

# Peake and Denison Copper exploration Strategy supercharged by first results

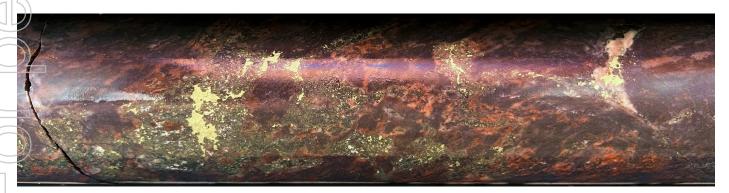
Demetallica reports completion of two drill holes targeting the Mawson and Wills copper targets at Demetallica's 100% owned Peake and Denison project, South Australia. Peake and Denison is a Joint Venture project funded by OZ Minerals (ASX: OZL, 'OZL') where Demetallica is manager and operator. OZL may fund to \$10 million to earn 70% interest in the project.

Highly encouraging visible copper mineralisation has been intersected at both sites confirming Demetallica's exploration model targeting Iron-Oxide Copper-Gold (IOCG) type mineral systems. These results amplify the JV's view that Peake and Denison offers immense untapped potential as a completely new copper exploration frontier along the north-eastern edge of the Gawler Craton.

## **Highlights**

- Demetallica controls 2,500km<sup>2</sup> of contiguous tenure with first-mover advantage
- Basement anomalism encountered as predicted by Demetallica's geoscience models
- Mawson and Wills anomalies host intense IOCG type alteration and visible copper mineralisation
- Copper sulphides visible in 264m core intersection
- OZ Minerals completes minimum spend requirement and commits to JV Stage 1 earn-in
- Follow-up hole planned at Wills

The Peake and Denison project is a regional first-mover exploration joint venture (JV) with OZ Minerals<sup>1</sup>. Located 750km NNW of Adelaide along the NE margin of the Gawler Craton, the venture covers ~2,500km<sup>2</sup> of the Peake and Denison Inlier within 4 granted exploration licenses (Figure 1). The JV is targeting Iron-Oxide Copper-Gold style mineralisation.



Copper sulphide (yellow) in intensely altered volcanic rock within drill hole WL22DD001 from Wills target (photo from 575.9m – HQ drill core diameter is 63.5mm)

Refer later discussion 'About the Peake and Denison JV



## **Exploration Concept**

Demetallica recognised strong similarities with the Peake and Denison Inlier to IOCG mineral systems around Cloncurry and developed an exploration strategy applying its deep technical knowledge towards the discovery of similar type IOCG copper deposits.

Demetallica postulated that Inlier basement rocks at Peake and Denison proffer excellent potential for IOCG style mineralisation, based on data from limited historical drilling. The data show intense sodic-calcic-iron alteration developed at broadly the same age (1520-1470Ma) as mineralogical assemblages that occur as alteration with copper in the Cloncurry region. Additionally, granite intrusives at Peake and Denison at ~1530Ma also correlate with the same age range (1547-1493Ma) as the Williams — Naraku granites around Cloncurry that are also linked to copper-gold mineralisation. Demetallica's research revealed hydrothermal systems exhibiting very similar characteristics to those associated with large IOCG deposits in the Cloncurry district, such as the Ernest Henry copper-gold deposit (owned by Evolution Mining Ltd).

Demetallica defined 8 high priority targets of which 3 were selected by the JV for initial drilling (Figure 2), first results from which are presented here.

