9 September 2021

## FOUR NEW RARE EARTH ELEMENT IRONSTONES DISCOVERED AT MANGAROON

**HIGHLIGHTS**

- **Four new Rare Earth Element ("REE") ironstones have been discovered as part of the emerging Yin REE camp (Dreadnought 100%). Significant rock chips results include:**
    - **MNRK0407: 5.65% TREO, including 1.61% $Nd_2O_3$+$Pr_6O_{11}$**
    - **MNRK0399: 1.35% TREO, including 0.56% $Nd_2O_3$+$Pr_6O_{11}$**
- **The new REE ironstones significantly increase the footprint of known REE mineralisation to ~11kms of strike.**
- **A detailed airborne magnetic-radiometric survey will be flown in the December 2021 quarter over 50km strike extent which includes the six mineralised REE ironstones.**
- **Importantly, Yin rock chips contain high neodymium and praseodymium ($Nd_2O_3$+$Pr_6O_{11}$) ratios of total rare earth oxides ("TREO") of up to 43% and produce a potentially commercially treatable monazite concentrate.**
- **The Yin REE camp is located ~5kms southwest of the Yangibana REE Project ("Yangibana") which is currently under construction and development by Hastings Technology Metals Limited (ASX:HAS, "Hastings").**

Dreadnought Resources Limited ("**Dreadnought**") is pleased to announce that it has received assays from recent rock chips that confirm four additional REE ironstones. This significantly expands the strike of the emerging Yin REE camp to ~11kms. The four newly identified prospects (Y3, Y4, Y5 and Y6) are visually and chemically similar to those seen at both Yin and Yangibana.

A detailed airborne magnetic and radiometric survey will commence later in September and is expected to highlight additional anomalies and allow for mapping under shallow cover to trace the ironstones. This work will assist in identifying new ironstone occurrences, and for the design of drill programs to commence in the March 2022 quarter.

Dreadnought's Managing Director, Dean Tuck, commented: "*It is an exciting development confirming four new REE ironstones over ~11kms of strike which make Yin camp scale. We are excited for the results of the planned magnetic-radiometric survey to assist in further target generation ahead of Resource and discovery drilling in the March 2022 quarter.*

*In the interim, the upcoming Kimberley program remains on schedule with field crews mobilising to site in mid-September 2021"*

***Figure 1: Photo of newly identified REE ironstone outcrop from Y4.***

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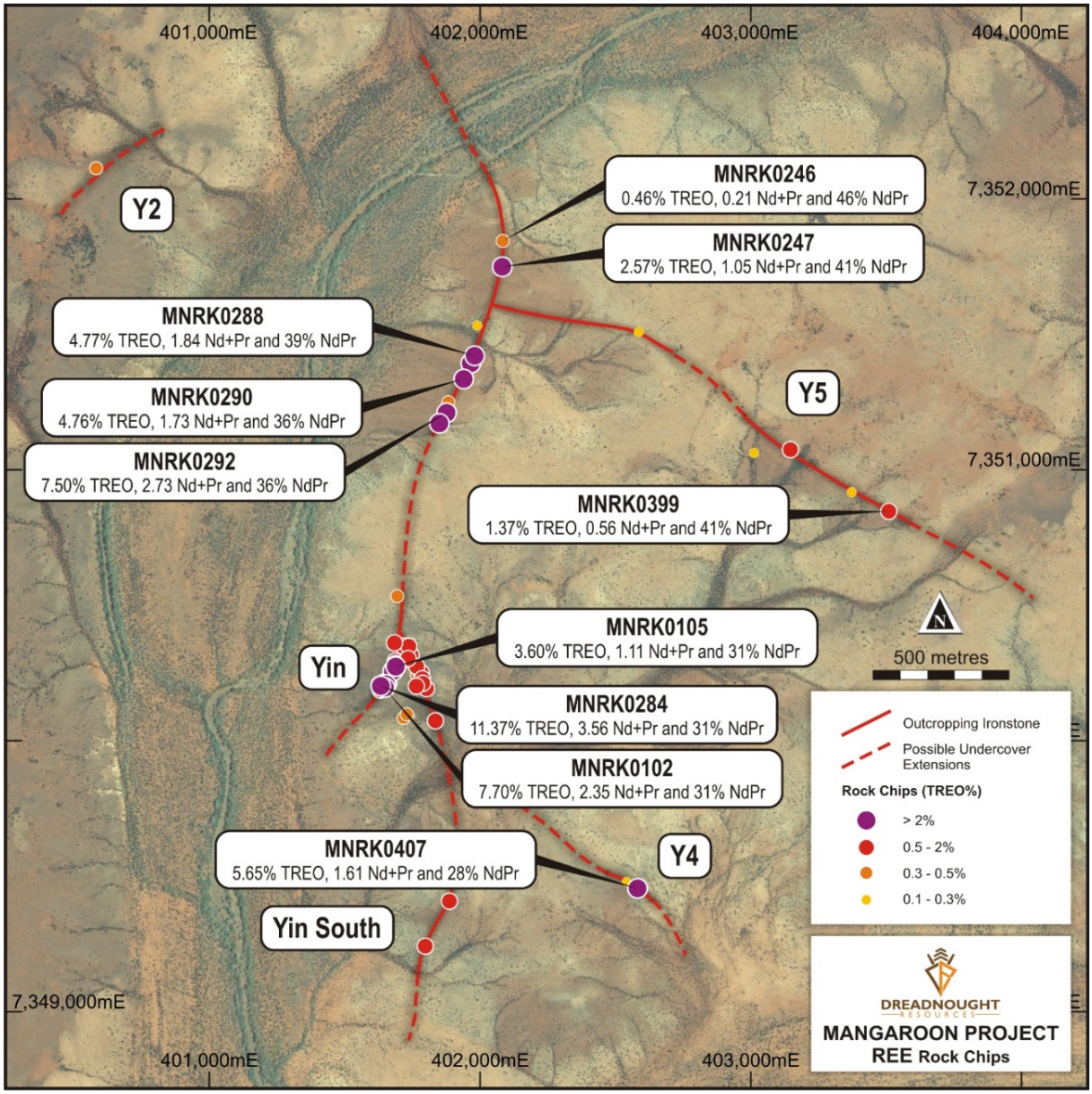
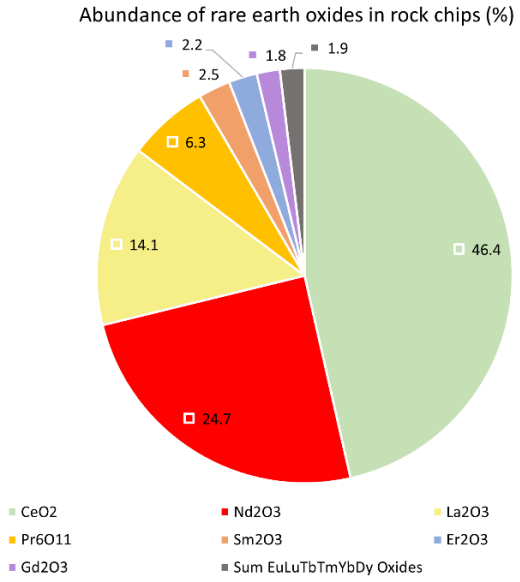


