



## KUM-KUM NICKEL PROJECT MINERAL SYSTEMS APPROACH RESULTS

### HIGHLIGHTS

- The Department of Earth Sciences at the University of Stellenbosch concluded a Minerals Systems Approach investigation over the Kum-Kum Ni-Cu-PGE Project Licenses
- During the investigation several historical documents containing exploration results over the Kum-Kum Project were discovered, which reported best historical borehole intersections from three boreholes drilled by Rio Tinto Exploration, Tantalite Valley Minerals and Southern Sphere between 1972 and 1976 as follows:
  - 16.00 m @ 0.65% Ni, 0.16% Cu
  - 6.00 m @ 0.61% Ni, 0.30% Cu
  - 2.44 m @ 0.62% Ni, 0.30% Cu
- Historical core samples obtained were sampled and returned the first known record of PGE and Au mineralisation in the ultramafic units of the Tantalite Valley Complex. The best results indicated mineralisation of:
  - 0.71% Ni, 0.28% Cu, 0.84 g/t Pd and 0.4 g/t Pt in orthopyroxenite
  - 0.58% Ni, 0.30% Cu, 0.69 g/t Pd, 0.31 g/t Pt and 0.26% Au in orthopyroxenite
- The primary magmatic sulphides comprise of coarse-grained pentlandite, pyrrhotite, and chalcopyrite
- Whole rock geochemistry highlights the geochemical similarities between the TVC and the Kum-Kum complexes. The TVC crystallized as a mafic/ultramafic layered intrusion and likely from a primitive mantle-derived parental magma.

**Arcadia Minerals Ltd (ASX:AM7, FRA:8OH) (Arcadia or the Company)**, the diversified exploration company targeting a suite of projects aimed at Tantalum, Lithium, Nickel, Copper and Gold in Namibia, is pleased to announce that the Department of Earth Sciences at the University of Stellenbosch concluded a Minerals Systems Approach investigation over the Kum-Kum Ni-Cu-PGE Project Licenses and delivered a report to the Company styled *“Geological overview and sulphide mineralization potential of the Tantalite Valley Complex”*

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by Drs. Martin Klausen and Bjorn von der Heyden & Mr Daniel Ferreira, Department of Earth Sciences, Stellenbosch University, May 2022, and this report will be made available on the Company's website at [www.arcadiaminerals.global](http://www.arcadiaminerals.global)<sup>1</sup>.

**Philip le Roux, the CEO of Arcadia stated:** *“Historical drilling results reporting high values of Nickel and Copper mineralisation attracted us to the Kum-Kum Project. From the work done by the team from the University of Stellenbosch it is evident that PGE and Au mineralisation is also present and that we are looking at a geological environment that possibly could contain a stratiform Ni-Cu-PGE disseminated sulphide ‘reef’ horizon. The prospect of possibly discovering a polymetallic (Ni, Cu, Au & PGE’s) deposit has increased the allure of the Kum-Kum Project for us, which we will eagerly follow up with further exploration. The results of the study will assist the Company to focus its exploration efforts in order to define drill targets.”*

### **Mineral Systems Approach Results**

The Tantalite Valley Complex (TVC) has been subject to a geological study by a team from Arcadia and the University of Stellenbosch involving two field sampling campaigns (8 days; 94 field samples collected) augmented with detailed consideration of historical drill core segments (57 samples), and supporting data from historical records, hyperspectral mapping, and stream sediment sampling.

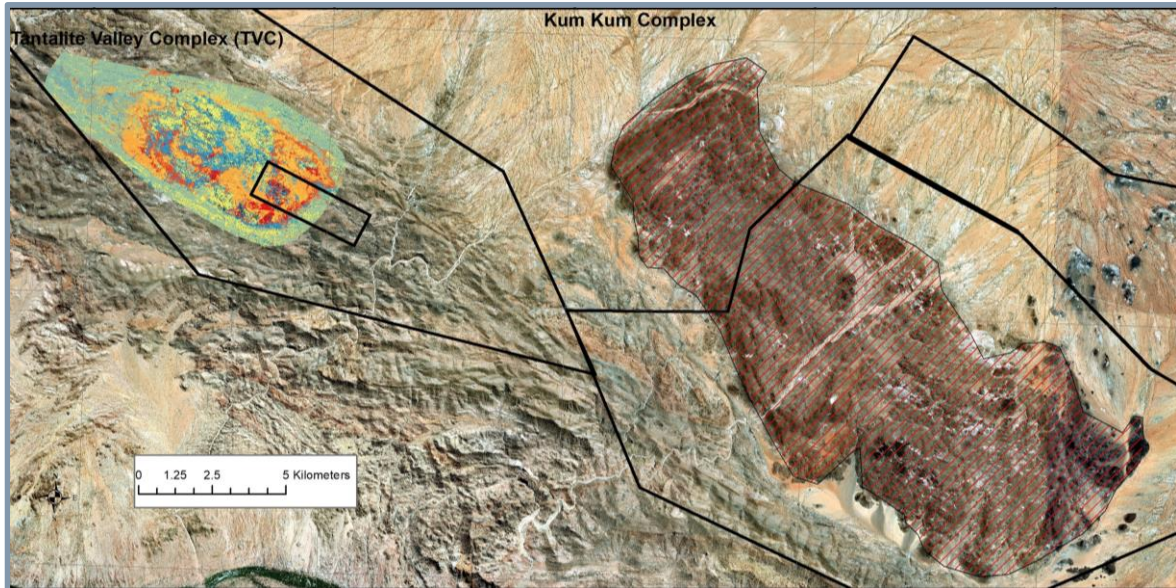
Collected field- and core- samples were subjected to a suite of analytical protocols including reflected- and transmitted-light optical petrography, whole-rock major and trace element chemistry, precious metal assays, sulphur isotope analyses, scanning electron microscopy with associated spectrometries and in-situ Laser Ablation Inductively Coupled Plasma Mass Spectrometry (LA-ICP-MS) of individual sulphide grains. Together, these results provide novel insights into the known mineralisation and prospectively of the TVC.