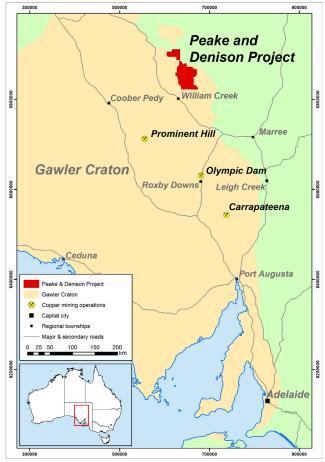


Figure 1: Peake and Denison project location map



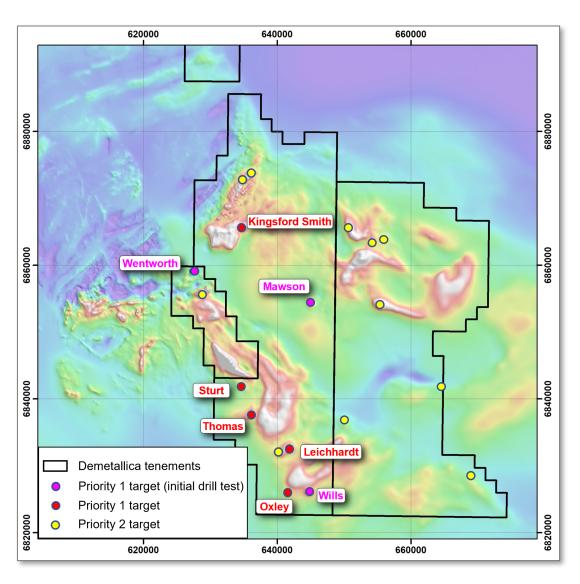


Figure 2: Priority IOCG targets on magnetics image



## **Drilling Results**

Three vertical drill holes targeted magnetic anomalies at 'Wentworth', 'Mawson' and 'Wills' (Figure 2, Table 1). The first hole, WW22DD001 testing the Wentworth target, encountered drilling difficulties in the cover sequence and was abandoned at 107m before striking basement, despite which remains a priority target. Subsequent drilling reached basement at predicted depths for both Mawson and Wills.

## **Wills Target**

Wills is a discrete 1000m x 1000m intense magnetic anomaly (Figure 3). A single drill hole, WL22DD001, targeted the peak of the magnetic response, intersecting basement at 408.5m after passing through a cover sequence of black shale and lesser sandstone; end of hole depth is 720.5m.

Basement comprises felsic volcanics affected by variably strong-intense hematitic feldspar alteration later brecciated and altered by hydrothermal magnetite, actinolite, clinopyroxene, biotite and chlorite (Figures 4-7). Chalcopyrite (cpy, copper sulphide) mineralisation is developed between 456-720.5m (EOH) and ranges from trace amounts to locally 2-4% by volume over lengths of up to 7m (e.g. Figure 7). The best developed zones of chalcopyrite, based on visual inspection of the drill core, are between 468-475m (1-2% cpy), 514-518m (1-3% cpy) and 572-579m (1-4% cpy). Minor native copper is present between 425-451m in the top weathered portion of the basement where chalcopyrite has likely been oxidised.

Pending lab assays the overall copper tenor is expected to be modest across the broader mineralised interval. However, this is considered to be a highly significant drill result given it is the first drill hole into a very large magnetic feature now known to be caused by intense hydrothermal magnetite alteration with copper. Most importantly, copper sulphide and the associated alteration assemblage show striking similarities to IOCG mineral systems in Cloncurry; the targeted mineralisation style. Given the large size of the Wills magnetic anomaly ample space remains for higher grade copper mineralisation to be developed within other parts of the target. A second hole (at 150m step-out from the initial hole) to further test the magnetic anomaly is planned (Figure 3).



