Sandfire

ASX Release

ASX:SFR

22 September 2021

# Maiden Ore Reserve for A4 Deposit and PFS confirms 5.2Mtpa Motheo Copper Project

## Highlights

- Maiden Probable Ore Reserve completed for the **A4 Deposit**, located 8km west of the Motheo Copper Mine in Botswana:
    - **9.7Mt at 1.2% Cu and 18g/t Ag for 114kt of contained copper metal and 5.7Moz of contained silver.**
- 85% of the contained copper in the updated A4 Mineral Resource announced on 21 July 2021 now classified as Ore Reserves.
- Ore Reserve confirms A4 as a high-grade source of additional ore feed for the Motheo Copper Mine, underpinning an expanded long-life 5.2Mtpa Production Hub.
- Sandfire will now move directly to a Definitive Feasibility Study (DFS) for the 5.2Mtpa Motheo Expansion, with the DFS expected to be completed in Q3 of FY2022.
- Pre-Feasibility Study (PFS) completed to inform the A4 Ore Reserve has indicated outstanding project economics from an expanded 5.2Mtpa mining operation compared to the initial 3.2Mtpa base case development scenario (see ASX Announcement 1 December 2020):
    - **116% increase in pre-tax NPV$_{7\%}$** to **US$672 million** ($937 million) and **IRR of 36%**,
    - Mine life of **10.5 years,** peak **production of 60ktpa** copper in concentrate, strip ratio of 6.5 waste to ore,
    - **15% decrease** in LOM **all-in sustaining costs to US$1.56/lb**.
- Opportunities identified to further enhance the economic and technical outcomes of the A4 PFS through integrated mine scheduling and pit optimisation, with these enhancements to be incorporated into the DFS for the 5.2Mtpa Expansion Case.
- Total pre-production development capital increased to US$366 million ($504 million), incorporating development costs for the A4 Open Pit plus an updated cost forecast for the Motheo plant to account for increased steel costs, foreign exchange movements and COVID-related disruptions.
- Outstanding potential for further Resource and Reserve growth, with recent step-out drilling confirming high-grade mineralisation ~1.2km south-west of the A4 Mineral Resource envelope and drilling continuing across an exceptional target pipeline within Sandfire's extensive land-holding in the Kalahari Copper Belt.

Sandfire Resources Ltd (ASX: SFR; **Sandfire** or **the Company**) is pleased to advise that it has confirmed the potential to rapidly expand its Motheo Copper Mine in Botswana from 3.2Mtpa to 5.2Mtpa following the completion of a maiden Ore Reserve estimate for the satellite A4 Deposit and Pre-Feasibility Study for the Expansion Case.

The maiden JORC 2012 Probable Ore Reserve estimate totals **9.7Mt at 1.2% copper and 18g/t silver for 114kt of contained copper metal and 5.7Moz of contained silver** (Table 1).

**Table 1: A4 Open Pit Ore Reserve**

| Ore Reserve Category | Tonnes (Mt) | Copper Grade (%) | Contained Copper (Kt) | Silver Grade (g/t) | Contained Silver (Moz) |
|---|---|---|---|---|---|
| Probable | 9.7 | 1.2 | 114 | 18.0 | 5.7 |
| **Total** | **9.7** | **1.2** | **114** | **18.0** | **5.7** |

Notes:

1. The Probable Ore Reserve is based on the Indicated category of the Mineral Resource. No Inferred category has been included.
2. The copper cut-off grade is variable, based on silver credits, contaminant penalties and variable metal recovery dependent on head grades for copper, silver, sulphur, arsenic, lead, zinc and the ratio of copper to acid soluble copper. A net smelter return (NSR) value was used to define the economic material for the Ore Reserve Estimate. An elevated copper cut-off grade of 0.5% was used for the majority of the life of mine (LOM). Material between the NSR marginal cut-off and the elevated cut-off was used to maintain plant feed and manage total material movement rates.
3. The minimum copper grade used in the NSR calculations was 0.25% Cu after deducting any acid soluble copper. In a scheduling period, the lowest average grade of ore added to the process plant feed was 0.54% Cu.
4. Ore Reserves are estimated based on a copper price of US$3.40/lb and a silver price of $18.77/oz.
5. Ore loss and dilution were applied to the Mineral Resource model which resulted in an ore loss of approximately 12% at 0.79% Cu and a diluted tonnage addition of approximately 16% at 0.0% Cu.
6. Metallurgical test work recoveries were applied in accordance to the recovery algorithms developed from the variability test work program conducted for the pre-feasibility study.

This reflects an outstanding Resource-to-Reserve conversion rate of 85% of contained copper based on the updated Mineral Resource Estimate of 9.8Mt at 1.4% Cu and 21g/t Ag for 134,000t of contained copper and 6.6Moz of contained silver for the A4 deposit (Table 2) announced on 21 July 2021 (see Appendix 1 for more information).

**Table 2: A4 Mineral Resource (July 2021)**

| Cu % Cut-off | Mineral Resource Category | Mt | Copper Grade (% Cu) | Silver Grade (ppm Ag) | Contained Cu (kt) | Contained Ag (Moz) |
|---|---|---|---|---|---|---|
| 0.50% | Total Indicated | 8.9 | 1.4 | 22.0 | 124 | 6.2 |
| | Total Inferred | 0.9 | 1.0 | 15.0 | 9 | 0.4 |
| | **TOTAL** | 9.8 | 1.4 | 21.0 | 134 | 6.6 |

Notes:

Estimations have been rounded to the nearest: 1kt; 0.1% Cu grade; 100kt Cu metal; 1g/t Ag grade; and 100koz Ag metal. Differences may occur due to rounding.

Given its location just 8km from the planned processing plant and infrastructure at Motheo, the maiden A4 Ore Reserve will underpin Sandfire's plans to increase production from the Base Case 3.2Mtpa production rate to 5.2Mtpa (see ASX Announcement 1 December 2020: 'Sandfire approves development of new long-life copper mine in Botswana').

Based on the strong economics of the PFS, Sandfire will now move directly to a Definitive Feasibility Study (DFS) for the integration of the A4 Deposit as a source of satellite ore feed for the Motheo Mining Hub.

## Motheo Expansion Case Pre-Feasibility Study

Supporting the estimation and reporting of the A4 Ore Reserve, Sandfire has completed an internal PFS for the expansion of the Motheo Processing Plant. The PFS has confirmed the strong business case for development of the A4 Deposit as part of an expanded 5.2Mtpa Motheo Production Hub strategy.

In completing the Expansion Case PFS Sandfire has been able to leverage the work completed for the T3 Definitive Feasibility Study (see ASX Announcement 1 December 2020).

The A4 PFS outlines the first additional satellite deposit to the Motheo Copper Mine, expanding plant production from 3.2Mtpa to 5.2Mtpa over its five-year mine life. Mine facilities include surface mining operations at the A4 Deposit, expansion of the processing plant and supporting infrastructure. The Motheo mining accommodation facility is already sized for the A4 Deposit driven expansion. New infrastructure for A4 will include a light vehicle access road from the accommodation facility, dual lane HV road to be constructed from A4 to the Motheo Plant, tyre/breakdown workshops, fuel, crib and office facilities, electrical and water supplies.

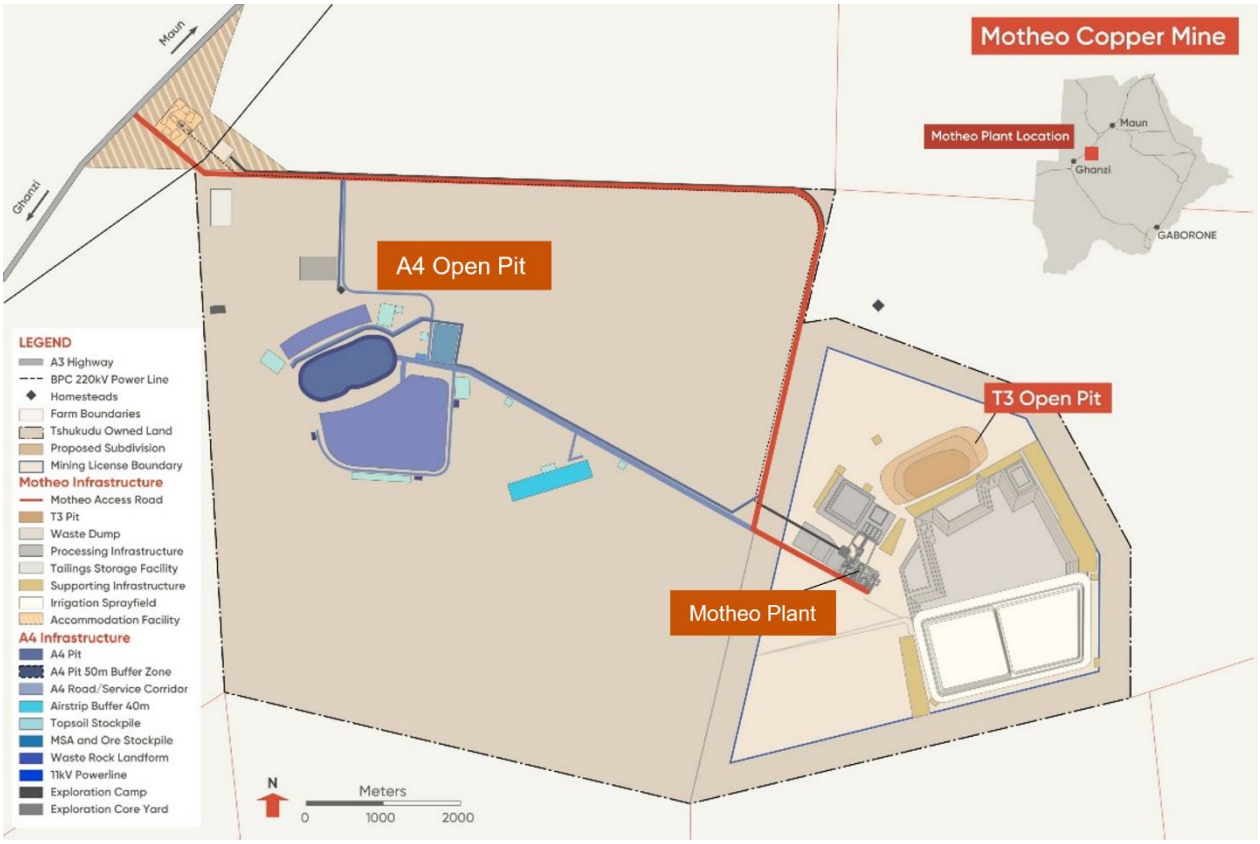


**Figure 1: Motheo - Proposed site layout.**

The ore processing contribution of the A4 Open Pit is five years with estimated copper production contained in concentrate over the life of the A4 Open Pit of 105,000t (Figure 2).

The estimated operating cost for the combined T3 and A4 operation varies throughout the life of mine as changes occur in the cost to mine and process the deposits. The average operating cash cost (C1) over the life-of-mine, on a 100% payable copper basis, is estimated to be approximately US$38/tonne of ore processed or US$1.32/lb of copper. The C1 consists of US$0.82/lb mining costs, US$0.38/lb processing cost inclusive of power, US$0.32/lb site administration and offsite logistics costs, and US$0.19/lb treatment and refining charges. A silver by-product credit of US$0.39/lb copper is included in the C1 cost. The estimated All in Sustaining Cost (AISC), which includes C1 plus sustaining capital, is US$1.56/lb.

The project's economics are most sensitive to variation in copper price, with other sensitive parameters being copper grade and copper recovery. Development capital has the least impact on the sensitivity of NPV.

Subject to the granting of the mining license for A4 and timing of the award of contracts, early works site construction activities are scheduled to commence in Q1 FY2023. Following construction and plant expansion commissioning, first copper concentrate production is expected around Q1 FY2025, 24 months from commencing site works.

