



Developing a globally significant nickel project for a clean energy future

# MARCH 2023 QUARTERLY ACTIVITIES REPORT

*Initial results from pilot plant testwork support the ability of the Jaguar Project to produce a battery-grade nickel sulphate product; Exceptional high-grade intercept of 20.4m at 3.94% Ni from the deepest hole drilled to date* 

#### 28 April 2023

## JAGUAR NICKEL SULPHIDE PROJECT

- Strong results from Jaguar Pilot Plant testwork support the pathway to produce a battery-grade nickel sulphate product, with key results to date including:
  - High leach extraction of nickel at 98.6%.
  - Very efficient zinc/calcium recovery in solvent extraction (SX) circuit (D2EPHA). Over 99% of zinc and calcium extracted from the leach solution with minimal losses of nickel (0.8% nickel).
  - > A high-purity zinc hydroxide product can be produced for sale to benefit overall project economics.
- The pilot work will continue through to the end of April, with process design for the refinery circuit to follow upon receipt of all key process data from the pilot.
- The DFS delivery date has been revised to be Q4 2023 and the Final Investment Decision (FID) now scheduled for Q3 2024.
- Outstanding intercept of 20.4m at 3.94% Ni from 612.7m, including 9.5m at 5.59% Ni from 612.7m, returned from JAG-DD-22-445 at Jaguar South, the deepest hole drilled at the Jaguar Project to date.
- Other strong, high-grade results received from step-out drilling at the Onça Preta (OP) and Jaguar South (JS) deposits include:
  - 42.7m at 0.98% Ni from 511.7m, incl. 4.1m at 2.42% Ni in JAG-DD-22-462 (OP)
  - 9.0m at 2.21% Ni from 599.0m in JAG-DD-22-460 (JS)
  - > 24.4m at 0.82% Ni from 507.6m, incl. 4.2m at 1.58% Ni in JAG-DD-22-507 (OP)
  - 27.0m at 1.25% Ni from 387.0m, incl. 12.0m at 2.27% Ni in JAG-DD-22-556 (JS)
  - > 25.2m at 0.99% Ni from 559.3m, incl. 5.0m at 1.51% Ni in JAG-DD-22-544 (OP)
  - > 15.0m at 1.76% Ni from 500.0m, incl. 9.0m at 2.63% Ni in JAG-DD-22-544 (OP)
- Step-out drilling completed after the November 2022 MRE cut-off has identified a new high-grade shoot at Jaguar North, with multiple high-grade intersections along a strike of around 200m outside of the November 2022 MRE and at the eastern limit of the Jaguar North Deposit, including 11.1m at 4.06% Ni from 97.0m.
- Several key personnel appointments have been made to support the DFS delivery and future Front-End Engineering & Design (FEED) work.

## CORPORATE

Cash at 31 March 2023 of \$23.0 million.

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# **JAGUAR NICKEL PROJECT**

The Jaguar Nickel Sulphide Project is located in the world-class Carajás Mineral Province of northern Brazil (Figure 1).





## DEFINITIVE FEASIBILITY STUDY (DFS), PROJECT DEVELOPMENT AND INFRASTRUCTURE INITIATIVES

Significant activity was progressed in respect to the DFS, project development initiatives and future infrastructure access during the quarter.

Of particular note, was the highly encouraging preliminary results received from the pilot plant testwork program at ALS Metallurgy in Perth, reinforcing the quality of the Jaguar Project and supporting its potential to achieve excellent nickel recoveries and ultimately deliver a battery-grade nickel sulphate product for the rapidly growing Electric Vehicle (EV) market.

Notwithstanding these excellent results, a delayed start to the pilot testwork program will see this program continue until the end of April, resulting in a delay to the important process flowsheet design for the refinery circuit. In light of this, the completion schedule for the Definitive Feasibility Study (DFS) is now planned for late Q4 2023, with a Final Investment Decision (FID) scheduled for Q3 2024.

The DFS activities detailed below are also reflected in Exploration & Evaluation expenditure for the quarter.



#### Mining

All inputs for the DFS optimisation runs were finalised during the Quarter, including dilution of the updated ore model, geotechnical parameters and mining and explosives pricing. Optimisation runs have been undertaken for a range of scenarios to assess the impact of nickel price and mining fleet selection on the potential pit size as well as to provide information for the exploration team to target future drill programs.

The pit optimisation shells selected for open pit design for the DFS show a significant growth in mining inventory compared to the Scoping Study and reflect the success of the exploration program undertaken since the Scoping Study was completed. Generally speaking, infill drilling has resulted in the separate Jaguar pits coalescing into a single pit including each of the deposits. Much of the mineralisation previously below the Scoping Study pits and considered as an underground target now lies within the optimised pit shells.

Given the growth in the mining inventory seen in the pit optimisations, the DFS for the Jaguar Project is being prepared solely on the basis of open pit mineralisation.

#### **Metallurgy & Pilot Plant Testwork**

#### Mineralogy

Centaurus has completed comprehensive testing and analysis of the mineralogy of the Jaguar Nickel Project as part of which 3km of core, drilled by Centaurus, was selected for mineralogical testing. The core was selected from geologically important areas across the entirety of the resource base of the Project, including Jaguar South, Jaguar Central, Jaguar West, Jaguar Central North, Jaguar North, Jaguar North-East, Onça Preta and Onça Rosa.

In addition to testing the geochemistry, 136 mineralogical composites were analysed by X-Ray Diffraction (XRD) and optical mineralogy. The details of the origin of the core are illustrated in Table 1 while Figure 2 outlines the average sulphide mineralogy of the ore zones.