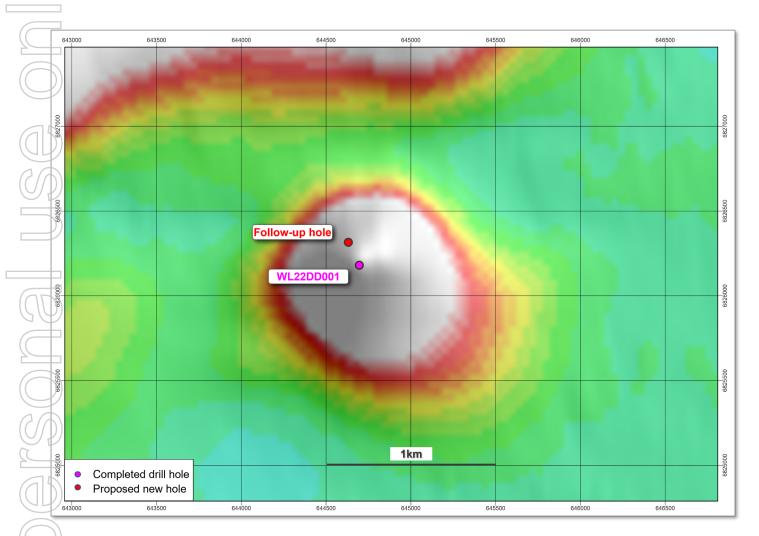


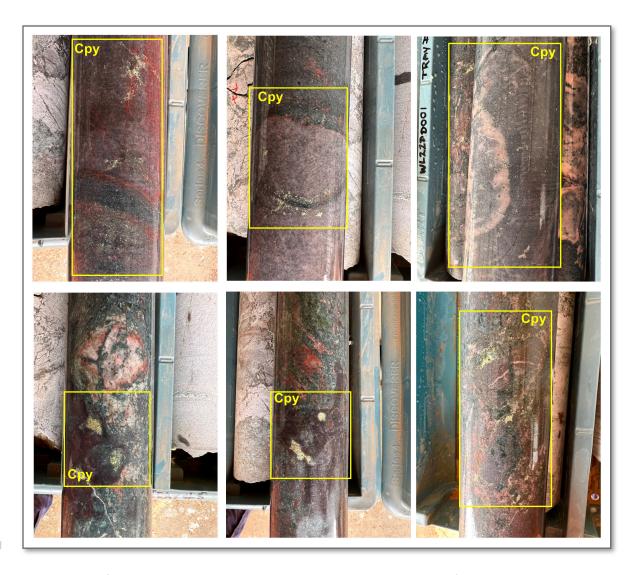
Figure 3: Wills magnetic anomaly showing location of drill hole WL22DD001 and proposed follow-up hole





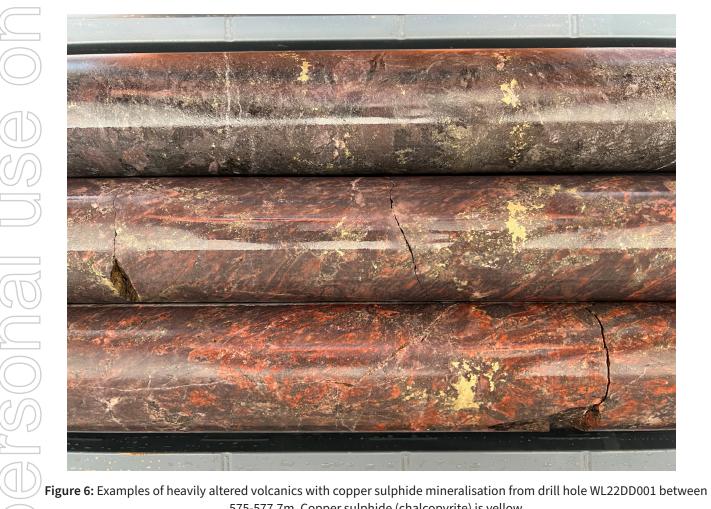
**Figure 4:** Examples of heavily altered volcanics with copper sulpihde mineralisation from drill hole WL22DD001 between 468-475m. Copper sulphide (chalcopyrite - Cpy) is yellow





**Figure 5:** Examples of heavily altered volcanics with copper sulpihde mineralisation from drill hole WL22DD001 between 514-518m. Copper sulphide (chalcopyrite - Cpy) is yellow





575-577.7m. Copper sulphide (chalcopyrite) is yellow





Figure 7: Examples of heavily altered volcanics with copper sulphide mineralisation from drill hole WL22DD001 between 572-579m. Copper sulphide (chalcopyrite) is yellow

#### **Mawson Target**

Mawson is a two-part 1200m x 800m magnetic anomaly (Figure 8), a discrete feature interpreted to lie adjacent a large northwest-trending fault. Drill hole MW22DD001 targeted the larger northern portion of the magnetic anomaly, intersecting basement at 318m after passing through a cover sequence of black shale and lesser sandstone; end of hole depth is 535.1m.

