

**Orion Minerals Limited**

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Australian Company Number 098 939 274

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**New Standout Intercepts Confirm Down-Dip Continuation of High-Grade Copper Mineralisation at Flat Mine South**

**Latest diamond hole returns assays of 24.95m at 4.14% Cu within 59.00m at 3.14% Cu**

- Outstanding assay results received for a diamond drill hole completed recently at Flat Mine South, which returned an intersection of 24.95m at 4.14% Cu within 59.00m at 3.14% Cu.
- The intersection confirms that high-grade copper mineralisation continues in an up-thrown and repeated fault block position.
- Drilling is continuing at Flat Mine South to further test the down-dip extension of high-grade copper mineralisation in a previously untested area.
- A ground geophysical program is also in progress in the Flat Mines area. Drill testing of geophysical targets is underway.

**Orion's Managing Director and CEO, Errol Smart, commented:**

*"Our ongoing drilling at the Okiep Project continues to deliver the highly anticipated extensions of previously intersected wide, high-grade copper mineralisation, confirming the substantial upside of this project. Importantly, the newly intersected mineralisation is at the foot of the proposed mine development planned for Flat Mine South, to extract the existing Mineral Resource."*

Orion Minerals Limited (**ASX/JSE: ORN**) (**Orion** or **Company**) is pleased to report final assay results from the first drill hole completed to test down-dip continuity in a block of structurally uplifted high-grade copper mineralisation at Flat Mine South (**FMS**), part of its Okiep Copper Project (**OCP**) in the Northern Cape, South Africa.

The latest results add further momentum to Orion's development strategy for the OCP, building on the outstanding outcomes of the recently completed confirmation drilling program, which confirmed the geology and endowment of the Flat Mines area (refer ASX/JSE releases 22 April 2024, 24 June 2024, 9 July 2024, 3 September 2024).

The OCP ground holdings of 703km<sup>2</sup> cover most of the Okiep copper mining district where a total of 105Mt is reported to have been mined over the past 100 years (refer ASX/JSE release 21 May 2021). Of the 105Mt mined, some 77Mt was mined on OCP prospecting and mining rights. The Flat Mines area and the current drilling program fall entirely within executed Mining Right NC10150MR.

The Mining Right is surrounded by the newly granted prospecting rights, NC12755PR and NC12848PR (refer ASX/JSE release 13 August 2024), which host several exciting historically drilled prospects and historical mines that offer the potential for additional Mineral Resources through future drilling.

Results reported in this announcement have confirmed reverse faulting and vertical repetition of previously intersected high-grade copper mineralisation (Figure 3) and suggest potential for further down-dip extensions below the mineralisation intercepted in drilling by Newmont and Goldfields of South Africa (**GFSA**) in the 1980s and 1990s and Orion's confirmation drilling program in 2024 (Figure 4).

The historical drilling information underpinned Orion's updated Mineral Resource for the Flat Mines deposits (refer ASX/JSE release on 28 August 2023) of 9.3Mt at 1.3% Cu (Table 1)<sup>1</sup>. This included 3.4Mt at 1.4% Cu at FMS inclusive of an Indicated Mineral Resource of 2.6Mt at 1.35% Cu (Table 1)<sup>1</sup>.

**Table 1: Mineral Resource Statement for the Flat Mine North, Flat Mine East and Flat Mine South.**

Mine / Prospect	Measured			Indicated			Inferred		
	Tonnes	% Cu	† Cu	Tonnes	% Cu	† Cu	Tonnes	% Cu	† Cu
Flat Mine North	440,000	1.13	5,000	940,000	1.42	13,000	200,000	1.5	4,000
Flat Mine East	-	-	-	3,400,000	1.37	47,000	1,000,000	1.0	9,000
Flat Mine South	-	-	-	2,600,000	1.35	35,000	800,000	1.6	13,000
<b>Total*</b>	<b>440,000</b>	<b>1.13</b>	<b>5,000</b>	<b>6,900,000</b>	<b>1.37</b>	<b>95,000</b>	<b>2,000,000</b>	<b>1.3</b>	<b>26,000</b>

*\*Numbers may not add up due to rounding in accordance with the JORC Code guidance.*

*Resources are reported at a 0.7% Cu cut-off grade.*

### Flat Mine South Down-dip Drilling Program

Following the successful completion of the Flat Mines confirmation drilling program in August 2024, two drill rigs were retained on site at FMS to test for extensions of high-grade mineralisation beyond the margins of the current Mineral Resource.

At FMS, historical GFSA holes and Orion holes OFMSD077 and OFMSD079 (refer ASX/JSE releases 9 July 2024, 3 September 2024) suggest that copper mineralisation may remain open down-dip for up to 200m within an untested area encompassing a strike length of 300m (Figures 3 and 4).

Drill holes OFMSD080 and OFMSD081 have been completed to date with holes OFMSD082 and OFMSD083 currently in progress. Importantly, the upper area has now delivered multiple drill intersections representing vertical repetitions of the wide and high-grade mineralisation.

Drill hole OFMSD080 intersected 26.12m at 3.02% Cu from 535.00m and 24.95m at 4.14% Cu from 567.00m within a broader zone of 59.00m at 3.14% Cu from 533.00m (Table 2). This intersection is located approximately 40m down-dip from OFMSD077, which intersected 43.00m at 3.41% Cu from 527.00m (Figure 3).

Drill hole OFMSD080 was targeted to better understand a possible reverse fault interpreted between Orion drill hole OFMSD077 and historical Goldfields drill hole FMS053D1 (Figure 3). The mineralised intercept in OFMSD077 is 10 metres away from drill hole FMS053D1 but sits 40m up-dip of the projected down-dip extension.

The intercept in OFMS080 likewise sits 30m above the projected intersection. This can best be explained by reverse faulting, which is supported by evidence of shearing and structural displacement observed in the core of OFMSD077 and OFMSD080, with references to strong foliations, shearing and possible fault zones in geological logs for GFSA holes FMS055, FMS057 and FMS053D1.

The repeated wide high-grade zones are located approximately 500m below surface (Figure 4) and could be accessed from the foot of the proposed mine development being assessed as part of the ongoing Bankable Feasibility Study to extract the current Mineral Resource which extends from 150m to 750m vertical depth.