The TVC is a ~7 km long by 3.3 km wide and roughly oval-shaped mafic-ultramafic complex representing a fault-bound block inside a dextral Pofadder Shear Zone (PSZ) that cuts across southern Namibia. Existing geochronology places the TVC as a ~1.2 Ga intrusion and roughly coeval with a Kum Kum Klippe mafic complex that is located roughly 40 km south-east and along the strike of the PSZ.

Whole rock geochemistry highlights the geochemical similarities between the TVC and the Kum Kum suite, but with the former uniquely showing much stronger geochemical evidence for overwhelmingly cumulate rocks. This implies that the TVC crystallized as a significant mafic/ultramafic layered intrusion and likely from a primitive mantle-derived parental magma that originated from a metasomatized mantle.

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<sup>1</sup> Additional data used in generating figures in this announcement are acknowledged to Rio Tinto exploration report (1976); Kartun (1979); Quefferus and Barnes (2015)



**Figure 1:** Map showing the relationship between the Tantalite Valley and Kum Kum Complexes. Hyperspectral interpretation of the TVC complex is shown over the complex.

The TVC can be broadly divided into a predominantly mafic northwestern (NW) and mafic-ultramafic southeastern (SE) half. An otherwise structurally obscure NW-half displays gently NNW-dipping melanocratic layers in its westernmost parts and comprises of variably amphibolitized gabbroic cumulates with conspicuous macropoikilitic textures. More pristine igneous lithologies include (olivine) gabbro-norites and troctolites, with a non-cumulate and potential chilled margin sampled along its northern edge. Another potential chilled margin was sampled from a proposed Marginal Zone to the SE-half and juxtapositioned to country rock hornfelses. Adopting a Skaergaard nomenclature, the better mapped SE-half is interpreted as made up of the aforementioned outer and heterogeneously pegmatoidal Marginal Zone, inside which a conspicuous concentric zone of sub-vertically banded (to locally mottled) leucogabbroic rocks are tentatively interpreted as a marginal Border Zone around a more central Layered Series (much like the famous intrusion).

The presumed basal part of the proposed Layered Series is dominated by ultramafic cumulate layers, which – according to field samples – are mainly dunitic, but – according to dumped drill core samples – also include more mineralized and orthopyroxenitic orthocumulates. While past interpretations leaned more towards a concentrically zoned Alaskan Type intrusion, field work and drill core logs provide evidence for a more rhythmically layered mafic-ultramafic sequence, which is thought to be dipping steeply towards the west. This ultramafic base is thought to transition into a purely gabbroic Middle Zone, the conspicuous contact of which is consistent with a 70°W dip, all the while that it is still unclear how this

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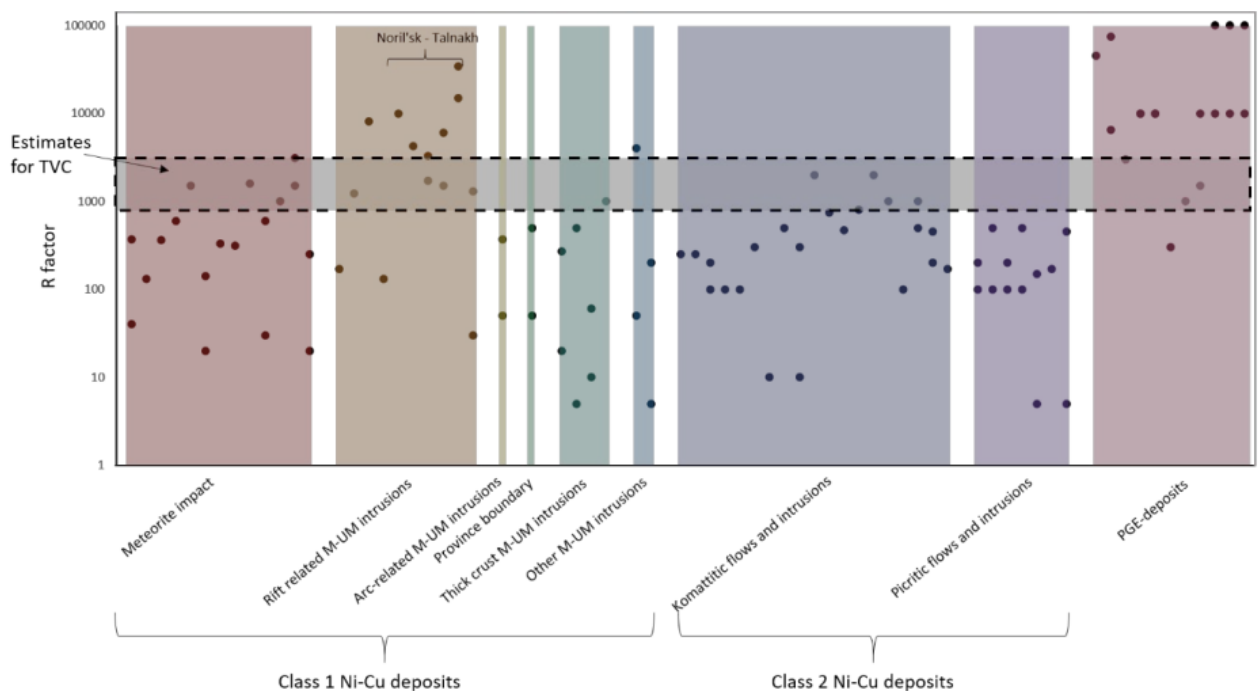
layering (of obvious cumulate rocks) extends into a north-western Upper Zone, or if the TVC's NW-half constitutes a separate intrusion of its own. While further field is required to properly resolve this, it seems more plausible for the TVC to represent single, coherent layered intrusion, with a current surface area of 18.7 km<sup>2</sup> (most of which is made up of cumulates).