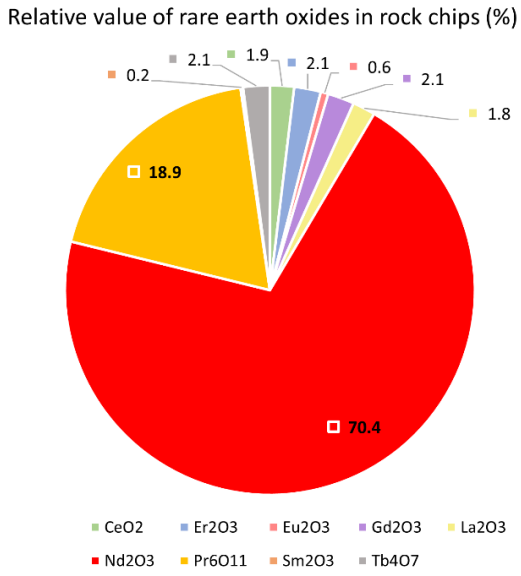

***Figure 2: Map showing the location of rock chip samples at Yin and the newly identified Y4 and Y5 ironstones and the location of mapped outcropping ironstones and their interpreted extensions under shallow cover. A ground magnetic survey conducted in June 2021 confirmed the Yin ironstones continue under shallow cover between outcrops.***

**Current Knowledge on REE at Yin (E09/2448, E09/2450, E09/2535: DRE 100%)**

Mineralogy:

Yin, like Yangibana, is unique to REE deposits globally due to the high proportion of neodymium and praseodymium in the total rare earth oxides, with rock chips from Yin containing up to a 43% NdPr ratio ($Nd_2O_3$+$Pr_6O_{11}$ content of the TREO). As shown in the charts below, $Nd_2O_3$ and $Pr_6O_{11}$ account for ~90% of the relative value of the REE despite comprising ~31% of the TREO inventory. These charts have been based on the average of all REE ironstone rock chips collected to date across the Yin Camp.




Metallurgy:

One of the key matters to determine with REE projects is the ability to create a commercial product with economically recoverable REE. Dreadnought undertook early metallurgical test work to determine the amenability of the Yin ironstones to produce a commercially treatable monazite concentrate.

An initial flotation circuit using bulk surface samples from Yin performed well, achieving a recovery of 92.8% at a concentrate grade of 12.3% $Nd_2O_3$. and an average 40% TREO.

In addition, powder X-ray diffraction (**"XRD"**) confirmed the type of minerals hosting the REE at Yin to be predominantly monazite. Monazite is well-known to be amendable to commercial processing and as a source of REE at commercial scales.

Thorium and Uranium:

All REE deposits exhibit some degree of radioactivity, however, like Hastings' Yangibana, data to date indicates that the Yin ironstones are very low in Th and U compared to other REE deposits.

| | Yin | Yangibana | Nolan's Bore | Dubbo | Mt Weld | Kvanfjeld |
|---|---|---|---|---|---|---|
| Th (ppm) | 314[1] | ~450 | ~2,700 | ~400 | ~700 | ~700 |
| **U (ppm)** | **10[1]** | **~27** | **~200** | **~100** | **~20** | **~300** |

***Table 1: Thorium (Th) and Uranium (U) of Yin rock chips compared to other REE deposits.***

*[1]Yin values are based on the average of all rock chips containing >0.1% TREO, and may not reflect eventual resource Th and U grades.*

**Rare Earth Element Strategy at Mangaroon (E09/2448, E09/2450, E09/2535: DRE 100%)**

Work to date at Yin has confirmed encouraging REE grades, mineralogy and amenability to concentration by simple flotation. Furthermore, a high NdPr monazite concentrate may be attractive for processing by a number of facilities in Australia or overseas.

Dreadnought is now committed to commence Resource and discovery drilling at the Yin REE camp.

A modern, high resolution airborne magnetic-radiometric survey will be flown in September 2021 with results by November 2021. Drilling is expected to commence in the March 2022 quarter. This drilling will form the basis for a planned maiden JORC 2012 Resource in the June 2022 quarter.

