

29 May 2019

## NEW PRE-FEASIBILITY STUDY UNDERWAY ON 1Mtpa IRON ORE PROJECT AT JAMBREIRO

Strategic review highlights potential to capitalise on new opportunities in the domestic and global iron ore market with PFS due for completion by end of June 2019

- Strategic Review of development-ready Jambreiro Iron Ore Project completed with positive outcomes facilitating decision to undertake a new Pre-Feasibility Study.
- Historical work on the Project includes:
  - Over 19,000m of drilling, underpinning JORC 2012 Mineral Resource estimation;
  - JORC 2004 Ore Reserve estimation;
  - Extensive process testwork and design, confirming that a high-grade (65% Fe), low impurity product (4.8% SiO<sub>2</sub>, 0.8% Al<sub>2</sub>O<sub>3</sub> & 0.01% P) can be produced;
  - Mining Leases granted and in place;
  - Key Environmental Approvals granted and in place for production of up to 3Mtpa;
  - Long Term Land Access arrangement in place with Cenibra, a Japanese-controlled pulp Company, which grows eucalypts on the tenement;
  - Extensive basic engineering completed by CDE Global for a modularised plant under a turnkey performance guaranteed plant; and
  - Original 1Mtpa Feasibility Study completed in 2013, demonstrating strong economics.
- Project well-located relative to Brazil's supply-disrupted domestic steel industry.
- Process testwork and engineering study underway to dry-stack all Jambreiro tailings, enhancing future expansion opportunities and mitigating potential development delays following recent concerns about tailings dams in Minas Gerais.
- Off-take discussions with potential domestic customers progressing well. Opportunities to sell high-quality Jambreiro product into international export markets also being analysed.
- Pre-Feasibility Study targeted for completion by the end of June 2019 with the relatively short study period reflecting the extensive work already completed on the Project between 2011 and 2013.

Centaurus Metals (ASX Code: **CTM**) is pleased to announce that a new Pre-Feasibility Study (**PFS**) of its advanced, development-ready **Jambreiro Iron Ore Project** in central Brazil is underway targeting a potential 1Mtpa domestic iron operation that would be ideally placed to capitalise on the new opportunities which have emerged in the domestic and international iron ore market in the past six months.

The decision to undertake a new PFS follows the completion of a strategic review of the 2013 Jambreiro Iron Ore Project Feasibility Study work, an ongoing assessment of the significant changes and marked improvement in the Brazilian domestic and global iron ore market in recent months, and the limited scope changes required to allow for the timely development of the Project to proceed.

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The PFS will build on the extensive Feasibility Study completed in late 2013, which demonstrated robust economics.

The Company will leverage off the vast amount of detailed technical work that was completed on the Project in the period of 2011-2013, as well as the advanced nature of the licences and approvals it already holds in an environment where the supply of high-grade, low-impurity ore in Brazil is now more difficult to access by potential customers.

The main activity for the PFS will be an update of the capital and operating costs, as the current design operating parameters and process flowsheet are not expected to change materially - with the exception of a small filtration or centrifuge circuit to treat the slimes portion of the tailings stream to facilitate the dry-stacking of this material.

The Company has already commenced work to upgrade the previous JORC Proven and Probable Ore Reserve up to 2012 standard using 2019 operating costs, underpinned by a new pit optimisation and detailed mine plan.

Due to the conservative nature of the pit optimisation assumptions used in the 2013 Feasibility Study and the fact that the Ore Reserve only considered the friable Measured and Indicated Resources, the Company does not expect any material change in the Ore Reserve and still anticipates a mine life in the order of 18 years at the planned 1Mtpa production rate. No further drilling of the Project is required.

Extensive process testwork completed at the time of the original 2013 Feasibility Study shows that a high-grade iron product (65% Fe) with very low impurities (4.8% SiO<sub>2</sub>, 0.8% Al<sub>2</sub>O<sub>3</sub> & 0.01% P) can be produced from the friable mineralisation at Jambreiro. This high-grade product attracts a significant premium in the iron ore market compared to the traditional 62% Fe CFR China Index and is a highly sought-after product in the Brazilian domestic market.

With tailings management being such a strong focus point for all stakeholders in Brazil at the present time, the Company has proactively made the decision that it will dry-stack all tailings produced from its operations at the Project, even though it is already licensed to build a Tails Dam. Due to the nature of the mineralisation at Jambreiro, dry-stacking should not result in any significant capital cost increase for tails management in the mine as any additional plant and equipment required should be offset by the removal of the tailings dam cost.

The removal of the tails dam will also significantly reduce the overall footprint of the project design and provide the added benefit of allowing for an easier expansion of the Project in the future.

The Company has recently collected a new bulk (10-tonne) sample from Jambreiro and is currently having it tested at Fundação Gorceix to determine the optimal solution for the slimes component of the tails and also to produce new product for delivery to potential customers if needed (see Figure 1).

Importantly, should the Jambreiro Project be brought to production, it would be the only processing plant in the region capable of beneficiating itabirite ores. With licensing expected to be increasingly difficult to achieve in Minas Gerais, it is reasonable to expect that Jambreiro could become a strategic processing hub for other miners in the region with significant itabirite resources but which still require approvals to construct a suitable plant to process them.