	Nove	ember 202	Mineralogy			
	Mt	%Ni	Ni t	% Ni t	Number of Samples	Metres Analysed
Jaguar South	35.8	0.91	327,000	34.5	91	1,091
Jaguar Central	12.5	0.81	100,400	10.6	54	837
Jaguar North	3.2	1.15	36,600	3.9	15	180
Jaguar Central North	14.2	0.62	88,100	9.3	13	149
Jaguar North-East	16.8	0.75	126,200	13.3	19	244
Jaguar West	8.7	0.72	63,100	6.6	23	205
Onça Preta	14.2	1.23	173,900	18.3	23	190
Onça Rosa	1.8	0.98	18,600	2.0	9	69
Tigre	2.0	0.77	15,100	1.6	-	-
Total	109.2	0.87	948,900	100.0	247	2,965

Table 1 – Jaguar Nickel Pro	iect Mineralogy Origins
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Figure 2 – Average Sulphide Mineralogy of the Jaguar Nickel Project's Ore Zones



The mineralogy work has provided significant understanding of the ore zones at Jaguar, including:

- The distribution of ore hardness across ore zones;
- The relative proportions of nickel sulphides (millerite, pentlandite or violarite);
- The proportions of recoverable nickel sulphides from the ore zones;
- The average mineral grain size and associations of the target minerals;
- Important geo-metallurgical relationships (flotation metal and mass recovery expectations); and
- For Jaguar ore zones, nickel sulphide recovery is independent of nickel head grade.

From this work Centaurus has developed a detailed understanding of the ore types at the Jaguar Project, with how to best process them and the resultant concentrate quality produced.

Of particular importance for the concentrator circuit is the determination of sulphide nickel (which is recoverable by flotation). Figure 3 illustrates the sulphide nickel to total nickel relationship for the Jaguar and Onça deposits. There is a consistent background of non-sulphide nickel across the different deposits and, as such, the higher the total nickel grade the lower proportion of non-sulphide nickel losses and the higher nickel flotation recovery that will be achieved.



#### Figure 3 – Total Nickel to Sulphide Nickel Relationship



### Flotation Testwork

Extensive flotation testwork has been completed on the Jaguar nickel sulphide ore, with over 800kg of high-quality concentrate produced for feed to the Jaguar Pilot Plant. Variability composites were also prepared and tested. The flotation work has provided an extensive geo-metallurgical understanding for optimisation of the mining schedule.

The testwork and geo-metallurgical analysis of the data has defined the following parameters:

- Concentrate mass recovery
- Nickel sulphide recovery
- Copper recovery
- Sulphur recovery
- Zinc recovery
- Cobalt recovery
- Ore hardness parameters

From the flotation testwork, **Centaurus estimates that it will be able to recover approximately 94% of the sulphide nickel processed to a concentrate (which is approximately 78% of the total nickel at the average head grade in the MRE).** 

The 800kg of bulk concentrate used as feed for piloting of the refinery had the following product specification (Table 2).

#### Table 2 – Pilot Bulk Concentrate Sample Analysis

Ni (%)	Cu (%)	Co (%)	Zn (%)	AI (%)
11.2	0.72	0.31	3.07	0.44
Cl (%)	As (%)	F (%)	Fe (%)	K (%)
<0.01	<0.01	<0.01	30.3	0.13
MgO (%)	Fe/MgO	Pb (%)	S (%)	P (%)
2.56	11.9	0.05	36.7	0.42

#### Pilot Plant

Centaurus' piloting program for the Jaguar Project was developed to provide detailed chemistry and process engineering data for the DFS and future front-end engineering design (FEED) requirements, as well as to ensure a high-quality nickel product can be achieved for marketing and offtake discussions.

The pilot program will also confirm the by-products that can be produced from the Jaguar process flowsheet so that all viable revenue streams from Jaguar can be considered in the project economics of the DFS.

The Pilot Plant testwork commenced in January 2023 (at ALS Metallurgy in Balcatta, Western Australia) when the pilot facilities were made available to Centaurus following extensions of piloting work programs of other companies in the piloting queue.

The scope of the Refinery piloting was split into four phases of work as follows:

- Phase 1: Concentrate feed preparation, pressure leaching, and copper solvent extraction.
- Phase 2: Calcium and zinc removal via solvent extraction.
- Phase 3: Cobalt/magnesium and nickel solvent extraction circuits.
- Phase 4: Nickel sulphate crystallisation plus zinc and cobalt hydroxide precipitate production.

Phase 1-3 have been completed with Phase 4 nearing completion.



#### Phase 1

Phase 1 treated the flotation concentrate, the specification of which is outlined above in Table 2. The flowsheet included oxidative pressure leaching (POX) in an autoclave with cooling by flash recycling, primary neutralisation, copper solvent extraction and secondary neutralisation.

Phase 1 of the pilot plant performed well and generated extensive chemistry and engineering data for the completion of the process design of the refinery, as planned. Of note were the following observations and results:

- The established flowsheet was able to produce high extractions continuously.
- The extractions of nickel, copper, zinc, and cobalt sulphides were better than anticipated at 98.6%, 96.6%, 95.6% and 60.8% respectively.
- Only 45% of the sulphides need to be oxidised to achieve the metal extractions which will translate into reduced oxygen consumption and acid generation and savings in neutralisation costs.
- A 3.5-hour retention time was achieved which was better than the 4-hour leach previously indicated from batch testwork.
- The thickening and filtration design data provided better than expected settling/filtration rates and solute recovery.

Further bench scale testwork has been completed by ALS on the pilot feed concentrate to positively verify the scale up relationship between the bench scale tests and the results achieved in continuous piloting. This provides the Company with confidence in using small-scale batch testing for concentrate variability.

#### Phase 2 & 3

#### Phase 2 & 3 of the pilot work defines the **solvent extraction requirements** of the flowsheet.

Phase 2 was designed to extract zinc (for a by-product revenue stream) and soluble calcium from Phase 1 leach solution with minimal nickel loss, whilst Phase 3 was designed to initially extract cobalt (again for a by-product revenue stream) and magnesium followed by the purification of the nickel solution to produce nickel sulphate.

From the Phase 2 solvent extraction work, three product/waste streams were produced:

- 1. A raffinate primarily containing nickel/cobalt/magnesium/manganese;
- 2. A zinc strip solution; and
- 3. A calcium strip solution for waste deposition.

The Phase 2 piloting of zinc and calcium solvent extraction was completed using D2EPHA extractant and a **solvent** extraction circuit configuration that was successful in extracting over 99% of the zinc and calcium whilst only losing less than 0.8% of the nickel (Table 3).

