



Developing a globally significant nickel project for a clean energy future

# SEPTEMBER 2020 QUARTERLY ACTIVITIES REPORT

Drilling and development studies step-up to the next level at the Jaguar Nickel Sulphide Project with 75,000m drill program underway to upgrade and expand the maiden Resource of 48Mt at 1.08% Ni for 517,500t of Ni

#### 27 October 2020

# SEPTEMBER QUARTER HIGHLIGHTS

## JAGUAR NICKEL SULPHIDE PROJECT

- Major new 75,000m drilling program commenced, comprising Resource in-fill, step-out and extensional drilling and regional exploration, with five drill rigs on site at the end of September.
- Significant thick semi-massive to massive nickel sulphide intercepts from extensional and in-fill drilling at the Jaguar Central Deposit, with assays including:
  - **33.7m at 2.23% Ni**, 0.12% Cu and 0.04% Co from 45.6m, incl. 10.4m at 3.35% Ni, 0.20% Cu and 0.06% Co from 45.6m and 15.5m at 2.53% Ni, 0.23% Cu and 0.04% Co from 63.8m (JAG-DD-20-056)
  - 15.0m at 2.42% Ni, 0.13% Cu and 0.05% Co from 69.0m, incl. 6.0m at 3.34% Ni, 0.21% Cu and 0.06% Co from 78.0m (JAG-DD-20-057)
- Step-out drilling at Jaguar Central confirms down-dip extensions of previous high-grade intercepts which remain open at depth and along strike, with assays including:
  - **44.9m at 1.36% Ni**, 0.11% Cu and 0.03% Co from 128.0m, incl. 10.2m at 2.22% Ni, 0.25% Cu and 0.04% Co from 148.6m and 7.8m at 2.01% Ni, 0.13% Cu and 0.04% Co from 165.0m (JAG-DD-20-070)
- In-fill drilling at the Jaguar North deposit also returned consistent thick, shallow high-grade nickel sulphide intercepts.
- ▶ The Onça Rosa discovery continues to grow with an outstanding semi-massive to massive nickel sulphide intersection of **6.3m at 3.18% Ni**, 0.21% Cu and 0.09% Co from 311.0m in hole JAG-DD-20-071.
- Scoping Study for the Jaguar Project development is progressing well, aimed at supporting Centaurus' aspirations to be a clean and efficient 20,000-plus tonne per annum nickel producer by the end of 2024 to assist in the global transition to electrification and to meet anticipated surging demand for key battery metals.
- Scoping Study 'Base Case' is for the production of a high-grade nickel concentrate using a traditional nickel flotation process, with the study to also consider value-adding opportunities, including downstream processing to produce nickel sulphate or nickel metal.

### **CORPORATE**

- Strong controls remain in place to help protect the health and safety of Centaurus' in-country workforce, their families and the local community, as well as to help maintain business continuity during COVID-19.
- Successful \$25.5 million institutional placement completed to accelerate resource growth and development at Jaguar Nickel Project.
- Cash at 30 September 2020 of \$26.9 million.

Centaurus Metals Limited Centaurus Metals Limited Level 2, 1 Ord St West Perth WA 6005 AUSTRALIA

#### **Brazilian Office**

Centaurus Brasil Mineração Ltda Avenida Barão Homem de Melo, 4391 Salas 606 e 607 - Estoril CEP: 30.494.275, Belo Horizonte MG BRAZIL ASX: CTM

ACN 009 468 099 office@centaurus.com.au T: +61 8 6424 8420



# **JAGUAR NICKEL PROJECT**

In August 2019, Centaurus secured an exceptional exploration, growth and development opportunity in the international nickel sulphide sector after executing a formal Sale & Purchase Agreement with global mining giant, Vale S.A. ("Vale") to acquire the advanced, large-scale Jaguar Nickel Sulphide Project, located in the world-class Carajás Mineral Province of northern Brazil (Figure 1).

The settlement of the acquisition was completed on 9 April 2020 following formal regulatory approval by the Brazilian National Bank for Economic and Social Development (BNDES).

On 29 June 2020, Centaurus reported a maiden JORC 2012 Indicated and Inferred Mineral Resource Estimate (MRE) for the Jaguar Project of **48.0Mt @ 1.08% Ni for 517,500t of nickel**, confirming Jaguar as an outstanding near-surface nickel sulphide deposit. Importantly, the MRE also contains a significant high-grade portion, with a High-Grade Indicated and Inferred MRE of **20.6Mt @ 1.56% Ni for 321,400t of nickel**, forming the cornerstone of the Company's strategy to establish a high-grade, high-margin nickel sulphide project.

This maiden resource will underpin the completion of a Scoping Study for the Jaguar Project development, which is targeted for completion in Q1 2021.



#### Figure 1: Jaguar Nickel Sulphide Project Location Map

#### RESOURCE IN-FILL, STEP-OUT AND EXTENSIONAL DRILLING PROGRAM

During the Quarter, Centaurus launched a major new 75,000m drilling program, to be completed at the Jaguar Project over the next 15 months, comprising Resource in-fill, step-out and extensional drilling, plus regional exploration drilling.