The more important stratigraphical thickness of these cumulates and even magma chamber volume estimates are much more difficult to constrain. Especially, since much of the internal structure of the TVC is largely unknown and likely deformed.

The TVC hosts two main categories of sulphides, *viz.* primary magmatic sulphides, hosted by an orthopyroxenite, as well as secondary (or hydrothermal) sulphides inside amphibolitised host rocks and typically found near shear zones (including the intrusion's sheared contacts). The latter remobilized category only hosts sub-economic Cu (<0.29 wt.%) and minor Ni (<0.17 wt.%), while Pd+Pt values never exceed 0.15 ppm. Texturally, this assemblage comprises of predominantly pyrite, with later paragenetic rims of chalcopyrite and magnetite and ilmenite. In contrast, the primary magmatic sulphides comprise of pyrrhotite and pentlandite and chalcopyrite, with the best assay results measured for 10 – 15cm long split core for:

Orthopyroxenite      0.71% Ni, 0.28% Cu, 0.84 g/t Pd and 0.4 g/t Pt  
                                  0.58% Ni, 0.30% Cu, 0.69 g/t Pd, 0.31 g/t Pt and 0.26% Au

Importantly, these assay values and corroborating Scanning Electron Microscope analyses constitute the first records of PGE and Au in the TVC.



**Figure 2:** R factor estimates for the TVC (delineated by dashed lines and shading) relative to other prominent classes of Cu-Ni and PGE mineralisation.

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Sulphur isotopes indicate that the magmatic sulphides carry a mantle signal and no contamination by crustal sulphur. Further, various *in situ* and whole rock geochemical proxies enable the calculation of an R factor, which represents the degree to which an immiscible sulphide melt interacted with a silicate magma chamber to obtain its precious metal signatures. The R factor for the TVC is estimated to be between 800 and 3000, which plots towards the high end for Ni-Cu deposits, but towards the low end for world-class PGE deposits.

Following an established relationship between Ni and total PGE, as well as these being hosted within a relatively unique orthopyroxenitic orthocumulate, this most mineralized target layer, pyroxenite-troctolite contact within the ultramafic units of southeastern TVC are suspected to have been intersected by historical boreholes TV03, N01, and PW01.

**PW01:** 16.0m @ 0.65% Ni, 0.16% Cu

**TV03:** 6.0m @ 0.61% Ni, 0.30% Cu

**N01:** 36.0m @ 0.34% Ni, 0.18% Cu, including 13.1m @ 0.49% Ni, 0.25% Cu and 0.62% Ni & 0.30% Cu over 2.44 m)

Further targeting of this most interesting horizon should endeavour to discern the dip, strike and true thickness of the mineralized layer, whether it outcrops at surface, the degree to which it has been affected by post-magmatic processes (e.g., amphibolitisation), and its lateral and vertical (i.e., within unit) grade variability.

In summary Dr Von der Heyden states *“The presence of primary magmatic sulphides within the mineralised pyroxenite emphasises that sulphide immiscibility has occurred somewhere within the stratigraphy of the TVC and thus that a stratiform Ni-Cu-PGE disseminated sulphide ‘reef’ horizon could exist somewhere in the TVC.”*

**This announcement has been authorised for release by the directors of Arcadia Minerals Limited.**

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## COMPETENT PERSONS STATEMENT & PREVIOUSLY REPORTED INFORMATION

The information in this announcement that relates to Exploration Results listed in Appendices below is based on, and fairly represents, information and supporting documentation prepared by the Competent Person(s) whose name(s) appears below, each of whom is either an independent consultant to the Company and a member of a Recognised Professional Organisation or a director of the Company. The Competent Person(s) named below have sufficient experience relevant to the style of mineralisation and types of deposits under consideration and to the activity which he has undertaken to qualify as a Competent Person as defined in the JORC Code 2012.

No information in this announcement relates to Mineral Resources.

Competent Person	Membership	Report/Document
Dr. Bjorn von der Heyden	Geological Society of South Africa (#968331)	This Announcement and JORC Tables
Dr Martin Klausen	South African Council for Natural Scientific Professions (#115528)	This Announcement and JORC Tables
Mr Philip le Roux (Director, Arcadia Minerals)	South African Council for Natural Scientific Professions #400125/09	This announcement
Dr Johan Hattingh	South African Council for Natural Scientific Professions #400112/93	Independent Geologist Report – Ni-Cu-PGE sulphide hosted mafic-ultramafic deposits Kum-Kum

The information relating to Exploration Results in this announcement is extracted from a report styled *“Geological overview and sulphide mineralization potential of the Tantalite Valley Complex”*, Dr. Martin Klausen, Dr. Bjorn von der Heyden & Daniel Ferreira, Department of Earth Sciences, Stellenbosch University, May 2022, and in the Company’s report styled *“Independent Geological Report on the Nickel-Copper-PGE sulphide hosted mafic-ultramafic deposits at Kum-Kum and surroundings, Warmbad District, Namibia”*, March 2021, both of which can be found at [www.arcadiaminerals.global](http://www.arcadiaminerals.global). The Company confirms that it is not aware of any new information or data that materially affects the Exploration Results information included in the Announcement. The Company confirms that the form and context in which the applicable Competent Persons’ findings are presented have not been materially modified for this announcement.

