### AUSTRALIAN SECURITIES EXCHANGE ANNOUNCEMENT



### 12 March 2024

### CENTAURUS COMMENCES NEW STUDY ON JAMBREIRO IRON ORE PROJECT FOR DIRECT REDUCTION QUALITY PELLET FEED - AMENDED

Centaurus Metals Limited (ASX: CTM) amends the announcement released to the market on 12/03/24 to include a revised Section 1 of JORC Table 1. No other changes have been made to the previous announcement.

-ENDS-

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12 March 2024

## POTENTIAL FOR DIRECT REDUCTION QUALITY PELLET FEED PRODUCT IDENTIFIED FOR JAMBREIRO IRON ORE PROJECT

# Portfolio project to be assessed on the basis of growing interest from potential off-takers and partners for DR pellet feed, resulting from changing dynamics in the steel industry requiring lower emission iron ore

Centaurus Metals Limited (ASX: CTM) ("Centaurus" or "the Company") is pleased to advise that, in response to growing interest from potential off-take partners and customers, it has commenced a new study on the potential of its 100%-owned **Jambreiro Iron Ore Project ('Jambreiro')** in Brazil to deliver a Direct Reduction (DR) quality pellet feed concentrate.

Jambreiro is an advanced iron ore project located in south-eastern Brazil near the regional centre of Belo Horizonte. It formed part of Centaurus' foundational portfolio of strategic minerals projects in Brazil and comprises a substantial Mineral Resource for which Centaurus continues to evaluate potential development and monetisation pathways.

The strong push by steel-makers to lower greenhouse emissions has resulted in iron ore producers being encouraged to maximise grade and minimise impurities.

With this in mind, Centaurus is now investigating the possibility of producing a DR quality pellet feed product from the Jambreiro ore, targeting a +68% Fe product with combined grades of Silica (SiO<sub>2</sub>) and Alumina (Al<sub>2</sub>O<sub>3</sub>) being under 2%.

DR pellet feed product is used to produce DR pellets, which in turn are then used as feed for Electric Arc furnaces. DR pellet feed material has a lower overall carbon footprint compared to ore that can only be fed into Blast Furnace (BF) steel mills. With steel producers increasingly focusing on strategies to reduce their carbon footprint, the production of DR quality iron ore greatly assists in achieving this objective.

Sighter tests undertaken by a potential off-taker have shown that **ore from the Jambreiro deposit is able to produce a DR quality pellet feed material**, with the specifications outlined below using both magnetic separation (Table 1) and flotation beneficiation processes (Table 2).

The Jambreiro ore tested is a composite from a friable itabirite outcrop, located in the central portion of the project area. The composite had a head grade of 38-39% Fe. The coordinates of outcrop samples of ore used to build the composite for the sighter testwork by the potential off-taker are shown in Table 3.

The testwork was completed on the basis of grinding 100% of the feed.

#### Table 1 – Jambreiro DR quality Pellet Feed Testwork Results – Magnetic Separation

### PFRD Route Grinding at P95 = 150 µm + WHIMS Rougher + Cleaner (no LIMS)

Product	Mass Rec	overy (%)	Grades (%)						Fe Recovery	
	Global	Stage	Fe	SiO2	Al2O3	Mn	Р	LOI	(%)	
Analysed Feed	100.00	100.00	38.18	42.99	0.92	0.02	<0.023	0.46		
Concentrate	45.01	45.01	68.39	1.12	0.57	0.03	<0.023	0.14	80.36	
Tailings	54.99	54.99	13.68	74.55	1.02	0.01	0.029	0.60	19.64	
Calaculated Feed	100.00	100.00	38.30	41.50	0.82	0.02	<0.023	0.39	100.00	

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#### Table 2– Jambreiro DR Quality Pellet Feed Testwork Results – Flotation

Product	Mass Rec	overy (%)	Grades (%)						Fe Recovery	
Ploudet	Global	Stage	Fe	SiO2	Al2O3	Mn	Р	LOI	(%)	
Analysed Feed	90.50	100.00	39.21	42.22	0.56	0.01	<0.023	0.07		
Concentrate	44.62	49.30	68.88	0.93	0.59	0.02	<0.023	0.06	86.07	
Tailings	45.88	50.70	10.84	82.25	0.43	0.00	<0.023	0.14	13.93	
Calaculated Feed	90.50	100.00	39.45	42.16	0.51	0.01	<0.023	0.10	100.00	

#### PFRD Route Grinding at P95 = 150 µm + Desliming + Flotation

The results from the tests are very encouraging and, in light of this, the Company has commenced a high-level study to:

- Assess the nature of changes required to the previous Jambreiro sinter feed process flowsheet to be able to achieve a DR pellet feed product;
- Understand metal and mass recoveries for the production of DR pellet feed material;
- Determine the nature of any additional capital requirements required in the process plant to be able to achieve the desired product specification; and
- Assess the additional revenue that can be generated from the production of a premium DR pellet feed material compared to a Sinter Feed Blast Furnace (BF) concentrate specification which was historically considered for Jambreiro.