Solution	Ca (mg/L)	Co (mg/L)	Mg (mg/L)	Mn (mg/L)	Ni (mg/L)	Zn (mg/L)
Product to Phase 3 Future Testing	7	772	2940	54	37670	3
Zinc Product Solution	382	<1	0.1	0.6	0.3	43290

#### Table 3 – Phase 2 Product Average Solution Concentrations

The **test work shows that a high purity zinc hydroxide product can be generated** providing an additional revenue stream not considered in prior economic assessments of the project. The results from Phase 2 confirmed the initial laboratory scale batch test work results.

Phase 3 was designed to extract cobalt and magnesium from the Phase 2 raffinate to allow production of a cobalt hydroxide product, followed by the purification of the nickel solution to produce nickel sulphate. Phase 3 was successfully completed during March.



### Phase 4

Phase 4 of the pilot is nearing completion.

The overall pilot process work will deliver all necessary data for the completion of the important refinery process design for the DFS as well as producing battery grade nickel product for marketing and offtake negotiations.

### **Process Plant Engineering**

The Processing Facilities comprise two sections.

- 1. The Concentrator Circuit which includes crushing, grinding and flotation to produce a sulphide concentrate that will become the feed to a refinery (POX + Solvent Extraction (SX) Circuits); and
- 2. The Refinery Circuit which extracts the metals from the concentrate to produce final products.

Capital pricing for major components of the Concentrator Circuit was received during the December and March Quarters with technical and commercial evaluations well progressed by the end of March. Material Take Off for the earthworks, structural steel and concrete were nearing completion at quarter end with pricing planned in the June quarter.

With the conclusion of the pilot testwork program and receipt of preliminary testwork data, sufficient information is now available to further progress the design of the Refinery Circuit of the plant, including the process design criteria, process flow diagrams and to commence sizing equipment for pricing.

Requests for Pricing (RFP) have been issued for some major components of the Refinery where sufficient information was available prior to the completion of the pilot program. The packages for the oxygen plant, pressure oxidation autoclaves and crystalliser have been issued.

RFPs for the construction of the IWL (tailings storage facility) and POX Residue dam have also been issued.

#### Infrastructure

Early works to facilitate the construction of the project will include the upgrade of up to 60km of gravel roads, drainage culverts and two bridges between the townships of Ourilândia do Norte and Tucumã and site. The work proposed will allow all freight to and from site to bypass both the townships and minimise disturbance to the communities. The environmental licenses were granted by São Félix do Xingu and Ourilândia do Norte, with the assessment by Tucumã environmental department progressing well.

Geotechnical drilling and sampling along the road corridor were completed for the road upgrade work required for project construction to commence. Materials testing and engineering design of roads is nearing completion and will continue into the June quarter.

Initial design and licencing work commenced during the quarter to connect to the 230kV national grid rather than the 138kV state grid, including the assessment of the preferred route and interconnection options. The Project's power requirements for an integrated concentrator and refining circuit have resulted in the need to access the higher voltage line for the delivery of more stable and secure power than what would have been available with the 138kV line.

Permitting activities in the quarter for the power line included meeting with the Ministry of Mines and Energy, site inspections by SEMAS (the Pará state environmental authority) and commencement of site environmental surveys. Electrical engineering design for the route and construction options have commenced with the initial design application to be completed for submission in April.

#### **New Site Core Shed**

The Company has now completed relocation of all diamond drill core to the new Core Storage Shed located next to the site at the Tres Marias exploration camp.



### **ENVIRONMENTAL, SOCIAL & GOVERNANCE**

The Company's formal environmental, social and governance (ESG) policy framework – adopted in late 2021 – is based on the recommendations and principles of two key ESG authorities:

- Towards Sustainable Mining (TSM) Principles; and
- Principles of Responsible Investment (PRI).

TSM is the Mining Association of Canada's (MAC) commitment to responsible mining. It is a set of tools and indicators to drive performance and ensure that key mining risks at any operation are managed responsibly. The PRI defines responsible investment as a strategy and practice to incorporate environmental, social and governance factors in investment decisions and active ownership. The PRI is a global organisation that encourages and supports the uptake of responsible investment practices in the investment industry.

Centaurus' ESG program combines the TSM and PRI principles with actions to be implemented during exploration and operations. The following initiatives have already been undertaken by the Company to date at the Jaguar Project region:

- Over 95% of Centaurus employees working directly on the Jaguar Project live in the local town with their families, solidifying the relationship between the Company and the local community.
- More than 89% of the current project workforce, including employees and outsourced labour, are from the south-eastern region of the State of Pará.
- More than 80% of the Company's investment expenditure relating to exploration and development work at the Jaguar Project to date has been awarded to the local community through drilling contracts, engagement of consultants and services and purchase of equipment and supplies.
- During the collection of social data, more than 95% of the local community interviewed were in favour of the Project.
- Construction and operation of a plant nursery on site with a capacity of 10,000 seedlings.

#### Local Community Support Plan

The 2023 annual plan for the works to be done in partnership with the local governments was defined to prioritise domestic waste. This will involve a study of the average composition and volume of waste generated in the three municipalities around the Jaguar Project, with a view to then implementing three courses of actions:

- Educational campaign about reduction, re-use and segregation of domestic waste
- Composting centre for education; and
- Recycling association for paper, plastic and aluminium

#### **GHG Emissions**

Since January 2022, the Company has been monitoring Scope 2 greenhouse gas (GHG) emissions and sinks associated with the Jaguar Project. The main carbon sink is the standing forest. The main source of carbon from the Project at present is the combustion of diesel to run drill rigs.

#### **Plant Nursery**

During the quarter, the Company's plant nursery continued to be expanded with the propagation of new seedlings to build out the stocks of plants available (see Figure 4 below) for the revegetation of previously cleared farmland. This revegetation program commenced during the quarter.

The planned revegetation will allow new forest corridors to be established around the site to assist with the movement, protection and biodiversity of flora and fauna.



Figure 4 – Plant Nursery on Site at Jaguar.



#### **Community Consultation**

In December, presentations about the Jaguar Project were made to the Mayors and Councillors of the three municipalities in the region. These presentations were designed to prepare the local authorities for the official public hearings planned to be held as part of the environmental approvals process. The same presentations were made to the broader community in all three municipalities in January 2023.