<sup>1</sup> Mineral Resource reported in accordance with the JORC Code (2012) in ASX release of 28 August 2023: "Orion upgrades Mineral Resources at Okiep Copper Project" available to the public on <http://www.orionminerals.com.au/investors/asx-jseannouncements/>. Competent Person Mineral Resource: Mr Sean Duggan. Orion confirms it is not aware of any new information or data that materially affects the information included above. The Company confirms that all material assumptions and technical parameters underpinning the estimates in the original release continue to apply and have not materially changed. Orion confirms that the form and context in which the Competent Person's findings are presented have not been materially modified.

The interpreted presence of reverse faulting represents significant potential for Mineral Resource growth in the targeted vertical interval. Drill hole OFMSD082 is currently in progress to test further down-dip continuity of the high-grade copper mineralisation and to confirm the current structural interpretation.

Drill hole OFMSD081 was drilled to test down-dip extensions to the mineralisation intersected in OFMSD079. Assay results from this hole are awaited and are anticipated to be reported mid-November 2024.

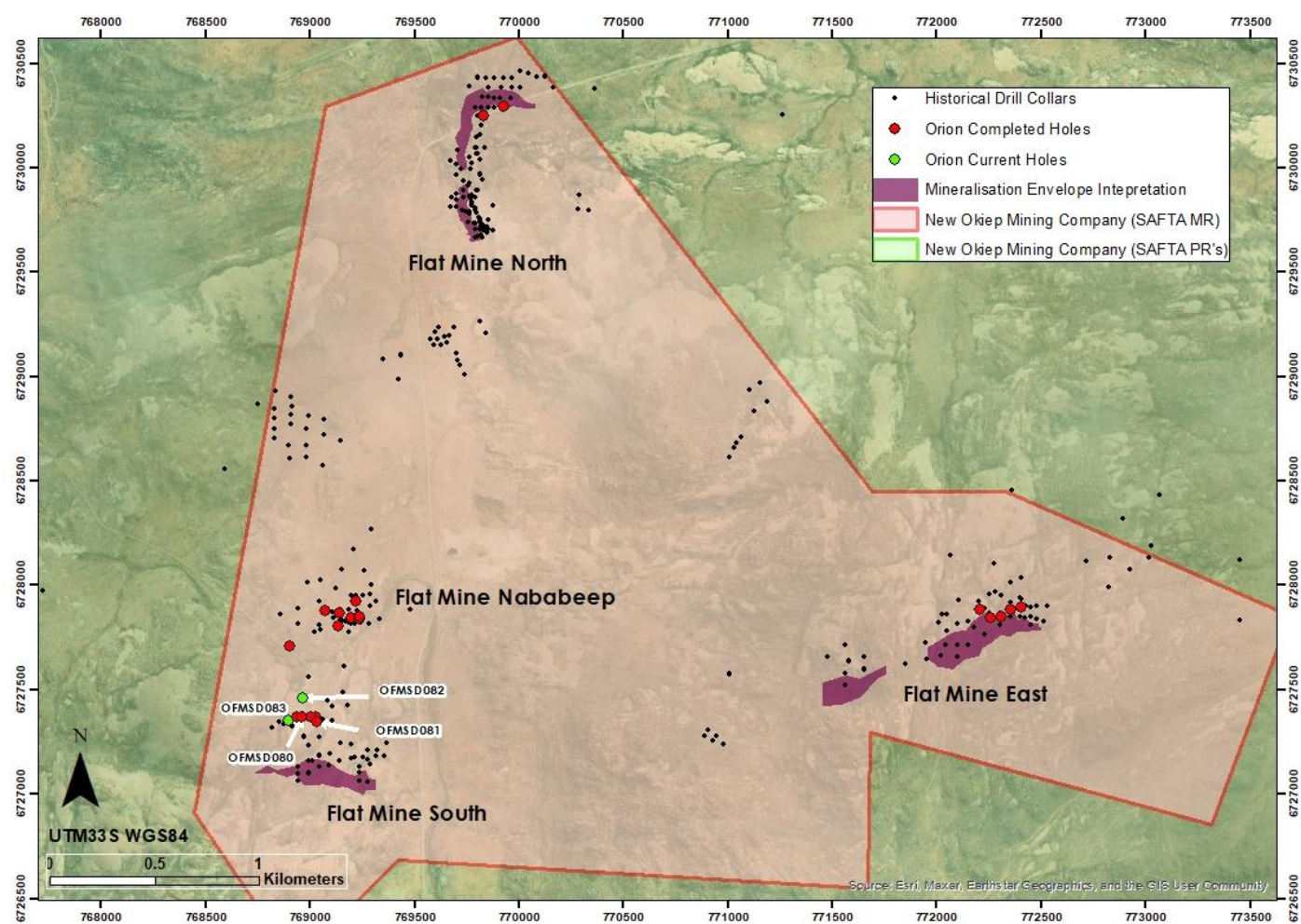


Figure 1: Plan showing historical and Orion drill holes, interpreted mineralisation envelopes and extent of the Mining Right.

Assay Results

Results received for FMS are summarised in Table 2 below.

Internal waste rock widths up to 3m are included within the reported intersection widths, providing opportunities for upgrading material using modern XRF ore sorting techniques to reject internal waste before milling. This provides the potential for optimised metal extraction with larger stopes operated at lower mining cost, while limiting concentrator capital and operating costs.

Table 2: Summary table of drill results to date for FMS prospect (minimum cut-off of 0.7% Cu with maximum 3m consecutive internal waste allowed). Intersections and inclusions with grades mostly above 1% Cu are tabulated. The data was not capped. Note: widths are down-hole drill widths.