## BACKGROUND ON ARCADIA

Arcadia is a Namibia-focused diversified metals exploration company, which is domiciled in Guernsey. The Company explores for a suite of Gold and new-era metals (Lithium, Tantalum, Palladium, Nickel and Copper). The Company’s strategy is to bring the advanced Swanson Tantalum project into production and then to use the cashflows (which may be generated)

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to drive exploration and development at the potentially company transforming exploration assets. As such, the first two pillars of Arcadia's development strategy (a potential cash generator and company transforming exploration assets) are established through a third pillar, which consists of utilising the Company's human capital of industry specific experience, tied with a history of project generation and bringing projects to results, and thereby, to create value for the Company and its shareholders.

Most of the Company's projects are located in the neighbourhood of established mining operations and significant discoveries. The mineral exploration projects include-

1. Bitterwasser Project – prospective for lithium-in-brines and that includes a potentially expanding JORC Mineral Resource from lithium-in-clays.
2. Kum-Kum Project – prospective for nickel, copper, and platinum group elements.
3. Karibib Project – prospective for copper and gold.
4. The Swanson Project – advanced tantalum project undergoing a feasibility study, and which contains a potentially expanding JORC Mineral Resource within the Swanson Project area and neighbouring tenements held by the Company.

As an exploration company, all the projects of the company are currently receiving focus. However, currently the Swanson project and the Bitterwasser Lithium project may be considered as Arcadia's primary projects due to their potential to enhance the Company's value.

For more details, please visit [www.arcdiaminerals.global](http://www.arcdiaminerals.global)

#### **DISCLAIMER**

Some of the statements appearing in this announcement may be forward-looking statements. You should be aware that such statements are only predictions and are subject to inherent risks and uncertainties. Those risks and uncertainties include factors and risks specific to the industries in which Arcadia operates and proposes to operate as well as general economic conditions, prevailing exchange rates and interest rates and conditions in the financial markets, among other things. Actual events or results may differ materially from the events or results expressed or implied in any forward-looking statement. No forward-looking statement is a guarantee or representation as to future performance or any other future matters, which will be influenced by a number of factors and subject to various uncertainties and contingencies, many of which will be outside Arcadia's control.

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## ANNEXURE 1

### Information for historical drillhole data obtained from historical reports.

Hole_Id	Company	Year	EOH	Collars	Survey	Log	Assay	Use	Best Intersection
TV01	Rio Tinto	1972	299.7	Yes	Yes	Yes	Yes	Yes	4m @ 0.32% Ni, 0.28% Cu
TV02	Rio Tinto	1972	309.1	Yes	Yes	Yes	Yes	Yes	4m @ 0.21% Ni, 0.35% Cu
TV03	Rio Tinto	1972	294.6	Yes	Yes	Yes	Yes	Yes	6m @ 0.61% Ni, 0.30% Cu
TV04	Rio Tinto	1972	305	Yes	Yes	Yes	Yes	Yes	4m @ 0.14% Ni, 0.11% Cu
TV05	Rio Tinto	1972	160.4	Yes	Yes	Yes	Yes	Yes	16m @ 0.15% Ni, 0.15% Cu
TV06	Rio Tinto	1972	320.1	Yes	Yes	Yes	Yes	Yes	6m @ 0.14% Ni, 0.03% Cu
TV07	Rio Tinto	1972	147.3	Yes	Yes	Yes	Yes	Yes	6m @ 0.24% Ni, 0.15% Cu
TV08	Rio Tinto	1972	301.5	Yes	Yes	No	Yes	Yes	4m @ 0.22% Ni, 0.02% Cu
TV09	Rio Tinto	1972	258	Yes	Yes	Yes	No	No	
TV10	Rio Tinto	1972	243.6	Yes	Yes	No	No	No	
TV11	Rio Tinto	1972	N/A	Yes	Yes	No	No	No	
TV12	Rio Tinto	1972	N/A	Yes	Yes	No	No	No	
K01	Tantalite Valley	1969	195.1	Yes	Yes	Yes	Yes	Yes	6m @ 0.31% Ni, 0.31% Cu
K01A	Tantalite Valley	1969	181.4	Yes	Yes	Yes	Yes	Yes	3m @ 0.27% Ni, 0.14% Cu
L01	Tantalite Valley	1970	N/A	No	No	No	No	No	
L02	Tantalite Valley	1970	N/A	Yes	No	No	No	No	
L03	Tantalite Valley	1970	N/A	Yes	No	No	Yes	No	
N01	Tantalite Valley	1971	305.1	Yes	Yes	Yes	Yes	Yes	36m @ 0.34% Ni, 0.18% Cu
N02	Tantalite Valley	1971	218.9	No	Yes	Yes	Yes	No	
N03	Tantalite Valley	1971	215.2	No	Yes	Yes	Yes	No	
N04	Tantalite Valley	1971	222	No	Yes	Yes	Yes	No	
N05	Tantalite Valley	1971	255.7	Yes	Yes	Yes	Yes	Yes	8m @ 0.13% Ni, 0.03% Cu
N06	Tantalite Valley	1971	382.8	Yes	Yes	Yes	Yes	Yes	14m @ 0.15% Ni, 0.01% Cu
N07	Tantalite Valley	1971	224.7	No	Yes	Yes	Yes	No	
N08	Tantalite Valley	1971	339.8	Yes	Yes	Yes	Yes	Yes	20m @ 0.15% Ni, 0.01% Cu
N09	Tantalite Valley	1971	249	No	Yes	Yes	Yes	No	
N10	Tantalite Valley	1971	213.4	No	Yes	Yes	Yes	Yes	54m @ 0.09% Ni, 0.01% Cu
N11	Tantalite Valley	1971	220.1	No	Yes	Yes	Yes	No	
N12	Tantalite Valley	1971	221.9	No	Yes	Yes	Yes	No	
N13	Tantalite Valley	1971	158.2	Yes	Yes	Yes	Yes	No	
N14	Tantalite Valley	1971	244.5	No	Yes	Yes	Yes	No	32m @ 0.13% Ni, 0.01% Cu
PW01	Southern Sphere	1976	506	Yes	Yes	Yes	Yes	Yes	16M @ 0.65% Ni, 0.16% Cu
PW02	Southern Sphere	1976	320	Yes	Yes	Yes	No	No	
PW03	Southern Sphere	1976	432.8	Yes	Yes	Yes	No	No	