**Ongoing and Upcoming Work Programs at Mangaroon:**

**Ongoing:** Mapping and rock chipping along the Money Intrusion for Ni-Cu-PGE target generation

**Commenced:** Project wide multi-element stream sediment sampling

**Commenced:** Petrological and mineralogical analysis of rocks from Yin

**September:** Fixed Loop EM Surveys along the Money Intrusion for Ni-Cu-PGE target definition

**September/October:** Detailed airborne magnetic-radiometric survey over REE ironstones

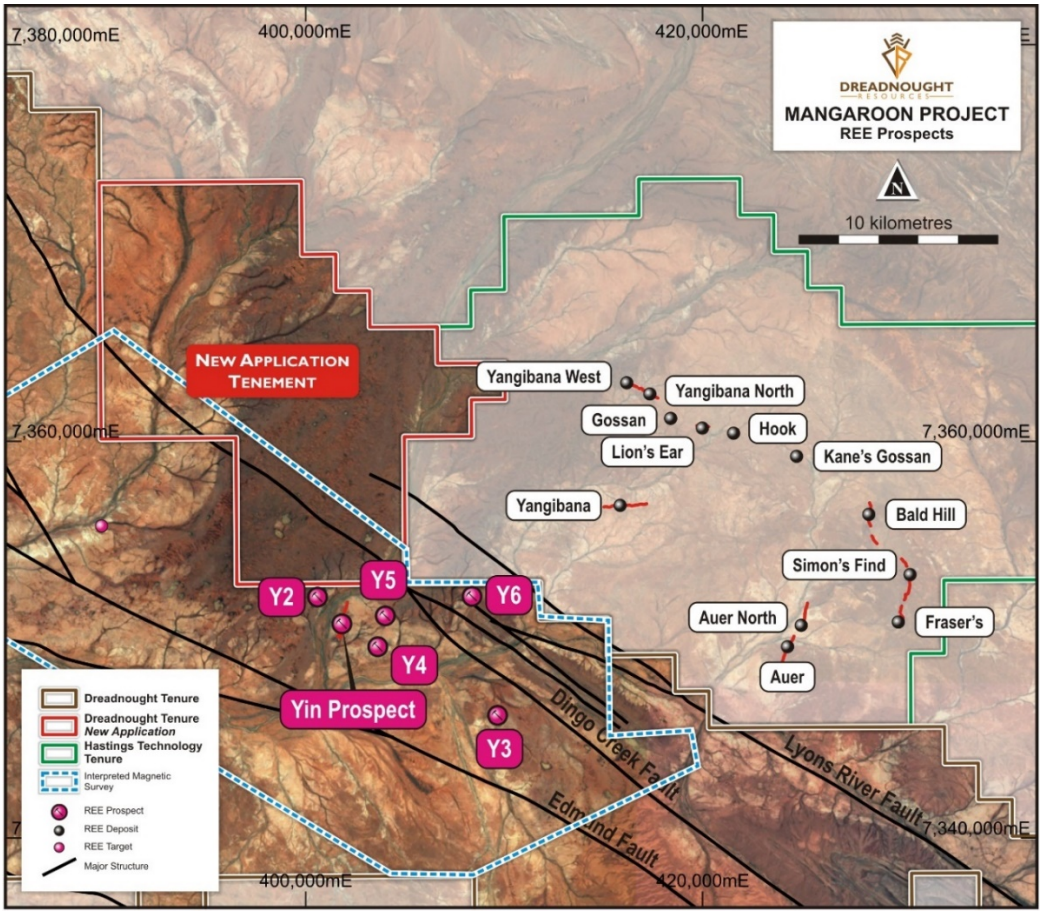



***Figure 3: Plan view image showing the location of Dreadnought's REE ironstones including the newly identified Y3, Y4, Y5 and Y6 (purple), in relation to the Lyons River Fault and the location of deposits within the Yangibana REE Project (black). The distance between the Y2 and Y3 ironstones measures 11km.***

**Rare Earth Elements at Mangaroon (E09/2448, E09/2450, E09/2535: DRE 100%)**

The Yangibana ironstones are readily accessible and located 5-20kms from the Cobra-Gifford Creek Road. The ironstones were first explored in 1972 for base metals. The REE potential of the ironstones was first assessed in 1985 and has seen substantial work by Hastings Technology Metals on the Yangibana ironstones north of the Lyons River Fault since 2011 (Figure 3).

Yangibana currently has a JORC 2012 Mineral Resource* of 27.42Mt @ 0.97% TREO with 0.33% $Nd_2O_3$+$Pr_6O_{11}$ and is under construction and development. The high proportion of $Nd_2O_3$+$Pr_6O_{11}$ (used for electric vehicle magnets for and renewable power generation) are an important component of the project's economics.

However, prior to Dreadnought, no significant REE exploration was undertaken south of the Lyons River Fault, which until now was considered to be the southern extent of the Yangibana REE Ironstones.

Recent TREO and $Nd_2O_3$+$Pr_6O_{11}$ results from Yin, exhibit similar characteristics to Yangibana and, to confirm this similarity, bulk samples were collected from outcrop for flotation test work and mineralogical analysis. The metallurgical assessment is an important first step in determining the potential for the TREO to be upgraded into a saleable intermediate product in the form of a concentrate. The mineralogical assessment is also important in that the beneficiation of monazite containing minerals to produce monazite concentrates is a demonstrated commercial scale process.

Significantly, six outcropping REE ironstones have now been identified, with detailed airborne magnetic-radiometric surveys to refine existing and additional targets. These surveys are to be conducted ahead of a drill program planned for Yin (initial JORC 2012 Resource definition) and any additional prospects (discovery).