Five drill rigs were on site at the end of the reporting period, with expected strong news flow over the remainder of 2020 and well into 2021.

Drilling results reported during the September Quarter support the potential to further expand the Company's maiden JORC 2012 Mineral Resource Estimate (MRE) of 48.0Mt at 1.08% Ni for 517,500 tonnes of contained nickel.



#### **Jaguar Central Deposit**

The Jaguar Central Deposit is hosted in a strongly sheared felsic dacite with the **primary high-grade zone now defined over 500m of strike** with multiple zones of sub-vertical stringer to semi-massive and massive sulphides up to 30m wide. These zones extend from surface to more than 300m depth and remain open at depth and along strike (see Figure 2).

The Company's maiden JORC MRE, released in June 2020, delineated 7.4Mt at 1.13% Ni for 83,400t of contained nickel at the Jaguar Central deposit alone, with a near-surface High-Grade MRE of 4.1Mt at 1.44% Ni for 59,400t of contained nickel.

Importantly, the Company has also identified a **thick**, **near-surface high-grade shoot of mineralisation that starts from surface** in the west of the deposit on section 476770mE (see Figures 2, 3 and 4 below) **and plunges sub-horizontally to the east across more than 300m of strike extent.** 

A flat-lying high-grade shoot with this geometry lends itself extremely well to a low-strip high grade starter pit. An optimum scheduling scenario has the potential to deliver low cost high-grade material to the plant during the project payback period.

# Figure 2 – The Jaguar Central Deposit with DHEM conductor plates (dark blue) and FLEM plates (light blue) overlaid on the Ground Magnetics Survey results (RTP) with the location of the Cross-Sections in Figures 3 and 4 shown.





Figure 3 – The Jaguar Central Deposit: Cross-Sections 476830mE showing the drill intersections with DHEM conductor plates in dark blue and FLEM in light blue.

Figure 4 – The Jaguar Central Deposit: Cross-Sections 476770mE showing the drill intersections with DHEM conductor plates in dark blue and FLEM in light blue.



Highlights of new assay results from **extensional and in-fill drilling** at the Jaguar Central Deposit during the September Quarter included the following down-hole intervals (see ASX Announcements dated 6 August and 12 October 2020 for complete results):

#### Hole JAG-DD-20-56

- 33.7m at 2.23% Ni, 0.12% Cu and 0.04% Co from 45.6m; including
  - o **10.4m at 3.35% Ni**, 0.20% Cu and 0.06% Co from 45.6m; and
  - **15.5m at 2.53% Ni**, 0.23% Cu and 0.04% Co from 63.8m;
- 8.3m at 0.57% Ni, 0.02% Cu and 0.02% Co from 79.2m; and
- **4.2m at 0.76% Ni**, 0.06% Cu and 0.03% Co from 106.8m.

#### Hole JAG-DD-20-57

- 15.0m at 2.42% Ni, 0.13% Cu and 0.05% Co from 69.0m; including
  6.0m at 3.34% Ni, 0.21% Cu and 0.06% Co from 78.0m;
- 8.2m at 1.22% Ni, 0.09% Cu and 0.03% Co from 91.8m;
- 12.5m at 0.58% Ni, 0.04% Cu and 0.03% Co from 104.0m; and
- > 18.3m at 0.44% Ni, 0.02% Cu and 0.01% Co from 119.5m.

#### Hole JAG-DD-20-073

- > 30.0m at 0.93% Ni, 0.06% Cu and 0.02% Co from 19.0m; including
  - 7.5m at 1.60% Ni, 0.05% Cu and 0.04% Co from 24.0m;
  - o **2.7m at 2.48% Ni**, 0.15% Cu and 0.05% Co from 46.3m.

#### Hole JAG-DD-20-074

- > 44.9m at 1.07% Ni, 0.06% Cu and 0.03% Co from 13.5m; Including
  - o **5.0m at 1.53% Ni**, 0.11% Cu and 0.05% Co from 15.4m;
  - 6.3m at 1.29% Ni, 0.07% Cu and 0.03% Co from 23.0m;
  - o 4.2m at 1.45% Ni, 0.06% Cu and 0.03% Co from 32.5m;
  - o **5.0m at 2.37% Ni,** 0.18% Cu and 0.06% Co from 53.4m.



The result in hole JAG-DD-20-056 was outstanding, comprising a continuous interval of 33.7m at 2.23% Ni precisely where the DHEM conductor plate indicated the potential for semi-massive to massive sulphides. The DHEM conductor plate was generated from the Company's survey of historical diamond drill holes (PKSJAGU-DH00114 and PKS-JAGU-DH00079) that were more than 100m apart and returned no high-grade nickel sulphide intersections.

The FLEM ground surveys have also been successful in highlighting potential resource extensional targets in areas where it has not yet been possible to undertake DHEM surveys.

Drill-hole JAG-DD-057 was drilled targeting the north-west extension of the interpreted ore body at Jaguar Central and a FLEM plate generated from the Company's survey work. The hole successfully intersected 15.0m at 2.42% Ni (see Figures 2 and 4).