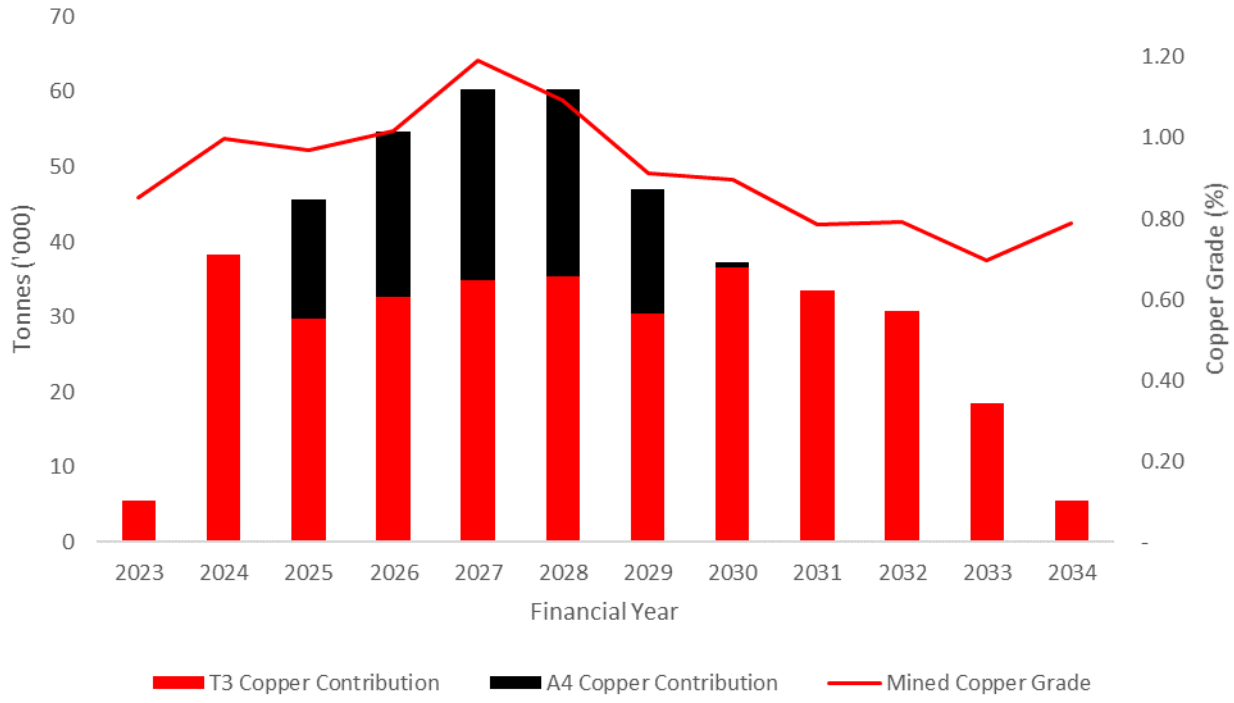


**Figure 2: Motheo – Production profile.**

Key outcomes of the PFS for an expanded 5.2Mtpa mining operation compared to the initial 3.2Mtpa base case development scenario (see ASX Announcement 1 December 2020) include:

- **47% increase** in estimated life-of-mine (LOM) revenue to **US$3.6 billion** ($4.9 billion) using an updated forecast long-term copper price of US$3.49/lb.
- **116% increase** in pre-tax **$NPV_{7\%}$** to **US$682 million** ($937 million) and **IRR of 36%**.
- **99% increase** in post-tax **$NPV_{7\%}$** to **US$417 million** ($574 million).
- **88% increase** in pre-tax net cash-flow to **US$1.24 billion** ($1.7 billion).
- **Payback** period reduced to **2.9 years** (previously 3.8 years) from production start.
- Additional **US$71 million** ($98 million) **pre-production capital** (inclusive of US$20m pre-approved) for process plant expansion to 5.2Mtpa and development of A4 Open Pit.
- Mine life of **10.5 years,** peak **production of 60ktpa** copper in concentrate, strip ratio of 6.5 waste:ore.
- **20% decrease** in LOM C1 cash costs to **US$1.32/lb** and **15% decrease** LOM AISC to **US$1.56/lb**.

A summary of key PFS parameters and comparison to the T3 DFS released in December 2020 are presented in the Table 3 below.

**Table 3: Motheo Study – Key Outcomes[1]**

| Key drivers | Unit | 3.2Mtpa Base Case | 5.2Mtpa Expansion Case | Variance (%) |
|---|---|---|---|---|
| **Physicals** | | | | |
| Life of Mine (processing) | **Years** | 12.5 | 10.5 | (16%) |
| Waste : Ore (inc. pre-strip) | | 6.1 | 6.5 | 7% |
| Cu grade | **%** | 0.90 | 0.96 | 6% |
| Ag grade | **g/t** | 12.2 | 13.4 | 10% |
| Cu recovery | **%** | 92.1 | 92.3 | 0% |
| Ag recovery | **%** | 87.3 | 88.2 | 1% |
| Cu in concentrate | **kt** | 331 | 437 | 32% |
| **Economic** | | | | |
| Cu price (LOM average)[1] | **US$/lb** | 3.16 | 3.49 | 11% |
| Ag price (LOM average) | **US$/oz** | 18.48 | 21.51 | 16% |
| Capex: Development & Pre-strip | **US$'M** | 259 | 366 | 41% |
| Capex: LOM | **US$'M** | 324 | 454 | 40% |
| Net cash flow (pre-tax) | **US$'M** | 661 | 1,241 | 88% |
| NPV (pre-tax, real, 7.0%) | **US$'M** | 316 | 682 | 116% |
| NPV (post-tax, real, 7.0%) | **US$'M** | 210 | 417 | 99% |
| IRR (pre-tax, real) | **%** | 25.5 | 36.2 | 42% |
| Capital payback (from 1st production) | **Years** | 3.8 | 2.9 | (24%) |
| C1: LOM | **US$/lb** | 1.65 | 1.32 | (20%) |
| AISC: LOM | **US$/lb** | 1.84 | 1.56 | (15%) |

Notes:

1. Financial outcomes from the Base Case 3.2Mtpa DFS released on 1 December 2020 have been updated using an assumed copper price of US$3.49/lb (compared with US$3.16/lb used in the 1 Dec 2020 announcement), reflecting long-term consensus forecasts, and bringing them in-line with the assumptions used in the Expansion Case 5.2Mtpa PFS reported in this announcement.

Work programs to support the 5.2Mtpa Motheo Expansion DFS are well underway, with significant work already progressed on areas such as environmental studies and approvals, metallurgical testwork, geotechnical drilling and analysis, groundwater drilling, mine scheduling and open pit optimisation.

This work has already identified areas for further optimisation, including combined T3 and A4 Open Pit scheduling and refined geotechnical parameters which may result in a lower strip ratio for the A4 Open Pit and potentially bringing forward A4 ore production.

The 5.2Mtpa Expansion Case DFS is scheduled to be completed in Q3 FY2022.

Key critical path items for the 5.2Mtpa Expansion have been identified as the Environmental & Social Impact Assessment (ESIA) and Mining Licence approvals, with both of these items now being fast-tracked.

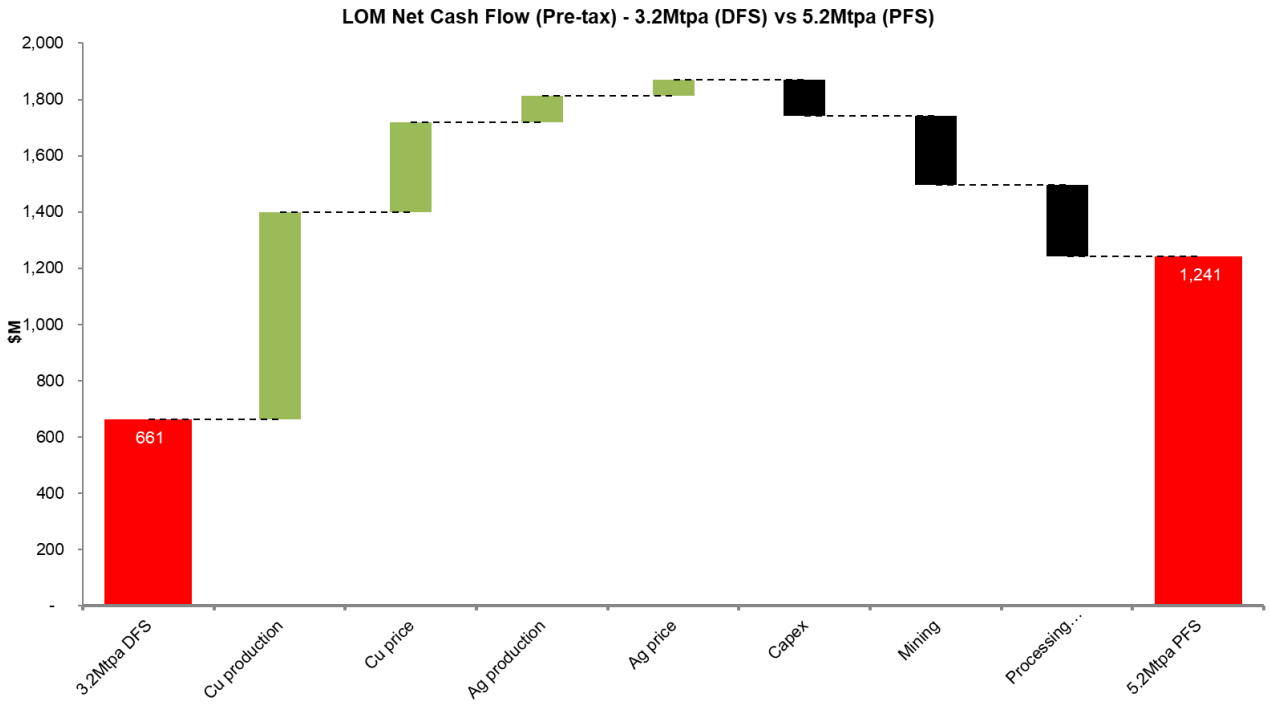


**Figure 3: LOM Cash Flow.**

Total development capital has increased to **US$366 million** ($504 million), incorporating development costs for the A4 Open Pit and expansion of the processing plant, plus an updated cost forecast for the Motheo Processing Plant to account for increased steel costs and foreign exchange movements. As at 31 August 2021, US$40 million of capital expenditure has been completed, with a further US$46 million of expenditure committed.

Sandfire intends to fund the development of the Motheo Copper Mine through a combination of cash ($573.7m at 30 June 2021) and project debt. Negotiations for debt financing of a minimum of US$160 million for the Base Case 3.2Mtpa development have been significantly advanced, with the Company's shortlist of potential international lenders set to complete due diligence over the next month prior to credit committee approvals. Sandfire has also commenced discussions with the same group of potential lenders to contribute a targeted 50% of the funding required for the additional A4 development.

**Table 4: Capital Expenditure Update**

| Capital Expenditure | US$M |
|---|---|
| 3.2Mtpa Base Case DFS estimate | 259.3 |
| 3.2Mtpa cost inflation | 35.9 |
| A4 development and plant expansion to 5.2Mtpa (inclusive of pre-approved US$20m) | 70.9 |
| **Total Capital** | **366.1** |

The Government of Botswana has a right to acquire up to a 15% fully contributing interest in the Motheo Copper Project. The Government of Botswana has not yet notified Sandfire of its intention regarding the acquisition of an ownership stake.

## Motheo Development Update

Site activities are continuing, with the 200-person construction camp now operational and initial borrow pit and temporary haul roads developed. Construction of the access road is continuing and the bulk earthworks contractor for the processing plant has mobilised and commenced clearing vegetation from the plant site.

**Figure 4: Clearing of topsoil T3 Stage 1 Open Pit and for the process plant and accommodation village in the background.**

The detailed process plant engineering design, being undertaken by Lycopodium, is 91% complete and will be finished in October 2021. Design and procurement of the 132kV sub-station and powerline is well advanced and design of the 750-bed accommodation facility is complete, with mobilisation to site early in the December 2021 Quarter.