**HAS.ASX: 5 May 2021 "Yangibana Project updated Measured and Indicated Resource tonnes up by 54%"*

***Figure 4: Dreadnought's Luke Blais and Nick Chapman (L to R) mapping and sampling an outcropping REE ironstone at Yin.***

**Background on Mangaroon (E08/3274, E8/3178, E09/2384, E09/2433, E09/2473: Option with FQM) (E08/3275, E09/2370, E09/2448, E09/2449, E09/2450, E09/2467, E09/2478: 100%)**

Mangaroon covers >4,500 sq. kms of the Mangaroon Zone in the Gascoyne Region of Western Australia. The region is host to high-grade gold mineralisation at the Bangemall/Cobra and Star of Mangaroon gold mining centres and the high-grade Yangibana REE deposits. During most of the region's early history, there was no government support for prospecting and or exploration resulting in a vastly underexplored region in Western Australia.

Dreadnought has located outcropping high-grade gold bearing quartz veins along the Edmund and Minga Bar Faults, outcropping high tenor Ni-Cu-PGE blebby sulphides in the recently defined Money Intrusion and outcropping high-grade REE ironstones, similar to those under development at Yangibana. Mangaroon is still in the early stages with limited modern exploration.

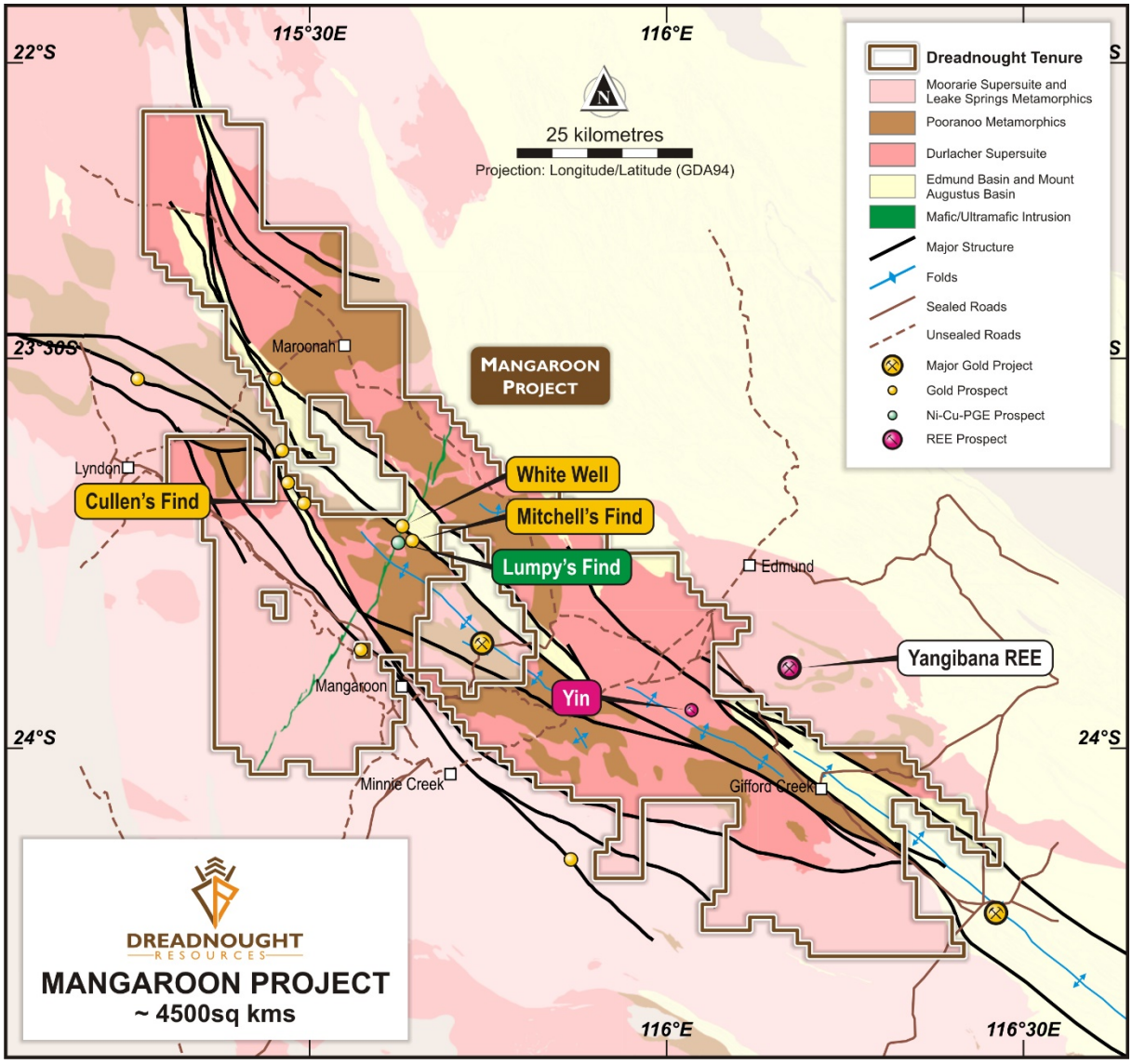



***Figure 5: Plan view map of Mangaroon showing the location of current prospects and new tenement application in relation to major structures, geology, roads and the Yangibana REE Project.***

## About Rare Earths

REEs are comprised of fifteen elements that are "rare" in terms of the limited number of concentrated deposits.

Neodymium and praseodymium ($Nd_2O_3$ and $Pr_6O_{11}$) are classified as light rare earths and are used in steelmaking to remove impurities, as well as in the production of specialty alloys (including steel, chromium, magnesium, molybdenum, tungsten, vanadium and zirconium).

The use of REEs in magnets is rapidly increasing with neodymium-iron-boron magnets being the strongest known magnets and are used in applications such as electric motors for hybrid cars, wind turbines, high-tech military components and battery alloys.

China accounts for >90% of global REE supply and applies restrictions to this supply. Accordingly, REEs are critical metals because of the specialised use in modern technology combined with China's near monopoly on supply. The political and economic issues surrounding global supply have highlighted the strategic importance of REEs.