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## ANNEXURE 2

### Location of samples

Collars (estimated from historical maps) and borehole information for holes that could be located from maps in historical report. Assayed samples all derive from coarse-grained orthopyroxenite core segments.

Hole_ID	Easting	Northing	Elevation	EOH	Drilled_by	Azimuth	Dip
K01	279149	6820721	825	195.10	Tantalite_Valley	0	-90
K01A	279143	6820717	825	181.40	Tantalite_Valley	250	-45
N01	278298	6821197	873	305.10	Tantalite_Valley	0	-90
N05	278898	6821200	993	255.70	Tantalite_Valley	0	-90
N06	278708	6820952	975	382.80	Tantalite_Valley	0	-90
N08	278464	6821308	900	339.80	Tantalite_Valley	0	-90
N10	278228	6821088	870	213.40	Tantalite_Valley	0	-90
N14	278314	6821097	876	244.50	Tantalite_Valley	0	-90
PW01	278338	6821208	876	506.00	Southern Sphere	0	-90
TV01	279040	6820803	870	299.70	Rio_Tinto	125	-50
TV02	279040	6820803	870	309.10	Rio_Tinto	125	-65
TV03	278299	6821182	870	294.30	Rio_Tinto	0	-90
TV04	278257	6821155	873	305.00	Rio_Tinto	0	-90
TV05	279104	6820757	864	160.40	Rio_Tinto	125	-50
TV06	278382	6821236	885	320.10	Rio_Tinto	0	-90
TV07	279080	6820716	876	147.30	Rio_Tinto	125	-50
TV08	278355	6821279	882	301.05	Rio_Tinto	0	-90

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## ANNEXURE 3

### JORC 2012 TABLES<sup>2</sup>

The following Tables are provided to ensure compliance with the JORC Code (2012 Edition) requirements for the reporting of Exploration Results at the Kum-Kum Project.

#### Section 1 Sampling Techniques and Data

Criteria	JORC Code explanation	Commentary
<b>Sampling techniques</b>	<ul style="list-style-type: none"> <li>• <i>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.</i></li> <li>• <i>Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.</i></li> <li>• <i>Aspects of the determination of mineralisation that are Material to the Public Report.</i></li> <li>• <i>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</i></li> </ul>	<ul style="list-style-type: none"> <li>• Sampling was conducted from historical core segments which were located proximal to the siting of a historical Rio Tinto exploration camp.</li> <li>• A total of 251 sulphide-bearing half core samples were collected, of which 57 were selected for further detailed investigation.</li> <li>• Half core samples ranged in length between ~5 – 15 cm and external diameters ranged between 4 cm and 5.5 cm.</li> <li>• To ensure sufficient sample for all complementary study techniques, the assayed sample masses ranged between 121 and 232 g.</li> </ul>

<sup>2</sup> Independent Geological Report styled “Geological overview and sulphide mineralization potential of the Tantalite Valley Complex”, Dr. Martin Klausen, Dr. Bjorn von der Heyden & Daniel Ferreira, Department of Earth Sciences, Stellenbosch University, May 2022

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Criteria	JORC Code explanation	Commentary
	<p><i>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.</i></p>	
<p><b>Drilling techniques</b></p>	<ul style="list-style-type: none"> <li>• <i>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).</i></li> </ul>	<ul style="list-style-type: none"> <li>• Samples derive from historical drilling campaigns which comprised a total 34 boreholes.</li> <li>• All samples derive from diamond drilling campaigns, in which individual holes were predominantly vertical, and at least five were inclined.</li> <li>• Historical drill strings ranged in length from 147 –506 m from collar position.</li> </ul>
<p><b>Drill sample recovery</b></p>	<ul style="list-style-type: none"> <li>• <i>Method of recording and assessing core and chip sample recoveries and results assessed.</i></li> <li>• <i>Measures taken to maximise sample recovery and ensure representative nature of the samples.</i></li> <li>• <i>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.</i></li> </ul>	<ul style="list-style-type: none"> <li>• Historical records detail only minor instances of core-loss during drilling.</li> <li>• Drill sample recovery data is not applicable to this study.</li> </ul>
<p><b>Logging</b></p>	<ul style="list-style-type: none"> <li>• <i>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.</i></li> <li>• <i>Whether logging is qualitative or quantitative in nature. Core</i></li> </ul>	<ul style="list-style-type: none"> <li>• Historical records document qualitative (lithological descriptions) and quantitative (Cu and Ni assays) data.</li> <li>• Historical Rio Tinto logs include descriptions for every 2 m interval, whereas Tantalite Valley Minerals and Southern Sphere logs document interval and assay data per lithological</li> </ul>