The June 2020 MRE only included assays up to drill hole JAG-DD-20-049, all holes subsequent to that will be included in the next JORC MRE upgrade.

In addition, a number of high-grade intersections were also encountered in **step-out drilling**. As announced on 11 June 2020, the first drill holes reported by the Company from the Jaguar Central Deposit returned outstanding shallow high-grade intersections in holes JAG-DD-20-042 (40.5m at 1.35% Ni) and JAG-DD20-047 (67.3m at 1.20% Ni). Step-out drilling was planned immediately, with the initial step-out program demonstrating the down-dip extension of the broad high-grade zones encountered in the initial drilling.

Highlights of the new assay results from the step-out drilling at the Jaguar Central Deposit include the following down-hole intervals (see ASX Announcements dated 6 August and 12 October 2020 for complete results):

#### Hole JAG-DD-20-049

- **5.4m at 1.08% Ni**, 0.02% Cu and 0.04% Co from 26.1m;
- 16.7m at 0.49% Ni, 0.03% Cu and 0.02% Co from 37.8m;
- 3.8m at 1.66% Ni, 0.12% Cu and 0.04% Co from 58.7m;
- 22.9m at 1.43% Ni, 0.09% Cu and 0.03% Co from 72.0m, including
  10.6m at 2.22% Ni, 0.19% Cu and 0.04% Co from 72.0m;
- > 8.9m at 0.84% Ni, 0.01% Cu and 0.03% Co from 105.1m;
- 10.0m at 0.94% Ni, 0.02% Cu and 0.04% Co from 118.4m, including
- 2.2m at 2.56% Ni, 0.07% Cu and 0.13% Co from 118.4m;
  16.3m at 1.01% Ni, 0.10% Cu and 0.03% Co from 140.8m, including
- 3.0m at 2.52% Ni, 0.25% Cu and 0.07% Co from 153.0m.

Hole JAG-DD-20-51

- 11.2m at 1.35% Ni, 0.08% Cu and 0.12% Co from 54.7m;
- 59.6m at 0.95% Ni, 0.06% Cu and 0.02% Co from 83.0m, including
  - o **2.8m at 2.38% Ni**, 0.10% Cu and 0.06% Co from 83.0m; and
  - o **3.1m at 1.28% Ni**, 0.08% Cu and 0.02% Co from 98.0m; and
  - o **3.5m at 2.38% Ni**, 0.17% Cu and 0.03% Co from 118.7m; and
  - **5.5m at 1.81% Ni**, 0.08% Cu and 0.04% Co from 129.3m.

Hole JAG-DD-20-070

- > 4.5m at 1.33% Ni, 0.03% Cu and 0.03% Co from 109.0m
- > 44.9m at 1.36% Ni, 0.11% Cu and 0.03% Co from 128.0m, including:
  - o **10.2m at 2.22% Ni**, 0.25% Cu and 0.04% Co from 148.6m; and
  - o **7.8m at 2.01% Ni**, 0.13% Cu and 0.04% Co from 165.0m

Hole JAG-DD-20-059

- 27.6m at 0.90% Ni, 0.06% Cu and 0.02% Co from 28.0m; including
  - **4.0m at 1.65% Ni**, 0.05% Cu and 0.06% Co from 28.0m
  - 9.7m at 1.19% Ni, 0.08% Cu and 0.02% Co from 45.9m
- 24.3m at 0.83% Ni, 0.04% Cu and 0.02% Co from 105.8m; including
  9.9m at 1.26% Ni, 0.06% Cu and 0.03% Co from 117.5m
- **4.1m at 1.02% Ni**, 0.07% Cu and 0.02% Co from 190.9m



Hole JAG-DD-20-065

- 23.7m at 0.60% Ni, 0.04% Cu and 0.02% Co from 38.3m; including
  4.7m at 0.97% Ni, 0.08% Cu and 0.03% Co from 38.3m
- > 7.4m at 0.65% Ni, 0.03% Cu and 0.02% Co from 54.7m
- > 8.5m at 0.77% Ni, 0.05% Cu and 0.02% Co from 165.0m; including
  - 3.5m at 1.30% Ni, 0.11% Cu and 0.03% Co from 165.0m
- 11.3m at 1.96% Ni, 0.12% Cu and 0.04% Co from 188.0m; including
  5.0m at 2.90% Ni, 0.18% Cu and 0.06% Co from 194.3m

Importantly, the DHEM and FLEM plates on these sections, and multiple adjacent sections, show that the semimassive and massive sulphide mineralisation remains open at depth. Further step-out drilling is underway.

One rig continues to drill at the Jaguar Central Deposit with this drilling continuing to focus on in-fill and extending the strike length of the shallow high-grade mineralisation. As outlined above, EM conductor plates continue to be generated for future step-out drilling.

#### **Jaguar North Deposit**

Jaguar North is hosted within a competent granite with strong magnetite alteration. The mineralisation occurs over 400m of strike (see Figure 5) with multiple zones of stringer to semi-massive and massive sulphides up to 25m wide that extend from surface to more than 200m depth and remain open at depth and along strike.