#### **Construction Training Programs**

During the quarter, the Company further advanced the enrolment process for construction training with over 1,900 applications to date having been received from all over the region. The Company intends to train up to 1,500 people in various trades that will allow them to be able to seek employment once construction of the Jaguar Project commences. The training programs are intended to be conducted in conjunction with local industry training college (SENAI), with the general training programs to commence in H2 2023 and the more trade specific training programs to commence in H1 2024.

#### UPDATED MINERAL RESOURCE ESTIMATE

The Mineral Resource Estimate (MRE) announced on 10 November 2022 has been revised as a result of the Independent Resource Geologist's review of the resource block model. During the review, it was identified that 8 of the 113 domains in the block model were not allocated a resource classification category and as such no mineralisation was reported in the November 2022 MRE from these domains.

The resource classification attributes for these domains have been updated with the correct classification. All domains in question are located in the Jaguar South deposit. No additional drilling was considered in the update and there has been no change to the interpretation of the mineralisation domains or to the estimation of metals from the November 2022 MRE.

The updated MRE is **109.2Mt at 0.87% Ni for 948,900 tonnes** of contained nickel (Table 4). This represents an increase of 10,400t of contained nickel metal (or 1.1% of the MRE). The Company does not consider this a material change in accordance with ASX Listing Rule 5.8. There has been no change to the material information used to estimate the MRE and the detailed technical discussion and supporting information (required under ASX Listing Rules 5.8.1 and 5.8.2) remains the same as reported in the ASX Announcement of 10 November 2022.



Table 4 – The Revised Jaguar November 2022 JORC Mineral Resource Estimate (MRE)

		Grade					Containe	d Metal	
Classification*	Mt	Ni %	Cu %	Co ppm	Zn %	Ni	Cu	Со	Zn
Measured	14.0	1.06	0.07	388	0.48	149,400	9,700	5,500	67,500
Indicated	72.6	0.81	0.06	237	0.31	588,500	42,600	17,200	223,600
Measured & Indicated	86.6	0.85	0.06	262	0.34	737,800	52 <i>,</i> 500	22,700	291,100
Inferred	22.6	0.93	0.09	289	0.24	211,000	19,800	6,500	53,800
Total	109.2	0.87	0.07	268	0.32	948,900	72,300	29,200	344,900

\* Within pit limits cut-off grade 0.3% Ni; below pit limits cut-off grade 0.7% Ni; Totals are rounded to reflect acceptable precision, subtotals may not reflect global totals. All oxide material is considered as waste and therefore not reported as Resources.

The Jaguar MRE covers the six Jaguar deposits, two Onça deposits and the Tigre Deposit, as outlined in Table 5.

#### **DRILLING & EXPLORATION PROGRAMS**

Drilling at the Jaguar Nickel Sulphide Project during the March 2023 Quarter has continued to grow and de-risk the project, with step-out and deeper drilling at key deposits confirming the potential for further significant Resource growth towards one million tonnes of contained nickel metal and beyond.

#### Jaguar South

The deepest hole completed by the Company to date on the Project, JAG-DD-22-445 on section 478300mE, reached a final depth of 771m. This hole intersected **20.4m at 3.94% Ni** from 612.7m with the intersection being at the base of the November 2022 MRE and more than 120m down-dip from the previous deepest hole on section JAG-DD-22-223 (**16.4m at 1.34% Ni**).

This deep, high-grade intersection included an outstanding higher-grade intercept of **9.5m at 5.59% Ni** from 612.7m.

Further, drill-hole JAG-DD-22-487, the second deepest hole completed at Jaguar South, was collared 90m to the east of JAG-DD-22-445 on section 478390mE and intersected **11.0m at 1.43% Ni** from 574.0m. Hole JAG-DD-22-460, on section 478270mE, which is 30m to the west of JAG-DD-22-445, also returned an outstanding high-grade intersection at depth of **9.0m at 2.21% Ni** from 599.0m.

This drilling confirms the presence of consistent high-grade mineralisation across multiple sections over at least 180m of strike and at depths greater than 600m from surface.

DHEM conductor plates suggest the strike of the high-grade shoot could be up to 300m long and extend for at least 200m below the current deepest drilling. The Jaguar Deeps drill program, which is scheduled to commence in May, will target this high-grade shoot.

The Jaguar South Deposit is the largest deposit at the Jaguar Project, hosting an MRE of **34.6Mt at 0.92% Ni** for more than **316kt of contained nickel**. The base of the November 2022 MRE continues to be constrained by the depth of drilling and ongoing step-out drilling continues to confirm that the mineralisation **remains open at depth and along the +800m strike length of the deposit in both directions** (see Figure 6).

Furthermore, the Jaguar South deposit continues to grow to the west. Step-out hole JAG-DD-22-556, on section 477725mE, which is located 575m west of JAG-DD-22-445, intersected **27.0m at 1.25% Ni** from 387.0m, including **12.0m at 2.27% Ni** from 402.0m (Figure 5).

This intersection is the first time that high-grade material has been intersected within the Jaguar South Deposit to the west of a north-south dolerite dyke, with the area immediately along strike to the west remaining untested. DHEM surveys have been carried out to investigate the potential for a new high-grade shoot in the area that could expand the resource to the west.

Full details of the assay results from Jaguar South were provided in the Company's ASX Announcements dated 6 February and 29 March 2023.



# Figure 5 – The Jaguar South Deposit: Cross-Sections 478300mE and 477725mE showing existing drilling, DHEM conductor plates in dark blue and FLEM conductor plates in light blue.



Figure 6 – The Jaguar South Deposit with DHEM (darker blue) and FLEM (lighter blue) conductor plates overlaid on the Ground Magnetics Survey results (Analytic Signal).





#### Onça Preta

The deepest step-out hole completed at the Onça Preta Deposit (JAG-DD-23-544) intersected two consistent tabular semi-massive zones of high-grade nickel sulphides which returned **15.0m at 1.76% Ni** from 500.0m (including **9.0m at 2.63% Ni** from 504.5m) and **25.2m at 0.99% Ni** from 559.3m on section 476835mE. These intersections are around 100m down-dip from Hole JAG-DD-22-284, which intersected **22.7m at 1.47% Ni**, including **6.4m at 2.49% Ni** (Figure 7).