Key construction contracts that have been awarded since the end of the June 2021 Quarter include process plant bulk earthworks, process plant concrete works, international equipment transport and logistics, 11kV power distribution, construction camp catering and Medical & Emergency Management Services.

## Management Comment

Sandfire's Managing Director and CEO, Karl Simich, said the maiden A4 Ore Reserve and positive Expansion Case PFS marked another pivotal milestone in the Company's plans to establish a major new long-term mining hub at Motheo.

"The completion of this maiden Ore Reserve at A4 provides the incremental increase in ore feed required to lift our planned production rate at Motheo to 5.2Mtpa, with the PFS showing that an expanded project will deliver a very positive uplift in the project's overall economic credentials, including a 88 per cent increase in pre-tax net cash-flow to US$1.24 billion.

“Encouragingly, 85% of the current A4 Mineral Resource has been converted to Ore Reserves, a very pleasing result which bodes well for our ongoing exploration across the Kalahari Copper Belt.

“Given the high conversion rate for this maiden Ore Reserve, and the very positive outcomes from the fast-tracked PFS that supported the Reserve estimation, we believe it makes good commercial sense to proceed immediately to a DFS for the 5.2Mtpa Expansion Case, with the intention of blending high-grade ore from the A4 Open Pit with baseload feed from the T3 Open Pit.

“The work to support this study is already well underway, and we expect to announce the details of the DFS in the first quarter of next calendar year.

“We have already identified several opportunities to enhance the economic outcomes of the PFS, particularly in the area of mine scheduling. At the moment, the mine schedules for both T3 and A4 open pits have been optimised separately, however we believe we can deliver enhanced outcomes in the DFS by combining and optimising the two pits with an integrated mine sequence.

“In parallel with these development studies, we are also continuing a major drilling campaign both in the near-mine area as well as across our extensive landholding in the Kalahari Copper Belt.”

**ENDS**

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**This announcement is authorised for release by Sandfire’s Managing Director and CEO, Karl Simich.**

**Competent Person’s Statement**

**A4 Ore Reserve**

The information in this release that relates to Open Pit Ore Reserves, is based on information compiled by Mr Jake Fitzsimons who is a Member of The Australasian Institute of Mining and Metallurgy. Mr Fitzsimons is employed by Orelogy Consulting Pty Ltd and has sufficient experience that is relevant to the style of mineralisation and type of deposit under consideration and to the activity which he is undertaking to qualify as Competent Person as defined in the 2012 Edition of the Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves. Mr Fitzsimons consents to the inclusion in the report of the matters based on his information in the form and context in which it appears.

**T3 Ore Reserve**

The information in this release that relates to Open Pit Ore Reserves, is based on information compiled by Mr Jake Fitzsimons who is a Member of The Australasian Institute of Mining and Metallurgy. Mr Fitzsimons is employed by Orelogy Consulting Pty Ltd and has sufficient experience that is relevant to the style of mineralisation and type of deposit under consideration and to the activity which he is undertaking to qualify as Competent Person as defined in the 2012 Edition of the Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves. Mr Fitzsimons consents to the inclusion in the report of the matters based on his information in the form and context in which it appears.

**T3 and A4 Mineral Resource**

The information in this release that relates to T3 Mineral Resources is based on information compiled by Mr Callum Browne who is a Member of The Australasian Institute of Mining and Metallurgy. Mr Browne was a permanent employee of Sandfire and has sufficient experience that is relevant to the style of mineralisation and type of deposit under consideration and to the activity which he is undertaking to qualify as Competent Person as defined in the 2012 Edition of the Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves. Mr Browne consents to the inclusion in this release of the matters based on his information in the form and context in which it appears.

The information in this release that relates to the A4 Mineral Resource is based on and fairly represents information and supporting documentation prepared by Mr Mark Zammit who is a Member of the Australian Institute of Geoscientists. Mr Zammit is a full time employee of Cube Consulting Pty Ltd. Mr Zammit has sufficient experience which is relevant to the style of mineralisation and type of deposit under consideration and to the

activity that he is undertaking to qualify as a Competent Person as defined in the 2012 Edition of the 'Australasian Code for Reporting of Exploration Results, Minerals Resources and Ore Reserves'. Mr Zammit consents to the inclusion in this release of the matters based on the information in the form and context in which it appears.

**Motheo Expansion Case**

The Expansion Case to 5.2Mtpa referred to in this release, where it relates to A4 and other prospects, is based on the T3 Mineral Resource Estimate and Ore Reserve, the 3.2Mtpa Definitive Feasibility Study completed in December 2020, A4 Mineral Resource Estimate and Ore Reserve and the 5.2Mtpa Pre-Feasibility Study. The 5.2Mtpa Pre-Feasibility Study has been completed to an overall level of accuracy of ±15-25% and is based on material assumptions outlined elsewhere in this announcement and in Appendix 1.

**Forward-Looking Statements**

Certain statements made during or in connection with this release contain or comprise certain forward-looking statements regarding Sandfire's Mineral Resources and Ore Reserves, exploration and project development operations, production rates, life of mine, projected cash flow, capital expenditure, operating costs and other economic performance and financial condition as well as general market outlook. Although Sandfire believes that the expectations reflected in such forward-looking statements are reasonable, such expectations are only predictions and are subject to inherent risks and uncertainties which could cause actual values, results, performance or achievements to differ materially from those expressed, implied or projected in any forward looking statements and no assurance can be given that such expectations will prove to have been correct.

There is continuing uncertainty as to the full impact of COVID-19 on Sandfire's business, the Australian economy, share markets and the economies in which Sandfire conducts business. Given the high degree of uncertainty surrounding the extent and duration of the COVID-19 pandemic, it is not currently possible to assess the full impact of COVID-19 on Sandfire's business or the price of Sandfire securities.

Accordingly, results could differ materially from those set out in the forward-looking statements as a result of, among other factors, changes in economic and market conditions, delays or changes in project development, success of business and operating initiatives, changes in the regulatory environment and other government actions, fluctuations in metals prices and exchange rates and business and operational risk management.

Except for statutory liability which cannot be excluded, each of Sandfire, its officers, employees and advisors expressly disclaim any responsibility for the accuracy or completeness of the material contained in these forward-looking statements and excludes all liability whatsoever (including in negligence) for any loss or damage which may be suffered by any person as a consequence of any information in forward-looking statements or any error or omission. Sandfire undertakes no obligation to update publicly or release any revisions to these forward-looking statements to reflect events or circumstances after today's date or to reflect the occurrence of unanticipated events other than required by the Corporations Act and ASX Listing Rules. Accordingly, you should not place undue reliance on any forward-looking statement.

**ASX releases referred to in this announcement:**

Sandfire delivers 34% increase in contained copper at satellite A4 Copper-Silver Deposit at Motheo – Sandfire Resources Ltd (21 July 2021).

Sandfire approves development of new long-life copper mine in Botswana - Sandfire Resources Ltd (1 December 2020).

## APPENDIX 1: A4 RESOURCE SUMMARY GEOLOGY

### A4 Deposit Geology

The A4 Deposit is located within the Ghanzi-Chobe belt in western Botswana. The stratigraphy in this belt comprises the basal Kgwebe volcanics which are unconformably overlain by Ghanzi Group sediments. The Ghanzi Group is a meta-sedimentary group comprising (in successively higher stratigraphic order) the Kuke, Ngwako Pan, D'Kar and Mamuno Formations.

There is no outcrop of the Ghanzi Group within the A4 project area, and the host meta-sediments are locally covered with a shallow layer of surficial calcrete, sand and soil.

A4 occupies a similar structural and stratigraphic position to that of the T3 Deposit in that it occurs within a NE-SW trending periclinal anticline (A4 Dome) with a core of Ngwako Pan Formation sandstone, overlain by a succession of D'Kar Formation shale, sandstone, siltstone and carbonates. All mineralisation modelled and incorporated in the Mineral Resource estimate occurs within the D'Kar Formation.

Second order (parasitic) upright to overturned folds are developed within the axial region of the periclinal anticline (Figure 1). The second order folds are cross-cut and displaced by moderately north-west dipping brittle-ductile, thrust-sense shear zones. These shear zones are characterised by zones of heterogeneous foliation of variable width and intensity. High strain zones have been recognised along which different sedimentary units have been juxtaposed by brittle displacement.

Flat-lying to shallow-dipping zones of extensional fracture and veining are developed in the footwall of the main shear zone. These extensional zones are interpreted to have formed as shear related extensional structures during thrust movement.

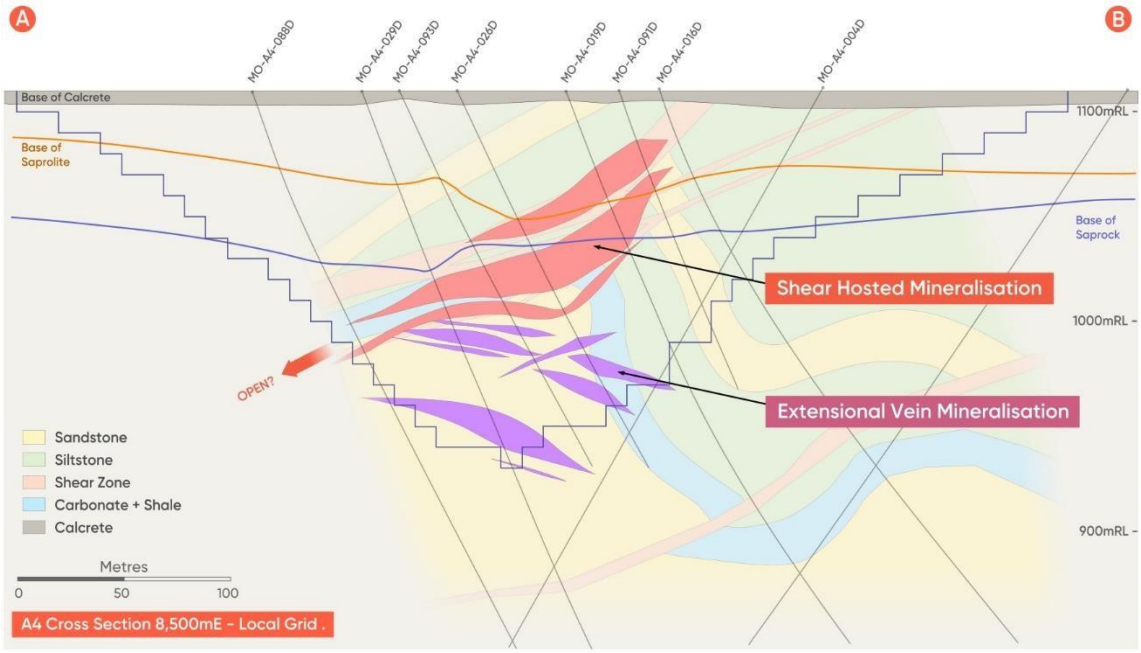


**Figure 1 Schematic Cross-Sections – showing interpreted geology and mineralisation styles across the A4 Deposit. US$4.50/lb Cu price optimised pit shell used to constrain the Mineral Resource shown in the blue outline.**

The extensional structures are preferentially developed within a sandstone dominated package but also penetrate into the overlying carbonate and siltstone dominated units.

Copper-Silver mineralisation at A4 is developed along both the shear zones and the extensional zones. Within the shear zones copper sulphides (bornite, chalcocite and chalcopyrite) are associated with quartz-carbonate veins developed sub-parallel to the shear foliation. Within the extensional zones, copper sulphides are associated with either quartz-carbonate veins or as sulphide fill to in-situ fragmentation zones (breccias) within the host sediments.