The new results from Jaguar North are from in-fill and extensional drilling. Highlights of assay results returned from the Jaguar North Deposit during the September Quarter included the following down-hole intervals (see ASX Announcements dated 6 August and 12 October 2020 for complete results):

Hole JAG-DD-20-052

8.5m at 0.76 % Ni, 0.08% Cu and 0.02% Co from 109.8m.

Hole JAG-DD-20-053

**4.0m at 1.08 % Ni**, 0.11% Cu and 0.04% Co from 121.5m;

14.0m at 1.32% Ni, 0.16% Cu and 0.04% Co from 140.5m, including
 7.0m at 2.10% Ni, 0.28% Cu and 0.06% Co from 146.5m.

Hole JAG-DD-20-55

11.0m at 1.38% Ni, 0.14% Cu and 0.04% Co from 97.0m, including

o **7.0m at 1.79% Ni**, 0.17% Cu and 0.05% Co from 100.0m.

Hole JAG-DD-20-060

6.0m at 1.44% Ni, 0.19% Cu and 0.05% Co from 65.8m

Hole JAG-DD-20-062

**8.5m at 1.04% Ni**, 0.11% Cu and 0.03% Co from 34.0m

Hole JAG-DD-20-064

11.3m at 0.98% Ni, 0.05% Cu and 0.02% Co from 74.2m; including

**7.5m at 1.18% Ni,** 0.06% Cu and 0.03% Co from 77.0m

> 3.0m at 0.98% Ni, 0.13% Cu and 0.02% Co from 88.5m

8.0m at 0.78% Ni, 0.20% Cu and 0.03% Co from 94.5m

Hole JAG-DD-20-066

5.0m at 1.23% Ni, 0.05% Cu and 0.03% Co from 113.0m; Hole JAG-DD-20-067

> 15.3m at 1.14% Ni, 0.32% Cu and 0.05% Co from 128.3m; including

5.2m at 1.51% Ni, 0.20% Cu and 0.08% Co from 138.4m

Hole JAG-DD-20-069

> 5.6m at 1.32% Ni, 0.07% Cu and 0.03% Co from 123.6m



The DHEM and FLEM plates on the sections set out in Figure 5 (as well as multiple adjacent sections) show that the semi-massive and massive sulphide mineralisation remains open at depth. Step-out drilling is planned to test these EM conductor plates.

The Company has also completed a FLEM survey over the Jaguar North Deposit. Of particular interest was the area to the north-west, where the mineralisation remained open and a strong untested magnetic anomaly was identified along strike.

The FLEM survey generated a new conductor plate that extends 100m beyond the current MRE limits. Drilling on section 477080mE testing the conductor plate has successfully intersected extensive semi-massive sulphide mineralisation in JAG-DD-20-064 (see Figure 6).

Figure 5 – The Jaguar North Deposit with DHEM conductor plates (dark blue) and FLEM plates (light blue) overlaid on the Ground Magnetics Survey results (RTP) with location of the Cross-Sections in Figure 6 shown.





# Figure 6 – The Jaguar North Deposit: Cross-Sections 477080mE (left) and 477230mE (right) showing the drill intersections with DHEM conductor plates in dark blue and FLEM in light blue.



#### Onça Rosa Deposit

The Company's Onça Rosa discovery is highlighted by a 600m long FLEM conductor plate, which is coincident with a magnetic anomaly, high Ni/Cr soil geochemical ratios (indicative of nickel sulphides) and locally nickeliferous magnetite float.

Importantly, modelling of DHEM surveys continues to reveal strong continuous EM conductor plates that are coincident with the massive sulphide mineralisation and are seen across more than 100m of strike.

Recent drilling continues to demonstrate this, with drill hole JAG-DD-20-071 intersecting **6.3m at 3.18% Ni**, 0.21% Cu and 0.09% Co from 311.0m (see section below in Figure 7), more than 30m down-dip from Centaurus' drill hole JAG-DD-20-017, which intersected **9.3m at 3.13% Ni** from 281.7m, and 65m down-dip from the discovery hole in drill hole PKS-JAGU-DH00158, which intersected **7.9m at 5.27% Ni** from 247.0m.





Figure 7 – The Onça Rosa Deposit: Cross-Sections 476040mE showing the drill intersections with DHEM conductor plates in dark blue and historical FLEM plate in light blue.

The Company will continue to work on step-out drilling at Onça Rosa over the coming months.

#### **REGIONAL DRILLING PROGRAM**

Centaurus has established an impressive pipeline of high-quality nickel and PGE exploration targets at the Jaguar Project that will be systematically tested with RC drilling over the coming months.

The Jaguar Project sits at the intersection of two of the most important mineralising structures in the Carajás Mineral Province, the Canãa and McCandless Faults.

At Jaguar, the close association of semi-massive and massive sulphides with magnetite means that, **when targeting new mineralisation, coincident electromagnetic and magnetic anomalies are the highest priority targets**. This is evidenced in the Ground Magnetics and Airborne Electromagnetic (GeoTEM) surveys in Figures 8 and 9 below.