The study work will be led by the Company's own iron ore metallurgist and supported by the exploration team as required. The study will not have any impact on ongoing workflows for the Company's flagship Jaguar Nickel Project and the delivery of the Jaguar Feasibility Study as outlined in the recent Jaguar Project Update (see ASX announcement, 1 March 2024).

### **Project Background and Status**

Centaurus has completed a number of studies on Jambreiro since it was first acquired as an exploration project in 2010. In 2013, the Company licensed the Project from both an environmental and Mining Lease perspective and completed significant engineering prior to the collapse in the iron ore market in 2014, which caused the Project to be put on hold.

In 2019, a new Pre-Feasibility Study (PFS) was completed, based on the production of a BF sinter feed product, with the key financial and technical outcomes announced to the market on 5 July 2019.

The PFS outlined a robust 1Mtpa start-up project capable of generating life-of-mine revenues of A\$1.05 billion and EBITDA of A\$533 million over its initial 18-year life. The July 2019 PFS economics were based on a mine gate domestic iron ore price of US\$41/tonne that was referenced to a 62% Fe CFR China Price of only US\$75/tonne with a net back for domestic logistic costs and sea freight.

The PFS was based on the JORC 2012 Proven and Probable Ore Reserves estimate of 43.3Mt grading 29.1% Fe<sup>1</sup> (Table 5), which was also released to the market on 5 July 2019. The Ore Reserve delivered 17.9Mt of high-grade (65% Fe), low-impurity (4.3% SiO<sub>2</sub>, 0.8% Al<sub>2</sub>O<sub>3</sub> & 0.01% P) sinter product to support an initial 18-year mine life once in operations.

<sup>&</sup>lt;sup>1</sup> Refer to ASX Announcement 5 July 2019. The Company confirms that it is not aware of any new information or data that materially affects the information included in the original market announcement and, in the case of estimates of Mineral Resources and Ore Reserves, that all material assumptions and technical parameters underpinning the estimates in the original market announcement continue to apply and have not materially changed. The Company confirms that the form and context in which the competent persons findings were presented have not been materially modified from the original announcement.



The conservative pit optimisations used to support the Ore Reserve estimation were based on mine gate iron ore prices of only BRL\$66/tonne (US\$18/tonne at time of 2019 PFS).

Underpinning the PFS results in 2019 were the low forecast mine gate cash operating costs of A\$25.1, which when combined with government and landowner royalties, amounted to a total mine gate cash cost (C1 + Royalties) of A\$29.0/tonne. The PFS estimated pre-production capital costs of A\$59.8 million for a A\$114.9 million post-tax NPV<sub>8</sub> and an IRR of 32% for a 1Mtpa operation.

### **Current Iron Ore Pricing**

The current price of DR quality pellet feed material in the international market is ~US\$135/tonne, referenced to the 65% Fe CFR China price for concentrate with a premium for the DR qualities of the product. The price assumption in the 2019 PFS was based on an international 62% Fe CFR China Price of US\$75/tonne. The DR pricing premium, current iron ore prices and current logistic costs to arrive at a mine gate price for a +65% Fe, low impurity DR quality product, will be considered as part of the study work to be undertaken.

### **Environmental Approvals**

As noted in the December 2023 Quarterly Report released to the market on 30 January 2024, an updated EIA/RIMA was lodged in September 2023 with the environmental agency in Minas Gerais State, Supram, for Jambreiro.

Previously, all environmental licences required to build Jambreiro were held by the Company but lapsed during the period when the Project was put on hold. The new EIA/RIMA incorporated the following changes to the project design that was originally approved in 2012:

- Elimination of the tailings dam through the inclusion of filtration at the back end of the process flowsheet to dewater the tailings and stockpile them with the waste dumps;
- Transforming the original tailings dam into a water storage dam, with a much smaller footprint;
- Development of two additional small open pits that are feasible in the current iron ore price environment; and
- Reducing the project's overall project footprint by ~50% via the removal of the tailings dam.

The new approvals are anticipated to be received in Q3 2024. The Company has also lodged the documentation to re-apply for all water permits necessary to operate the project.