Mineralisation extends over a strike length of approximately 900m and 270m down-dip and remains open at depth and along strike. Wireframes were developed using the high strain zones and extensional structures to guide interpretation of hosted mineralisation (Figure 1). A nominal 0.3% Cu cut-off grade was used to determine the external boundary of the mineralised zones. Immediately above the mineralised zone, soil/sand and calcrete extends to a depth ranging from 3 – 8m below surface. Saprolite (>25% oxidation) extends from 25 – 60m below surface and saprock (1 – 25% oxidation) from 55 – 85m below surface. Where oxidised, primary copper sulphides are altered to malachite, chrysocolla or covellite.

### A4 Mineral Resource

The initial December 2020 Inferred Mineral Resource for the A4 Copper-Silver Deposit was based on the results of the initial 99 diamond drill holes, of which 79 intersected the deposit and informed the Mineral Resource. This drilling was completed on a nominal 50mE x 50mN spacing, providing sufficient confidence to allow the company to complete a scoping study. Since the estimation of the inferred resource an additional 104 have been drilled with drilling focused on infilling areas of sparse drilling. Drilling has been completed to a nominal 25m x 25m grid spacing, improving overall confidence in the resource estimate and subsequent resource classification.

**Table 1: July 2021 A4 Mineral Resource**

| Cu % Cut-off | Mineral Resource Category | Weathering | Tonnes | Copper Grade (% Cu) | Silver Grade (ppm Ag) | Contained Cu (t) | Contained Ag (oz) |
|---|---|---|---|---|---|---|---|
| 0.50% | Indicated | Saprolite | 550,000 | 1.0 | 7.0 | 6,000 | 100,000 |
| | | Saprock | 1,340,000 | 1.5 | 14.0 | 20,000 | 600,000 |
| | | Fresh | 7,000,000 | 1.4 | 24.0 | 99,000 | 5,400,000 |
| | **Total Indicated** | | **8,900,000** | **1.4** | **22.0** | **124,000** | **6,200,000** |
| | Inferred | Saprolite | 30,000 | 1.4 | 2.0 | - | - |
| | | Saprock | 40,000 | 0.9 | 6.0 | - | - |
| | | Fresh | 850,000 | 1.0 | 16.0 | 9,000 | 400,000 |
| | **Total Indicated** | | **920,000** | **1.0** | **15.0** | **9,000** | **400,000** |
| | **GRAND TOTAL** | | 9,820,000 | 1.4 | 21.0 | 134,000 | 6,600,000 |

Notes:

Estimates have been rounded to the nearest: 10kt; 0.1% Cu grade; 1kt Cu metal; 1g/t Ag grade; and 100koz metal.

The July 2021 Indicated and Inferred Mineral Resource for A4, at a 0.5% Cu cut-off, constrained within a US$4.50/lb Cu price optimised pit shell, is 9.8Mt grading 1.4% Cu and 22g/t for 134,000t of contained copper and 6.6Moz of contained silver. The resource is reported on a block cut-off basis.

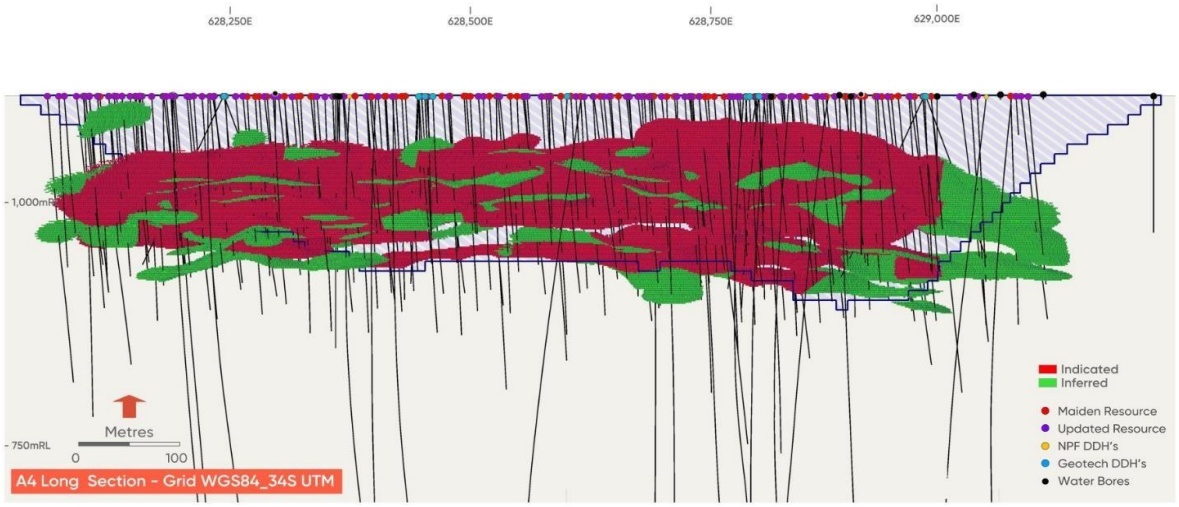


**Figure 2 A4 Long Section – showing Mineral Resource Classification.**

## A4 Mineral Resource Methodology

The grade estimation technique applied for estimation within Cu mineralisation domains is ordinary kriging. Variables estimated include Cu, Ag, Bi, Mo, S, acid soluble Cu and Density. Stationarity was assessed for the copper mineralisation domains with analysis suggesting that a stationarity assumption is reasonable for the style of deposit and linear estimation of grades. Figure 3: A4 Plan view – Collar location of drill holes used to inform the Mineral Resource. US$4.50/lb Cu price optimised pit shell shown in blue outline. The position of cross-section A-B (Figure 2) is indicated.

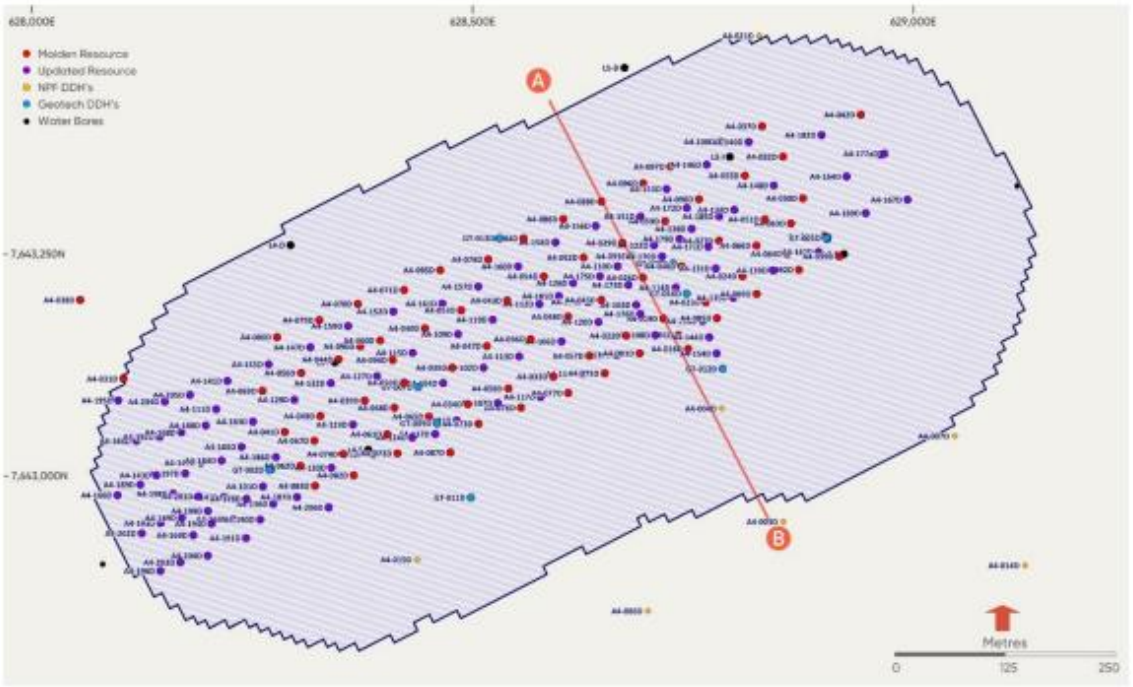


**Figure 3: A4 Plan view – Collar location of drill holes used to inform the Mineral Resource. US$4.50/lb Cu price optimised pit shell shown in blue outline. The position of cross-section A-B (Figure 2) is indicated.**

# APPENDIX 2: JORC 2012 CODE

## JORC 2012 MINERAL RESOURCE PARAMETERS

## MOTHEO COPPER PROJECT

| Criteria | JORC Code Explanation | Commentary |
|---|---|---|
| Sampling techniques | *Nature and quality of sampling (e.g. cut channels, random chips, or specific specialised industry standard measurement tools appropriate to the minerals under investigation, such as downhole gamma sondes, or handheld XRF instruments, etc.). These examples should not be taken as limiting the broad meaning of sampling.* | Sampling boundaries are geologically defined and commonly one metre in length unless a significant geological feature warrants a change from this standard unit. |
| | *Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.* | Core is sawn along a cut line as defined by the logging geologist, which is marked to intersect the core orthogonal to the main core axis. Core is then routinely sampled along the same side of the line as cut to ensure sampling consistency. |
| | *Aspects of the determination of mineralisation that are Material to the Public Report.* | The determination of mineralisation is based on observed amount of sulphides and lithological differences. |
| | *In cases where 'industry standard' work has been done this would be relatively simple (e.g. 'reverse circulation drilling was used to obtain 1 m samples from which 3 kg was pulverised to produce a 30 g charge for fire assay'). In other cases more explanation may be required, such as where there is coarse gold that has inherent sampling problems. Unusual commodities or mineralisation types (e.g. submarine nodules) may warrant disclosure of detailed information.* | Diamond drill core sample is pulverised via LM2 to nominal 85% passing -75µm.<br>Pulp charges of 0.25g are prepared using a four-acid digest and an ICP-AAS finish. Non-sulphide Cu is analysed, utilising a sulphuric acid leach with an ICP-AAS finish. |
| Drilling techniques | *Drill type (e.g. core, reverse circulation, open-hole hammer, rotary air blast, auger, Bangka, sonic, etc.) and details (e.g. core diameter, triple or standard tube, depth of diamond tails, face-sampling bit or other type, whether core is oriented and if so, by what method, etc.).* | Surface diamond drillholes used HQ3 (63.5mm) and NQ (47.6mm) core size (standard tubes).<br>Core orientation is completed when possible, using the Boart Longyear TrueCore Tool. |
| Drill sample recovery | *Method of recording and assessing core and chip sample recoveries and results assessed.* | Diamond drillhole recoveries were quantitatively recorded using length measurements of core recoveries per-run. Core recoveries routinely exceeded 95%. |
| | *Measures taken to maximise sample recovery and ensure representative nature of the samples.* | Core was cut along a cut-line marked by the supervising geologist, which was marked orthogonal to the main core axis. Core was consistently sampled along the same side of this cut line for all holes. Core is metre marked and orientated to check against the driller's blocks, ensuring that all core loss is considered. |
| | *Whether a relationship exists between sample recovery and grade and whether sample bias may have occurred due to preferential loss/gain of fine/coarse material.* | No sample recovery issues have impacted on potential sample bias. |