#### Figure 8 – The Jaguar Nickel Project – Soils Geochemistry (Ni/Cr) over Ground Magnetics (Analytic Signal)

To date, more than 240 holes have been drilled at Jaguar with only six of these holes located outside the known deposit limits (yellow outline in Figure 8 above.)

There are multiple prospects and targets that are yet to be drill-tested within the tenement area which are located along the main mineralisation structures and characterised by ground magnetic and airborne and/or ground electromagnetic (EM) anomalies coincident with significant soil geochemical anomalies.



Figure 9 – The Jaguar Nickel Project – Soils Geochemistry (Ni/Cr) <u>over GeoTEM</u> (Channel 12) No GeoTEM data was collected on the western limit of the tenement (shown in white)



Recent in-fill soil sampling and FLEM surveys have advanced a number of the targets over the last few months. These new datasets have been combined with the detailed ground magnetics completed earlier in the year and historical airborne GeoTEM survey work to enable the Company to prioritise existing targets and identify a number of new targets.

The 10 high-priority exploration targets defined to date by the Company are shown in Figure 8 above. Further information regarding the key regional targets at Jaguar were provided in the Company's ASX Announcement dated 1 October 2020.

#### SCOPING STUDY

The Company has engaged industry leading nickel sulphide engineering groups, Entech and DRA Global, to complete the Jaguar Nickel Project Scoping Study in conjunction with the Company's internal technical team.

Entech is responsible for the mine planning and geotechnical components of the Scoping Study, with a focus on evaluating the potential open pit and underground operations. Entech has extensive base metals open pit and underground experience, having worked on multiple base metal projects previously with Mincor, Western Areas, Panoramic, Sandfire and Sirius/IGO.

DRA is responsible for all engineering aspects, compilation and final delivery of the Scoping Study. DRA has a significant global footprint with 18 offices across six continents and has delivered projects in more than 30 countries, including in South America. Key personnel assigned to the Scoping Study have broad experience in the successful development and construction of base metals projects in both Australia and Internationally.

Given the size of the maiden Mineral Resource Estimate, the Company now has three diamond rigs working on double shift to convert adequate Inferred Resources across to the Indicated category to allow the Scoping Study Production Targets and Project economics to be published under the ASX reporting guidelines.

The project sizing decision and required resource drilling are driving the timing of the completion of the Scoping Study. An updated MRE should be available by the end of 2020 and this resource is expected to allow the Scoping Study results to be released in mid Q1 2021.

#### **Scoping Study Base Case**

The Scoping Study Base Case is for the production of a high-grade nickel concentrate using a traditional nickel flotation process. Entech's mine engineering and pit optimisation work is being used to assist the Company in determining the optimal throughput for the Project and this will then be used to determine the mining sequence. Based on the MRE it is clear that a significant portion is within the top 200m from surface and this will greatly assist the Company in defining a project with strong open pit potential.

The metallurgical test work already completed on the Project consistently shows a quality nickel concentrate grading 16% nickel at a nickel recovery of +80% using a conventional flotation process<sup>1</sup>. Further samples from the Jaguar Central and Jaguar North deposits have been sent to Perth for testing to assist in the further refinement and definition of the concentrator flowsheet design.

The metallurgical test work results combined with the pit optimisation and mine design will be used by the Company and DRA Global to establish the proposed flowsheet and project layout to facilitate the estimation of capital and operating costs for the Project and to make an initial assessment of the project economics.

<sup>&</sup>lt;sup>1</sup> Refer to ASX announcements dated 21 February and 31 March 2020 for details of metallurgical results.



#### Pressure Oxidation (POx) Test work

As part of the Scoping Study, the Company is also investigating project value-adding opportunities including the conversion of the Jaguar concentrate to a high-quality nickel sulphate or nickel metal product. Nickel sulphate is the chemical form of nickel that is required by the growing EV battery industry and for the broader electrification of industry. The advantages of the addition of a hydrometallurgical add-on process to the base case project are numerous and include:

- High-quality nickel sulphate or nickel metal products have significantly higher payability value than the equivalent metal value in a nickel sulphide concentrate;
- Nickel metal will attract a price that is 100% of LME whilst nickel sulphate will attract 100% of LME plus or minus a premium/discount depending on the prevailing demand for the product. Centaurus expects rising demand for nickel sulphates based on the ongoing electrification of industry and growing demand for key battery metals;
- Higher metal recoveries can be achieved with focus on sulphide recovery and not concentrate specification;
- Trucking and shipping volumes are reduced; and
- Importantly, the combined residue from both the flotation and hydrometallurgical processes have orders of magnitude fewer sulphides present compared to a conventional sulphide concentrate project, further reducing the potential environmental impact of the surface storage of the tailings.

The key drivers to the potential viability of further value adding to the sulphide concentrate base case are premised on the Jaguar Project's location. The Project's location in Brazil provides it with a number of favourable attributes rarely accessible in other locations where nickel sulphide concentrates are currently produced including:

- Access to low cost clean energy Brazil runs at more than 80% renewable energy (mainly hydro and wind) and power costs of less than USD\$0.10/kWh are expected to be available to the Project which is significantly less than remote power costs generally seen in the Western Australian resource sector;
- Access to a relatively low-cost skilled labour market the Carajás Mineral Province hosts multiple world class mines within 200km of Jaguar;
- Access to low cost residue neutralisation material; and
- Good availability of high-quality fresh water within the Carajás Mineral Province.