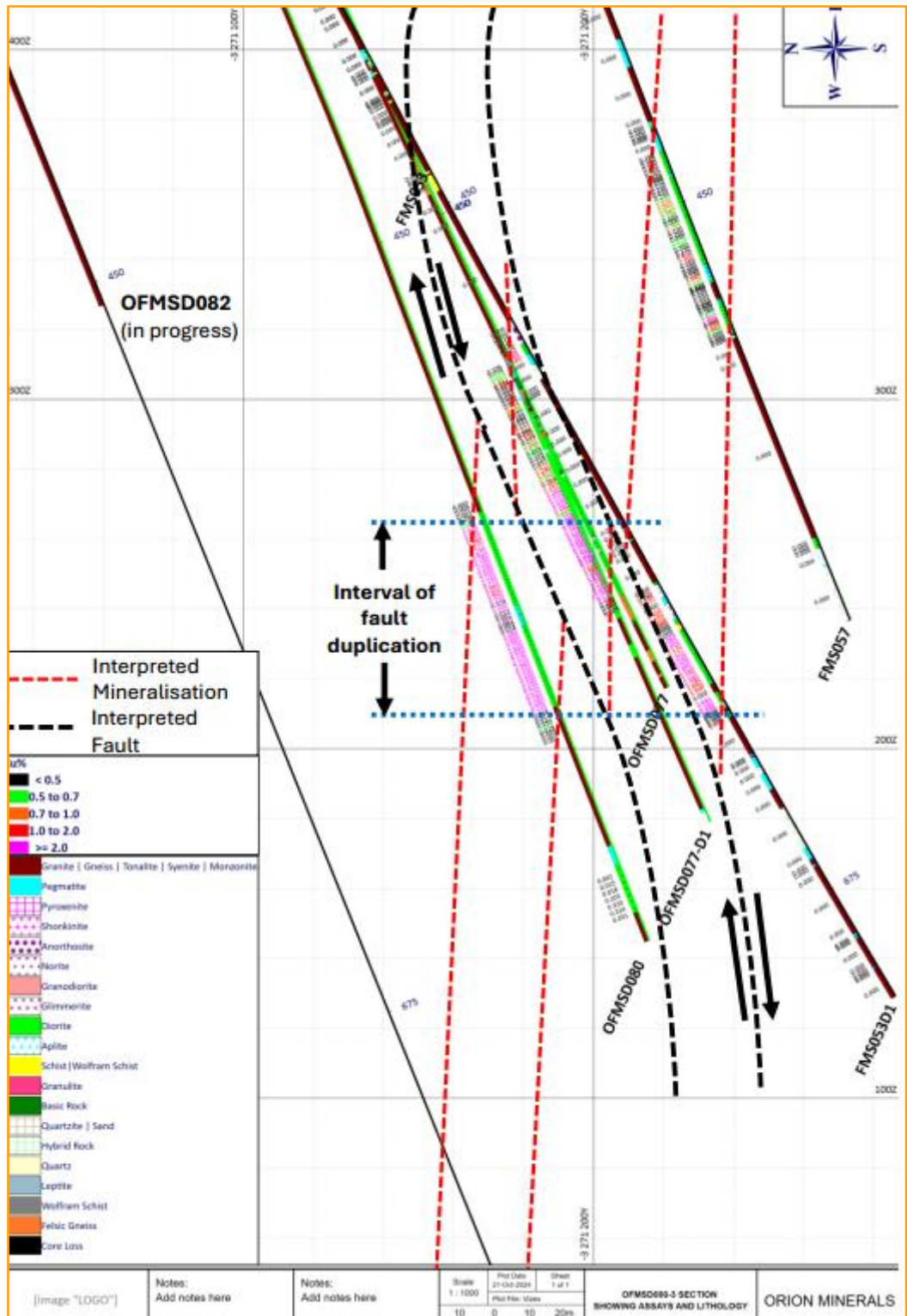


Figure 3: Cross-section of OFMSD080 with adjacent holes.

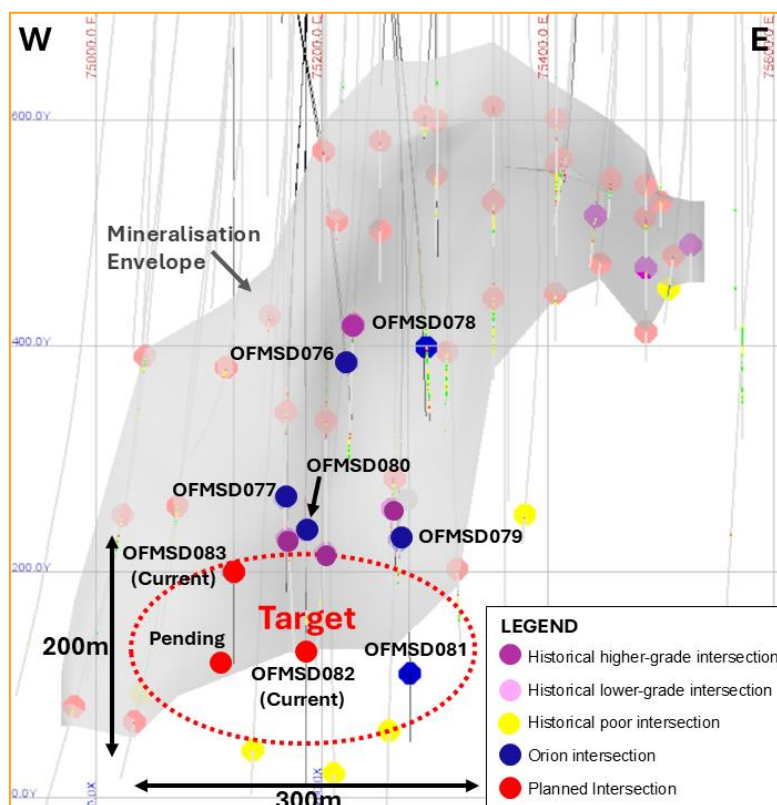


Figure 4: Long section of FMS down-dip drilling target.

### Geophysical Program

Geophysical orientation surveys are currently being conducted over the deposits in the Flat Mines Area applying magnetic, gravity and electrical methods including ground, drone and down-hole geophysical techniques to assist in ranking a number of priority drill targets already identified in a cluster around the proposed Flat Mines Mill Site.

Areas being covered include historical deposits and mineralisation, previously identified by mapping and various geophysical anomalies from the 2021 SkyTEM™ survey (refer ASX/JSE release 1 September 2021). This work is being prioritised to ensure appropriate sterilisation before placement of long-term surface infrastructure for the Flat Mines development.

For and on behalf of the Board.

Errol Smart  
**Managing Director and CEO**

23 October 2024

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## Competent Persons Statement

The information in this report that relates to Exploration Results is based on information compiled by Mr Paul Matthews (Pr.Sci.Nat.), a Competent Person who is a member of the South African Council for Natural Scientific Professionals, a Recognised Professional Organisation (RPO). Mr Matthews is a full-time employee of Orion. Mr Matthews has sufficient experience that is relevant to the style of mineralisation and type of deposit under consideration and to the activity being undertaken to qualify as a Competent Person as defined in the 2012 Edition of the JORC Code. Mr Matthews consents to the inclusion in this announcement of the matters based on his information in the form and context in which it appears.