Centaurus' Managing Director Mr Darren Gordon, said: *"The recently completed strategic review has reinforced the quality of the Jambreiro Project and the strategic opportunities which now present themselves in the domestic market for a licensed and development-ready asset located in Minas Gerais.*

*"Historically the project had strong technical fundamentals and was expected to deliver sound financial returns from an initial 18-year mine life based only on the friable mineralisation contained in the Project Ore Reserve,"* Mr Gordon said.



*“Due to recent supply disruptions from the State of Minas Gerais, Brazil coupled with the current positive structural changes in the global iron ore market pricing dynamic which have pushed benchmark 62% Fe CFR China prices above US\$100 per tonne, we have commenced a Pre-Feasibility Study leveraging off the extensive amount of work already completed at the Project.*

*“Local consensus is that the disruption to supply we are seeing presently in Minas Gerais will not be solved quickly, and this is driving domestic consumers to find alternative, consistent high-quality supply options similar to that which Jambreiro would provide.*

*“We have seen recently other smaller producers in close proximity to Jambreiro achieving mine gate prices in the R\$130-150 per tonne range for 62% Fe products and this bodes well for a 65% Fe product from Jambreiro given this 62% Fe pricing is over 50% higher than the life-of-mine average mine gate price used in the 2013 Feasibility Study.*

*“We expect the new PFS – which will pave the way for us to crystallise the significant inherent value in this project – to be delivered by the end of June”.*

### **Key Operating Conditions**

From a licensing perspective the Jambreiro Project is in a unique position. Mining Leases and key environmental licences are in place for the Project, which will provide for the timely construction of the Project once any development decision is made. This advanced stage of licensing is a huge positive for the Project in the current operating environment in Brazil.

An amendment to the previously granted Installation Licence will be sought to reflect the Company’s decision to dry-stack all tails and to incorporate the reduced footprint arising from the removal of the tails dam from the project design.

The Company is currently in the process of re-applying for water licences that were historically cancelled to save unnecessary holding costs. Given the licences were previously granted, the Company expects to be able to move rapidly to secure the amended approvals once the necessary applications have been made. This will occur in parallel with the ongoing PFS work.

A land access agreement is already in place with the land owner, Cenibra. This land access arrangement is effective until 2022, and can be renewed by the Company at that time. The land is predominantly a eucalypt plantation (see Figure 2) and is therefore considered to be a disturbed farming/industrial area.

Having only one landowner to deal with is a rarity in Brazil and represents a significant benefit for the planned operation of the Project. Furthermore, Cenibra, as the original project vendor, holds a production royalty and is motivated to see the Project developed.

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Figure 1 – Top Left – Jig Concentrate and Jig Tails; Top Right – Spirals Tailings  
Bottom Left – Spirals Testwork Facility; Bottom Right – WHIMS Concentrate.



Figure 2 – Eucalypt Plantations over the Jambreiro Project Area – pre and post-harvesting.





### **Project Revenue Assumptions**

Centaurus has already completed significant analysis of the current pricing regime in the domestic market – both selling to integrated steel mills and also to mining/trading groups with ready access to export logistics.

A number of the domestic steel mills have tested the Jambreiro product at their own facilities and have indicated that they are impressed by the high-grade, low impurity product that can be produced from the Jambreiro ore and the ability of Centaurus to deliver this product on a long-term consistent basis.

The Company is advancing multiple positive discussions around product sales and off-take agreements that will progress in parallel with the PFS.

Historically, domestic steel mill pricing has been a function of the prevailing international export markets less logistic charges back to the mill's location. Consequently, an analysis of the domestic market pricing is in essence an analysis of the international iron ore pricing environment. Because of this, it appears that a number of the potential domestic customers simply view the price of domestic iron ore as a percentage of an international benchmark for ease of negotiations.

Given the recent supply disruptions within the very region that the Jambreiro Project would supply, the domestic price is very attractive. Initial analysis, obtained from discussions with existing domestic iron ore producers in close proximity to Jambreiro, indicates that iron ore grading 62% Fe is currently selling in the domestic market for R\$130-R\$150 per tonne on a mine gate basis.

This bodes well for a 65% Fe product from Jambreiro, given that this 62% Fe pricing is more than 50% higher than the life-of-mine average mine gate price used in the 2013 Feasibility Study.

The higher-grade nature of the Jambreiro product, and its very low impurity levels, is expected to attract a premium in the domestic market, consistent with international markets. Since the 1Mtpa Feasibility Study was completed in 2013, international pricing has changed markedly with respect to premiums for high grade ore and discounts for low grade ore. Based on current published indices, a 65% Fe product would currently attract a premium in the order of US\$15 per tonne over a 62% Fe Product.

Concurrently with analysing supply opportunities in the domestic market for the high-grade Jambreiro product, the Company is also analysing opportunities to sell the high quality Jambreiro product to international export markets.