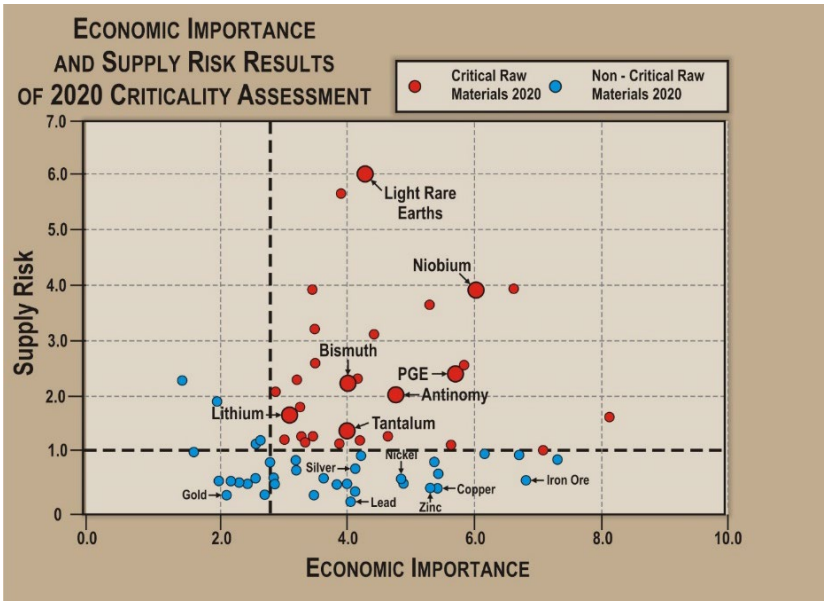
## Critical Minerals

Critical minerals are considered vital for the economic well-being of the world's economies, yet whose supply may be at risk due to geological, geopolitical or other factors. These minerals are used in the manufacture of mobile phones, flat screen monitors, wind turbines, electric cars, solar panels and many other high-tech applications.

The minerals ranked as most critical by the USA, Japan, South Korea, the UK and the European Union are as follows: rare-earth elements (REE), gallium (Ga), indium (In), tungsten (W), platinum-group elements (PGE), cobalt (Co), niobium (Nb), magnesium (Mg), molybdenum (Mo), antimony (Sb), lithium (Li), vanadium (V), nickel (Ni), tantalum (Ta), tellurium (Te), chromium (Cr), manganese (Mn) and bismuth (Bi).

Dreadnought's critical minerals prospects include the following:

- Illaara: Peggy Sue tantalum, niobium and lithium prospect
- Mangaroon: Yin light rare earths and Lumpy's Ni-Cu-PGE prospects
- Tarraji-Yampi: Rough Triangle Cu-Sb-Bi-Ag, Texas and Orion Ni-Cu-PGE prospects




***Sources:***
***Study on the review of the list of Critical Raw Materials, European Commission, 2017.***
***Critical Minerals in Australia: A Review of Opportunities and Research Needs, Geoscience Australia, 2018.***

For further information please refer to previous ASX announcements:

- *11 June 2021* *High-Grade REE Ironstones Outcropping at Mangaroon*
- *19 July 2021* *High-Grade REE Ironstones Confirmed Over 2.5kms at Mangaroon*
- *1 September 2021* *Encouraging Results for Rare Earths at Yin*

**UPCOMING NEWSFLOW**

**September:** Remaining assays from drilling at Tarraji-Yampi (Texas, Orion Ni-Cu-PGE, Grant's Find, Fuso and Paul's Find Cu-Au and Chianti-Rufina VMS targets)

**September:** Results of DHEM and FLEM surveys from Orion and Chianti

**September:** Commencement of ground EM survey along the Money Intrusion at Mangaroon

**9 September:** Presenting at the New World Metals Conference in Perth

**September:** Commencement of detailed airborne magnetic and radiometric survey over Mangaroon

**September:** Recommencement of RC drilling at Orion, Grant's Find and Fuso – Tarraji-Yampi

**October/November:** Results of drilling at Tarraji-Yampi (Orion, Grant's Find and Fuso)

**October/November:** Results of ground EM surveys along the Money Intrusion at Mangaroon

**October:** Quarterly Activities and Financial Reports

**November:** Results of airborne magnetic-radiometric surveys for REE ironstones at Mangaroon

~Ends~

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*This announcement is authorised for release to the ASX by the Board of Dreadnought.*

**Competent Person's Statement**

*The information in this announcement that relates to geology and exploration results and planning was compiled by Mr. Dean Tuck, who is a Member of the AIG, Managing Director, and shareholder of the Company. Mr. Tuck has sufficient experience which 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 'Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves'. Mr. Tuck consents to the inclusion in the report of the matters based on the information in the form and context in which it appears. The Company confirms that it is not aware of any new information or data that materially affects the information in the original reports, and that the forma and context in which the Competent Person's findings are presented have not been materially modified from the original reports.*

**INVESTMENT HIGHLIGHTS**

**Kimberley Ni-Cu-Au Projects**

Dreadnought controls the second largest land holding in the highly prospective West Kimberley region of WA. The main project area, Tarraji-Yampi, is located only 85kms from Derby and has been locked up as a Defence reserve since 1978.

Tarraji-Yampi presents a rare first mover opportunity with known outcropping mineralisation and historic workings from the early 1900s which have seen no modern exploration.

Three styles of mineralisation occur at Tarraji-Yampi including: volcanogenic massive sulphide ("**VMS**"); Proterozoic Cu-Au ("**IOCG**"); and magmatic sulphide Ni-Cu-PGE. Numerous high priority nickel, copper and gold drill targets have been identified from recent VTEM surveys, historical drilling and surface sampling of outcropping mineralisation.


**Mangaroon Ni-Cu-PGE, REE & Au Project**

Mangaroon is a first mover opportunity covering ~4,500sq kms of tenure located 250kms south-east of Exmouth in the Gascoyne Region of Western Australia. During most of the regions early history, it did not receive government support for prospecting and or exploration resulting in a vastly underexplored region in Western Australia.