## Reference to Previous Report

Exploration Results from previous drilling at Flat Mines area were reported in ASX/JSE releases of 22 April 2024: "Spectacular High-Grade Copper Intercept at Okiep Project", 24 June 2024: "More Outstanding Hits at Okiep Copper Project", 9 July 2024: "Okiep Copper Project Continues to Deliver" and 3 September 2024: "Okiep Confirmation Drilling Successfully Completed", available to the public on <http://www.orionminerals.com.au/investors/asx-jse-announcements/>. Competent Person: Mr Paul Matthews. Orion confirms that it is not aware of any new information or data that materially affects the information included in the original market announcement. Orion confirms that the form and context in which the Competent Person's findings are presented have not been materially modified from the original market announcement.

FMN, FME and FMS Mineral Resources were reported in ASX/JSE release dated 28 August 2023: "Orion upgrades Mineral Resources at Okiep Copper Project" available to the public on <http://www.orionminerals.com.au/investors/asx-jseannouncements/>. Competent Person Mineral Resource: Mr Sean Duggan. Orion confirms it is not aware of any new information or data that materially affects the information included in the original market announcement. The Company confirms that all material assumptions and technical parameters underpinning the estimates in the original market announcement continue to apply and have not materially changed. Orion confirms that the form and context in which the Competent Person's findings are presented have not been materially modified.

## Disclaimer

This release may include forward-looking statements. Such forward-looking statements may include, among other things, statements regarding targets, estimates and assumptions in respect of metal production and prices, operating costs and results, capital expenditures, mineral reserves and mineral resources and anticipated grades and recovery rates, and are or may be based on assumptions and estimates related to future technical, economic, market, political, social and other conditions. These forward-looking statements are based on management's expectations and beliefs concerning future events. Forward-looking statements inherently involve subjective judgement and analysis and are necessarily subject to risks, uncertainties and other factors, many of which are outside the control of Orion. Actual results and developments may vary materially from those expressed in this release. Given these uncertainties, readers are cautioned not to place undue reliance on such forward-looking statements. Orion makes no undertaking to subsequently update or revise the forward-looking statements made in this release to reflect events or circumstances after the date of this release. All information in respect of Exploration Results and other technical information should be read in conjunction with Competent Person Statements in this release (where applicable). To the maximum extent permitted by law, Orion and any of its related bodies corporate and affiliates and their officers, employees, agents, associates and advisers:

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## Appendix 1: Drill hole collar information and assay results from drill program at Flat Mine South

**Table 3: Drill hole collar information for FMS prospect. Coordinates in LO17 Hartebeesthoek 94.**

Hole ID	Easting	Northing	RL	Azimuth	Dip	Depth (m)	Comment
OFMSD080	-75187.00	3270970.27	762.09	180	-69	664.16	Completed
OFMSD081	-75259.02	3270991.79	767.43	167	-74	739.40	Completed – assays pending
OFMSD082	-75187.17	3270885.84	749.34	178	-68	800.00	Current
OFMSD083	-75121.00	3270989.00	762.00	180	-67	700.00	Current

**Table 4: OFMSD080 drill assay results.**

Hole ID	From (m)	To (m)	% Cu
OFMSD080	528.00	529.00	0.0003
OFMSD080	529.00	530.00	0.0039
OFMSD080	530.00	531.00	0.0310
OFMSD080	531.00	532.22	0.0074
OFMSD080	532.22	533.00	0.2900
OFMSD080	533.00	534.00	0.7400
OFMSD080	534.00	535.00	0.6830
OFMSD080	535.00	536.00	2.7700
OFMSD080	536.00	537.00	2.3400
OFMSD080	537.00	538.00	1.8750
OFMSD080	538.00	539.00	2.8700
OFMSD080	539.00	540.00	1.9400
OFMSD080	540.00	541.00	2.6300
OFMSD080	541.00	542.00	0.8120
OFMSD080	542.00	543.00	3.2900
OFMSD080	543.00	544.00	4.4200
OFMSD080	544.00	545.00	4.5800
OFMSD080	545.00	546.00	2.1800
OFMSD080	546.00	547.00	5.2500
OFMSD080	547.00	548.00	2.3900
OFMSD080	548.00	549.00	6.6300
OFMSD080	549.00	550.00	4.6500
OFMSD080	550.00	551.00	2.2300
OFMSD080	551.00	552.00	2.1600
OFMSD080	552.00	553.00	4.1700
OFMSD080	553.00	554.00	1.6650
OFMSD080	554.00	555.00	3.4000
OFMSD080	555.00	556.00	1.4050
OFMSD080	556.00	557.00	3.3000
OFMSD080	557.00	558.00	5.7200
OFMSD080	558.00	559.00	0.3790
OFMSD080	559.00	560.00	2.2600
OFMSD080	560.00	561.12	3.2200
OFMSD080	561.12	562.25	0.0125
OFMSD080	562.25	563.50	0.0021
OFMSD080	563.50	564.17	2.8000
OFMSD080	564.17	565.00	0.0608
OFMSD080	565.00	566.00	0.0032
OFMSD080	566.00	567.05	0.0181
OFMSD080	567.05	568.00	3.3400

Hole ID	From (m)	To (m)	% Cu
OFMSD080	568.00	569.00	3.8900
OFMSD080	569.00	570.00	2.4000
OFMSD080	570.00	571.00	3.5600
OFMSD080	571.00	572.00	3.1500
OFMSD080	572.00	573.00	5.9400
OFMSD080	573.00	574.00	3.6500
OFMSD080	574.00	575.00	4.2500
OFMSD080	575.00	576.00	2.7200
OFMSD080	576.00	577.00	4.3100
OFMSD080	577.00	578.00	2.9400
OFMSD080	578.00	579.00	4.5300
OFMSD080	579.00	580.00	3.3300
OFMSD080	580.00	581.00	5.2000
OFMSD080	581.00	582.00	5.3500
OFMSD080	582.00	583.00	3.3300
OFMSD080	583.00	584.00	3.2900
OFMSD080	584.00	585.00	4.6200
OFMSD080	585.00	586.00	3.7100
OFMSD080	586.00	587.00	4.9200
OFMSD080	587.00	588.00	8.7900
OFMSD080	588.00	589.00	4.5800
OFMSD080	589.00	590.00	3.6600
OFMSD080	590.00	591.00	4.2100
OFMSD080	591.00	592.00	3.7100
OFMSD080	592.00	593.00	0.0581
OFMSD080	593.00	594.00	0.0713
OFMSD080	594.00	595.00	0.0225
OFMSD080	595.00	596.00	0.0495
OFMSD080	596.00	597.00	0.6570
OFMSD080	597.00	597.70	0.4290
OFMSD080	597.70	598.80	0.0088
OFMSD080	598.80	600.00	0.0031
OFMSD080	600.00	601.00	0.0032
OFMSD080	642.00	644.00	0.0017
OFMSD080	644.00	646.00	0.0149
OFMSD080	646.00	648.00	0.0180
OFMSD080	648.00	650.00	0.1035
OFMSD080	650.00	652.00	0.3200
OFMSD080	652.00	654.00	0.3140
OFMSD080	654.00	656.00	0.0306



