

Date: 31 March 2022

ASX Code: MAN

#### Capital Structure

Ordinary Shares: 487,038,070

Unlisted Options: 65,461,850  
(3c exercise)

Current Share Price: 5.7c

Market Capitalisation: \$28M

Debt: Nil

#### Directors

Lloyd Flint

Non-Executive Chairman  
Company Secretary

James Allchurch

Managing Director

Roger Fitzhardinge

Non-Executive Director

#### Contact Details

First Floor

10 Outram Street

West Perth WA 6005

Australia

Tel: +61 9200 3743

[mandrakeresources.com.au](http://mandrakeresources.com.au)

## Strong Conductor Identified by Downhole EM

### Highlights

- **Down hole electromagnetic survey at MNEWRC004 identifies off-hole EM plate with strong conductance of 8,750 siemens**
- **Encouraging assay results received for MNEWRC004 include:**
  - **4m @ 0.37% Ni and 229ppm Cu from 82m; and**
  - **1m @ 0.33% Ni and 368ppm Cu from 69m**
- **Strong EM conductor can be tested with a 150m deep drill hole, multiple ultramafic intrusions remain untested across the tenure**
- **Mandrake to shift corporate and exploration focus to the recently acquired Delfin Copper Project**
- **Mandrake fully funded with approx \$16.2M in cash**

Mandrake Resources Limited (ASX: MAN) (**Mandrake** or **the Company**) advises that assay results have been received for reverse circulation drill hole MNEWRC004 which targeted electromagnetic (EM) conductor plate C at the Newleyine PGE-nickel-copper prospect.

EM conductor plate C was modelled using data collected during the fixed loop EM (FLEM) survey conducted in 2020. MNEWRC004 intersected the modelled position of EM conductor plate C however the hole did not intersect conductive material that would likely explain the presence of the plate.

A subsequent downhole EM survey (DHEM) revised and refined the precise three-dimensional location of the main conductor, identified as sitting immediately above and to the south-east of MNEWRC004.

The single off-hole conductor identified by DHEM was modelled using late time EM data and is a ~80 x 20m strongly conductive plate (8,750 Siemens). The conductive plate is 125m below ground surface.

MNEWRC004 was assessed by portable XRF (pXRF), with five samples submitted for laboratory analysis based on lithology and pXRF nickel and copper values.

MNEWRC004 contained trace sulphides and returned assay results of 4m @ 0.37% Ni, 229ppm Cu and 42.5ppb Pt+Pd from 82m; as well as 1m @ 0.33% Ni, 368ppm Cu and 40ppb Pt+Pd from 69m. Both intervals comprised an ultramafic serpentinite-dunite.

All assay results are provided in Table 1.

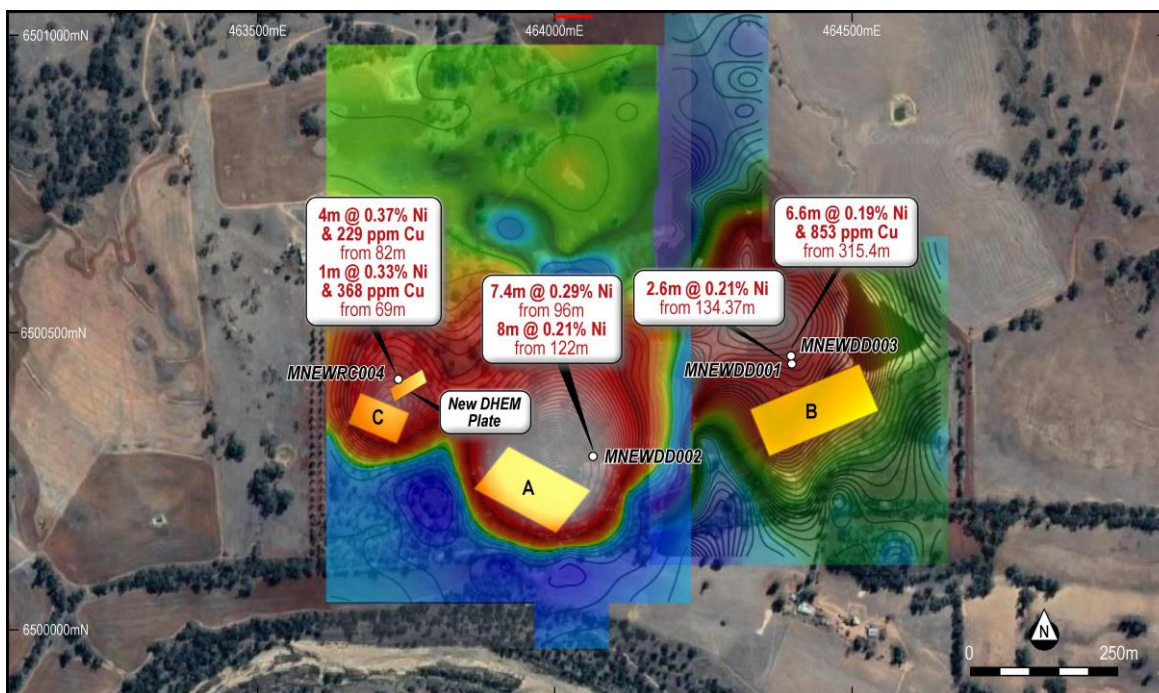


Figure 1 – Newleyne prospect showing FLEM EM conductors (A, B and C) and drill results