### **Project Location**

The Jambreiro Project is located in south-east Brazil (Figure 1) close to the Company's head office in the city of Belo Horizonte.

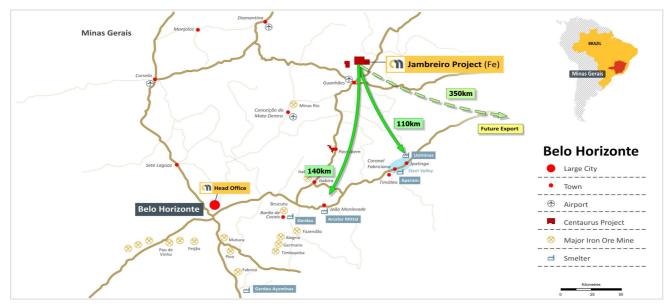


Figure 1– Jambreiro Iron Ore Project Location



### Management Comment

Commenting on the opportunity to add value on the Jambreiro Iron Ore Project, Centaurus' Managing Director, Mr Darren Gordon, said:

"The Jambreiro Project has been well-studied in the past and the Company has an enormous amount of technical and cost data available to quickly assess the economic merits of producing a DR quality pellet feed product from the Project.

"Steel makers are strongly supporting iron ore producers who can produce iron ore that will lower the emissions footprint of their businesses. One of the best ways to achieve this is to produce a DR quality product for supply to electric arc furnaces.

"Initial sighter tests by a potential off-taker for the Jambreiro Project has shown that the Project can produce a DR quality pellet feed product, using flotation or magnetic separation, that grades +68% Fe with combined silica and alumina under 2%. This is a fantastic iron ore product specification and one that the Company expects will be received very well by the market.

"Study work will now expand the metallurgical testwork program to optimise the best way to achieve the DR quality specification utilising the existing Jambreiro process flowsheet whilst also ensuring the economics of producing this product are robust through any price cycle."

#### -ENDS-

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### **Competent Person's Statement**

The information in this report that relates to Exploration Results is based on information compiled by Mr Roger Fitzhardinge who is a Member of the Australasia Institute of Mining and Metallurgy. Mr Fitzhardinge is a permanent employee and shareholder of Centaurus Metals Limited. Mr Fitzhardinge has sufficient experience which is relevant to the style of mineralisation and type of deposit under consideration and to the activity which he is undertaking 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 Fitzhardinge consents to the inclusion in the report of the matters based on his information in the form and context in which it appears.



#### Table 3– Jambreiro Metallurgical Sample Composite Location.

Project	Sample ID	Easting	Northing	mRL
Jambreiro	JBR-MET-17-001	722308	7945089	931

#### Table 4– Jambreiro Resource Estimate – July 2019

(Mineral Resources are inclusive of Ore Reserves)

Prospect	(Mineral Resource	Mt	Fe%	SiO <sub>2</sub> %	Al <sub>2</sub> O <sub>3</sub> %	Р%	LOI %
Tigre	Measured	36.9	29.2	50.8	4.0	0.04	1.4
ngre	Indicated	17.3	27.4	51.3	3.3	0.04	1.4
	Measured + Indicated	54.2	28.6	51.0	3.8	0.04	1.4
	Inferred	30.1	27.3	52.9	2.8	0.04	0.6
	TOTAL	84.3	28.2	51.7	3.4	0.05	1.1
Cruzeiro	Measured	7.4	29.3	49.0	3.7	0.05	1.6
	Indicated	10.2	27.3	50.3	3.0	0.05	1.3
	Measured + Indicated	17.7	28.1	49.8	3.3	0.05	1.5
	Inferred	4.5	28.2	50.3	3.0	0.05	1.5
	TOTAL	22.1	28.2	49.9	3.2	0.05	1.5
Galo Total	Indicated	7.3	28.4	49.5	5.7	0.04	2.6
	Inferred	6.2	27.0	50.9	6.2	0.05	3.1
	TOTAL	13.5	27.7	50.2	5.9	0.04	2.9
Coelho	Indicated	3.0	26.5	56.1	3.8	0.03	1.4
	Inferred	4.3	26.8	56.0	3.6	0.03	1.4
	TOTAL	7.3	26.7	56.1	3.7	0.03	1.4
Jambreiro Total	Measured	44.3	29.2	50.5	3.9	0.04	1.5
	Indicated	37.7	27.5	51.1	3.7	0.04	1.6
	Measured + Indicated	82.1	28.4	50.8	3.8	0.04	1.5
	Inferred	45.1	27.3	52.7	3.3	0.05	1.1
	TOTAL	127.2	28.0	51.4	3.7	0.05	1.4
Ore Type	JORC Resource Category	Mt	Fe%	SiO₂%	Al <sub>2</sub> O <sub>3</sub> %	<b>P%</b>	LOI %
Friable &	Measured	34.0	29.7	50.3	4.2	0.04	1.6
Semi-Compact Ore	Indicated	18.5	28.1	50.9	4.7	0.04	2.1
	Measured + Indicated	52.5	29.2	50.6	4.4	0.04	1.8
	Inferred	7.8	26.6	52.7	5.4	0.04	2.5
	TOTAL	60.3	28.8	50.8	4.5	0.04	1.9
Compact Ore	Measured	10.4	27.5	51.1	2.9	0.05	1.0
	Indicated	19.2	26.9	51.2	2.8	0.05	1.0
	Measured + Indicated	29.6	27.1	51.1	2.8	0.05	1.0
	Inferred	37.3	27.5	52.7	2.9	0.05	0.8
	TOTAL	66.9	27.3	52.0	2.9	0.05	0.9
Total	Measured	44.3	29.2	50.5	3.9	0.04	1.5
	Indicated	37.7	27.5	51.1	3.7	0.04	1.6
	Measured + Indicated	82.1	28.4	50.8	3.8	0.04	1.5
	Inferred	45.1	27.3	52.7	3.3	0.05	1.1
	TOTAL	127.2	28.0	51.4	3.7	0.05	1.4