Basement comprises felsic volcanics affected by strong hematitic feldspar alteration later brecciated and altered by hydrothermal magnetic, biotite, actinolite, chlorite and patchy weak copper sulphide mineralisation (Figure 9). Core is being logged for assay preparation. The copper tenor is expected to be modest, however like Wills has strong similarities to IOCG mineral systems in Cloncurry. Given the scale of the Mawson magnetic anomaly ample space remains for higher grade copper mineralisation to be developed within other parts of this target. An obvious follow-up area is the south-eastern lobe of the anomaly, centred 600m from the initial drill hole (Figure 8).



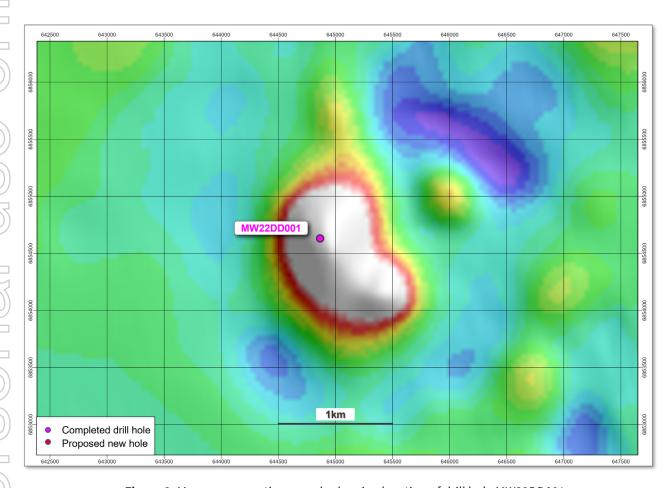


Figure 8: Mawson magnetic anomaly showing location of drill hole MW22DD001

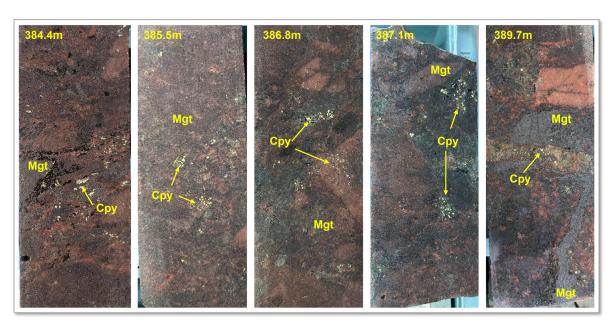


Figure 9: Examples of copper sulphide mineralisation from drill hole MW22DD001 between 384.4-389.7m. Copper sulphide (chalcopyrite) is yellow. Cpy = chalcopyrite, Mgt = magnetite

#### **Summary and Next Steps**

Demetallica quickly established 'proof of concept' that the Peake and Denison Inlier hosts IOCG mineralisation within basement material analogous to Cloncurry IOCG systems. This is a highly significant development for a region historically overlooked despite its proximity to the prolific Gawler Craton (Figure 1). Demetallica appreciates OZ Minerals' faith in Demetallica's geoscientific analysis and targeting methods, leading to significant JV funding support for Demetallica's exploration effort.

Assays are expected within the next two months. Meanwhile, the JV has planned a second drill hole at Wills. The JV will consider follow-up of the Mawson target and other similar priority targets.

Demetallica acknowledges the Government of South Australia for supporting the drill program through its Accelerated Discovery Initiative (ADI), providing \$230,000 of funding towards drilling activities.

## **About the Peake and Denison JV**

Entry to the joint venture required OZ Minerals to commit to a minimum expenditure hurdle; comfortably surpassed. With additional funding since provided OZ Minerals notified Demetallica of its intent to continue sole-funding exploration as part of the Stage 1 earn-in of \$4M to achieve 51% equity position in the project. Ultimately, OZ Minerals may acquire 70% interest through the culmination of \$10 million in expenditure.



Hole	Easting	Northing	Dip	Azi (True)	Depth	Type	Drill Target
WW22DD001	627384	6859092	-90	0	107.0	RM/DD	Wentworth
MW22DD001	644877	6854634	-90	0	535.1	RM/DD	Mawson
WL22DD001	644696	6826181	-90	0	720.5	RM/DD	Wills

Table 1: Drill collar table. Coordinates are GDA94, Zone 53. RM = Rotary Mud, DD = Diamond

This release is authorised by Managing Director, Andrew Woskett.