### Next Steps

The Company's immediate focus is on the evaluating and exploring the Delfin Copper Project in Chile.

Notwithstanding, Mandrake will also be continuing investigations into the virgin ultramafic bodies located at Tolarno North and Tolarno South as well as further assessing the newly identified highly conductive plate proximal to MNEWRC004.

**This announcement has been authorized by the board of directors of Mandrake.**

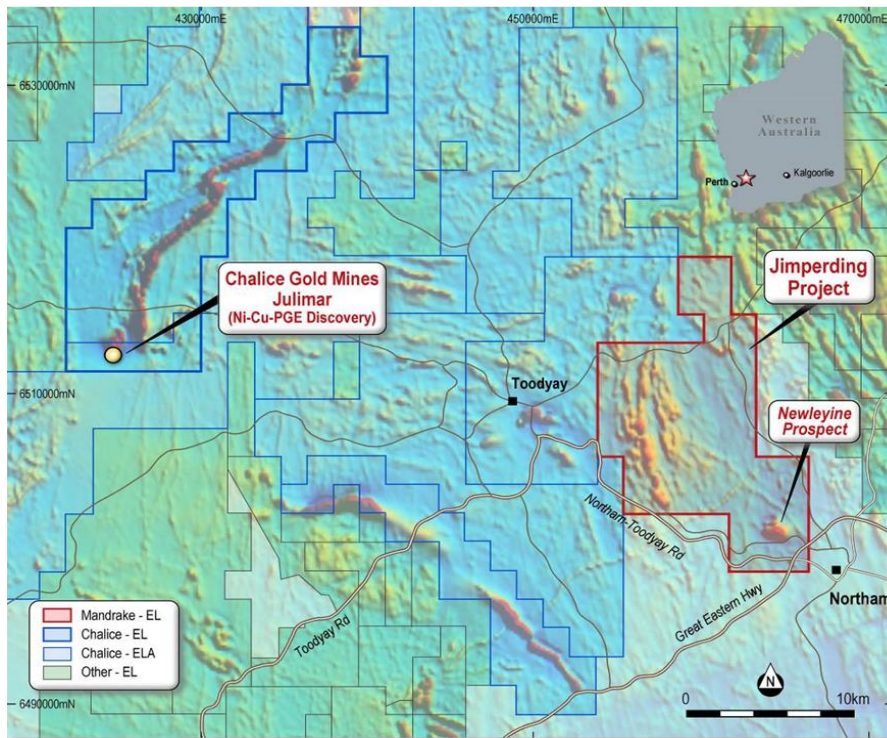
For personal use only

### About Mandrake Resources

Mandrake is a junior exploration company established with the purpose of exploring and developing gold, nickel, copper and PGE opportunities. The Company recently acquired the Delfin Copper Project located in Chile which contains numerous high grade historical copper hits such as 86m @ 4.83% Cu from 121m (DD-4); including 27m @ 7.1% Cu from 134m and 3m @ 14.4% Cu from 164m.

The Company also controls 100% of a 140km<sup>2</sup> exploration licence prospective for PGE-Ni-Cu in the exciting Jimperding Metamorphic Belt, 70km NE of Perth as well as a mineral exploration project located in the prolific Pine Creek Orogen of the Northern Territory prospective for gold, silver and base metals.

For further information visit [www.mandrakeresources.com.au](http://www.mandrakeresources.com.au)



**Figure 2 - Regional aeromagnetics – Jimperding Project**

### Competent Persons Statement

The technical information in this announcement complies with the 2012 Edition of the Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves (JORC Code) and has been compiled and assessed under the supervision of Mr James Allchurch, Managing Director of Mandrake Resources. Mr Allchurch is a Member of the Australian Institute of Geoscientists. He 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 Allchurch consents to the inclusion in this announcement of the matters based on his information in the form and context in which it appears.