| Criteria | JORC Code Explanation | Commentary |
|---|---|---|
| Logging | *Whether core and chip samples have been geologically and geotechnically logged to a level of detail to support appropriate Mineral Resource estimation, mining studies and metallurgical studies.* | Geological logging is completed for all holes and is representative across the ore body. The major rock unit (colour, grain size, texture), weathering, alteration (style and intensity), mineralisation (type), interpreted origin of mineralisation, estimation of % sulphides/oxides, and veining (type, style, origin, intensity) are logged following Sandfire standard procedures.<br>Data is originally recorded on paper (hard copies) and then transferred to Excel logging sheets. Once validated the data is imported to the central database. |
| | *Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc.) photography.* | Logging is both qualitative and quantitative depending on the field being logged.<br>All drill core is photographed and catalogued appropriately. |
| | *The total length and percentage of the relevant intersections logged.* | All drill holes are fully logged. |
| | *If core, whether cut or sawn and whether quarter, half or all core taken.* | Longitudinally cut half core samples are produced using a core saw. |
| | *If non-core, whether riffled, tube sampled, rotary split, etc. and whether sampled wet or dry.* | No non-core used in Mineral Resource Estimate |
| Sub-sampling techniques and sample preparation | For all sample types, the nature, quality and appropriateness of the sample preparation technique. | Samples were submitted to the Botswana on-site preparation facility managed by ALS. Samples are first crushed in their entirety to 70% <2 mm using a jaw crusher. The entire samples are then milled to 85% passing 75 µm.<br>The procedure is considered to represent industry standard practices and are considered appropriate for the style of mineralisation. |
| | *Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.* | For sample preparation, every 20th sample prepared at both the coarse crush, and milling stages is screened for consistency. Any failure triggers the re-crush/mill of the previous three samples. If any one of those samples should also fail, then the entire submitted batch is re-crushed/milled. Between each batch the coarse crushing equipment is cleaned using blank quartz material. LM2 ring mills are cleaned with acetone and compressed air between each sample. |
| | *Measures taken to ensure that the sampling is representative of the in situ material collected, including for instance results for field duplicate/second-half sampling.* | Duplicate analysis of pulp samples has been completed and identified no issues with sampling representatively with assays showing a high level of correlation. |
| | *Whether sample sizes are appropriate to the grain size of the material being sampled.* | The sample size is considered appropriate for the mineralisation style. |
| Quality of assay data and laboratory tests | *The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total.* | Samples analysed by ALS Laboratories were also assayed for total and non-sulphide Cu, Ag, Mo, Pb and Zn. Prepared and analysed using ALS method ME-ICP61 for total Cu and other elements, with an over-range trigger to ME-OG62 for high-grade Cu samples. In addition, two additional methods Cu-VOL61 (for Cu over 50%) and ME-XRF15c (for Mo over 10%) were utilised by ALS. Pulp charges of 0.25 grams are prepared using a four-acid digest, and an ICP-AAS finish. Non-sulphide Cu is analysed via method AA05, utilising a sulphuric acid leach with an ICP-AAS finish, whilst total sulphur was determined using oxidation, induction furnace and infrared spectroscopy (IR08 method) as opposed to the standard ICP method.<br>The non-sulphide method is considered partial and is conducted for the purposes of determining the acid-soluble Cu component of the sample. |

| Criteria | JORC Code Explanation | Commentary |
|---|---|---|
| | *For geophysical tools, spectrometers, handheld XRF instruments etc., the parameters used in determining the analysis including instrument make and model, reading times, calibrations factors applied and their derivation, etc.* | No geophysical tools were used to analyse the drilling products |
| | *Nature of quality control procedures adopted (e.g. standards, blanks, duplicates, external laboratory checks) and whether acceptable levels of accuracy (i.e. lack of bias) and precision have been established.* | Precision and accuracy were monitored throughout their sample chain of custody through the use of coarse and pulp duplicates, and the insertion of certified reference materials (CRMs) and blanks into the sample stream.<br>CRMs are sourced from Ore Research Laboratories in Australia, and with the exception of the blank, span a range of Cu grades appropriate to the A4 project mineralisation.<br>Control samples are inserted alternately at a rate of 1 in 10.<br>Analysis of duplicate samples shows acceptable repeatability and no significant bias |
| Verification of sampling and assaying | *The verification of significant intersections by either independent or alternative company personnel.* | Significant intersections have been verified by alternative company personnel. |
| | *The use of twinned holes.* | There are no twinned holes drilled |
| | *Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.* | Logging data (including geotechnical parameters) are first recorded on paper, then scanned to preserve a digital image. Original documents are filed in hardcopy. Data logged to paper is also entered into a Microsoft Excel spreadsheet template which has been specifically designed for the capture of A4 deposit logging data. The data is then imported into Sandfire Resources SQL database. The SQL server database is configured for optimal validation through constraints, library tables, triggers and stored procedures. Data that fails these rules on import is rejected or quarantined until it is corrected. |
| | *Discuss any adjustment to assay data.* | The primary data is always kept and is never replaced by adjusted or interpreted data. |
| Location of data points | *Accuracy and quality of surveys used to locate drill holes (collar and down-hole surveys), trenches, mine workings and other locations used in Mineral Resource estimation.* | Drillholes are initially set-out prior to drilling using a handheld global positioning system (GPS). Subsequent to completion, holes are capped and marked with a marker peg.<br>Periodically, collar locations are surveyed by Afro-Geodata Surveys Pty Ltd, a commercial contract land surveyor using Leica VIVA GNSS GPS system instrumentation, which provides sub-decimetre accuracy. Downhole surveying is completed on all diamond drillholes via north-seeking gyroscopic survey.<br>In late-2020, Sandfire employed a registered site surveyor for the Motheo Copper project who has been completing RTK GPS collar pick-ups for the most recent drilling completed over the A4 project area. This includes all holes from MO-A4-166D through to MO-A4-206D. |
| | *Specification of the grid system used.* | Collars are marked out and picked up in the Botswanan National Grid in UTM format. Subsequent Mineral Resource modelling has been conducted in a local Mine grid, which is rotated 27° to the east to align the strike of the A4 deposit along local east-west. |
| | *Quality and adequacy of topographic control* | Topographic control is provided by the GPS survey system used for collar pickup. The topography of the A4 deposit area is very flat, and significant variations in topography within the project are not apparent. The topographic control is considered fit for purpose. |
| | *Data spacing for reporting of Exploration Results.* | No Exploration Results are included in this release. |

| Criteria | JORC Code Explanation | Commentary |
|---|---|---|
| Data spacing and distribution | *Whether the data spacing and distribution is sufficient to establish the degree of geological and grade continuity appropriate for the Mineral Resource and Ore Reserve estimation procedure(s) and classifications applied.* | Drillhole spacing's are approximately 25mE x 25mN. The spacing and distribution are sufficient to establish the degree of geological and grade continuity appropriate for the classifications applied. |
| | *Whether sample compositing has been applied.* | No sample compositing is applied during the sampling process. |
| Orientation of data in relation to geological structure | *Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type.* | Drillholes have been oriented to intersect A4 mineralisation approximately orthogonal to the known dip of the deposit. No bias is considered to have been introduced to the sample dataset as a result of drilling orientation. |
| | *If the relationship between the drilling orientation and the orientation of key mineralised structures is considered to have introduced a sampling bias, this should be assessed and reported if material.* | No significant sampling bias occurs in the data due to the orientation of drilling with regards to mineralisation. |
| Sample security | *The measures taken to ensure sample security.* | Samples are collected at the end of each shift by Tshukudu staff and driven directly from the rig to the storage and logging yard in Ghanzi, which is a secure compound.<br>Samples are prepared to pulp stage on-site at the core logging and storage facility, within a purpose built commercially operated facility (ALS Laboratories). Sample security is not considered to be a significant risk to the A4 project. |
| Audits or reviews | *The results of any audits or reviews of sampling techniques and data.* | The sampling techniques and data collection processes are of industry standard and have been subjected to internal reviews by Sandfire personal. |

## Section 2: Reporting of Exploration Results

| Criteria | JORC Code Explanation | Commentary |
|---|---|---|
| Mineral tenement and land tenure status | *Type, reference name/number, location and ownership including agreements or material issues with third parties such as joint ventures, partnerships, overriding royalties, native title interests, historical sites, wilderness or national park and environmental settings.* | Sandfire, through their 100% ownership of Botswanan company Tshukudu Metals Botswana (Pty) Ltd, hold prospecting license PL190/2008 as part of a larger tenement package. This licence, on which A4 occurs, was renewed on 1st October 2020 and is valid till 30th September 2022.<br>UK-listed company Metal Tiger Plc. holds a US$2.0 million capped Net Smelter Royalty over the Company's T3 Copper Project in Botswana. Metal Tiger Plc also holds an uncapped 2% Net Smelter Royalty over 8,000km$^2$ of the Company's Botswana exploration license holding in the Kalahari Copper Belt. This uncapped royalty covers the area subject to the historical Tshukudu joint venture with MOD Resources Ltd and includes PL190/2008, which hosts the A4 resource area. |
| | *The security of the tenure held at the time of reporting along with any known impediments to obtaining a licence to operate in the area.* | There are no known impediments to obtaining a license to operate in the area. |
| Exploration done by other parties | *Acknowledgment and appraisal of exploration by other parties.* | Limited previous exploration in the area of the drilling reported in this announcement, apart from widely spaced soil sampling conducted by Discovery Metals Limited, and 20 diamond drill holes completed by Tshukudu Exploration on behalf of MOD Resources Ltd during 2018 and 2019. |
| Geology | *Deposit type, geological setting and style of mineralisation.* | The A4 deposit is located within the Ghanzi-Chobe belt in western Botswana. The stratigraphy in this belt comprises the basal Kgwebe volcanics which are unconformably overlain by Ghanzi Group sediments. The Ghanzi Group is a meta-sedimentary group comprising (in successively higher stratigraphic order) the Kuke, Ngwako Pan, D'Kar and Mamuno Formations.<br>A4 occupies a similar structural and stratigraphic position to that of the T3 deposit in that it occurs within a NE-SW trending periclinal anticline ("Dome") with a core of Ngwako Pan Formation sandstone, overlain by a succession of D'Kar Formation shale, sandstone, siltstone and carbonates. All mineralisation modelled and incorporated in the Mineral Resource estimate occurs within the D'Kar Formation.<br>Second order (parasitic) upright to overturned folds are developed within the axial region of the periclinal anticline. The second order folds are cross-cut and displaced by moderately north-west dipping brittle-ductile, thrust-sense shear zones. These shear zones are characterised by zones of heterogeneous foliation of variable width and intensity. High strain zones have been recognised along which different sedimentary units have been juxtaposed by brittle displacement.<br>Flat lying to shallow dipping zones of extensional fracture and veining are developed in the footwall of the main shear zone. These extensional zones are interpreted to have formed as shear related extensional structures during thrust movement. The extensional structures are preferentially developed within a sandstone dominated package but also penetrate the overlying carbonate and siltstone dominated units.<br>Cu-Ag mineralisation that forms the focus of A4 is developed along both the shear zones and the extensional zones. Within the shear zones copper sulphides (bornite, chalcocite, chalcopyrite) are associated with quartz-carbonate veins developed sub-parallel to the shear foliation. Within the extensional zones copper sulphides are associated with either quartz-carbonate veins or as sulphide fill to in-situ fragmentation zones (breccias) within the host sediments. |

| Criteria | JORC Code Explanation | Commentary |
|---|---|---|
| Drillhole information | *A summary of all information material to the understanding of the exploration results including a tabulation of the following information for all Material drillholes:*<br>• *Easting and northing of the drillhole collar;*<br>• *Elevation or RL (Reduced Level – elevation above sea level in metres) of the drillhole collar;*<br>• *Dip and azimuth of the hole;*<br>• *Downhole length and interception depth; and*<br>• *Hole length.* | No exploration results are reported in this release. |
| | *If the exclusion of this information is justified on the basis that the information is not Material and this exclusion does not detract from the understanding of the report, the Competent Person should clearly explain why this is the case.* | No exploration results are reported in this release. |
| Data aggregation methods | *In reporting Exploration Results, weighting averaging techniques, maximum and/or minimum grade truncations (e.g. cutting of high grades) and cut-off grades are usually Material and should be stated.*<br>*Where aggregate intercepts incorporate short lengths of high-grade results and longer lengths of low-grade results, the procedure used for such aggregation should be stated and some typical examples of such aggregations should be shown in detail.*<br>*The assumptions used for any reporting of metal equivalent values should be clearly stated.* | No exploration results are reported in this release. |
| | *These relationships are particularly important in the reporting of Exploration Results.*<br>*If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported.*<br>*If it is not known and only the down hole lengths are reported, there should be a clear statement to this effect (e.g. 'down hole length, true width not known').* | No exploration results are reported in this release. |
| | *Appropriate maps and sections (with scales) and tabulations of intercepts should be included for any significant discovery being reported These should include, but not be limited to a plan view of drillhole collar locations and appropriate sectional views.* | No exploration results are reported in this release. |
| Relationship between mineralisation widths and intercept lengths | *Where comprehensive reporting of all Exploration Results is not practicable, representative reporting of both low and high grades and/or widths should be practiced to avoid misleading reporting of Exploration Results.* | No exploration results are reported in this release. |
| | *Other exploration data, if meaningful and material, should be reported including (but not limited to): geological observations; geophysical survey results; geochemical survey results; bulk samples – size and method of treatment; metallurgical test results; bulk density, groundwater, geotechnical and rock characteristics; potential deleterious or contaminating substances.* | No exploration results are reported in this release. |