#### COMPETENT PERSON'S STATEMENT

Information in this report that relates to Exploration Results is based on information compiled by Mr. Glen Little who is a Member of the Australian Institute of Geoscientists. Mr. Little holds shares in and is a full-time employee of Demetallica and has sufficient experience which is relevant to the style of mineralisation under consideration to qualify as a Competent Person as defined in the 2012 Edition of the 'Australian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves'. Mr Little consents to the inclusion in the report of the matters based on the information compiled by him, in the form and context in which it appears.

# JORC Code, 2012 Edition, 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 (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.	No assay data is presented in this report. References to copper mineralisation, and estimates of copper sulphide (chalcopyrite) content are based on visual inspection of core and are not to be considered an accurate representation of copper grade. Sampling of core has commenced for hole MW22DD001, and will soon commence for hole WL22DD001, and relevant portions of core considered mineralised based on visual logging will be sent to an authorized laboratory for analyses and published in due course.
		Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.	No assays are being reported here.
		Aspects of the determination of mineralisation that are Material to the Public Report.	No assay data is presented in this report. References to copper mineralisation, and estimates of copper sulphide (chalcopyrite) content are based on visual inspection of core and are not to be considered an accurate representation of copper grade. Photos of zones where higher concentrations of visible copper sulphide are evident are presented in Figures 4-7 for the Wills target and Figure 9 for Mawson target. These photos are for illustrative purposes and not meant to imply actual copper concentrations or that they represent the entire cored length of each hole. Reference for the depths where the photos were taken are provided in the figure captions.
7		In cases where 'industry standard' work has been done this would be relatively simple (eg 'reverse circulation drilling was used to obtain 1m samples from which 3kg was pulverised to produce a 30g 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.	No assays are presented. However, when sampling occurs, samples will be of half HQ diameter drill core. Standard assaying technique will be applied to analyse for multi-elements (including Cu and Ag) and Au.
1	Drilling	Drill type (eg core, reverse circulation, open-hole hammer, rotary air blast, auger,	Drilling contractor Adams Drillers conducted the drilling.
	techniques	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).	Each hole was rotary-mud drilled through the cover sequence (pre-collar) until the hole intersected basement. Drill hole WW22DD001 did not intersect basement.
			The pre-collar had 30m of 8 5/8 inch steel casing installed at the top of the hole from surface, this portion of the drill casing is called the conductor. The remainder of the rotary mud portion of the hole, drilled down into basement (WW22DD001 did not reach basement but the same technique was used) had 4 ½ inch steel casing inserted to the bottom which was then pressure-cemented to secure the casing in the hole.
			The remainder of holes MW22DD001 and WL22DD001 were drilled using diamond drilling coring method in HQ

Cri	teria	JORC Code explanation	Commentary
			core (drill core retrieved from this drilling technique is 63.5mm in diameter).
			A Reflex north-seeking gyro downhole survey system was used to survey the drill hole every 30m down the hole to give an accurate trajectory of the drill hole.
			The drilling program was supervised by experienced Demetallica personnel.
	ll sample overy	Method of recording and assessing core and chip sample recoveries and results assessed.	No assays are presented in this report however it is worth noting that core recovery achieved near-to 100% for the entire length of each hole and there are not expected to be issues with recovery and assay values when that data is received.
		Measures taken to maximise sample recovery and ensure representative nature of the samples.	Ground conditions in the basement rocks for both holes was generally excellent with near 100% core recovery.
		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 assays are presented in this report.
Log	gging	Whether core and chip samples have been geologically and geotechnically logged to a level of detail to support appropriate Mineral Resource estimation, mining studies and metallurgical studies.	Geological logging of the cover sequence and basement has been conducted by experienced Demetallica geologists. Logging detail was sufficient for early stage exploration and including logging of lithologies, alteration and mineralisation. Magnetic susceptibility and specific gravity data has also been collected.
		Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc) photography.	Geological logging is qualitative. Magnetic susceptibility and specific gravity measurements are quantitative.
		The total length and percentage of the relevant intersections logged.	All holes have been geologically logged for the entire drilled length.
Sub	o- npling	If core, whether cut or sawn and whether quarter, half or all core taken.	No assays are reported here, however when sampled drill samples will be sawn HQ diameter half core.
tech and	nniques sample paration	If non-core, whether riffled, tube sampled, rotary split, etc and whether sampled wet or dry.	Not applicable
-pie	paration	For all sample types, the nature, quality and appropriateness of the sample preparation technique.	Core will be sawn (halved) using an industry standard automatic core saw and half-core sections for each sample interval are placed methodically into calico bags. It is expected that most samples will be 1m lengths of core. The sample lengths are considered to be appropriate for the targeted style of mineralisation. Half core samples with be put in calico sample bags that are bundled into polyweave bags secured with zipties ready for dispatch to ALS Adelaide. All other sample preparation will be conducted under controlled conditions at the laboratory.
		Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.	Logging of the drill core was conducted to sufficient detail to maximise the representivity of the samples when determining sampling intervals.
		Measures taken to ensure that the sampling is representative of the in situ material collected, including for instance results for field duplicate/second-half	Not applicable