Since acquiring the project in late 2020, Dreadnought has located outcropping high-grade gold bearing quartz veins along the Edmund and Minga Bar Faults, outcropping high tenor Ni-Cu-PGE blebby sulphides in the recently defined Money Intrusion and outcropping high-grade REE ironstones, similar to those under development at the Yangibana REE Project. Mangaroon is still in the early stages with limited modern exploration.

**Illaara Gold, VMS & Iron Ore Project**

Illaara is located 190km northwest of Kalgoorlie in the Yilgarn Craton and covers 75kms of strike along the Illaara Greenstone Belt. Illaara is prospective for typical Archean mesothermal lode gold deposits and base metals VMS mineralisation.

Dreadnought has consolidated the Illaara Greenstone Belt mainly through an acquisition from Newmont. Newmont defined several camp-scale targets which were undrilled due to a change in corporate focus. Prior to Newmont, the Illaara Greenstone Belt was predominantly held by iron ore explorers and has seen minimal gold and base metal exploration since the 1990s.

DREADNOUGHT
RESOURCES

*Table 2: All ironstone rock chip results (GDA94 MGAz50)*

| Sample ID | Easting | Northing | TREO % | $Nd_2O_3 + Pr_6O_{11}$ % | $(Nd_2O_3 + Pr_6O_{11})$ % of TREO | Prospect |
|---|---|---|---|---|---|---|
| **MNRK0101** | **401637** | **7350206** | **7.14** | **2.20** | **31%** | |
| **MNRK0102** | **401648** | **7350201** | **7.72** | **2.35** | **30%** | |
| **MNRK0104** | **401657** | **7350221** | **1.13** | **0.34** | **30%** | |
| **MNRK0105** | **401689** | **7350278** | **3.56** | **1.11** | **31%** | |
| **MNRK0106** | **401715** | **7350353** | **1.91** | **0.60** | **31%** | |
| MNRK0107 | 401723 | 7350334 | 0.42 | 0.12 | 29% | |
| MNRK0108 | 401802 | 7350196 | 0.54 | 0.10 | 19% | |
| MNRK0109 | 401783 | 7350255 | 0.98 | 0.29 | 30% | |
| MNRK0111 | 401720 | 7350085 | 0.44 | 0.15 | 34% | |
| MNRK0239 | 401687 | 7350298 | 0.75 | 0.27 | 36% | |
| **MNRK0240** | **401678** | **7350262** | **3.72** | **1.05** | **28%** | |
| MNRK0241 | 401766 | 7350278 | 0.92 | 0.3 | 33% | |
| MNRK0242 | 401769 | 7350245 | 0.37 | 0.08 | 22% | |
| MNRK0243 | 401787 | 7350233 | 0.90 | 0.19 | 21% | |
| MNRK0244 | 401789 | 7350216 | 0.70 | 0.17 | 24% | |
| MNRK0245 | 401765 | 7350205 | 0.57 | 0.15 | 26% | |
| MNRK0246 | 402086 | 7351845 | 0.49 | 0.21 | 43% | |
| **MNRK0247** | **402082** | **7351754** | **2.57** | **1.05** | **41%** | |
| MNRK0270 | 401687 | 7350359 | 0.29 | 0.06 | 21% | |
| MNRK0271 | 401710 | 7350350 | 0.34 | 0.09 | 26% | |
| MNRK0272 | 401737 | 7350352 | 0.69 | 0.20 | 29% | |
| **MNRK0273** | **401684** | **7350365** | **1.50** | **0.46** | **31%** | Yin |
| **MNRK0274** | **401746** | **7350320** | **1.82** | **0.54** | **30%** | |
| **MNRK0275** | **401735** | **7350307** | **1.45** | **0.42** | **29%** | |
| MNRK0276 | 401711 | 7350283 | 0.31 | 0.09 | 29% | |
| MNRK0277 | 401701 | 7350273 | 0.28 | 0.07 | 25% | |
| MNRK0278 | 401663 | 7350216 | 0.98 | 0.28 | 29% | |
| **MNRK0279** | **401632** | **7350191** | **1.39** | **0.42** | **30%** | |
| MNRK0280 | 401628 | 7350211 | 0.70 | 0.16 | 23% | |
| **MNRK0281** | **401646** | **7350221** | **1.20** | **0.36** | **30%** | |
| **MNRK0282** | **401653** | **7350213** | **3.69** | **1.18** | **33%** | |
| MNRK0283 | 401638 | 7350206 | 0.64 | 0.18 | 29% | |
| **MNRK0284** | **401634** | **7350207** | **11.37** | **3.56** | **32%** | |
| **MNRK0288** | **401980** | **7351426** | **4.77** | **1.84** | **39%** | |
| **MNRK0289** | **401966** | **7351398** | **3.12** | **1.21** | **39%** | |
| **MNRK0290** | **401940** | **7351340** | **4.76** | **1.73** | **36%** | |
| MNRK0291 | 401885 | 7351250 | 0.41 | 0.15 | 37% | |
| **MNRK0292** | **401876** | **7351215** | **7.50** | **2.73** | **36%** | |
| **MNRK0293** | **401850** | **7351176** | **2.65** | **0.97** | **37%** | |
| MNRK0294 | 401697 | 7350535 | 0.34 | 0.12 | 35% | |
| MNRK0412 | 401835 | 7350079 | 0.64 | 0.19 | 30% | |
| MNRK0413 | 401730 | 7350103 | 0.31 | 0.03 | 10% | |
| MNRK0414 | 401688 | 7350290 | 0.59 | 0.20 | 34% | |
| MNRK0295 | 401798 | 7349246 | 0.73 | 0.2 | 27% | |
| MNRK0296 | 401887 | 7349411 | 0.90 | 0.31 | 34% | Yin South |
| MNRK0409 | 401890 | 7349410 | 0.39 | 0.12 | 31% | |
| MNRK0112 | 400611 | 7352124 | 0.45 | 0.14 | 31% | Y2 |
| MNRK0285 | 409613 | 7346221 | 0.14 | 0.03 | 21% | |
| MNRK0286 | 409612 | 7346220 | 0.18 | 0.03 | 17% | Y3 |
| MNRK0450 | 409657 | 7346193 | 0.33 | 0.04 | 12% | |