| Criteria | JORC Code Explanation | Commentary |
|---|---|---|
| | *The nature and scale of planned further work (tests for lateral, depth extensions or large-scale step-out drilling).*<br>*Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.* | No exploration results are reported in this release. |
| Diagrams | *A summary of all information material to the understanding of the exploration results including a tabulation of the following information for all Material drillholes:*<br>• *Easting and northing of the drillhole collar*<br>• *Elevation or RL (Reduced Level – elevation above sea level in metres) of the drillhole collar*<br>• *Dip and azimuth of the hole*<br>• *Downhole length and interception depth*<br>• *Hole length.* | No exploration results are reported in this release. |
| Balanced reporting | *If the exclusion of this information is justified on the basis that the information is not Material and this exclusion does not detract from the understanding of the report, the Competent Person should clearly explain why this is the case.* | No exploration results are reported in this release. |
| Other substantive exploration data | *In reporting Exploration Results, weighting averaging techniques, maximum and/or minimum grade truncations (e.g. cutting of high grades) and cut-off grades are usually Material and should be stated.*<br>*Where aggregate intercepts incorporate short lengths of high-grade results and longer lengths of low-grade results, the procedure used for such aggregation should be stated and some typical examples of such aggregations should be shown in detail.*<br>*The assumptions used for any reporting of metal equivalent values should be clearly stated.* | No exploration results are reported in this release. |
| Further work | *These relationships are particularly important in the reporting of Exploration Results.*<br>*If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported.*<br>*If it is not known and only the down hole lengths are reported, there should be a clear statement to this effect (e.g. 'down hole length, true width not known').* | No exploration results are reported in this release. |
| | *Appropriate maps and sections (with scales) and tabulations of intercepts should be included for any significant discovery being reported These should include, but not be limited to a plan view of drillhole collar locations and appropriate sectional views.* | No exploration results are reported in this release. |

## Section 3: Estimation and Reporting of Mineral Resources

| Criteria | JORC Code Explanation | Commentary |
|---|---|---|
| Database integrity | *Measures taken to ensure that data has not been corrupted by, for example, transcription or keying errors, between its initial collection and its use for Mineral Resource estimation purposes.* | Sandfire uses SQL as the central data storage system. User access to the database is regulated by specific user permissions. Only the Database Management team can overwrite data.<br>Existing protocols maximise data functionality and quality whilst minimising the likelihood of error introduction at primary data collection points and subsequent database upload, storage and retrieval points.<br>An IT contracting company is responsible for the daily Server backups of both the source file data on the file server and the SQL Server databases. The selected SQL databases are backed up each day to allow for a full recovery. |
| | *Data validation procedures used.* | The SQL server database is configured for optimal validation through constraints, library tables, triggers and stored procedures. Data that fails these rules on import is rejected or quarantined until it is corrected.<br>Database is centrally managed by a Database Manager who is responsible for all aspects of data entry, validation, development, quality control and specialist queries.<br>There is a standard suite of vigorous validation checks for all data. |
| Site Visits | *Comment on any site visits undertaken by the Competent Person and the outcome of those visits.* | Site visits have been undertaken by Sandfire personnel. No material concerns were identified during those site visits. |
| | *If no site visits have been undertaken indicate why this is the case.* | The Competent Persons for Mineral Resources from Cube Consulting have not been able to undertake a site visit due to travel restrictions imposed from COVID-19. Prior to COVID-19 restrictions, Sandfire's Competent Person (Brad Ackroyd) completed numerous site visits to the A4 project area. |
| Geological interpretation | *Confidence in (or conversely, the uncertainty of) the geological interpretation of the mineral deposit.* | A preliminary lithostratigraphic and structural model forms the basis for confidence in the geological interpretation and continuity of mineralisation. |
| | *Nature of the data used and of any assumptions made.* | All available geological logging data from diamond core are used for the interpretations.<br>Interpreted master displacement planes have been used to constrain and guide wireframes. |
| | *The effect, if any, of alternative interpretations on Mineral Resource estimation.* | The geological interpretation of mineralised boundaries are considered robust and alternative interpretations do not have the potential to impact significantly on the Mineral Resources. |
| | *The use of geology in guiding and controlling Mineral Resource estimation.* | The interpreted mineralisation boundaries are used as hard boundaries during the Mineral Resource estimation. |
| | *The factors affecting continuity both of grade and geology.* | The Mineralisation is considered to be a structurally hosted, epigenetic deposit. The continuity of mineralisation is structurally controlled. |
| Dimensions | *The extent and variability of the Mineral Resource expressed as length (along strike or otherwise), plan width, and depth below surface to the upper and lower limits of the Mineral Resource.* | Cu-Ag mineralisation that forms the focus of the A4 study extends from approximately 5m – 220m below surface. Mineralisation extends for 1,200m along strike and the cumulative total true width of mineralisation ranges from 10m – 80m. |

| Criteria | JORC Code Explanation | Commentary |
|---|---|---|
| Estimation and modelling techniques | *The nature and appropriateness of the estimation technique(s) applied and key assumptions, including treatment of extreme grade values, domaining, interpolation parameters and maximum distance of extrapolation from data points. If a computer assisted estimation method was chosen include a description of computer software and parameters used.* | Grade estimation technique applied for estimation within Cu mineralisation domains is ordinary kriging (OK) for variables including Cu, Ag, Bi, Mo, S, and acid soluble Cu. Analysis suggests that a stationarity assumption is reasonable for the style of deposit and linear estimation of grades. Density has been estimated with Inverse Distance Squared (IDW2).<br>Grade estimation technique applied for estimation within high level Pb-Zn mineralisation domains is Ordinary Kriging. Variables estimated include As, Pb and Zn.<br>Top cuts were applied to isolated high-grade composites prior to estimation where applicable based on review of histograms, disintegration analysis and statistical analysis of composites. Distance based top cuts were also used to limit the influence of isolated high-grade composites.<br>Copper-Silver mineralisation at A4 is developed along both the thrust sense shear zones and the extensional zones. Within the thrust sense shear zones copper sulphides (bornite, chalcocite, chalcopyrite) are intimately associated with quartz-carbonate veins developed sub-parallel to the shear foliation. Within the extensional zones copper sulphides are associated with either quartz-carbonate veins or as sulphide fill to in-situ fragmentation zones (breccias) within the host sedimentary lithofacies. A nominal 0.3% Cu cut-off grade was used to determine the external boundary of the mineralised zones.<br>The Pb-Zn mineralisation was modelled separately from the Cu mineralisation on the basis of a (Pb+Zn)/2 nominal 0.15% lower cut-off.<br>The search ellipsoid corresponds to the range of the variogram structures and is constrained by the optimum number of samples to ensure data used to estimate blocks is within the constraints of the variograms. Blocks that were not estimated within the first search (<5%) were estimated in a second pass where search ranges were doubled.<br>Mineral Resource estimation is completed within GEOVIA Surpac 2020 software. Three dimensional mineralisation wireframes were completed within Seequent™ Leapfrog software and these are then imported into Surpac. |
| | *The availability of check estimates, previous estimates and/or mine production records and whether the Mineral Resource estimate takes appropriate account of such data.* | The current Mineral Resource estimate (MRE) is an update of the maiden A4 MRE completed in December 2020 by Sandfire Resources. The current MRE uses all previous data as well as an additional 104 holes completed since the previous MRE.<br>The estimates have been checked by comparing composite data with block model grades for all domains. Visual comparison in has also been completed between block grades and composite samples. The block model visually and statistically reflects the input data.<br>There is no mining production to date from A4 to make a comparison. |
| | *The assumptions made regarding recovery of by-products.* | Silver has been estimated as a by-product within the A4 deposit. It is assumed that silver will be recovered only where copper is being mined. |
| | *Estimation of deleterious elements or other non-grade variables of economic significance (e.g. sulphur for acid mine drainage characterisation).* | Estimates include deleterious or penalty elements As, Bi, Pb, Mo and Zn. Estimates also include the ratio of acid soluble Cu to total Cu. |
| | *In the case of block model interpolation, the block size in relation to the average sample spacing and the search employed.* | Data spacing was the primary consideration taken into account when selecting an appropriate estimation block size. The A4 project is drilled on an approximate 25mE x 25mN support. The parent cell sizes of 6.25mE x 12.5mN x 2.5mRL were based on approximately half to one third of the average drill spacing. |

| Criteria | JORC Code Explanation | Commentary |
|---|---|---|
| | *Any assumptions behind modelling of selective mining units.* | No selective mining units are assumed in this estimate. |
| | *Any assumptions about correlation between variables.* | Correlation analysis was completed for all variables with Cu showing moderate to strong correlation with Ag, S and Bi, and weak to moderate correlation with Cu_AS and Mo. In the Pb-Zn domains there is a weak correlation between all of Pb, Zn and As.<br>However, all variables are treated in the univariate sense for estimation.<br>Correlation between the estimated block values for all constituents are checked after interpolation to ensure that they are similar to the correlation of the input composites. |
| | *Description of how the geological interpretation was used to control the resource estimates.* | The block model is assigned unique domain codes that corresponds with the domain codes as defined by mineralisation wireframes. Wireframes are then used as hard boundaries during interpolation where blocks are estimated only with composites having the corresponding domain code. |
| | *Discussion of basis for using or not using grade cutting or capping.* | Top cuts were applied to isolated composites prior to estimation where applicable based on review of histograms and statistical analysis. |
| | *The process of validation, the checking process used, the comparison of model data to drill hole data, and use of reconciliation data if available.* | The process of validation includes standard model validation using visual and numerical methods:<br>• The block model estimates are checked visually against the input composite/drillhole data;<br>• Swath plots of the estimated block grades and composite mean grades are generated by eastings, northings and elevations and reviewed to ensure acceptable correlation, and ;<br>• Global statistical comparisons of mean estimated block grades to mean composite grades. No reconciliation data is available as no mining has taken place. |
| Moisture | Whether the tonnages are estimated on a dry basis or with natural moisture, and the method of determination of the moisture content. | Tonnages are estimated on a dry basis. |
| Cut-off parameters | *The basis of the adopted cut-off grade(s) or quality parameters applied.* | The Mineral Resource has been reported above a cut-off of 0.5% Cu within an optimised open pit shell run at a US $4.50/lb Cu price. It is the opinion of the Competent Person that the cut-off grade represents a suitable assessment of a potential lower economic cut-off, when likely mining methods for the current A4 Mineral Resource are considered. |
| Mining factors or assumptions | *Assumptions made regarding possible mining methods, minimum mining dimensions and internal (or, if applicable, external) mining dilution. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider potential mining methods, but the assumptions made regarding mining methods and parameters when estimating Mineral Resources may not always be rigorous. Where this is the case, this should be reported with an explanation of the basis of the mining assumptions made.* | Preliminary mining studies for the A4 deposit have shown that the currently defined Mineral Resource could potentially be economically mined using open-cut methods at the currently reported average Cu grade. |