Criteria	JORC Code explanation	Commentary
	<p><i>(or costean, channel, etc) photography.</i></p> <ul style="list-style-type: none"> <li><i>The total length and percentage of the relevant intersections logged.</i></li> </ul>	<p>package.</p> <ul style="list-style-type: none"> <li>The total length of all cores logged is 4760 m.</li> </ul>
<p><b>Sub-sampling techniques and sample preparation</b></p>	<ul style="list-style-type: none"> <li><i>If core, whether cut or sawn and whether quarter, half or all core taken.</i></li> <li><i>If non-core, whether riffled, tube sampled, rotary split, etc and whether sampled wet or dry.</i></li> <li><i>For all sample types, the nature, quality and appropriateness of the sample preparation technique.</i></li> <li><i>Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.</i></li> <li><i>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.</i></li> <li><i>Whether sample sizes are appropriate to the grain size of the material being sampled.</i></li> </ul>	<ul style="list-style-type: none"> <li>Each of the 57 half core samples selected for further analyses was split into two. One split was for chemical analysis and the other split for is kept for mineralogical test work.</li> <li>The split for the mineralogical test work was used to develop thin sections and polished mounts for optical and scanning electron microscopies, and in situ Laser Ablation Inductively Coupled Mass Spectrometry and sulphur isotope measurements.</li> <li>The split for the chemical analyses was further crushed and milled following standard operating procedures at the respective professional laboratory services (Scientific Services c.c. (South Africa); 48 samples) and MINTEK (South Africa); 9 samples).</li> </ul>
<p><b>Quality of assay data and laboratory tests</b></p>	<ul style="list-style-type: none"> <li><i>The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total.</i></li> <li><i>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.</i></li> </ul>	<ul style="list-style-type: none"> <li>The first subset of 48 samples was analysed by Scientific Services cc in South Africa.</li> <li>These samples were assayed for Cu (ppm) and Ni (ppm), and Pt (ppm) and Pd (ppm) by fire assay.</li> <li>The QAQC protocols included two blank samples as well as standards GBM320-16, GBM913-9 and GBM910-6 for Cu and Ni; and African Minerals Standards (Pty) Ltd.'s (AMIS) certified</li> </ul>

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Criteria	JORC Code explanation	Commentary
	<ul style="list-style-type: none"> <li><i>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.</i></li> </ul>	<p>reference materials AMIS 0251, 0237, 0459 and ST265 for Pd and Pt.</p> <ul style="list-style-type: none"> <li>A second subset of nine mineralised orthopyroxenite samples was submitted to Mintek laboratory services in South Africa.</li> <li>These samples were assayed for Cu (%), Ni (%), S (%), Co (ppm), Au (ppm), Pd (ppm) and Pt (ppm) using analytical protocols FA4S_MINPGM6E_NEW, ICP_BASE_S; ICP21 and MS1.</li> <li>This analytical work comprised duplicates for three of the submitted samples, and additional QAQC samples included one blank sample and seven standards (A486, A629, SARM117, SARM107, AMIS314, AMIS56).</li> </ul>
<b>Verification of sampling and assaying</b>	<ul style="list-style-type: none"> <li><i>The verification of significant intersections by either independent or alternative company personnel.</i></li> <li><i>The use of twinned holes.</i></li> <li><i>Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.</i></li> <li><i>Discuss any adjustment to assay data.</i></li> </ul>	<ul style="list-style-type: none"> <li>All samples and data were verified by the authors of the main report.</li> <li>Sample core specimen were bagged and tagged at Stellenbosch University, prior to submission to the respective laboratories.</li> <li>Sample split cut surfaces were scanned using a benchtop document scanner and all images are stored electronically along with supporting notes.</li> <li>The original assay data are write-protected and have not been adjusted.</li> </ul>

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Criteria	JORC Code explanation	Commentary
<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> <li>• Specification of the grid system used.</li> <li>• Quality and adequacy of topographic control.</li> </ul>	<ul style="list-style-type: none"> <li>• The borehole collars documented in Annexure 2 were estimated from historical maps, with some ground truthing conducted by project geologists on site.</li> <li>• Absolute location of individual core segments could not be elucidated.</li> </ul>
<b>Data spacing and distribution</b>	<ul style="list-style-type: none"> <li>• Data spacing for reporting of Exploration Results.</li> <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> <li>• Whether sample compositing has been applied.</li> </ul>	<ul style="list-style-type: none"> <li>• The 23 boreholes for which collar data is available are located within an area of approximately 0.5 km<sup>2</sup>.</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> <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>• The historical boreholes drilled into the ultramafic rocks of the TVC were all vertical, whereas boreholes drilled into the mineralisation associated with the contact with country hornfelses included some inclined boreholes.</li> <li>• The orientation of the layered packages is loosely constrained but appears to dip steeply towards the north west.</li> <li>• The relationship between the historical borehole orientations within the main ultramafic unit and the orientation of the mineralized structure (believed to be a steeply dipping orthopyroxenite unit) may be expected to have introduced a bias. The true thickness of this unit is not known.</li> </ul>

