill spacing and interpreted geological continuity has allowed three resource categories to be defined and are defined as follows:
		  ◦ **Measured Mineral Resource:** Area with drill holes at a semi-gridded spacing <150m x 150m ending in basement (clay/coloured sands) or when very damp sand or water was intersected.
		  ◦ **Indicated Mineral Resource:** Area with drill holes at a confirmatory level spacing (150m-250m) ending in basement (clay/coloured sands) or when very damp sand or water was intersected.
		  ◦ **Inferred Mineral Resource:** Areas with drill holes at a scout level spacing (250m-400m).
		• The result appropriately reflects the Competent Persons view of the deposit.

Criteria	JORC Code explanation	Commentary
Audits or reviews	• *The results of any audits or reviews of Mineral Resource estimates.*	• Previous Mineral Resource Estimates have been completed and reviewed internally by Ausrocks Pty Ltd. • Ausrocks have reviewed variogram and kriging methodology and their applications, in consultation with a third-party specialist/training geostatistician.
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 drill density and continuity of geochemical samples. • The Mineral Resource boundary and the reported geological confidence intervals is relatively tightly constrained based on the drill density, although some further drill definition should be undertaken to better constrain dune sides/perimeters. • 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 North, suggesting potential viability.