	Criteria	JORC Code explanation	Commentary
		sampling.	
		Whether sample sizes are appropriate to the grain size of the material being sampled.	Not applicable
)	Quality of assay data and	The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total.	Not applicable
	laboratory tests	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.	Not applicable
		Nature of quality control procedures adopted (eg standards, blanks, duplicates, external laboratory checks) and whether acceptable levels of accuracy (i.e. lack of bias) and precision have been established.	Not applicable.
	Verification of sampling and	The verification of significant intersections by either independent or alternative company personnel.	Not applicable, however the Exploration Manager for Demetallica has viewed the drill core samples to verify the presence of copper sulpihde in each hole.
	assaying	The use of twinned holes.	Not applicable
		Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.	All geological logging has been validated using Demetallica's data entry protocols and will be uploaded to Demetallica's geological database for data storage.
		Discuss any adjustment to assay data.	Not applicable
	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.	Drill collar positions were located by handheld GPS with approximately +/-2m accuracy, sufficient accuracy for the reporting of information in the body of this document.
		esumauon.	Downhole orientation surveys were conducted at ~30m intervals by the drilling contractor using a Reflex north-seeking gyro.
			The survey data spacing is considered adequate.
		Specification of the grid system used.	Grid system used is GDA94, Zone 53.
		Quality and adequacy of topographic control.	Only single holes have been drilled and topography is not relevant
	Data spacing and distribution	Data spacing for reporting of Exploration Results.	No assays are being reported. Comments about visible copper sulphide relate to metre lengths and are appropriate given that will be the likely length of sampling for assaying and that the information presented is based on visual observations only
		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.	Not applicable

Criteria	JORC Code explanation	Commentary
	Whether sample compositing has been applied.	Not applicable
Orientation of data in relation to geological structure	Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type.	All holes were drilled vertically because of the requirement to drill through a thick cover sequence obscuring basement; this is the best method to ensure drill success rate in covered terranes, and Demetallica has no prior drilling experience in the project area. This means that the drill core is no oriented and geological structures cannot be measured. It is uncertain at this stage of the true orientation of any mineralisation encountered in the drilling and if either the Wills or Mawson target is followed Nup additional data will be required to ascertain better geological information to better inform possible orientations of mineralised structures.
	If the relationship between the drilling orientation and the orientation of key mineralised structures is considered to have introduced a sampling bias, this should be assessed and reported if material.	No assay data is yet available
Sample security	The measures taken to ensure sample security.	Drill core has been palletised, covered and strapped and is in transit from the drill site to Adelaide for sampling. The transportation is via a third party transport company and loading of the pallets will be supervised by Demetallica personnel.
Audits or reviews	The results of any audits or reviews of sampling techniques and data.	Not applicable