These key drivers combined with a project that has a large MRE with the potential to sustain a long-life mine and nickel concentrate production are optimal for the viability of downstream nickel sulphate or nickel metal value adding options and will be explored extensively during the Scoping Study.

#### Test work results

Blended flotation concentrates were sourced from both the Onça Preta and Jaguar South Deposits. The POx feed concentrate is not constrained by requirements to meet target concentrate specification limits and therefore the maximum nickel sulphide recovery through flotation can be pursued. This results in a higher nickel (+5.6%), copper (+2.6%), cobalt (+63.5%) and sulphur recoveries being able to be achieved through the flotation process stage (as seen in Table 1 below<sup>2</sup>).

<sup>&</sup>lt;sup>2</sup> Refer to ASX announcement dated 24 September 2020 for details of metallurgical results.



#### Table 1 – The Jaguar Nickel Project concentrate recovery and grade from conventional flotation.

	Test ID	NI % Cu %		Co %		S %			
		Grade	Recovery	Grade	Recovery	Grade	Recovery	Grade	Recovery
JAG001	1								
Conventional Concentrate	CT6227	16.0	81.0	0.7	88.0	0.1	35.0	25.0	47.0
POx Feed Concentrate	CT6214	10.3	85.9	0.4	92.7	0.2	96.7	28.1	96.6
<u>OP001</u>									
Conventional Concentrate	CT6271	16.0	81.8	1.4	96.4	0.3	28.8	26.4	32.2
POx Feed Concentrate	CT6278	6.6	88.0	0.6	96.8	0.4	94.1	30.4	96.4
Combined JAG001 + OP001									
Conventional Concentrate	CT6227 + CT6271	16.0	81.4	1.1	92.2	0.2	31.9	25.8	39.6
POx Feed Concentrate	CT6214 + CT6278	8.1	87.0	0.5	94.8	0.3	95.4	29.5	96.5
Difference in Metal Recovery		5	.6	2	.6	63	3.5	5	5.9

The optimised nickel sulphide recovery concentrate ("POx Feed Concentrate") was then tested using both POx and Atmospheric Leaching. POx testing completed at ALS Metallurgy in Perth returned excellent results with extractions of nickel, copper, and cobalt all exceeding 99% (see Table 2).

As expected, the atmospheric results were not viable, and as such this route has been discarded.

#### Table 2 – The Jaguar Nickel Project metal extraction results for pressure oxidation (POx) and atmospheric leach test work.

			Metals Recovery					
Test	Solvent	Pressure	Temperature	Time	Ni %	Cu %	Co %	S %
Atmospheric	H2SO4	101 kPa	95C	24 hrs	53.1	56.5	18	50.1
Pressure (POx)	H2SO4	3,000 kPa	220C	2 hrs	99.1	99.5	99.8	96.9

#### **Environmental Approval Process**

The Environmental Impact Assessment (EIA/RIMA) is the key environmental approval document required to be lodged with the Pará State Environmental Agency (SEMAS). The Company is targeting the lodgement of this document by the end of Q2 2021 and is currently on track to achieve this.

The environmental approval process is being overseen by the Company's Country Manager, Mr Bruno Scarpelli, who led the successful environmental licencing of the Company's Jambreiro Iron Ore Project and who was previously also part of the Vale team who licenced the world class Salobo Copper Gold Project and the enormous S11D Iron Ore Project, both located in the Carajás Mineral Province.

In order to complete the EIA/RIMA, the Company has been collecting wet and dry season environmental data (flora, fauna, water, river flow, air quality and noise) as well as social data. 90% of the wet season campaigns have been completed with the remaining wet season data to be collected in November and December this year. Dry season data collection has been ongoing over the last couple of months and has recently been completed.

The lodgement of the EIA/RIMA also requires waste and tailings management work to be completed to prefeasibility study standard and as such, work in this area will be completed in the first half of 2021, allowing lodgement of the EIA/RIMA by the middle of 2021.

To date no environmental issues have been identified from the wet and dry season survey work.

#### **Power and Power Line Route**

The Company has been assessing a number of power line routes for the supply of power to the Project. A 230kV sub-station is located at Vale's Onça Puma Ferronickel operation, 15km from the Project, whilst a 138kV sub-station is located on the outskirts of the Tucumã township, 40km from the Project.



After assessment of the high-level capital costs and approvals process for each option, the Company has decided to pursue grid access from the 138kV sub-station at Tucumã. Once this was determined a number of potential power line routes from this sub-station to the Project site were investigated. The preferred route has now been selected to allow the approvals work in relation to this route to be undertaken.

80% of all of Brazil's power is generated from renewable energy sources, principally hydro generation. As a result, power costs in Brazil are low, with Centaurus likely to be able to source power for less than US\$0.10/kWh. This low power cost is expected to facilitate low processing costs for the Company's proposed nickel concentrate flotation circuit.