**Appendix 2: The following tables are provided in accordance with the JORC Code (2012) requirements for the reporting of Exploration Results from the Okiep Copper Project.**

**Section 1 Sampling Techniques and Data**

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

Criteria	JORC Code explanation	Commentary
<b>Sampling techniques</b>	<ul style="list-style-type: none"> <li>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 down hole gamma sondes, or handheld XRF instruments, etc). These examples should not be taken as limiting the broad meaning of sampling.</li> </ul>	<ul style="list-style-type: none"> <li>Sampling was carried out using industry standard diamond drilling procedures. NQ-size diamond drill cores were longitudinally split in half using a diamond core cutting machine. Half core was cut to quarter core where field duplicates were taken.</li> </ul>
	<ul style="list-style-type: none"> <li>Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.</li> </ul>	<ul style="list-style-type: none"> <li>HQ core size was only drilled in the upper weathered portion and no HQ core was sampled.</li> </ul>
	<ul style="list-style-type: none"> <li>Aspects of the determination of mineralisation that are Material to the Public Report.</li> </ul>	<ul style="list-style-type: none"> <li>One-metre sample length was taken in most cases, with two-metre sample length in poorly mineralised zones and internal waste. Sample lengths were varied to honour geological and mineralisation boundaries, with a maximum sample size of 2.10m and a minimum sample size of 22cm.</li> </ul>
	<ul style="list-style-type: none"> <li>In cases where 'industry standard' work has been done this would be relatively simple (eg '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 (eg submarine nodules) may warrant disclosure of detailed information.</li> </ul>	<ul style="list-style-type: none"> <li>Areas of sampling were selected based on visual observations and readings from a handheld Niton XL3t 500 XRF analyser (standard analytical range &gt;25 elements from S to U with additional elements Mg, Al, Si and P via helium purge).</li> </ul>
<b>Drilling techniques</b>	<ul style="list-style-type: none"> <li>Drill type (eg core, reverse circulation, open-hole hammer, rotary air blast, auger, Bangka, sonic, etc) and details (eg 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).</li> </ul>	<ul style="list-style-type: none"> <li>Diamond core drilling was undertaken.</li> </ul>
		<ul style="list-style-type: none"> <li>HQ and NQ size core was drilled using a standard tube. HQ core size was only drilled in the upper weathered portion of approximately 6m. No Cu mineralisation was visually identified in the HQ core and no HQ core was sampled.</li> </ul>
		<ul style="list-style-type: none"> <li>Core was oriented using a Reflex ACT III™.</li> </ul>
<b>Drill sample recovery</b>	<ul style="list-style-type: none"> <li>Method of recording and assessing core and chip sample recoveries and results assessed.</li> </ul>	<ul style="list-style-type: none"> <li>Core 'stick-ups' reflecting the depth of the drill hole are recorded at the rig at the end of each core run. A block with the depth of the hole written</li> </ul>

Criteria	JORC Code explanation	Commentary
		on it is placed in the core box at the end of each run. At the core yard, the length of core in the core box is measured for each run. The measured length of core is subtracted from the length of the run as recorded from the stick-up measured at the rig to determine the core loss.
	<ul style="list-style-type: none"> <li>Measures taken to maximise sample recovery and ensure representative nature of the samples.</li> </ul>	<ul style="list-style-type: none"> <li>Core recovery was found to be very good (&gt;98%) within the mineralised zone.</li> </ul>
	<ul style="list-style-type: none"> <li>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.</li> </ul>	<ul style="list-style-type: none"> <li>Ground conditions below the weathered zone were very good.</li> </ul>
		<ul style="list-style-type: none"> <li>No obvious relationship exists between sample recovery and grade.</li> </ul>
		<ul style="list-style-type: none"> <li>No core/sample loss or gain which could result in sample bias.</li> </ul>
<b>Logging</b>	<ul style="list-style-type: none"> <li>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.</li> </ul>	<ul style="list-style-type: none"> <li>Core of the entire hole length was geologically logged by qualified geologists.</li> </ul>
	<ul style="list-style-type: none"> <li>Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc) photography.</li> </ul>	<ul style="list-style-type: none"> <li>The core was logged to a level of detail that is sufficient to support appropriate Mineral Resource estimation, mining studies and metallurgical studies.</li> </ul>
	<ul style="list-style-type: none"> <li>The total length and percentage of the relevant intersections logged.</li> </ul>	<ul style="list-style-type: none"> <li>Geological logging was qualitative and was carried out using a standard sheet with a set of standard logging codes to describe lithology, structure and mineralisation. The logging sheet allows for free-form description to note any unusual features.</li> </ul>
		<ul style="list-style-type: none"> <li>Geological logs were captured electronically.</li> </ul>
		<ul style="list-style-type: none"> <li>All cores were photographed before sampling.</li> </ul>
		<ul style="list-style-type: none"> <li>OFMSD080 was entirely logged with a depth of 664.16m.</li> </ul>
		<ul style="list-style-type: none"> <li>Geotechnical logging was completed on oriented core. The data collected per drill run consisted of core recovery, length of core greater than ten centimetres, longest piece, fracture count, alpha and beta angles for all joint types and lithological contacts, joint infill types and their strength as well as nature of joint surface.</li> </ul>