Step-out holes continue to be down-hole surveyed by the Company's EM survey team, with DHEM conductor plates generated from these deep holes extending up to 200m below the deepest drilling. Drilling will continue to target resource growth at depth to support future underground mining.

The high-grade nickel sulphide mineralisation intersected continues to confirm the current interpretation of the NNE plunge towards the Puma Layered Mafic-Ultramafic Complex, with vectoring of the drilling coming from DHEM conductor plates that extend up to 200m below the deepest drilling. The proposed Jaguar Deeps drill program, which is scheduled to commence in April, will target the Onça Preta high-grade shoot.

The Onça Preta Deposit is the highest-grade deposit at the Jaguar Project, with the November 2022 Mineral Resource Estimate (MRE) expanded to **14.2Mt at 1.23% Ni** for more than **173kt of contained nickel.** Now with 400m of strike and up to 700m of down-dip extension, the Onça Preta deposit demonstrates outstanding potential for significant ongoing resource growth.

Full details of the assay results from Onça Preta were provided in the Company's ASX Announcements dated 6 February and 29 March 2023.







#### Jaguar North Deposit

The Jaguar North Deposit represents the highest-grade of all the Jaguar deposits, with the November 2022 Mineral Resource Estimate (MRE) increased to **3.2Mt at 1.15% Ni** for **36.6kt of contained nickel.** Although it is one of the smaller deposits at the Jaguar Project, Jaguar North has the second highest resource grade behind only Onça Preta.

Step-out drilling completed after the November 2022 MRE cut-off has identified a new high-grade shoot at Jaguar North, with multiple high-grade intersections along a strike of around 200m outside of the November 2022 MRE and at the eastern limit of the Jaguar North Deposit. This includes an intersection immediately below the current planned pit limits of **16.5m at 1.23% Ni** from 170m in hole JAG-DD-22-555 on section 477290mE (Figure 8).

Significantly, **~200m to the east of section 477290mE**, drill hole JAG-DD-22-558 on section 477485mE intersected an **outstanding intersection of 11.1m at 4.06% Ni from 97.0m** (Figure 8).

This shallow high-grade intersection is located 50m east of the previous planned pit limits and is expected to contribute to additional resource growth and a possible extension of the Jaguar North pit to the east.

DHEM surveys have been carried out on the recent drilling and new step-out and extensional drilling has been planned to test this new high-grade shoot to the east towards the Jaguar Northeast Deposit.

Full details of the assay results from Jaguar North were provided in the Company's ASX Announcement dated 29 March 2023.

# Figure 8 – The Jaguar North Deposit: Cross-Sections 477290mE (left) and 477485mE (right) showing existing drilling, DHEM conductor plates in light blue.





#### Jaguar Northeast Deposit

The Jaguar Northeast Deposit now hosts an MRE of **16.8Mt at 0.75% Ni for more than 126kt of contained nickel**. The focus of drilling in the last part of 2022 was to upgrade all the in-pit Resources at Jaguar Northeast into the Indicated category.

Both resource growth and development drilling at Jaguar Northeast during the March Quarter has continued to confirm the current geological model as well as extending mineralisation below current limits with quality intersections such as **30.0m at 0.67% Ni** from 250.0m in JAG-DD-22-491 and **10.8m at 1.94% Ni** from 145.1m in JAG-DD-22-501 (Figure 9), which continue to confirm the quality of the mineralisation in terms of both width and grade.

The deposit remains open to the east and down-dip. DHEM and FLEM surveys are planned for Jaguar Northeast to drive resource growth at the deposit. To-date DHEM surveys have not been completed at Jaguar Northeast as no EM loop was previously set-up given the priority use of the EM equipment at other deposits. The loop has now been planned and the deepest drill-holes on selected sections have been cased and surveys will commence in the coming weeks.

New mineralisation intersected immediately outside of the current pit limits points to a possible extension of the Jaguar Northeast pit towards the west. Additionally, previous drilling along strike to the east has also extended the Jaguar Northeast mineralisation (see Figure 9 below).

Full details of the assay results from Jaguar Northeast were provided in the Company's ASX Announcement dated 6 February 2023.







#### Jaguar Central and Central North Deposit

New assay results were reported from in-fill drill holes that were not included in the November 2022 MRE upgrade. These holes include both resource development in-fill drilling, which continues to confirm the Jaguar geological and structural model, as well as resource step-out drilling which is expected to contribute to future resource growth.

In-fill drilling at Jaguar Central focused on upgrading shallow mineralisation into the higher confidence Measured Resource category to help de-risk the Resource and project. With its favourable geometry, the flat-lying high-grade shoot that forms part of the Jaguar Central mineralisation lends itself extremely well to extraction via a low-strip ratio starter pit.

Full details of the assay results from Jaguar Central and Central North were provided in the Company's ASX Announcement dated 29 March 2023.

#### **Continued Mineral Resource Growth**

The Company has optimised its drill contractor fleet and now has six diamond rigs and one RC rig on site. Drilling over the next 12 months will focus on the following work fronts:

- Resource Development, Step-out and Extensional Drilling Further drilling to contribute to continued
  resource growth, targeting previously untested areas within and around new pit designs that are currently
  considered waste. Drilling will also include follow-up of high-grade material that has been identified at or
  near the base of current pit optimisations, as well as in-filling areas of lower geological confidence to
  continue to build confidence in the model and help de-risk the Project.
- Jaguar Deeps Drilling New deeper drilling designed to step-out over 400m below the previous deepest drill holes at the Jaguar South and Onça Preta Deposits. Down-dip extension of these deposits are currently around 600m from surface, so successful drilling could potentially double the down-dip extent. The hydrothermal nature of the mineralisation at the Jaguar Project is understood to be similar to that seen at the Salobo Cu-Au Mine and points to a deep plumbing system which remains to be tested beyond current drill depths at Jaguar (Figure 10). The average drill-hole depth to date is only 230m, with less than 5% of diamond holes (30 out of a total of 601) completed to end-of-hole depths of more than 500m. All deep holes drilled to date have intersected stringer to semi-massive nickel mineralisation. The Jaguar Deeps drilling will be carried out using a directional drilling contractor and a 1,500m winch for the DHEM survey has been commissioned. The Jaguar Deeps program is expected to start in April.
- New Discovery Resource drilling Greenfields exploratory drilling to be undertaken using the RC rig across the Filhote, Fliperama and Twisters prospects, to be followed up using a diamond rig in the event that new discoveries are made.