	Table 5– Jambreiro	Ore Reserv	/e Estimate	e – July 2019	Ð		
Prospect	JORC Reserve Category	Mt	Fe%	SiO₂%	Al <sub>2</sub> O <sub>3</sub> %	<b>P%</b>	LOI %
Tigre	Proven	26.2	29.2	50.1	4.3	0.04	1.6
	Probable	3	27.4	50.1	5.4	0.03	2.4
	TOTAL	29.2	29	50.1	4.4	0.04	1.7
Cruzeiro	Proven	4.4	30.7	48.2	3.7	0.04	1.6
	Probable	2.7	30.3	46.2	3.4	0.04	1.8
	TOTAL	7.1	30.5	47.4	3.6	0.04	1.7
Galo	Proven	-	-	-	-	-	-
	Probable	5.1	28.7	48.9	5.3	0.04	2.5
	TOTAL	5.1	28.7	48.9	5.3	0.04	2.5
Coelho	Proven	-	-	-	-	-	-
	Probable	1.9	26.5	55.2	3.9	0.03	1.5
	TOTAL	1.9	26.5	55.2	3.9	0.03	1.5
Jambreiro Total	Proven	30.6	29.4	49.8	4.2	0.04	1.6
	Probable	12.7	28.4	49.5	4.7	0.04	2.2
	TOTAL	43.3	29.1	49.7	4.4	0.04	1.8

\*Ordinary Kriging (OK) estimate; Cut-off 20% Fe; Mine Dilution – 2%; Mine Recovery – 98%