For personal use only

**Table 1: Drill Hole Details**

Hole_ID	East*	North*	Azimuth (deg)	Dip (deg)	RL (m)	Total Depth (m)
MNEWRC004	463729	6500426	203	65	178	249

\* - Coordinates are in GDA94 MGA Zone 50

**Table 2: Assay Results**

Sample ID	From	To	Ni (ppm)	Cu (ppm)	Pt (ppb)	Pd (ppb)
69-70	69	70	3,320	368	10	30
82-83	82	83	3,230	175	15	30
83-84	83	84	3,730	240	10	25
84-85	84	85	3,370	211	15	30
85-86	85	86	4,460	291	10	35

<LOR – Below laboratory limit of reporting

For personal use only

## JORC Code, 2012 Edition – Table 1 report template

### 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><i>Nature and quality of sampling (eg 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 (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.</i></li> </ul>	<ul style="list-style-type: none"> <li>RC samples were collected from a rig mounted cyclone at one-metre intervals, placed in a green plastic bag and arranged on the ground in rows of 20.</li> <li>Rock chips were collected by taking a scoop of material from the green plastic bags, then sieved, washed and placed in prelabeled chip trays.</li> <li>Downhole Electromagnetic (DHEM) surveys were designed and managed by Southern Geoscience Consultants (SGC). DHEM data were acquired by SGC Niche Acquisition with the following survey parameters: <ul style="list-style-type: none"> <li>Transmitter loops (x3): 200m x 200-300m</li> <li>Current: 50-60A</li> <li>1 Hz base frequency</li> <li>Transmitter: DRTX</li> <li>Receiver: SMARTem24</li> <li>Probe: DigiAtlantis 3-component fluxgate</li> <li>Min. 2 repeatable readings / 32-64 stack</li> </ul> </li> </ul>

Criteria	JORC Code explanation	Commentary
<b>Drilling techniques</b>	<ul style="list-style-type: none"> <li>• <i>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).</i></li> </ul>	<ul style="list-style-type: none"> <li>• Reverse Circulation drilling was used by employing a Schramm RC Rig fitted with a 1,150cfm/350psi on-board compressor and supported by a Booster/Auxiliary unit which gave the rig package total air capacity of 2,300cfm/1,000psi.</li> <li>• On-board sample cyclone systems were fitted to the rig that featured a hydraulic raise and lower and a hydraulic splitter swing. Water injection was also used as a dust suppression system.</li> <li>• A conventional hammer was used.</li> </ul>
<b>Drill sample recovery</b>	<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>• Recoveries were visually assessed and evaluated as appropriate for all the samples.</li> <li>• Samples were collected through a cyclone to maximise recovery of fines.</li> <li>• Rods, cyclone and splitter were regularly cleaned.</li> <li>• There is no observable relationship between recovery and grade in the RC drilling at this stage.</li> </ul>
<b>Logging</b>	<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 (or costean, channel, etc) photography.</i></li> <li>• <i>The total length and percentage of the relevant intersections logged.</i></li> </ul>	<ul style="list-style-type: none"> <li>• The lithology, colour, weathering, texture, mineralogy and alteration were recorded for each meter interval in an Excel spreadsheet.</li> <li>• Logging is both qualitative and quantitative.</li> </ul>

Criteria	JORC Code explanation	Commentary
<b>Sub-sampling techniques and sample preparation</b>	<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>A 2kg sub sample was split into a calico bag from the main sample through a riffle splitter mounted under the cyclone.</li> <li>All of the subsamples were analysed with a portable XRF (pXRF) making sure that a blank and a standard were inserted at least every one hundred samples.</li> <li>Subsamples were taken from selected intervals (dictated by the results of the pXRF, lithology and potential mineralisation) and sent to Bureau Veritas for assaying where they were dried, crushed (to 3mm) and pulverised (to 95% passing 105um).</li> <li>A 40gm (approx) portion from the subsample was then assayed by fire assay.</li> <li>Bureau Veritas' internal quality assurance and quality control procedures were applied.</li> </ul>
<b>Quality of assay data and laboratory tests</b>	<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> <li><i>Nature of quality control procedures adopted (eg standards, blanks, duplicates, external laboratory checks) and whether acceptable levels of accuracy (ie lack of bias) and precision have been established.</i></li> </ul>	<ul style="list-style-type: none"> <li>Subsamples underwent sample preparation and geochemical analysis by Bureau Veritas Perth. Au-Pt-Pd was analysed by 40g fire assay fusion with an ICP-AES finish (BV Method code FA002). A 47 element suite was analysed by ICP-MS following a four-acid digest (BV method codes MA100/MA102) including Ag, As, Ba, Be, Bi, Cd, Ce, Co, Cs, Cu, Dy, Er, Eu, Ga, Gd, Hf, Ho, In, La, Li, Lu, Mo, Nb, Nd, Ni, Pb, Pr, Rb, Re, Sb, Se, Sm, Sn, Sr, Ta, Tb, Te, Th, Tl, Tm, U, W, Y, Yb, Zn and Zr.</li> <li>Certified analytical standards and blanks were inserted at appropriate intervals. All QA/QC samples display results within acceptable levels of accuracy.</li> </ul>