Criteria	JORC Code explanation	Commentary
<b>Sub-sampling techniques and sample preparation</b>	<ul style="list-style-type: none"> <li>If core, whether cut or sawn and whether quarter, half or all core taken.</li> </ul>	<ul style="list-style-type: none"> <li>NQ core was cut, and half core was taken as sample with quarter core for duplicates.</li> </ul>
	<ul style="list-style-type: none"> <li>If non-core, whether riffled, tube sampled, rotary split, etc and whether sampled wet or dry.</li> </ul>	<ul style="list-style-type: none"> <li>HQ core size was only drilled in the upper weathered portion and no HQ core was sampled.</li> </ul>
	<ul style="list-style-type: none"> <li>For all sample types, the nature, quality and appropriateness of the sample preparation technique.</li> </ul>	<ul style="list-style-type: none"> <li>Sample preparation was undertaken at ALS Laboratory Johannesburg (ALS), an ISO accredited laboratory, and is considered appropriate. ALS utilises industry best practice for sample preparation for analysis involving drying of samples, weighing samples, crushing to &lt;2mm if required. Crushed samples are riffle-split and a 250g portion pulverised with +85% passing through 75 microns.</li> </ul>
	<ul style="list-style-type: none"> <li>Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.</li> </ul>	<ul style="list-style-type: none"> <li>Crushing and pulverising QC tests were applied by ALS and found acceptable.</li> </ul>
	<ul style="list-style-type: none"> <li>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.</li> </ul>	<ul style="list-style-type: none"> <li>Quarter core field duplicates were taken for three samples.</li> </ul>
	<ul style="list-style-type: none"> <li>Whether sample sizes are appropriate to the grain size of the material being sampled.</li> </ul>	<ul style="list-style-type: none"> <li>All sample sizes are deemed appropriate.</li> </ul>
<b>Quality of assay data and laboratory tests</b>	<ul style="list-style-type: none"> <li>The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total.</li> </ul>	<ul style="list-style-type: none"> <li>Areas of sampling were selected based on visual observations and readings from a handheld Niton XL3t 500 XRF analyser (standard analytical range &gt;25 elements from S to U with additional elements Mg, Al, Si and P via helium purge.</li> </ul>
		<ul style="list-style-type: none"> <li>Samples submitted to ALS were analysed for base metals and gold.</li> </ul>
		<ul style="list-style-type: none"> <li>All samples were analysed by an appropriate high-grade aqua regia ICP-AES method, ALS code ME-ICP41a.</li> </ul>
		<ul style="list-style-type: none"> <li>Samples where assays returned &gt;5% Cu were re-assayed by aqua regia digestion and ICP-AES method, ALS code MEOG-46.</li> </ul>
	<ul style="list-style-type: none"> <li>For geophysical tools, spectrometers, handheld XRF instruments, etc, the parameters used in determining the analysis including instrument make</li> </ul>	<ul style="list-style-type: none"> <li>Samples were assayed for gold by fire assay and AAS, ALS code AU-AA25 method.</li> </ul>

Criteria	JORC Code explanation	Commentary
	<i>and model, reading times, calibrations factors applied and their derivation, etc</i>	<ul style="list-style-type: none"> <li>Orion inserted CRMs every 10<sup>th</sup> sample. A total of fifteen CRMs were inserted. CRMs were alternated throughout the sample stream and where possible, matched to the sample material being analysed.</li> </ul>
		<ul style="list-style-type: none"> <li>Three CRMs were used. AMIS0399 (1.014 %Cu), AMIS0809 (2.97 %Cu) and AMIS0088 (0.3 %Cu).</li> </ul>
		<ul style="list-style-type: none"> <li>All CRMs returned acceptable results within two Standard Deviations of the CRM average.</li> </ul>
	<ul style="list-style-type: none"> <li>Nature of quality control procedures adopted (e.g. standards, blanks, duplicates, external laboratory checks) and whether acceptable levels of accuracy (ie lack of bias) and precision have been established.</li> </ul>	<ul style="list-style-type: none"> <li>Chip blanks are inserted at the beginning of each batch and after any sample that may be considered high grade. A total of six blanks were used. Acceptable results were returned indicating no contamination.</li> </ul>
		<ul style="list-style-type: none"> <li>The laboratory conducts their own checks which are also monitored. The accuracy and precision of the geochemical data reported on has deemed to be acceptable.</li> </ul>
		<ul style="list-style-type: none"> <li>Results from the three-quarter core field duplicates showed a correlation coefficient of 0.98.</li> </ul>
		<ul style="list-style-type: none"> <li>No external laboratory checks have been carried out at this stage.</li> </ul>
<b>Verification of Sampling and assaying</b>	<ul style="list-style-type: none"> <li>The verification of significant intersections by either independent or alternative company personnel.</li> </ul>	<ul style="list-style-type: none"> <li>Orion's exploration geologist personally supervised the drilling and sampling along with a team of experienced geologists</li> </ul>
	<ul style="list-style-type: none"> <li>The use of twinned holes.</li> </ul>	<ul style="list-style-type: none"> <li>Hole OFMSD080 was planned to test downdip continuity of mineralisation intersected in Orion drill hole OFMSD077. It is not a twin hole.</li> </ul>
	<ul style="list-style-type: none"> <li>Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.</li> </ul>	<ul style="list-style-type: none"> <li>The mineralisation intersection in OFMSD080 is located approximately 40m from the mineralised intersection in OFMSD077 which was recently drilled as part of the Orion confirmation drilling program. The widths and grades broadly correspond.</li> </ul>
	<ul style="list-style-type: none"> <li>Discuss any adjustment to assay data.</li> </ul>	<ul style="list-style-type: none"> <li>The Competent Person has reviewed the raw laboratory data and confirmed the calculation of the significant intersections.</li> </ul>
		<ul style="list-style-type: none"> <li>No adjustments have been made to the assay data.</li> </ul>
<b>Location of data points</b>	<ul style="list-style-type: none"> <li>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.</li> </ul>	<ul style="list-style-type: none"> <li>Collar positions of the FMS prospect holes were initially located using a hand-held Garmin GPS and have been subsequently surveyed by a qualified surveyor using a differential GPS.</li> </ul>