*Table 2 continued: All ironstone rock chip results (GDA94 MGAz50)*

| Sample ID | Easting | Northing | TREO % | $Nd_2O_3 + Pr_6O_{11}$ % | $(Nd_2O_3 + Pr_6O_{11})$ % of TREO | Prospect |
|---|---|---|---|---|---|---|
| **MNRK0407** | **402582** | **7349462** | **5.65** | **1.61** | **28%** | Y4 |
| MNRK0408 | 402542 | 7349483 | 0.19 | 0.01 | 5% | |
| **MNRK0399** | **403511** | **7350852** | **1.37** | **0.56** | **41%** | Y5 |
| MNRK0400 | 403373 | 7350921 | 0.11 | 0.04 | 36% | |
| MNRK0401 | 403147 | 7351081 | 0.79 | 0.27 | 34% | |
| MNRK0403 | 403013 | 7351066 | 0.22 | 0.09 | 41% | |
| MNRK0396 | 408450 | 7352205 | 0.08 | 0.02 | 25% | Y6 |

# JORC Code, 2012 Edition – Table 1 report template

## Section 1 Sampling Techniques and Data

## JORC TABLE 1

### Section 1 Sampling Techniques and Data

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

| 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 down hole gamma sondes, or handheld XRF instruments, etc.). These examples should not be taken as limiting the broad meaning of sampling.*<br>• *Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.*<br>• *Aspects of the determination of mineralisation that are Material to the Public Report.*<br>• *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.* | **Rock Chips**<br>• Rock Chips were collected by Dreadnought staff and submitted for analysis. Rock chips are random, subject to bias and often unrepresentative for the typical widths required for economic consideration. They are by nature difficult to duplicate with any acceptable form of precision or accuracy.<br>• Rock chips have been collected by Dreadnought to assist in characterising different lithologies, alterations and expressions of mineralisation. In many instances, several rock chips were collected from a single location to assist with characterising and understanding the different lithologies, alterations and expressions of mineralisation present at the locality.<br>• Rock chips were submitted to ALS Laboratories in Perth for determination of Rare Earth Oxides by Lithium Borate Fusion XRF (ALS Method ME-XRF30).<br>**Yangibana Rock Chips**<br>• Rock Chips were collected by Hastings and Artemis personnel and submitted for analysis.<br>• Hastings submitted rock chips to Genalysis for determination of Rare Earth Oxides by Lithium Borate Fusion ICP-MS (Genalysis Method FP6/MS).<br>• Artemis submitted rock chips to Genalysis for determination of Rare Earth Oxides by Lithium Borate Fusion ICP-MS/OES (Genalysis Method |

| Criteria | JORC Code explanation | Commentary |
|---|---|---|
| | | FS105/MS/OES). |
| *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.).* | No drilling undertaken |
| *Drill sample recovery* | • *Method of recording and assessing core and chip sample recoveries and results assessed.*<br>• *Measures taken to maximise sample recovery and ensure representative nature of the samples.*<br>• *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 drilling undertaken |
| *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.*<br>• *Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc.) photography.*<br>• *The total length and percentage of the relevant intersections logged.* | No drilling undertaken |
| *Sub-sampling techniques and sample preparation* | • *If core, whether cut or sawn and whether quarter, half or all core taken.*<br>• *If non-core, whether riffled, tube sampled, rotary split, etc. and whether sampled wet or dry.*<br>• *For all sample types, the nature, quality and appropriateness of the sample preparation technique.*<br>• *Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.*<br>• *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.*<br>• *Whether sample sizes are appropriate to the grain size of the material being sampled.* | **Rock Chips**<br>Entire rock chips were submitted to the lab for sample prep and analysis.<br>**Yangibana Rock Chips**<br>Sub-sampling and sample prep are unknown. |
| *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.*<br>• *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.*<br>• *Nature of quality control procedures adopted (e.g. standards, blanks, duplicates, external* | **Rock Chips**<br>• All samples were submitted to ALS Laboratories in Perth where 1-3kg rock chips samples were crushed so that >70% of material passes through -6mm, the sample is then pulverised to >85% passing 75 micron.<br>• A 66-gram aliquot of pulverised sample is fused with 12:22 lithium borate flux containing an oxidizing agent, and poured to form a fused disk. The resultant disk is in then analysed by XRF spectrometry specifically for Rare Earths (ALS Method ME-XRF30) |