| Criteria | JORC Code Explanation | Commentary |
|---|---|---|
| Metallurgical factors or assumptions | *The basis for assumptions or predictions regarding metallurgical amenability. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider potential metallurgical methods, but the assumptions regarding metallurgical treatment processes and parameters made when reporting Mineral Resources may not always be rigorous. Where this is the case, this should be reported with an explanation of the basis of the metallurgical assumptions made.* | Preliminary test work has been conducted on material from the A4 Deposit. 4 composites were used for comminution test work, along with 6 variability samples to test for metallurgical recovery. The variability samples used the same laboratory flowsheet that was used to assess T3. Initial results showed the A4 material to be similar in ore competency to T3, and responded well to the T3 flowsheet, producing metallurgical recoveries in line with T3. A larger, more comprehensive test work program will be conducted as part of the next project stage. |
| Environmental factors or assumptions | *Assumptions made regarding possible waste and process residue disposal options. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider the potential environmental impacts of the mining and processing operation. While at this stage the determination of potential environmental impacts, particularly for a greenfields project, may not always be well advanced, the status of early consideration of these potential environmental impacts should be reported. Where these aspects have not been considered this should be reported with an explanation of the environmental assumptions made.* | It has been assumed that the waste material produced as a result of open-cut mining will be stored in dry stacked waste dumps on site, adjacent to the mining operation. The sulphide content of the mineralisation poses the risk for potentially acid generating waste to be produced. It has been assumed that the treatment and appropriate storage of this waste will not pose any significant impediment to the sustainable mining of the deposit and would be correctly managed in accordance with regulatory conditions imposed by the Botswanan government. |
| Bulk density | *Whether assumed or determined. If assumed, the basis for the assumptions. If determined, the method used, whether wet or dry, the frequency of the measurements, the nature, size and representativeness of the samples.* | Sample mass was determined by weighing the core in air and sample volume was determined by the Archimedes principle.<br>Density is estimated using Inverse Distance Squared within the Cu domains. Density is assigned to waste blocks outside of the Cu domains based on weathering profile averages. |
| | *The bulk density for bulk material must have been measured by methods that adequately account for void spaces (vugs, porosity, etc.), moisture and differences between rock and alteration zones within the deposit.* | The procedure used is suitable for non-porous or very low porosity samples, which can be quickly weighed in water before saturation occurs. |
| | *Discuss assumptions for bulk density estimates used in the evaluation process of the different materials* | No assumptions for bulk density made. |
| Classification | *The basis for the classification of the Mineral Resources into varying confidence categories.* | The Mineral Resource is classified as a function of drillhole spacing, geological and grade continuity, database integrity and QAQC. Areas where drilling has been completed on a nominal 25m x 25m pattern and classified as Indicated. Areas where the drillhole spacing is larger than the nominal 25m x 25m pattern have been classified as Inferred.<br>The MRE was also spatially constrained within a Whittle optimized open pit shell generated using optimistic input parameters based on a Cu price of US $4.50/lb. |
| | *Whether appropriate account has been taken of all relevant factors (i.e. relative confidence in tonnage/grade estimations, reliability of input data, confidence in continuity of geology and metal values, quality, quantity and distribution of the data).* | The Mineral Resource classification has appropriately taken into account data spacing, distribution, reliability, quality and quantity of input data as well as the confidence in predicting grade and geological continuity. |
| | *Whether the result appropriately reflects the Competent Person's view of the deposit.* | The Mineral Resource estimation appropriately reflects the Competent Person's view of the deposit. |

| Criteria | JORC Code Explanation | Commentary |
|---|---|---|
| Audits or reviews | *The results of any audits or reviews of Mineral Resource estimates.* | No audits or reviews have been completed |
| Discussion of relative accuracy/ confidence | *Where appropriate a statement of the relative accuracy and confidence level in the Mineral Resource estimate using an approach or procedure deemed appropriate by the Competent Person. For example, the application of statistical or geostatistical procedures to quantify the relative accuracy of the resource within stated confidence limits, or, if such an approach is not deemed appropriate, a qualitative discussion of the factors that could affect the relative accuracy and confidence of the estimate.* | The Mineral Resources has been reported in accordance with the guidelines of the 2012 edition of the Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves and reflects the relative accuracy of the Mineral Resources estimates. |
| | *The statement should specify whether it relates to global or local estimates, and, if local, state the relevant tonnages, which should be relevant to technical and economic evaluation. Documentation should include assumptions made and the procedures used.* | The A4 Mineral Resource Estimate is a global estimate. |
| | *These statements of relative accuracy and confidence of the estimate should be compared with production data, where available.* | The deposit has not been mined. |

## Section 4: Estimation and Reporting of Ore Reserves

| Criteria | JORC Code Explanation | Commentary |
|---|---|---|
| Mineral Resource estimate for conversion to Ore Reserves | *Description of the Mineral Resource estimate used as a basis for the conversion to an Ore Reserve.* | The Mineral Resource Estimate used as a basis for the conversion to the Ore Reserve was provided on the 21st July 2021 with Mr. Mark Zammit, of Cube Consulting Pty Ltd, as the Competent Person.<br>The total Mineral Resource, reported above 0.5% Cu and within a $4.50 shell, of 9.8 Mt at 1.4 % Cu and 21 g/t Ag included:<br>• Indicated at 8.9 Mt at 1.4 % Cu & 22 g/t Ag<br>• Inferred at 0.9 Mt at 1.0 % Cu & 15 g/t Ag<br>The estimation and reporting of Mineral Resources is outlined in Section 3 of this Table. |
| | *Clear statement as to whether the Mineral Resources are reported additional to, or inclusive of, the Ore Reserves.* | Mineral Resources are reported inclusive of Ore Reserves. |
| Site visits | *Comment on any site visits undertaken by the Competent Person and the outcome of those visits.* | Mr Jake Fitzsimons, the Competent Person for this Ore Reserve statement is a full-time employee of Orelogy Consulting Pty Ltd (Orelogy). A site visit to the Motheo Copper Project was untaken by Mr Ryan Locke of Orelogy on behalf of the Competent Person on the 9 Nov 2019. |
| | *If no site visits have been undertaken indicate why this is the case.* | A site visit was undertaken as described above. |

| Criteria | JORC Code Explanation | Commentary |
|---|---|---|
| Study status | *The type and level of study undertaken to enable Mineral Resources to be converted to Ore Reserves.* | The Ore Reserve estimate is based on a Pre-Feasibility Study (PFS) for the A4 Satellite pit. The study was undertaken following Sandfire's approval to commence development of the Motheo Cooper Project in Botswana. The Project is held by Sandfire's wholly owned subsidiary, Tshukudu Metals (Botswana) Pty Ltd.<br>Sandfire had competed an updated FS in September 2020 and has since awarded contracts for construction and commencement of mining is April of 2022.<br>The objective of this PFS was to assess the expansion of the Motheo operation from 3.2 Mtpa to 5.2 Mtpa using ore mined and hauled from A4.<br>The PFS update was compiled by Sandfire on behalf of Tshukudu Metals with input from:<br>• Cube Consulting (Geology)<br>• Wood PLC (Geotechnical)<br>• Orelogy Consulting (Mine Planning)<br>• ADP Kukama (process design)<br>• Knight Piesold (tailings storage)<br>• AQ2 (hydrology and hydrogeology)<br>• Sandfire (marketing and financial analysis) |
| Cut-off parameters | *The basis of the cut-off grade(s) or quality parameters applied.* | The copper cut-off grade is variable, based on silver credits, contaminant penalties and variable metal recovery dependent on head grades for copper, silver, sulphur, arsenic, lead, zinc and the ratio of copper to acid soluble copper.<br>A net smelter return (NSR) value was used to define the economic material for the Ore Reserve Estimate.<br>An elevated copper cut-off grade of 0.5% was used for the majority of the life of mine (LOM). Material between the NSR marginal cut-off and the elevated cut-off was used to maintain plant feed and manage total material movement rates. |
| Mining factors or assumptions | *The method and assumptions used as reported in the Pre-Feasibility or Feasibility Study to convert the Mineral Resource to an Ore Reserve (i.e. either by application of appropriate factors by optimisation or by preliminary or detailed design).* | The Open Pit Ore Reserve Estimate is underpinned by mine plans that deliver ore for processing on site to produce a concentrate for export. The mine planning activities included open pit optimisation, pit design, mine scheduling and cost estimation.<br>Mining costs were sourced from the same contractor that was awarded the contract for mining services for the T3 pit at Motheo. |
| | *The choice, nature and appropriateness of the selected mining method(s) and other mining parameters including associated design issues such as pre-strip, access, etc.* | Conventional open pit mining method using backhoe excavators and rigid dump trucks was adopted in line with the mining method at T3.<br>The bench heights and equipment selection were reviewed in parallel with the dilution modelling and confirmed the 2.5 m flitch height for ore mining with blasting on 10 m benches was optimal for mining at A4.<br>A split shell approach for staging of the pit was selected as the preferred option for managing pre-stripping requirements and continuity of ore supply. |

| Criteria | JORC Code Explanation | Commentary |
|---|---|---|
| | *The assumptions made regarding geotechnical parameters (e.g. pit slopes, stope sizes, etc.), grade control and pre-production drilling.* | A preliminary geotechnical assessment of the slope design was undertaken by Wood PLC with batter / berm configurations provided for design of the final walls based on weathering profiles and footwall / hanging wall conditions.<br>Grade control drilling is proposed from 40 m vertical intervals in advance of mining with 60$^{o}$ angled holes drilled perpendicular to the orebody using RC drilling methods to minimise contamination. |
| | *The major assumptions made and Mineral Resource model used for pit and stope optimisation (if appropriate).* | The Mineral Resource model created to estimate the Mineral Resources as at the 21$^{st}$ July 2021 was used as the basis for pit optimisation and scheduling.<br>To establish mineable quantities, a number of open pit optimisations were completed on the diluted Mineral Resource model. The base case optimisations considered Indicated materials only, and applied pricing, recoveries and other modifying factors to define a Net Smelter Return (NSR). Only diluted blocks with a positive NSR value were identified as ore during pit optimisation.<br>The shell selection was based on the business objectives of maximising the discounted cash flow whilst providing sufficient mine life for the Project. A conservative open pit optimisation shell, at a revenue factor of 0.92 times the copper and silver prices, was selected as the basis for design. |
| | *The mining dilution factors used.* | Dilution was applied to the Mineral Resource model using regularisation to a SMU size.<br>As a result of applying dilution using this method, the model reported dilution of 16% at 0.0% Cu and ore loss of 12 % at 0.79 % Cu. |
| | *The mining recovery factors used.* | No additional recovery factors were applied. |
| | *Any minimum mining widths used.* | The mine design used minimum mining width of 20 m and 100 m respectively for pit floor and cutbacks. |
| | *The manner in which Inferred Mineral Resources are utilised in mining studies and the sensitivity of the outcome to their inclusion.* | Only Indicated material was used for the reporting of the Ore Reserve estimate. Inferred Mineral Resource was treated as waste. |
| | *The infrastructure requirements of the selected mining methods.* | The majority of site facilities such as accommodation and other camp facilities, sewerage plant, ROM pad, processing plant, maintenance facilities, tailings storage and Contractor built/supplied workshops were already required for the T3 pit. For the satellite operation at A4, the infrastructure requirements for the open pit operation include dewatering bores, water storage dams, haul roads, satellite workshop for minor servicing and office facilities. |