### **Capital Costs**

The 2013 Feasibility Study was based on Northern Ireland-based CDE Global providing a modularised, fixed-price turnkey proposal for the construction of the Jambreiro beneficiation circuit. The Company has re-engaged with CDE Global for them to provide an update on their pricing based on the previously designed and engineered flowsheet.

The plant footprint and associated earthworks for the Project are expected to be similar to 2013 given the plant design is not expected to materially change.

The Company has also sought new prices for all of the major equipment used in the processing circuit from the preferred supplier groups assessed at the time of the 2013 Feasibility Study.

The 2013 Feasibility Study had a pre-production capital cost of A\$53 million for a 1Mtpa plant<sup>1</sup>.

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<sup>1</sup> Full Details of the 2013 Feasibility Study were released to the market on 20 December 2013 and 13 January 2014.

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## Operating Costs

The mine operating costs are expected to be low, in a similar vein to the 2013 Feasibility Study, due to the friable nature of the ore, which does not require drill and blast for the first 10 years of production and the short haulage distances to the ROM and waste dumps arising from enhanced mine planning and design put together in conjunction with CDE Global.

At the time of the 2013 Feasibility Study, the life-of-mine strip ratio was 0.97:1 with the first five years of operation having a strip ratio of 0.55:1. Multiple mining contractor groups recently completed site visits ahead of providing new pricing on the mining activities of the Project.

In respect to the labour workforce, the overall manning schedule will be reviewed as well as the current labour rates and conditions prevailing in the labour market in Brazil. Access to skilled mining workers in the local market is good.

The process plant is planned to be run on diesel-generated power for the first three years while approvals for a power line to access the grid are obtained. The Company will investigate the use of solar power solutions where applicable as favourable development bank funding may be available to the project with the use of a renewable energy solution.

The 2013 Feasibility Study forecast an operating cost (including royalties) of A\$22 per tonne for the initial 1Mtpa project. A full summary of the economic outcomes from the 2013 1Mtpa Feasibility Study were released to the market on 20 December 2013 and 13 January 2014.

## Taxation & Royalty Assumptions

The Centaurus subsidiary that holds the Jambreiro Iron Ore Project holds carried-forward tax losses of approximately R\$160 million, which provides a strong tax shield against any future taxable profits from the Project.

The following royalties and levies are payable in respect to production from the Project. The royalty is generally applied to gross revenues, less the transaction taxes associated with the sale of the product.

Federal Government (CFEM)	3.50%
Landowner	1.75%
Original Vendor Royalty	0.85%
State Government	R\$1.44 per tonne of product

-ENDS-

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### Competent Person's Statement

*The information in this report that relates to Exploration Results and Mineral Resources is based on information compiled by Roger Fitzhardinge who is a Member of the Australasia Institute of Mining and Metallurgy and Volodymyr Myadzel who is a Member of Australian Institute of Geoscientists. Roger Fitzhardinge is a permanent employee of Centaurus Metals Limited and Volodymyr Myadzel is the Senior Resource Geologist of BNA Consultoria e Sistemas Limited, independent resource consultants engaged by Centaurus Metals.*

*Roger Fitzhardinge and Volodymyr Myadzel have sufficient experience which is relevant to the style of mineralization and type of deposit under consideration and to the activity which they are undertaking to qualify as a Competent Person as defined in the 2004 Edition of the 'Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserve'. Roger Fitzhardinge and Volodymyr Myadzel consent to the inclusion in the report of the matters based on their information in the form and context in which it appears.*

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*The information in this report that relates to Ore Reserves is based on information compiled by Beck Nader who is a professional Mining Engineer and a Member of the Member of Australian Institute of Geoscientists. Beck Nader is the Managing Director of BNA Consultoria e Sistemas Ltda and is a consultant to Centaurus. Beck Nader has sufficient experience, which is relevant to the style of mineralization and type of deposit under consideration and to the activity, which they are undertaking to qualify as a Competent Person as defined in the 2004 Edition of the 'Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserve'. Beck Nader consents to the inclusion in the report of the matters based on their information in the form and context in which it appears.*

## **Disclaimer**

*All information included in this announcement regarding Exploration Results, Mineral Resources and Ore Reserve estimates was prepared and first announced by the Company to the market under the JORC Code 2004. To the extent that information related to the Jambreiro Mineral Resource, it was subsequently updated to be compliant with the JORC 2012 Code and that updated information has since been announced by the Company. The information in relation to the Jambreiro Ore Reserve has not been updated since to comply with the JORC Code 2012, however, on the basis that the information has not materially changed since it was last reported.*

*All information included in this presentation regarding the Ore Reserve estimate for the Jambreiro Iron Ore Project should be read in conjunction with the ASX announcement dated 5 November 2012. No material change has occurred since that time in any of the pit optimisation parameters used to estimate the Jambreiro Ore Reserve.*

*Refer to the ASX announcements dated 20 December 2013 and 13 January 2014 for details of the material assumptions underpinning the production target and forecast financial information included in this announcement for the Jambreiro Iron Ore Project. The Company confirms that all the material assumptions underpinning the production target and forecast financial information derived from the production target continue to apply and have not materially changed.*