All development drilling for geotechnical and metallurgical purposes required for the Definitive Feasibility Study (DFS) has been completed. The Company has a dual-track strategy of targeting continued resource growth at the Jaguar Project while at the same time further de-risking the project through in-fill and development drilling and advancing the DFS, which is expected to unlock further value and set the Company up with a very long-life Resource and Reserve base.





# **JAMBREIRO IRON ORE PROJECT**

The Company's 100%-owned Jambreiro Project, located in south-east Brazil (Figure 11) close to the Company's head office in the city of Belo Horizonte.







The Company has commenced the process to refresh all environmental licences required to develop the project. As part of this process, Supram (the Minas Gerais environmental agency) has advised that new wet and dry season environmental data will need to be collected to support a new Licence application given the age of the data used in the originally approved LI. The new data collection is expected to be completed by the end of June 2023, with the new application targeted for lodgement in July 2023. Approval is anticipated to be 12 months from lodgement.

The Company has also lodged the documentation to re-apply for all water permits necessary to operate the project. All water permits and environmental licences to build the Project were previously granted and should be granted again after the applications have been duly considered by the relevant agencies.

# CORPORATE

#### **New Appointments**

The Company made several key personnel appointments during the March Quarter to support the delivery of the DFS and future Front-End Engineering & Design (FEED) work. The appointments bring a wealth of additional experience in the resource sector to Centaurus and significantly add to the existing process engineering, metallurgy and hydrometallurgical experience within the group.

#### Mick Ryan – Project Manager

Mick brings **over 40 years' experience** to the project team in the mining industry in an **extensive array of operational, project & construction management and consulting metallurgist roles** covering a range of commodities and international locations. He has held project management roles in nickel, niobium and gold for Australian and International Projects and as a metallurgist he has been in the forefront of a number of large scale mining projects and process technologies, including flotation of base metals (Ban Phuc Vietnam, Red Dome QLD, Yackabindie WA, Oyu Tolgoi Mongolia and Kanyika Malawi), nickel laterite hydrometallurgy and refining (Murrin Murrin WA, NiWest WA, Syerston NSW, Ambatovy Madagascar and Weda Bay Indonesia) and chloride leach technologies. He heads up a diverse team of engineering professionals, consultants, and contractors to deliver the Jaguar Nickel Project feasibility study, engineering, and execution.

#### Sarah Mitchell – Consultant Metallurgist

Sarah brings to the team a wealth of metallurgical, project studies and commissioning management experience. With over 25 years' experience in metallurgy and process development for complex flow sheets in nickel, cobalt, copper, uranium and other metals, Sarah has been engaged to support the development of the refinery solvent extraction and nickel sulphate crystalliser flow sheet and design. Most recently, Sarah spent **four years as the Commissioning Manager for BHP with responsibility for commissioning of new processing facilities across Australia including the commissioning of the nickel sulphate crystalliser in Kwinana, Western Australia.** 

#### Barun Dutta – Engineering Manager

Barun has over 30 years' experience in senior leadership roles in engineering, project and asset management in Australia and internationally including engineering management on **project builds up to USD4.4B in South America** and operational asset maintenance responsibility for a 60ktpa nickel refinery in Madagascar using process equipment similar to that contemplated for Jaguar. Barun most recently worked for Newmont and is a Fellow of Engineers Australia.

#### Glenn Firth – Environmental and Compliance Specialist

Glenn has over **30 years' experience in environmental management** in mining operations, project studies and as a consultant with significant experience in the development, implementation and auditing of health, safety and environmental management systems in Australia and internationally. Glenn is an accredited Environmental Management Systems (ISO14001) auditor.



#### Richard Kelly – Project Engineer

Richard has over 20 years' experience in site project execution on owner and engineering teams including with Samsung at the Roy Hill Project and FMG's Solomon Hub. Richard brings **significant experience in project controls**, **logistics and contracts administration** to the team. For the past seven years Richard has managed site projects including tailings storage facility and sustaining capital projects at a gold mine in WA.

#### **Cash Position**

At 31 March 2023, the Company held cash reserves of A\$23.0 million.

#### **Shareholder Information**

The Company's capital structure as of 31 March 2023 is as follows:

#### **Quoted Securities**

Capital Structure	Number
Fully paid ordinary shares (CTM)	427,106,273
Top 20 Shareholders	71.0%
Directors and Management Shareholding	4.0%

#### Unquoted Options

Expiry Date	Exercise Price	Vested	Unvested
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
31/12/24	-	-	1,134,372
31/12/25	-	-	1,225,220
		5,702,403	3,759,592

#### Additional Information Required by Listing Rule 5.3.3

Brazilian Tenements - Previous	y Held

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%
856.392/1996	Jaguar (Mining Lease Application)	Pará	100%
850.475/2016	Itapitanga	Pará	100%
851.571/2021	Terra Roxa (Jaguar Regional)	Pará	100%
851.563/2021	Santa Inês (Jaguar Regional)	Pará	100%
850.071/2014	Curionópolis Project	Pará	100%
851.767/2021	Curionópolis Project	Pará	100%
851.768/2021	Curionópolis Project	Pará	100%
851.769/2021	Curionópolis Project	Pará	100%

#### Australian Tenements

Tenement	Project Name	Location	Interest	
EPM14233	Mt Isa	Queensland	10%(1)	

1. 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.



#### Listing Rule 5.3 Information

- 1. ASX Listing Rule 5.3.1: Exploration and Evaluation Expenditure during the Quarter was A\$8.9 million. Details of the exploration activities to which this expenditure relates are set out above.
- 2. ASX Listing Rule 5.3.2: There were no mining production and development activities during the Quarter.
- 3. ASX Listing Rule 5.3.5: Payments to related parties of the Company and their associates during the Quarter totalled A\$417k. These payments relate to non-executive directors' fees, executive directors' salaries and entitlements and payments to MPH Lawyers, a director related entity, for the provision of legal services.