Criteria	JORC Code explanation	Commentary
	<ul style="list-style-type: none"> <li>Specification of the grid system used.</li> </ul>	<ul style="list-style-type: none"> <li>On completion drill collars are capped and labelled.</li> </ul>
	<ul style="list-style-type: none"> <li>Quality and adequacy of topographic control.</li> </ul>	<ul style="list-style-type: none"> <li>The local South African Lo17 (Hartebeesthoek 94) grid system is used.</li> </ul>
		<ul style="list-style-type: none"> <li>All the FMS holes have been surveyed down-hole. A north seeking Reflex SPRINTIQ gyro tool was used for the down-hole surveys.</li> </ul>
<b>Data spacing and distribution</b>	<ul style="list-style-type: none"> <li>Data spacing for reporting of Exploration Results.</li> </ul>	<ul style="list-style-type: none"> <li>OFMSD080 intersected mineralisation approximately 40 metres from mineralisation intersected in drill hole OFMSD077. The hole was drilled to test for downdip continuity and to test the latest structural interpretation.</li> </ul>
	<ul style="list-style-type: none"> <li>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.</li> </ul>	<ul style="list-style-type: none"> <li>The drill spacing is considered sufficient to establish the degree of geological and grade continuity appropriate for the Mineral Resource and Ore Reserve estimation and classifications.</li> </ul>
	<ul style="list-style-type: none"> <li>Whether sample compositing has been applied.</li> </ul>	<ul style="list-style-type: none"> <li>Two-metre samples were taken in wider zones of internal waste or barren zones separating hanging wall and footwall mineralised zones.</li> </ul>
<b>Orientation of data in relation to geological structure</b>	<ul style="list-style-type: none"> <li>Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type.</li> </ul>	<ul style="list-style-type: none"> <li>To achieve unbiased sampling, drilling is oriented as close as practically possible to perpendicular, or at a maximum achievable angle, to the attitude of the mineralisation. OFMSD080 was inclined at -68°.</li> </ul>
	<ul style="list-style-type: none"> <li>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.</li> </ul>	<ul style="list-style-type: none"> <li>No sampling bias is anticipated as a result of drill hole orientations.</li> </ul>
<b>Sample security</b>	<ul style="list-style-type: none"> <li>The measures taken to ensure sample security.</li> </ul>	<ul style="list-style-type: none"> <li>Chain of custody is managed by the Company. Samples were stored on site in a secure locked building and then freighted directly to the laboratory.</li> </ul>
<b>Audits or reviews</b>	<ul style="list-style-type: none"> <li>The results of any audits or reviews of sampling techniques and data.</li> </ul>	<ul style="list-style-type: none"> <li>No audits or reviews have been carried out to date.</li> </ul>



## Section 2 Reporting of Exploration Results

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

Criteria	JORC Code explanation	Commentary
<b>Mineral tenement and land tenure status</b>	<ul style="list-style-type: none"> <li>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.</li> <li>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.</li> </ul>	<ul style="list-style-type: none"> <li>The mineral rights to the properties are vested in the peoples of South Africa and the Minerals and Petroleum Resources Development Act, 2002, (<b>MPRDA</b>) regulates the prospecting and mining industry in South Africa.</li> </ul>
		<b>Newmont and GFSA:</b> <ul style="list-style-type: none"> <li>O'Okiep Copper Company (Pty) Ltd (<b>OCC</b>), historically owned at different times by Newmont, GFSA and Metorex, held vast areas under an old order (prior to the MPRDA) mining right.</li> </ul>
		<b>Orion:</b> <ul style="list-style-type: none"> <li><b>Flat Mines Mining Right.</b> A mining right, NC30/5/1/2/2/10150MR was granted on 28 July 2022 to Southern African Tantalum Mining (Pty) Ltd (<b>SAFTA</b>) in terms of section 23 of the MPRDA to mine for a period of fifteen years. The right may be renewed for periods of up to 30 years. The mining right was ceded to Orion indirect subsidiary, New Okiep Mining Company (Pty) Ltd (<b>NOMC</b>) on 12 December 2023. The right is for copper ore and tungsten are over a portion of portion 3, a portion of portion 13, a portion of portion 14 and a portion of portion 21 of the farm Nababeep No 134 situated within the Administrative District of Namaqualand. The area measures 1,214Ha in extent.</li> </ul>
		<ul style="list-style-type: none"> <li>A prospecting right NC30/5/1/1/2/12850PR was granted on 27 June 2023 to SAFTA in terms of section 17 of the MPRDA for the same area as the mining right for 3 years (renewable for 3 years) for 26 additional minerals including gold and silver.</li> </ul>
		<ul style="list-style-type: none"> <li><b>SAFTA PR.</b> A prospecting right, NC30/5/1/1/2/12755PR was granted on 21 June 2024 to SAFTA in terms of section 17 of the MPRDA to prospect for a period of 3 years, renewable for 3 years. The right is for copper ore and tungsten ore for portion of Portion 3, portion of Portion 10, portion of Portion 13, portion of Portion 14, Portion 15, Portion 16, portion of Portion 21 of the farm Nababeep 134 and Okiep Township Plot 2086. situated within the Administrative District of Namaqualand. The total area measures 7,164Ha in extent.</li> </ul>

Criteria	JORC Code explanation	Commentary
		<ul style="list-style-type: none"> <li>A prospecting right NC30/5/1/1/2/12848PR was granted on 21 June 2024 to SAFTA in terms of section 17 of the MPRDA for the same area as the prospecting right NC12755PR for 3 years (renewable for 3 years) for 26 additional minerals including gold and silver.</li> <li>Orion acquired 56.25% of the tenement rights through the SAFTA-Orion Acquisition Agreement. The remaining 43.75% is held by the Industrial Development Corporation of South Africa (<b>IDC</b>) (refer ASX/JSE releases 2 August 2021, 7 September 2022, 14 November 2022, 17 April 2024, 6 May 2024). Applications for Section 11 consent in terms of the MPRDA to cede the rights to NOMC are submitted once each right is granted and are in preparation and process.</li> <li>The area was mined historically for copper and tungsten.</li> </ul>
<b>Exploration done by other parties</b>	<ul style="list-style-type: none"> <li>Acknowledgment and appraisal of exploration by other parties.</li> </ul>	<ul style="list-style-type: none"> <li>Previous explorers in the region includes Newmont, GFSA and SAFTA. Exploration was focussed on Cu.</li> <li>Extensive historical drilling data (480 holes totalling 126,601m) is contained in the database inherited from Newmont, GFSA and SAFTA for FME, FMN and FMS. This includes 247 holes totalling 42,738m at FMN, 151 holes totalling 50,583m at FME and 82 holes totalling 33,280m at FMS.</li> <li>Sample and analytical details are contained within JORC Table 1 of ORN ASX/JSE Announcement from 28 August 2023.</li> </ul>
<b>Geology</b>	<ul style="list-style-type: none"> <li>Deposit type, geological setting and style of mineralisation.</li> </ul>	<ul style="list-style-type: none"> <li>The tenements are located over the Central and Western parts of the Okiep Copper District (<b>OCD</b>). The style of mineralisation is mafic hosted orogenic Cu-mineralisation.</li> <li>Copper mineralisation is primarily associated with irregular, elongated and steeply dipping Koperberg Suite mafic intrusives.</li> <li>The Koperberg Suite intrusives are mainly restricted to so-called "Steep Structures" of extensive strike lengths and steeply dipping to the north.</li> <li>The Koperberg Suite consists of intermediate to mafic rock types, predominated by anorthosite, diorite and norite.</li> <li>Mineralisation usually occurs as blebs to disseminated Cu mineral assemblages: bornite &gt; chalcopyrite &gt; chalcocite and less pyrite and</li> </ul>