#### **SUDAM Tax Incentive Program**

The Company has reviewed the likely tax incentives available to the Company as a result of being located in the jurisdiction of the Superintendence for Development of the Amazon (SUDAM). It appears that Centaurus presently meets all of the criteria to be able to secure an effective income tax rate of 15% for the first 10 years of the Jaguar Project but application can only be made for the program once the Project is operational, which is currently targeted for the end of 2024.

# JAMBREIRO IRON ORE PROJECT

The Company's 100%-owned Jambreiro Project, located in south-east Brazil (Figure 10), represents a strategic asset in the Brazilian domestic iron ore and steel sector, particularly with the premium pricing that exists in the market for high-grade ore (+65% Fe) such as that which could be produced at Jambreiro.

Centaurus completed the Pre-Feasibility Study (PFS) in July 2019, with the key financial and technical outcomes announced to the market on 5 July 2019. The 1Mtpa start-up project PFS outlined a A\$59.8 million development, life-of-mine revenues of A\$1.05 billion and EBITDA of A\$533 million over its initial 18-year life to deliver a A\$114.9 million post-tax NPV<sub>8</sub> and IRR of 32%.

The PFS was based on the JORC 2012 Proven and Probable Ore Reserves estimate of 43.3Mt grading 29.1% Fe, which was also released to the market on 5 July 2019. The Ore Reserve delivers 17.9Mt of high-grade (65% Fe), low-impurity (4.3% SiO<sub>2</sub>, 0.8%  $Al_2O_3 \& 0.01\%$  P) sinter product to support the initial 18-year mine life once operations commence.

The Jambreiro Project's potential economics have continued to improve since the July 2019 PFS was completed. Revised PFS project economics were released to the market in the June quarterly on 29 July 2020, updated for latest capital costs for the modularised plant from CDE Global and current foreign exchange rates. Since this time potential project economics have continued to improve with the increase in global iron ore prices and the further decline in the Brazilian Real exchange rate to the US dollar.

Even with the potential improved economics, the completion of a suitable off-take is required in order for the Company to advance financing discussions for the Project. Consequently, until offtake is advanced to a satisfactory stage to support financing, any development decision in respect to the Project will continue to be deferred though other value realisation options continue to be assessed.





Figure 10: Jambreiro Iron Ore Project Location

## **ITAPITANGA NICKEL-COBALT PROJECT**

During the Quarter, the Earn-in Agreement previously entered into with Simulus was terminated returning control of the Project to Centaurus. A review of value adding opportunities for this Project will now be undertaken given the Company's focus on the Jaguar Nickel Sulphide Project.

# CORPORATE

#### **Cash Position**

At 30 September 2020, the Company held cash reserves of A\$26.9 million.

#### **COVID-19** Response

Centaurus continues to maintain stringent health and safety protocols to protect its workers, their families and the wider community while at the same time maintaining business continuity.

These protocols include regular COVID-19 testing, revised working arrangements, supply of suitable PPE and social distancing practices as well as making a strong contribution to the local municipal health services of Tucumã and São Félix do Xingu through the purchase of masks, gowns, hand sanitiser and COVID-19 test kits to better equip them for the delivery of health services in these communities.

To date, COVID-19 has had relatively minimal impact on the Company's operations and the tight protocols adopted by the Company have been highly effective in managing the risk of transmission.

During the Quarter, drilling has been able to be ramped up again as a result of the strong protocols adopted by the Company in relation to COVID-19. At Quarter end, the Company had 5 rigs on site to support the 75,000 metre drill program targeted for completion over the next 15 months.

#### \$25.5M Capital Raising

During the Quarter, Centaurus raised \$25.5 million under an institutional capital raising to underpin its aggressive exploration and resource expansion drill program at the Jaguar Project and fast-track studies aimed at advancing the globally significant nickel project towards development as rapidly as possible.



There was very strong demand for the institutional share placement from a number of Australian and international institutional investors, including the highly experienced Canadian-based resource investor Dundee Goodman Merchant Partners, which invested \$7.0 million on behalf of its parent company in the placement. Institutional bidding under the placement significantly exceeded the \$25.5 million placement amount and bids were scaled to accommodate the strong demand.

The proceeds of the capital raising have put Centaurus in a strong position to accelerate drilling activity on site while also simultaneously funding ongoing Scoping Study and Pre-Feasibility Study work in order to maintain and increase the significant exploration and development momentum built up in recent months.

Under the placement, the Company issued a total of 60,714,286 shares at \$0.42 under one tranche. The shares were issued under the Company's existing placement capacity under ASX Listing Rule 7.1 (34,559,292 shares) and 7.1A (26,154,994 shares).

Sprott Capital Partners and Euroz Securities were the Joint Lead Managers and Bookrunners to the Placement.

#### **Transfer of Jaguar Mining Lease Application**

Subsequent to the end of the Quarter, the formal transfer of the Mining Lease Application covering the Jaguar Project from Vale Metais Básicos S.A. ("Vale") to Centaurus' Brazilian subsidiary, Aliança Mineração Ltda ("Aliança"), was completed. The transfer was recently gazetted in Brazil's Official Federal Gazette – *Diário Oficial da União*.