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

### DARREN GORDON MANAGING DIRECTOR

				G	rade			Contained N	letal	
Deposit	Classification	Mt	Ni %	Cu %	Co ppm	Zn %	Ni	Cu	Со	Zn
	Indicated	28.5	0.87	0.05	199	0.13	247,800	13,500	5,700	37,400
Jaguar South	Inferred	7.3	1.08	0.06	258	0.09	79,100	4,800	1,900	6,500
	Total	35.8	0.91	0.05	211	0.12	327,000	18,000	7,600	44,000
	Measured	8.9	0.88	0.05	252	0.56	78,600	4,900	2,300	50,400
	Indicated	2.9	0.61	0.04	207	0.24	17,300	1,000	600	6,700
Jaguar Central	Inferred	0.7	0.68	0.05	210	0.19	4,500	300	100	1,200
	Total	12.5	0.81	0.05	239	0.47	100,400	6,200	3,000	58,400
	Indicated	2.7	1.14	0.17	383	1.19	30,900	4,500	1,000	32,200
Jaguar North	Inferred	0.5	1.19	0.23	387	1.16	5,700	1,100	200	5,600
	Total	3.2	1.15	0.18	383	1.19	36,600	5,600	1,200	37,800
	Indicated	10.2	0.61	0.04	189	0.62	62,000	3,600	1,900	63,500
Jaguar Central North	Inferred	4.0	0.66	0.04	197	0.44	26,100	1,700	800	17,600
	Total	14.2	0.62	0.04	191	0.57	88,100	5,300	2,700	81,100
	Indicated	13.3	0.71	0.09	269	0.50	95,100	11,700	3,600	66,100
Jaguar Northeast	Inferred	3.5	0.89	0.21	317	0.55	31,200	7,200	1,100	19,300
0	Total	16.8	0.75	0.11	279	0.51	126,200	18,900	4,700	85,400
	Indicated	7.8	0.72	0.03	168	0.13	56,200	2,300	1,300	9,800
Jaguar West	Inferred	0.9	0.75	0.04	157	0.05	6,900	300	100	400
	Total	8.7	0.72	0.03	167	0.12	63,100	2,600	1,500	10,200
	Measured	8.9	0.88	0.05	252	0.56	78,600	4,900	2,300	50,400
	Indicated	65.4	0.78	0.06	216	0.33	509,400	36,500	14,100	215,800
Jaguar Deposits	Inferred	16.8	0.91	0.09	252	0.30	153,400	15,400	4,200	50,600
	Total	91.2	0.81	0.06	226	0.35	741,300	56,800	20,600	316,800
	Measured	5.1	1.39	0.10	636	0.33	70,800	4,900	3,200	17,000
	Indicated	4.5	1.19	0.09	517	0.15	53,800	4,100	2,300	6,900
Onça Preta	Inferred	4.5	1.08	0.08	436	0.07	49,200	3,700	2,000	3,000
	Total	14.2	1.23	0.09	534	0.19	173,900	12,700	7,600	26,900
	Indicated	1.9	0.98	0.08	281	0.03	18,200	1,400	500	500
Onça Rosa	Inferred	0.04	0.92	0.05	304	0.02	400	20	10	10
-	Total	1.9	0.98	0.07	282	0.03	18,600	1,400	500	500
	Indicated	0.8	0.86	0.09	303	0.04	7,100	700	200	300
Tigre	Inferred	1.2	0.70	0.06	248	0.02	8,100	700	300	300
	Total	2.0	0.77	0.07	271	0.03	15,100	1,400	500	600
	Measured	14.0	1.06	0.07	388	0.48	149,400	9,700	5,500	67,500
1	Indicated	72.6	0.81	0.06	237	0.31	588,400	42,600	17,200	223,600
Jaguar MRE	Inferred	22.6	0.93	0.09	289	0.24	211,000	19,800	6,500	53,800
	Total	109.2	0.87	0.07	268	0.32	948,900	72,300	29,200	344,900

#### Table 5 – The Jaguar JORC Mineral Resource Estimate by Deposit

\* Within pit limits cut-off grade 0.3% Ni; below pit limits cut-off grade 0.7% Ni; Totals are rounded to reflect acceptable precision, subtotals may not reflect global totals. All oxide material is considered as waste and therefore not reported as Resources.

# Appendix 5B

# Mining exploration entity or oil and gas exploration entity quarterly cash flow report

Name of entity

Centaurus Metals Limited				
ABN		Quarter ended ("current quarter")		
40 009 468 099		31 March 2023		

Consolidated statement of cash flows		Current quarter \$A'000	Year to date (3 months) \$A'000
1.	Cash flows from operating activities		
1.1	Receipts from customers		
1.2	Payments for		
	(a) exploration & evaluation	(8,721)	(8,721)
	(b) development	-	-
	(c) production	-	-
	(d) staff costs	-	-
	(e) administration and corporate costs	(1,535)	(1,535)
1.3	Dividends received (see note 3)	-	-
1.4	Interest received	370	370
1.5	Interest and other costs of finance paid	-	-
1.6	Income taxes paid	-	-
1.7	Government grants and tax incentives	-	-
1.8	Other (provide details if material)	-	-
1.9	Net cash from / (used in) operating activities	(9,886)	(9,886)

2.	Cash flows from investing activities		
2.1	Payments to acquire or for:		
	(a) entities	-	-
	(b) tenements	-	-
	(c) property, plant and equipment	(959)	(959)
	(d) exploration & evaluation	(252)	(252)
2.2	Proceeds from the disposal of:		
	(a) entities	-	-
	(b) tenements	14	14
	(c) property, plant and equipment	-	-

ASX Listing Rules Appendix 5B (17/07/20) + See chapter 19 of the ASX Listing Rules for defined terms.