Criteria	JORC Code explanation	Commentary
		pyrrhotite.
		<ul style="list-style-type: none"> <li>The more mafic and magnetite-rich lithologies generally host the bulk of and higher-grade mineralisation.</li> <li>The OCD has a long exploration and mining history, and the geology is well known and understood.</li> </ul>
<b>Drill hole Information</b>	<ul style="list-style-type: none"> <li>A summary of all information material to the understanding of the exploration results including a tabulation of the following information for all Material drill holes: <ul style="list-style-type: none"> <li>easting and northing of the drill hole collar</li> <li>elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar</li> <li>dip and azimuth of the hole</li> <li>down hole length and interception depth</li> <li>hole length.</li> </ul> </li> <li>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.</li> </ul>	<ul style="list-style-type: none"> <li>Refer to Table 3 in Appendix 1 for collar details of drill holes reported.</li> </ul>
<b>Data aggregation methods</b>	<ul style="list-style-type: none"> <li>In reporting Exploration Results, weighting averaging techniques, maximum and/or minimum grade truncations (eg cutting of high grades) and cut-off grades are usually Material and should be stated.</li> </ul>	<ul style="list-style-type: none"> <li>A minimum 0.7% Cu cut-off was used to calculate intercepts.</li> </ul>
		<ul style="list-style-type: none"> <li>Allowance was made for 3m internal waste.</li> </ul>
	<ul style="list-style-type: none"> <li>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.</li> </ul>	<ul style="list-style-type: none"> <li>A cut-off of 1.0% Cu was used for the higher-grade inclusions.</li> </ul>
		<ul style="list-style-type: none"> <li>Weighted grades were calculated as follows: %Cu x sample length(m)</li> </ul>
	<ul style="list-style-type: none"> <li>The assumptions used for any reporting of metal equivalent values should be clearly stated.</li> </ul>	<ul style="list-style-type: none"> <li>The Competent Person is of the opinion that the above aggregation methods are acceptable for this type of deposit.</li> </ul>
		<ul style="list-style-type: none"> <li>These aggregation methods were also applied to historical holes and assay results in previous announcements.</li> </ul>
		<ul style="list-style-type: none"> <li>No metal equivalents are reported.</li> <li>No capping of assay results was required.</li> </ul>

Criteria	JORC Code explanation	Commentary
<b>Relationship between mineralisation widths and intercept lengths</b>	<ul style="list-style-type: none"> <li>These relationships are particularly important in the reporting of Exploration Results.</li> </ul>	<ul style="list-style-type: none"> <li>Drilling is generally oriented perpendicular, or at a maximum achievable angle to, the attitude of the mineralisation.</li> </ul>
	<ul style="list-style-type: none"> <li>If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported.</li> </ul>	<ul style="list-style-type: none"> <li>Generally, drill hole inclinations ranged between -58° to -65° towards the south while the mineralisation is expected to dip close to 80° towards the north.</li> </ul>
	<ul style="list-style-type: none"> <li>If it is not known and only the down hole lengths are reported, there should be a clear statement to this effect (eg 'down hole length, true width not known').</li> </ul>	<ul style="list-style-type: none"> <li>Down holes lengths are reported in all instances apart from where true widths (TW) are specified</li> </ul>
		<ul style="list-style-type: none"> <li>Where true widths (TW) are specified they are calculated by measuring the intersection width perpendicular to the interpreted mineralisation trend.</li> </ul>
<b>Diagrams</b>	<ul style="list-style-type: none"> <li>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 drill hole collar locations and appropriate sectional views.</li> </ul>	<ul style="list-style-type: none"> <li>Refer to body of the announcement for plans, plots and tables.</li> </ul>
		<ul style="list-style-type: none"> <li>Drilling data was incorporated and monitored in Micromine™ software together with interpretation models based on the available historical drill data.</li> </ul>
<b>Balanced reporting</b>	<ul style="list-style-type: none"> <li>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.</li> </ul>	<ul style="list-style-type: none"> <li>In the Competent Person's opinion, the Exploration Results reported in this announcement have been reported in a balanced manner.</li> </ul>
<b>Other substantive exploration data</b>	<ul style="list-style-type: none"> <li>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.</li> </ul>	<ul style="list-style-type: none"> <li>The Company's previous ASX releases have detailed exploration works.</li> </ul>
		<ul style="list-style-type: none"> <li>Surface geophysical surveys are being undertaken and include ground, drone and downhole magnetics, gravity and electrical methods. The objectives of the work is to provide baseline survey information over known and well-described mineralisation so as to inform the future application of techniques most suited to the Koperberg style of mineralisation.</li> </ul>
		<ul style="list-style-type: none"> <li>A high-resolution drone magnetic survey was carried-out and will assist in future planning of additional drill holes.</li> </ul>
		<ul style="list-style-type: none"> <li>Drone (DJI 600M Pro) magnetics were done at 30m AGL and 50m line spacing.</li> </ul>

Criteria	JORC Code explanation	Commentary
		<ul style="list-style-type: none"> <li>Historical detailed surface mapping is interpreted and utilised during drill hole planning.</li> <li>Where possible, bulk density measurements were made over the full length of each individual sample of split core. Where not possible due to incompetent (crushed or broken) core, a minimum of 80% of the (half-core) sample was used. The bulk density is determined by measuring and subtracting the wet weight from the dry weight using an electronic scale. Care is taken to clean and zero the scale between each weighing. The intact sample portion is first weighed in air and the weight recorded. The sample is then weighed, while completely submerged in clean water within a measuring container. The mass of container and water are deducted for net submerged weight and volume displacement read on measuring container. The sample is then removed and placed back into the core tray in the correct position and orientation. The procedure is repeated for each geological sample interval. The data were recorded in the bulk density Data Sheet. The bulk density is calculated for each sample using the formula:  <math display="block">BD = \frac{\text{weight of sample}}{(\text{weight of sample in air} - \text{weight of the sample in water})}</math> </li> </ul>
<b>Further work</b>	<ul style="list-style-type: none"> <li>The nature and scale of planned further work (eg tests for lateral extensions or depth extensions or large-scale step-out drilling).</li> </ul>	<ul style="list-style-type: none"> <li>Drilling is continuing on Flat Mine South prospect.</li> </ul>
	<ul style="list-style-type: none"> <li>Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.</li> </ul>	