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Criteria	JORC Code explanation	Commentary
<b>Sample security</b>	<ul style="list-style-type: none"> <li><i>The measures taken to ensure sample security.</i></li> </ul>	<ul style="list-style-type: none"> <li>Arcadia Minerals Ltd. and the Department of Earth Sciences at Stellenbosch University maintained strict chain-of-custody procedures during all segments of sample handling, transport and samples prepared for transport to the laboratory are bagged and labelled in a manner which prevents tampering. Samples also remained in control of these entities until they were delivered and released to the laboratory.</li> <li>An export permit was obtained by Arcadia Minerals from the Namibian Mining Department to transport the samples across the border.</li> <li>Sample security between the time of drilling (circa 1972 –1976) and their ultimate collection for this project cannot be elucidated.</li> </ul>
<b>Audits or reviews</b>	<ul style="list-style-type: none"> <li><i>The results of any audits or reviews of sampling techniques and data.</i></li> </ul>	<ul style="list-style-type: none"> <li>Audits and reviews were limited to the Standard Operational Procedures in as far as data capturing was concerned during the sampling.</li> </ul>

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**Section 2 Reporting of Exploration Results**

Criteria	JORC Code explanation	Commentary
<p><b>Mineral tenement and land tenure status</b></p>	<ul style="list-style-type: none"> <li>• <i>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.</i></li> <li>• <i>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.</i></li> </ul>	<p>EPL 5047 (Tantalite Valley Complex) &amp; EPL7295 (Kum Kum Complex) is located in the Karas region, southern Namibia, near the South African border, and approximately 15 km to the north of the Orange River.</p> <p>Both EPL;s are held by ORP and is 14,671 and 21 734 hectares in size.</p> <p>ORP also obtained an Environmental Clearance Certificate on 4 April 2019 from the Ministry of Environmental and Tourism over EPL 5047.</p> <ul style="list-style-type: none"> <li>• A land-use agreement, including access to the property for exploration has been signed with the owners of the farms Norechab 130, Kinderzit 132 and Umeis 110</li> </ul>
<p><b>Exploration done by other parties</b></p>	<ul style="list-style-type: none"> <li>• <i>Acknowledgment and appraisal of exploration by other parties.</i></li> </ul>	<p>Three historical drilling campaign for which report is available was conducted</p> <p>1972 – Tantalite Valley Minerals</p> <p>1972 – Rio Tinto Exploration</p> <p>1976 Southern Sphere</p> <p>Detailed geological report on the Tantalite Valley and Kum Kum complexes has been published namely</p> <p>1975 – Moore</p> <p>1976 – Van Backstrom</p>

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Criteria	JORC Code explanation	Commentary
		1975 – Kartun 2015 – Macey
<b>Geology</b>	<ul style="list-style-type: none"> <li>• <i>Deposit type, geological setting and style of mineralisation.</i></li> </ul>	<ul style="list-style-type: none"> <li>• Sulphide mineralisation associated with layered mafic intrusion</li> </ul>
<b>Drill hole Information</b>	<ul style="list-style-type: none"> <li>• <i>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:</i> <ul style="list-style-type: none"> <li>○ <i>easting and northing of the drill hole collar</i></li> <li>○ <i>elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar</i></li> <li>○ <i>dip and azimuth of the hole</i></li> <li>○ <i>down hole length and interception depth</i></li> <li>○ <i>hole length.</i></li> </ul> </li> <li>• <i>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.</i></li> </ul>	The available information for historical holes that is available has been provided in Annexure 1 and 2 of this announcement.
<b>Data aggregation methods</b>	<ul style="list-style-type: none"> <li>• <i>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.</i></li> <li>• <i>Where aggregate intercepts incorporate short lengths of high-grade results and longer lengths of low-grade results, the</i></li> </ul>	Information about data aggregation is not stated in the available documents.