#### Appendix 5B Mining exploration entity or oil and gas exploration entity quarterly cash flow report

Con	solidated statement of cash flows	Current quarter \$A'000	Year to date (3 months) \$A'000
2.3	Cash flows from loans to other entities	-	-
2.4	Dividends received (see note 3)	-	-
2.5	Other (provide details if material)	-	-
2.6	Net cash from / (used in) investing activities	(1,197)	(1,197)

3.	Cash flows from financing activities
3.1	Proceeds from issues of equity securities (excluding convertible debt securities)
3.2	Proceeds from issue of convertible debt securities
3.3	Proceeds from exercise of options
3.4	Transaction costs related to issues of equity securities or convertible debt securities
3.5	Proceeds from borrowings
3.6	Repayment of borrowings
3.7	Transaction costs related to loans and borrowings
3.8	Dividends paid
3.9	Other (provide details if material)
3.10	Net cash from / (used in) financing activities

4.	Net increase / (decrease) in cash and cash equivalents for the period		
4.1	Cash and cash equivalents at beginning of period	34,048	34,048
4.2	Net cash from / (used in) operating activities (item 1.9 above)	(9,886)	(9,886)
4.3	Net cash from / (used in) investing activities (item 2.6 above)	(1,197)	(1,197)
4.4	Net cash from / (used in) financing activities (item 3.10 above)	-	-
4.5	Effect of movement in exchange rates on cash held	82	82
4.6	Cash and cash equivalents at end of period	23,047	23,047

5.	Reconciliation of cash and cash equivalents at the end of the quarter (as shown in the consolidated statement of cash flows) to the related items in the accounts	Current quarter \$A'000	Previous quarter \$A'000
5.1	Bank balances	381	94
5.2	Call deposits	22,666	33,954
5.3	Bank overdrafts	-	-
5.4	Other (provide details)	-	-
5.5	Cash and cash equivalents at end of quarter (should equal item 4.6 above)	23,047	34,048

Payments to related parties of the entity and their associates	Current quarter \$A'000
Aggregate amount of payments to related parties and their associates included in item 1	417
Aggregate amount of payments to related parties and their associates included in item 2	-
any amounts are shown in items 6.1 or 6.2, your quarterly activity report must include a tion for, such payments.	description of, and an
eration to Executive Directors of \$314,000 (which includes monthly salaries and award c	of 2022 short term incentives)
id to Non-Executive Directors of \$86,000	
	associates         Aggregate amount of payments to related parties and their associates included in item 1         Aggregate amount of payments to related parties and their associates included in item 2         any amounts are shown in items 6.1 or 6.2, your quarterly activity report must include a tion for, such payments.         eration to Executive Directors of \$314,000 (which includes monthly salaries and award or such payments)

Legal Fees paid to MPH Lawyers a director related entity \$17,000

7.	<b>Financing facilities</b> Note: the term "facility' includes all forms of financing arrangements available to the entity. Add notes as necessary for an understanding of the sources of finance available to the entity.	Total facility amount at quarter end \$A'000	Amount drawn at quarter end \$A'000
7.1	Loan facilities	-	-
7.2	Credit standby arrangements	-	-
7.3	Other (please specify)	-	-
7.4	Total financing facilities	-	-
7.5	Unused financing facilities available at qu	arter end	-
7.6	Include in the box below a description of each facility above, including the lender, interest rate, maturity date and whether it is secured or unsecured. If any additional financing facilities have been entered into or are proposed to be entered into after quarter end, include a note providing details of those facilities as well.		itional financing

8.	Estim	ated cash available for future operating activities	\$A'000	
8.1	Net ca	sh from / (used in) operating activities (item 1.9)	(9,886)	
8.2		ents for exploration & evaluation classified as investing es (item 2.1(d))	(252)	
8.3	Total r	elevant outgoings (item 8.1 + item 8.2)	(10,138)	
8.4	Cash a	and cash equivalents at quarter end (item 4.6)	23,047	
8.5	Unuse	d finance facilities available at quarter end (item 7.5)	-	
8.6	Total a	available funding (item 8.4 + item 8.5)	23,047	
8.7	Estimated quarters of funding available (item 8.6 divided by item 8.3)		2.27	
		the entity has reported positive relevant outgoings (ie a net cash inflow) in item δ se, a figure for the estimated quarters of funding available must be included in i		
8.8	If item	If item 8.7 is less than 2 quarters, please provide answers to the following questions:		
	8.8.1 Does the entity expect that it will continue to have the current level of net operating cash flows for the time being and, if not, why not?			
	8.8.2	Has the entity taken any steps, or does it propose to take any cash to fund its operations and, if so, what are those steps an believe that they will be successful?		
	8.8.3	Does the entity expect to be able to continue its operations ar objectives and, if so, on what basis?	nd to meet its business	

## **Compliance statement**

- 1 This statement has been prepared in accordance with accounting standards and policies which comply with Listing Rule 19.11A.
- 2 This statement gives a true and fair view of the matters disclosed.

Date: 28 April 2023

Authorised by: Darren Gordon – Managing Director (Name of body or officer authorising release – see note 4)

#### Notes

- 1. This quarterly cash flow report and the accompanying activity report provide a basis for informing the market about the entity's activities for the past quarter, how they have been financed and the effect this has had on its cash position. An entity that wishes to disclose additional information over and above the minimum required under the Listing Rules is encouraged to do so.
- 2. If this quarterly cash flow report has been prepared in accordance with Australian Accounting Standards, the definitions in, and provisions of, AASB 6: Exploration for and Evaluation of Mineral Resources and AASB 107: Statement of Cash Flows apply to this report. If this quarterly cash flow report has been prepared in accordance with other accounting standards agreed by ASX pursuant to Listing Rule 19.11A, the corresponding equivalent standards apply to this report.
- 3. Dividends received may be classified either as cash flows from operating activities or cash flows from investing activities, depending on the accounting policy of the entity.
- 4. If this report has been authorised for release to the market by your board of directors, you can insert here: "By the board". If it has been authorised for release to the market by a committee of your board of directors, you can insert here: "By the [name of board committee – eg Audit and Risk Committee]". If it has been authorised for release to the market by a disclosure committee, you can insert here: "By the Disclosure Committee".
- 5. If this report has been authorised for release to the market by your board of directors and you wish to hold yourself out as complying with recommendation 4.2 of the ASX Corporate Governance Council's *Corporate Governance Principles and Recommendations*, the board should have received a declaration from its CEO and CFO that, in their opinion, the financial records of the entity have been properly maintained, that this report complies with the appropriate accounting standards and gives a true and fair view of the cash flows of the entity, and that their opinion has been formed on the basis of a sound system of risk management and internal control which is operating effectively.