The Company is now well placed to lodge a revised PAE (*Plano de Aproveitamento Económico*) with Brazil's National Mining Agency (ANM) as soon as the Jaguar Scoping Study, scheduled for completion in Q1 2021, is available. The revised PAE, once approved, will underpin the grant of the Jaguar Mining Lease.

#### Shareholder Information

The Company's capital structure at 30 September 2020, following the completion of the \$25.5 million capital raise outlined above, is as follows:

#### **Quoted Securities**

Capital Structure	Number
Fully paid ordinary shares (CTM)	325,857,160
Listed options, exercise price \$0.18, expiry date 31 May 2021 (CTMOC)	28,940,040
Top 20 Shareholders	59%
Directors and Management Shareholding of Listed Securities	4%

#### Unquoted Options

The following table shows a summary of the unquoted options on issue at Quarter end.

Expiry Date	<b>Exercise Price</b>	Vested	Unvested
31/05/21	\$0.210	1,233,335	-
31/05/22	\$0.180	116,667	-
31/05/22	\$0.225	2,233,335	-
31/05/22	\$0.378		1,400,000
31/05/23	\$0.180	116,667	
31/05/23	\$0.392		1,400,000
31/12/23	-	-	3,952,402
31/05/24	\$0.180	-	233,334
31/05/24	\$0.405		1,400,000
		3,700,004	8,385,736



#### Unquoted Performance Rights

During the Quarter, the 6 million Performance Rights previously on issue to Terrativa Minerais SA were cancelled. There are now no Performance Rights on issue at Quarter end.

This Quarterly Activities Report is authorised for release by the Managing Director, Mr Darren Gordon.

DARREN GORDON MANAGING DIRECTOR

#### **Competent Person's Statements**

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.

The information in this report that relates to the new June 2020 Jaguar Mineral Resources is based on information compiled by Mr Lauritz Barnes (consultant with Trepanier Pty Ltd) and Mr Roger Fitzhardinge (a permanent employee and shareholder of Centaurus Metals Limited). Mr Barnes and Mr Fitzhardinge are both members of the Australasian Institute of Mining and Metallurgy. Mr Barnes and Mr Fitzhardinge have sufficient experience of relevance to the styles of mineralisation and types of deposits under consideration, and to the activities undertaken to qualify as Competent Persons as defined in the 2012 Edition of the Joint Ore Reserves Committee (JORC) Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves. Specifically, Mr Fitzhardinge is the Competent Person for the database (including all drilling information), the geological and mineralisation models plus completed the site visits. Mr Barnes is the Competent Person for the construction of the 3-D geology / mineralisation model plus the estimation. Mr Barnes and Mr Fitzhardinge consent to the inclusion in this report of the matters based on their information in the form and context in which they appear.

The information in this report that relates to Jambreiro Mineral Resources is based on information compiled by Roger Fitzhardinge who is a Member of the Australasian 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 was the Senior Resource Geologist of BNA Mining Solutions, independent resource consultants engaged by Centaurus Metals, at the time when the Mineral Resource estimate was first completed. Roger Fitzhardinge and Volodymyr Myadzel have sufficient experience which is relevant to the style of mineralisation and type of deposit under consideration and to the activity which they are 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'. 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.

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 Australian Institute of Geoscientists. Beck Nader is the Managing Director of BNA Mining Solutions and is a consultant to Centaurus.

Beck Nader 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'. Beck Nader consents to the inclusion in the report of the matters based on his information in the form and context in which it appears.



# Additional Information Required by LR5.3.3

#### **Brazilian Tenements**

Tenement	Project Name	Location	Interest	
831.638/2004	Canavial	Minas Gerais	100%	
831.639/2004	Canavial	Minas Gerais	100%	
831.649/2004	Jambreiro (Mining Lease)	Minas Gerais	100%	
833.409/2007	Jambreiro (Mining Lease)	Minas Gerais	100%	
834.106/2010	Jambreiro (Mining Lease)	Minas Gerais	100%	
831.645/2006	Passabém	Minas Gerais	100%	
830.588/2008	Passabém	Minas Gerais	100%	
833.410/2007	Regional Guanhães	Minas Gerais	100%	
851.068/2016	Salobo West	Pará	Nil <sup>(1)</sup>	
856.392/1996	Jaguar (Mining Lease Application)	Pará	100%	
850.130/2013	Pebas	Pará	100%	
850.475/2016	Itapitanga	Pará	100%	

 The Company agreed to divest the Salobo West tenements to Vale as part of the acquisition of the Jaguar Project Nickel Sulphide Project. During the Quarter the final Salobo West Exploration Licence Application was granted to the Company. At Quarter end the Company is in the process of transferring this granted EL to Vale as part Jaguar transaction.

#### **Australian Tenements**

Tenement	Project Name	Location	Interest
EPM14233	Mt Isa	Queensland	10%(2)

2. Subject to a Farm-Out and Joint Venture Exploration Agreement with Summit Resources (Aust) Pty Ltd. Summit has earned a 90% interest in the Project. Aeon Metals Limited has acquired 80% of Summit's Interest giving them a total interest of 72% of the tenement.