| Criteria | JORC Code Explanation | Commentary |
|---|---|---|
| Metallurgical factors or assumptions | *The metallurgical process proposed and the appropriateness of that process to the style of mineralisation.*<br>*Whether the metallurgical process is well-tested technology or novel in nature.*<br>*The nature, amount and representativeness of metallurgical test work undertaken, the nature of the metallurgical domaining applied and the corresponding metallurgical recovery factors applied.*<br>*Any assumptions or allowances made for deleterious elements.*<br>*The existence of any bulk sample or pilot scale test work and the degree to which such samples are considered representative of the orebody as a whole.*<br>*For minerals that are defined by a specification, has the ore reserve estimation been based on the appropriate mineralogy to meet the specifications?* | Conventional crushing, grinding and sulphide flotation processing is proposed which will yield a saleable, silver bearing copper concentrate with a LOM grade of 30% Cu. The process is well tested, widely used in the mining industry and there are no novel steps in the flowsheet.<br>The metallurgical testwork program to support development of the A4 Deposit commenced in July 2020 which initially targeted 6 samples from selected drill core within the proposed A4 pit shell. The initial results were encouraging with the samples tested exhibiting similar metallurgical characteristics (ore competency and copper recovery to concentrate) as the T3 deposit.<br>The results provided confidence that the copper ore from the A4 deposit will respond well when processed through the proposed T3 process flowsheet. As a result, the second stage of the A4 testwork program was developed on the basis that the A4 ore will be treated in the T3 plant. This allowed the program to focus on comminution and flotation variability testing rather than flowsheet development and optimisation. This also allowed for a reduced level of engineering tests, however, blending tests were required to confirm the metallurgical response of the combined T3 and A4 material.<br>The T3 testwork flowsheet and conditions were adopted for all flotation testing during the A4 test program, a flotation feed mass P80 grind size of 212µm, residence times, reagent doses and flotation conditions used the T3 flotation flowsheet.<br>The A4 deposit has areas of high molybdenum (Mo) and Bismuth (Bi) so the A4 testwork program included both Cu-Mo separation testwork and Bi depression testwork<br>The proposed treatment route has been applied to similar style orebodies around the world.<br>Variability samples that represent differing mineralisation types, lithologies and spatial distributions were tested.<br>Deleterious elements such as, Bi, Pb and Zn were assayed for and tracked through the testwork program. Hg was assayed for in selected feed and final concentrate.<br>Where penalty ranges of deleterious elements are modelled to be reached with the mine plan, allowances have been made in the financial model to capture the impact on revenue.<br>The LOM Cu metallurgical recovery is 93.1% and 90.7% for Ag. |
| Environmental | *The status of studies of potential environmental impacts of the mining and processing operation. Details of waste rock characterisation and the consideration of potential sites, status of design options considered and, where applicable, the status of approvals for process residue storage and waste dumps should be reported.* | Key environmental baseline studies have commenced for the A4 Project including flora, fauna and biodiversity assessments.<br>In addition, waste rock characterisation studies and updated groundwater modelling assessments are underway.<br>The findings of baseline assessments will be incorporated into an Environmental and Social Impact Assessment (ESIA) to be submitted to the Botswana Department of Environmental Affairs (DEA) for review and approval.<br>A mine closure plan will be developed for the A4 Project with the principal objective being to create safe, stable and non-polluting landforms. |

| Criteria | JORC Code Explanation | Commentary |
|---|---|---|
| Infrastructure | *The existence of appropriate infrastructure: availability of land for plant development, power, water, transportation (particularly for bulk commodities), labour, accommodation; or the ease with which the infrastructure can be provided, or accessed.* | The Motheo Project area is well serviced with infrastructure. The A3 major bitumen highway is within 15 km of the project site, as will be the HV power supply.<br>Raw and process water will be sourced from the open-pit and water bores located around the pit.<br>Unskilled and skilled labour will be sourced principally from within Botswana.<br>Ownership of the land and easements required for access and development are well advanced with agreements with landholders in place.<br>An upgrade to the existing site access road from the National A3 Highway of approximately 15 km length is required and is currently under construction.<br>A 750 person accommodation camp located approximately 14 km west of the plant site is also currently under construction. |

<table>
<tr><th>Criteria</th><th>JORC Code Explanation</th><th>Commentary</th></tr>
<tr><td>Costs</td><td>The derivation of, or assumptions made, regarding projected capital costs in the study.<br>The methodology used to estimate operating costs.<br>Allowances made for the content of deleterious elements.<br>The source of exchange rates used in the study.<br>Derivation of transportation charges.<br>The basis for forecasting or source of treatment and refining charges, penalties for failure to meet specification, etc.<br>The allowances made for royalties payable, both Government and private.</td><td>The Project cost has been derived for the PFS update.<br>The mining costs in 2021 USD prices are supported by contractor submissions provided during the Tender for the mining contract at T3.<br>The capital cost estimate in 2021 USD prices has been based on a mechanical equipment list with budget pricing for major equipment for bulks such as concrete and steel for the process plant and other non process infrastructure. Including access road power line extension and bore field. Electrical and earthworks were estimated separately.<br>Operating costs in 2020 USD prices for the processing plant, mining and site administration for a production rate of 5.2 Mtpa of ore have been estimated by appropriately experienced industry personnel.<br>Mine closure and rehabilitation liability costs have been included in the financial model based on areas of disturbance. These commitments are in line with the closure plan.<br>Operating and capital costs were estimated using the following exchange rate assumptions, based on banking long term forecast rates in Q2 2020.
<table>
<tr><td>AUD : USD</td><td>0.752</td></tr>
<tr><td>EUR : USD</td><td>1.19</td></tr>
<tr><td>USD:ZAR</td><td>14.33</td></tr>
<tr><td>USD:BWP</td><td>10.825</td></tr>
</table>
Concentrate transport charges have been applied on road transport to Walvis Bay and Durban then sea freight to China.<br>Treatment and refining charges (TC/RC) have been applied for both Cu and Ag.<br>Penalties for deleterious elements including Pb, Zn, As, Bi, Cl, Sb, Fl and Hg have been applied in the financial model.<br>Government royalties have been applied at the rates of 3% for Copper and 5% for silver.<br>A royalty is payable to Metal Tiger which is uncapped at 2% NSR for A4. The T3 Metal Tiger Royalty is capped at US$2M.</td></tr>
</table>

| Criteria | JORC Code Explanation | Commentary |
|---|---|---|
| Revenue factors | *The derivation of, or assumptions made regarding revenue factors including head grade, metal or commodity price(s) exchange rates, transportation and treatment charges, penalties, net smelter returns, etc.*<br>*The derivation of assumptions made of metal or commodity price(s), for the principal metals, minerals and co-products.* | Price forecasts supplied by Consensus Economics Inc. for copper and silver pricing were applied in the pit optimisation, development of then mine schedule and financial model.<br>Metal prices used to estimate the Ore Reserve were:<br>• US$3.40/lb for copper<br>• US$18.77/oz for silver<br>Selling cost used to estimate the Ore Reserve were:<br>• Concentrate transport of US$151.90/t wet<br>• Treatment charge of US$90.00/t concentrate<br>• Refining cost of US$0.09/lb Cu and $0.35/oz Ag<br>• Copper payability of 96.5%<br>• Silver payability of 90% above 30 g/t |
| Market assessment | *The demand, supply and stock situation for the particular commodity, consumption trends and factors likely to affect supply and demand into the future.*<br>*A customer and competitor analysis along with the identification of likely market windows for the product.*<br>*Price and volume forecasts and the basis for these forecasts.*<br>*For industrial minerals the customer specification, testing and acceptance requirements prior to a supply contract.* | Sandfire is a low-cost copper concentrate producer selling into global market for custom concentrates.<br>Pricing is fundamentally on value of contained metals the main metal being copper with silver credits.<br>The price of copper being set based on the LME which is a mature, well established and publically traded exchange.<br>Sandfire relies upon independent expert publications (CRU, Wood Mac, Metal Bulletin) and other sources (bank reports, trader reports, conferences, other trade publications) in forming a view about future demand and supply and the likely effects of this on both metal prices and concentrate prices. |
| Economic | *The inputs to the economic analysis to produce the net present value (NPV) in the study, the source and confidence of these economic inputs including estimated inflation, discount rate, etc.*<br>*NPV ranges and sensitivity to variations in the significant assumptions and inputs.* | A discount rate of 7% (using industry standard assumptions in calculating WACC) has been utilised to determine NPV for the A4 Satellite Pit and expansion of the plant at Motheo to 5.2 Mtpa.<br>Orelogy was provided with confidential financial information demonstrating the economic viability of the project based on this Ore Reserve Estimate.<br>A range of sensitivities was produced for the pit optimisation which showed that the project was robust to changes in the significant inputs and assumptions being most sensitive to commodity prices.<br>The Ore Reserve Estimate is based on a PFS level of accuracy with inputs from open pit mining, processing, sustaining capital and contingencies scheduled and costed to generate the Ore Reserve cost estimate and cashflows.<br>The Ore Reserve returns a positive NPV based on the FS and associated modifying factors. |
| Social | *The status of agreements with key stakeholders and matters leading to social licence to operate.* | The Environmental and Social Impact Assessment (ESIA) submitted to the Botswana Department of Environmental Affairs (DEA) in late 2018 was approved in June 2020. The ESIA documented the various stakeholder consultation processes that had been undertaken. |

| Criteria | JORC Code Explanation | Commentary |
|---|---|---|
| Other | *To the extent relevant, the impact of the following on the project and/or on the estimation and classification of the Ore Reserves:*<br>*Any identified material naturally occurring risks.*<br>*The status of material legal agreements and marketing arrangements.*<br>*The status of governmental agreements and approvals critical to the viability of the project, such as mineral tenement status, and government and statutory approvals. There must be reasonable grounds to expect that all necessary Government approvals will be received within the timeframes anticipated in the Pre-Feasibility or Feasibility study. Highlight and discuss the materiality of any unresolved matter that is dependent on a third party on which extraction of the reserve is contingent.* | The relevant prospecting license PL 190/2008 is in good standing and expires on 30 September 2022. The licence is in good standing both in the expenditure and work completed.<br>Following the completion of a Bankable Feasibility Study and an investment decision by Sandfire on the A4 Project an application for a Mining Licence will commence.<br>Legal agreements are in place with all relevant landholders and the land on which the A4 Project is situated has been purchased and is owned by a wholly owned Botswana subsidiary company of Sandfire Resources. |
| Classification | *The basis for the classification of the Ore Reserves into varying confidence categories.*<br>*Whether the result appropriately reflects the Competent Person's view of the deposit.*<br>*The proportion of Probable Ore Reserves that have been derived from Measured Mineral Resources (if any).* | Open Pit Ore Reserves have been derived from a mine plan that is based on extracting the 21 July 2021 Mineral Resources.<br>Probable Ore Reserves were determined from Indicated material after applying appropriate modifying factors as per the guidelines.<br>These results reflect the Competent Person's view of the deposit. |
| Audits or reviews | *The results of any audits or reviews of Ore Reserve estimates.* | The Ore Reserve Estimate has been reviewed internally by Orelogy Consulting Pty Ltd. |
| Discussion of relative accuracy/confidence | *Where appropriate a statement of the relative accuracy and confidence level in the Ore Reserve estimate using an approach or procedure deemed appropriate by the Competent Person. For example, the application of statistical or geostatistical procedures to quantify the relative accuracy of the reserve within stated confidence limits, or, if such an approach is not deemed appropriate, a qualitative discussion of the factors which could affect the relative accuracy and confidence of the estimate.*<br>*The statement should specify whether it relates to global or local estimates, and, if local, state the relevant tonnages, which should be relevant to technical and economic evaluation. Documentation should include assumptions made and the procedures used.*<br>*Accuracy and confidence discussions should extend to specific discussions of any applied Modifying Factors that may have a material impact on Ore Reserve viability, or for which there are remaining areas of uncertainty at the current study stage.*<br>*It is recognised that this may not be possible or appropriate in all circumstances. These statements of relative accuracy and confidence of the estimate should be compared with production data, where available.* | The Mineral Resource Estimate and hence the Ore Reserve Estimate relate to global estimates.<br>The Ore Reserve Estimate is an outcome of the 2021 Mining Pre-Feasibility Study with geological, mining, metallurgical, processing, engineering, marketing and financial considerations to allow for the cost of finance and tax. Engineering and cost estimations have been completed to a ±15-25% level of accuracy, consistent with a study of this nature.<br>There has been an appropriate level of consideration given to all modifying factors to support the declaration and classification of the Ore Reserves.<br>No production or reconciliation date is yet available for comparison. |