# **Section 2: Reporting of Exploration Results**

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

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.	Drill hole WW22DD001 was drilled on EL 6270 and drill holes MW22DD001 and WL22DD001 are on EL 6221. The tenements are 100% owned by Demetallica.
		The project is in Joint Venture with OZ Minerals who has the right to earn up to 70% interest in the project, including EL's 6270 and 6221.
		A registered native title claim exists over EL's 6270 and 6221 and Demetallica has a Native Title agreement with the Arabana Aboriginal Corporation (Arabana). Native title site clearances were conducted at each drill site with Arabana representatives prior to drilling.
		Access Agreements are in place with the relevant landholders.
		A PEPR is in place authorizing the drilling.
	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.	EL's 6270 and 6221are secure and compliant with the Conditions of Grant. There are no known impediments to obtaining a licence to operate in the prospect area.
Exploration done by other parties	Acknowledgment and appraisal of exploration by other parties.	The only pre-existing exploration data prior to drilling of the three targets at Wentworth, Mawson and Wills was publicly available magnetics and gravity data and 23 drill holes that intersected basement across the 2,500kn² tenure held by Demetallica.
		Some drill holes are available for viewing at the core library in Adelaide, however these covered a broad area and were only used to help interpret the basement geology across the project area. No previous drilling is available near any of the targets drilled by Demetallica.
Geology	Deposit type, geological setting and style of mineralisation.	The project area is cover by 150m to +400m of younger cover lying over crystalline basement of the Peake and Denison Inliers.
		Demetallica recognize that the basement rocks, and hydrothermal alteration of those rocks present in historic drill holes is similar to the geology of the basement in the Eastern Succession of the Mt Isa Inlier in the Cloncurry district of NW Qld. The Cloncurry district is host to numerous significant copper deposits, known as Iron Oxide Copper Gold (IOCG) type deposits including Ernest Henry, Osborne and Starra. Demetallica is targeting IOCG type deposits in the Peake and Denison project area.
		Demetallica view both the Mawson and Wills drill holes reported here to have similar geological features to some of the Cloncurry IOCG type deposits based on visual observations from the logging of those holes. Assay data is not yet available but is likely to support this hypothesis.

Criteria	JORC Code explanation	Commentary
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:  - easting and northing of the drill hole collar - elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar - dip and azimuth of the hole - down hole length and interception depth - hole length.	Drill collar details, including hole ID, easting, northing, dip, azimuth and depth (end of hole) are included in Table 1 of the body of this report.
	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 data deemed material to the understanding of the exploration results have been excluded from this document.
Data aggregation methods	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.	Not applicable
	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.	Not applicable
	The assumptions used for any reporting of metal equivalent values should be clearly stated.	Not applicable
Relationship between mineralisation widths and intercept lengths	These relationships are particularly important in the reporting of Exploration Results.	Assay data is not yet available and once available will better inform these relationships. Demetallica is not presenting information in this report that relates to possible width of the mineralisation zone nor it's orientation, it is only reporting the present of copper sulpihde mineralisation and where in the hole is occurs.
	If the geometry of the mineralisation with respect to the drill hole angle is known, its	The orientation of the mineralisation is not yet known and suggested orientations are not reported

Criteria	JORC Code explanation	Commentary
	nature should be reported.	here.
	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').	No assay data is reported. Comments about visual copper sulphide over certain intervals related to down hole depth length only.
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.	The location of the project area is presented in Figure 1. The location of the drilled targets of Wentworth, Mawson and Wills is presented in Figure 2. A detailed magnetic image and the location of the drill hole at each of Wills and Mawson and presented in Figures 3 and 8 respectively. Images showing copper sulphide mineralisation in drill hole WL22DD001 at Wills is presented in Figures 4-7 and for MW22DD001 at Mawson is presented in Figure 9.  Drill collar location and other details are presented in
		Table 1.
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.	No assays are reported. The purpose of this report is to provide an update to shareholders of the completion of drilling of the 3 initial targets at the project and that two of those holes contain copper sulphide mineralisation that Demetallica views as highly prospective and validates the exploration strategy targeting IOCG-style mineralisation
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.	No meaningful and material exploration data have been omitted.
Further work	The nature and scale of planned further work (eg tests for lateral extensions or depth extensions or large-scale step-out drilling).	Assays are yet to be received that will better inform the next stages of exploration, however the JV views the drill hole at Wills to be highly prospective and plans to drill another hole to gain a better understanding of the geology of the prospect; that drill hole lies approximately 140m NNW of hole WL22DD001 (refer Figure 3) and is expected to commence in October 2022.
	Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.	Refer to Figures 3 and 8.