| Criteria | JORC Code explanation | Commentary |
|---|---|---|
| | *laboratory checks) and whether acceptable levels of accuracy (i.e. lack of bias) and precision have been established.* | • Lithium borate fusion is considered a total digest and Method ME-XRF30 is appropriate for REE determination.<br>• No standards, duplicates or blanks submitted with rock chips.<br>**Yangibana Rock Chips**<br>• Hastings submitted rock chips to Genalysis for determination of Rare Earth Oxides by Lithium Borate Fusion ICP-MS (Genalysis Method FP6/MS).<br>• Lithium borate fusion is considered a total digest and Method FP6/MS is considered appropriate for REE determination.<br>• Artemis submitted rock chips to Genalysis for determination of Rare Earth Oxides by Lithium Borate Fusion ICP-MS/OES (Genalysis Method FS105/MS/OES).<br>• Lithium borate fusion is considered a total digest and Method FS105/MS/OES is considered appropriate for REE determination. |
| *Verification of sampling and assaying* | • *The verification of significant intersections by either independent or alternative company personnel.*<br>• *The use of twinned holes.*<br>• *Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.*<br>• *Discuss any adjustment to assay data.* | **Rock Chips**<br>• Rock chip and geological information is written in field books and coordinates and track data saved from hand held GPSs used in the field.<br>• Dreadnought geologists have inspected and logged all rock chips.<br>• Field data is entered into excel spreadsheets to be loaded into a database.<br>**Yangibana Rock Chips**<br>No verification of sampling and assaying of the Yangibana rock chips has been undertaken by Dreadnought |
| *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.*<br>• *Specification of the grid system used.*<br>• *Quality and adequacy of topographic control.* | • All sample locations were recorded with a Garmin handheld GPS which has an accuracy of +/- 5m.<br>• GDA94 MGAz50.<br>**Yangibana Rock Chips**<br>• Survey information of the Yangibana rock chips is unknown, coordinates were included in the public assay files from WAMEX reports |
| *Data spacing and distribution* | • *Data spacing for reporting of Exploration Results.*<br>• *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.*<br>• *Whether sample compositing has been applied.* | Sample spacing and distribution is not sufficient to establish the degree of geological and grade continuity appropriate for a Mineral Resource. |
| *Orientation of data in relation to* | • *Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is* | At this early stage of exploration, mineralisation thickness's, orientation and dips are not known. |

| Criteria | JORC Code explanation | Commentary |
|---|---|---|
| *geological structure* | *known, considering the deposit type.*<br>• *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.* | |
| *Sample security* | • *The measures taken to ensure sample security.* | • All geochemical samples were collected, bagged, and sealed by Dreadnought staff and delivered to Norex General Transport in Exmouth.<br>• Samples were delivered directly to ALS Laboratories Perth by Norex General Transport out of Exmouth.<br>**Yangibana Rock Chips**<br>Sample security is unknown |
| *Audits or reviews* | • *The results of any audits or reviews of sampling techniques and data.* | The program is continuously reviewed by senior company personnel.<br>**Yangibana Rock Chips**<br>Audits and reviews of rock chips are unknown. |

## Section 2 Reporting of Exploration Results

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

| 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.*<br>• *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.* | • The Mangaroon Project consists of 1 granted Exploration License (E09/2370,) and 12 pending Exploration Licenses (E08/3178, E08/3274, E08/3275, E09/2384, E09/2433, E09/3178, E09/2448, E09/2449, E09/2450, E09/2467, E09/2468, E09/2535)<br>• All tenements are 100% owned by Dreadnought Resources.<br>• E08/3178, E08/3274, E09/2384, E09/2433, E09/2473 are subject to an option agreement with First Quantum Minerals over the base metal rights.<br>• E08/3178, E09/2370, E09/2384 and E09/2433 are subject to a 2% Gross Value Royalty held by Beau Resources.<br>• E08/3274, E08/3275, E09/2433, E09/2448, E09/2449, E09/2450 are subject to a 1% Gross Value Royalty held by Beau Resources.<br>• The Mangaroon Project covers 4 Native Title Determinations including the Budina (WAD131/2004), Thudgari (WAD6212/1998), Gnulli Gnulli (WAD22/2019) and the Combined Thiin-Mah, Warriyangka, Tharrkari and Jiwarli (WAD464/2016)<br>• The Mangaroon Project is located over Lyndon, Mangaroon, Gifford Creek, Maroonah Minnie Creek, Towra and Uaroo |

| Criteria | JORC Code explanation | Commentary |
|---|---|---|
| | | Stations |
| *Exploration done by other parties* | • *Acknowledgment and appraisal of exploration by other parties.* | • Historical exploration of a sufficiently high standard was carried out in the region by a few parties including:<br>Hurlston Pty Ltd 1986-1987: WAMEX Report A23584<br>Newmont 1990: WAMEX Report A32886<br>Newcrest 1990: WAMEX Report A36887<br>Desert Energy 2006-2007: WAMEX Reports A78056, A80879<br>**Yangibana Rock Chips**<br>Hastings 2017: WAMEX Report A114242<br>Hastings 2014: WAMEX Report A102800<br>Hastings 2013: WAMEX Report A97135<br>Hastings 2012: WAMEX Report A93001<br>Artemis 2009: WAMEX Report A89503 |
| *Geology* | • *Deposit type, geological setting and style of mineralisation.* | • The Mangaroon Project is located within Mangaroon Zone of the Gascoyne Province.<br>• The Mangaroon Project is prospective for orogenic gold, magmatic Ni-Cu-PGE mineralisation and Ferrocarbonatite hosted REEs. |
| *Drill hole information* | • *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:*<br>  ○ *easting and northing of the drill hole collar*<br>  ○ *elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar*<br>  ○ *dip and azimuth of the hole*<br>  ○ *down hole length and interception depth*<br>  ○ *hole length.*<br>• *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 drilling undertaken |
| *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* | No drilling undertaken |

| Criteria | JORC Code explanation | Commentary |
|---|---|---|
| | *examples of such aggregations should be shown in detail.*<br>• *The assumptions used for any reporting of metal equivalent values should be clearly stated.* | |
| *Relationship between mineralisation widths and intercept lengths* | • *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 drilling undertaken |
| *Diagrams* | • *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.* | • Refer to figures within this report. |
| *Balanced reporting* | • *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.* | • The accompanying document is a balanced report with a suitable cautionary note. |
| *Other substantive exploration data* | • *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.* | • Suitable commentary of the geology encountered are given within the text of this document. |
| *Further work* | • *The nature and scale of planned further work (e.g. tests for lateral extensions or 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.* | • Detailed airborne magnetics, surface geochemistry and mapping prior to drilling |