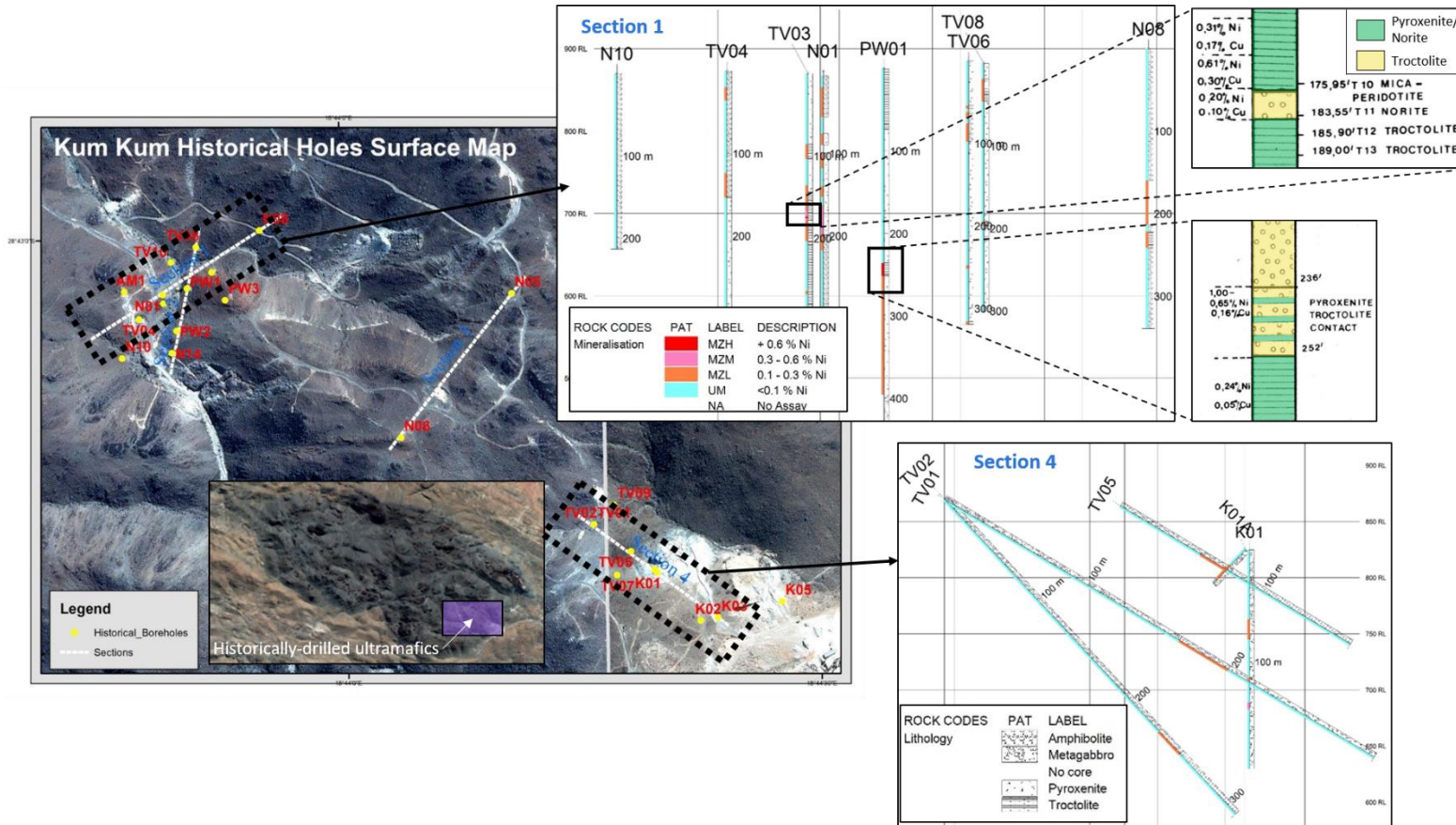
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Criteria	JORC Code explanation	Commentary
	<p><i>procedure used for such aggregation should be stated and some typical examples of such aggregations should be shown in detail.</i></p> <ul style="list-style-type: none"> <li><i>The assumptions used for any reporting of metal equivalent values should be clearly stated.</i></li> </ul>	
<p><b>Relationship between mineralisation widths and intercept lengths</b></p>	<ul style="list-style-type: none"> <li><i>These relationships are particularly important in the reporting of Exploration Results.</i></li> <li><i>If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported.</i></li> <li><i>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’).</i></li> </ul>	<ul style="list-style-type: none"> <li>All the intersection mentioned in Annexure 1 is downhole intersection and do not reflect the true width of the intersection. Not enough information is however available to calculate what the true width could be for each intersection.</li> </ul>
<p><b>Diagrams</b></p>	<ul style="list-style-type: none"> <li><i>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.</i></li> </ul>	<ul style="list-style-type: none"> <li>Refer to Annexure 4 of this announcement, showing the borehole location and section. It must be stated that the borehole collars have not been surveyed and was obtained from geo-referencing historical maps, and accuracy is estimated at around 10m.</li> </ul>
<p><b>Balanced reporting</b></p>	<ul style="list-style-type: none"> <li><i>Where comprehensive reporting of all Exploration Results is not practicable, representative reporting of both low and high grades and/or widths should be practiced avoiding misleading reporting of Exploration Results.</i></li> </ul>	<ul style="list-style-type: none"> <li>All available information to date was included in the report: <i>Geological overview and sulphide mineralization potential of the Tantalite Valley Complex, Dr. Martin Klausen, Dr. Bjorn von der Heyden &amp; Daniel Ferreira, Department of Earth Sciences, Stellenbosch University, May 2022</i></li> </ul>

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Criteria	JORC Code explanation	Commentary
<b>Other substantive exploration data</b>	<ul style="list-style-type: none"> <li><i>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.</i></li> </ul>	<ul style="list-style-type: none"> <li>Not aware of any other information.</li> </ul>
<b>Further work</b>	<ul style="list-style-type: none"> <li><i>The nature and scale of planned further work (e.g., tests for lateral extensions or depth extensions or large-scale step-out drilling).</i></li> <li><i>Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.</i></li> </ul>	<p>EPL 5047 (Tantalite Valley Complex) &amp; EPL7295 (Kum Kum Complex) is located in the Karas region, southern Namibia, near the South African border, and approximately 15 km to the north of the Orange River.</p> <p>Both EPL's are held by ORP and is 14,671 and 21 734 hectares in size.</p> <p>ORP also obtained an Environmental Clearance Certificate on 4 April 2019 from the Ministry of Environmental and Tourism over EPL 5047.</p> <ul style="list-style-type: none"> <li>A land-use agreement, including access to the property for exploration has been signed with the owners of the farms Norechab 130, Kinderzit 132 and Umeis 110</li> </ul>

### ANNEXURE 4 - Borehole Location and Section



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