Criteria	JORC Code explanation	Commentary
<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>The company used industry standard techniques for sampling and used independent laboratories.</li> <li>Primary geological and sampling data were recorded digitally.</li> </ul>
<b>Location of data points</b>	<ul style="list-style-type: none"> <li><i>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.</i></li> <li><i>Specification of the grid system used.</i></li> <li><i>Quality and adequacy of topographic control.</i></li> </ul>	<ul style="list-style-type: none"> <li>The drill collar and elevation was located using a hand held GPS with accuracy of +-3m. This is considered appropriate for exploration drill-holes.</li> <li>The grid system used is MGA GDA94 Zone 50.</li> <li>The hole was downhole surveyed at 30m intervals using a Champ Gyro (Axis) multi-shot down hole survey camera.</li> </ul>
<b>Data spacing and distribution</b>	<ul style="list-style-type: none"> <li><i>Data spacing for reporting of Exploration Results.</i></li> <li><i>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.</i></li> <li><i>Whether sample compositing has been applied.</i></li> </ul>	<ul style="list-style-type: none"> <li>Only one hole is being reported.</li> <li>Drilling is exploratory in nature.</li> <li>No sample compositing has been applied.</li> <li>3-component DHEM data were measured at minimum 10m spacings and infilled to 5m and 2.5m, as required, through conductive features to sufficiently define anomalies of interest.</li> <li>All DHEM loops were designed to optimally couple with the FLEM and DHEM modelled plates targeted by the drillholes.</li> </ul>
<b>Orientation of data in relation to geological structure</b>	<ul style="list-style-type: none"> <li><i>Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type.</i></li> <li><i>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.</i></li> </ul>	<ul style="list-style-type: none"> <li>Samples were collected continuously at one metre intervals.</li> <li>Drilling is first pass in nature; there is significant uncertainty about the orientation of potentially mineralized structures (represented as EM conductor plates).</li> </ul>



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>Samples and subsamples were stored on private land with restricted access near the drill site.</li> <li>Selected subsamples were taken directly to the laboratory in Canning Vale, Perth.</li> <li>Chips trays were kept by company personnel at all times and are stored at the company's office in Perth.</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>No review has been carried out as yet.</li> <li>Geophysical data is managed, quality checked, and processed by Perth geophysical consultants, Southern Geoscience Consultants (SGC). All data collected and interpretations are peer reviewed.</li> <li></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><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>	<ul style="list-style-type: none"> <li>The drill-hole is located on E70/5345 which is 100% owned by Mandrake Resources.</li> <li>The tenement is in good standing with no known impediments.</li> </ul>

Criteria	JORC Code explanation	Commentary
<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>Nickel-copper mineralization at Newleyine was investigated by Australia Anglo American/North Flinders Mines during 1978. Three diamond core holes were drilled, but no individual assay values were reported. It is unknown if PGE elements were assayed for.</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>Newleyine is located in the Jimperding Metamorphic belt.</li> <li>Newleyine is considered prospective for magmatic sulphide Ni-Cu-PGE associated with a pipe like dunitic intrusive body.</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>The drill hole collar information is provided in Table 1 of this announcement</li> </ul>

Criteria	JORC Code explanation	Commentary
<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 (eg 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 procedure used for such aggregation should be stated and some typical examples of such aggregations should be shown in detail.</i></li> <li><i>The assumptions used for any reporting of metal equivalent values should be clearly stated.</i></li> </ul>	<ul style="list-style-type: none"> <li>Standard length weighting averages apply where applicable; no cut-off grades have been applied.</li> <li>No metal equivalent values have been reported.</li> </ul>
<b>Relationship between mineralisation widths and intercept lengths</b>	<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 (eg 'down hole length, true width not known').</i></li> </ul>	<ul style="list-style-type: none"> <li>Only downhole lengths are reported, true widths are not yet known.</li> </ul>
<b>Diagrams</b>	<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 figures in announcement.</li> </ul>
<b>Balanced reporting</b>	<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 to avoid misleading reporting of Exploration Results.</i></li> </ul>	<ul style="list-style-type: none"> <li>All data reported, see Table 2.</li> </ul>
<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>All meaningful information provided.</li> </ul>

Criteria	JORC Code explanation	Commentary
<b>Further work</b>	<ul style="list-style-type: none"> <li><i>The nature and scale of planned further work (eg 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>	<ul style="list-style-type: none"> <li>In conjunction with exploration activities at the recently acquired Delfin Copper Project, Mandrake will also be continuing investigations into the virgin ultramafic bodies located at Tolarno North and Tolarno South as well as further assessing the newly identified highly conductive plate proximal to MNEWRC004</li> </ul>