### APPENDIX A – JORC Code, 2012 Edition – Table 1 Compliance Statement for Jambreiro Project

### SECTION 1 - SAMPLING TECHNIQUES AND DATA

#### (Criteria in this section apply to all succeeding sections).

Criteria	Commentary
Sampling techniques	<ul> <li>Metallurgical bulk samples were taken with an excavator from trenches or outcrops below 2m and loaded into bulked bags or large drums for transport.</li> <li>To determine bulk sample grades at the laboratories, samples were speared and then dried, crushed to &lt;2mm, homogenized and pulverized to 150 mesh then fused with lithium tetraborate and lithium nitrate. The resultant disk is assayed in X-Ray Fluorescence Spectrometer to quantify a range of oxides, some elements and LOI.</li> </ul>
Drilling techniques	No new drill results are reported in this announcement.
Drill sample recovery	No new drill results are reported in this announcement.
Logging	• All sample locations have been logged geologically to a level of detail appropriate to support metallurgical sampling.
Sub-sampling techniques and sample preparation	No new drill results are reported in this announcement.
Quality of assay data and laboratory tests	<ul> <li>All chemical analysis was completed at a third-party laboratory. Metal Oxide is determined using XRF analysis. Analysis at the third-party laboratory was for a 24-element suite. FeO is determined using Titration and LOI using Loss Determination by Thermogravimetric analysis.</li> <li>Laboratory procedures are in line with industry standards and are appropriate for iron ore.</li> <li>The third-party laboratory insert their own standards at set frequencies and monitor the precision of the XRF analysis. These results also reported well within the specified 2 standard deviations of the mean grades for all main elements.</li> <li>Centaurus QAQC procedures and results are to industry standard and are of acceptable quality.</li> </ul>
Verification of sampling and assaying	<ul> <li>Bulk sample information was elaborated by a geologist using excel spreadsheets within the electronic database; geological logging and any other relevant exploration field data are retained in both physical and electronic databases.</li> <li>All primary data both electronic and physical is stored in the Centaurus office (Belo Horizonte, Brazil).</li> <li>No adjustments were made to the assay data apart from resetting the below detection level values to half of the detection limit.</li> </ul>
Location of data points	• The grid system used is SAD-69 23S. This is in line with Brazilian Mining Agency requirements. All sample locations were surveyed using a handheld GPS.
Data spacing and distribution	<ul> <li>Based on the extensive geological understanding of the deposit the sample location is considered adequate to establish the degree of geological and grade continuity appropriate for the bulk sample.</li> <li>No sample compositing has been applied.</li> </ul>
Orientation of data in relation to geological structure	The orientation of the mineralisation is well understood and sample locations were selected to sample the mineralisation appropriately.
Sample security	<ul> <li>All samples are placed in 1ton bulker bags and then a sample ticket is placed within the bag as a check. Bags are sealed and then transported by courier to Centaurus core facility in Jardim Canada, Nova Lima-MG.</li> <li>All remnant sample is stored at Centaurus' core shed.</li> </ul>
Audits or reviews	No external audit or reviews have been undertaken specifically in relation to these exploration results.

### SECTION 2 REPORTING OF EXPLORATION RESULTS

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

Criteria	Commentary
Mineral tenement and land tenure status	<ul> <li>The Jambreiro Project is located wholly within the following Mining Leases: 831.649/2004, 833.409/2007 and 834.106/2010. The Mining Leases are 100% Centaurus owned.</li> <li>The tenements are part of the Cenibra-Centaurus Agreement. Centaurus will pay a vendor royalty of 0.85% of gross revenue.</li> <li>All mining projects in Brazil are subject to a government royalty of 2% of revenue (less taxes and logistics costs). Additionally, a landowner royalty of 50% of the CFEM royalty is to be paid to Cenibra.</li> <li>The Project is not located within national or state wilderness or historical parks.</li> <li>At the time of this report the three mining leases are in good standing. There are not any known impediments to obtaining a licence to operate in the area.</li> </ul>
Exploration done by other parties	• Cenibra conducted geological mapping and a small diamond drill program in 2007 to satisfy Brazilian Mining Agency requirements.



Criteria	Commentary
Geology	<ul> <li>The Jambreiro Project is located within the Guanhães Group of the Mantiqueira Complex. The region is dominated by structurally complex meta-volcanic and meta-sedimentary sequences with duplex fault systems and folding ranging from micro folding in outcrop to large scale regional deformation.</li> <li>The Itabirite units are part of an iron formation including ferruginous quartzites, quartzites, amphibolitic and/or dolomitic itabirites and schists hosted within a meta-sedimentary sequence. This sequence is emplaced in regional gneissic basement.</li> <li>The Itabirite mineralisation comprises concentrations of medium - coarse grained friable, semi-compact and compact material that have undergone enrichment. The mineralisation is composed of quartz, hematite, magnetite, martite with minor goethite, limonite, amphibole (Grunerite), Mica (muscovite) and clay minerals.</li> <li>Itabirite thicknesses vary from 10m to up to 100m generally dipping 45-70° to the W-SW. The combined strike length of the mapped mineralisation is around 3,000m. Itabirite has been intersected at depths of 240m with friable itabirite intersected to 80m.</li> </ul>
Drill hole Information	No new drill results are reported in this announcement.
Data aggregation methods	No new drill results are reported in this announcement.
Relationship between mineralisation widths and intercept lengths	<ul> <li>No new drill results are reported in this announcement.</li> <li>The bulk sample location was excavated perpendicular to the mineralisation strike foliation angle and as a result return approximately true width and representative of the mineralised interval.</li> </ul>
Diagrams	Refer to Figure 1
Balanced reporting	Not applicable to this report. All figures previously reported.
Other substantive exploration data	<ul> <li>A number of metallurgical tests have been carried out on the Jambreiro Project mineralisation. See ASX announcement on 6 August 2012 for full details of the Jambreiro Pilot Plant Results.</li> <li>The Company historically completed a 1Mtpa Pre-Feasibility Study on the Jambreiro Project in 2019. See ASX announcement on 5 July 2019 for full details.</li> </ul>
Further work	• There is no current plan for additional drilling on the Jambreiro Project.