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4 July 2023

Further drilling completed at Clermont (EPM17968)

Metallica Minerals Limited (ASX: MLM) has received assay results for the extension to diamond drill hole RDD020 drilled on EPM17968 in April and May 2023. Hole RDD020 was extended by approximately 450m to test an intense magnetic low anomaly observed in the regional airborne magnetic data and confirmed by a close spaced drone magnetic survey completed in August 2022. The magnetic low feature had a modelled depth to top of +500m and remained untested after the 2022 drilling program (refer to ASX Announcement dated 13 July 2022: "*Clermont assays indicate potential mineralised porphyry*" for the prior drill program that identified the porphyry target).

Hole RDD020 was deepened to test the magnetic low and provide cross sectional geochemical data across the anomaly. The extension to RDD020 intersected a quartz-monzonite porphyry which exhibits potassic and phyllic alteration which are characteristic of mineralised porphyry systems. The intensity of mineralisation and alteration increased with depth to 510m then the tenor of mineralisation alteration dropped off, with only narrow zones of intense alteration with varying degrees of mineralisation observed in the hole.

Geochemical plots of the copper intensity show a gradual increase in copper anomalism from the top of the hole to 510m, the copper grade then decreases with depth showing a drop off in overall copper and gold values to the bottom of the hole at 950m. There is a slight increase in the copper anomalism at approximately 790m where the copper peaks at 4,080ppm Cu, which is related to a zone of intense strong alteration.

Sulphide mineralisation in the form of iron pyrite, chalcopyrite and molybdenum was observed in the extension to hole RDD020 with the majority of the mineralisation confined to fracture surfaces or mineralised quartz veins (pyrite ± chalcopyrite ± molybdenum). Fine disseminations of pyrite, chalcopyrite and molybdenum were also observed in the rock matrix but with concentration of less than 1% total sulphides.

Anomalous copper, gold and molybdenum was recorded in narrow zones in the extension to RDD020 with copper values ranging from 1.8ppm Cu to 4,080ppm Cu, gold grades ranging from <0.005 g/t Au to 0.62g/t Au and Molybdenum grades varying from 0.5ppm to 682ppm Mo. The highest 1m intercept from the extended hole was from 789m, where the quartz monzonite was intensely altered and contained over 5% iron-pyrite, with this 1m section returning assays of 0.41% copper, 0.62 g/t gold and 228ppm molybdenum.

The Drill hole parameters for RDD020 are included as Table 1 and the drill hole location and drill hole trace is presented in Figure 1.

Table 1. Clermont JV (EPM 17968) – Drill Hole Parameters

Hole Number	Easting	Northing	RL	Dip	Azimuth	Depth (m)
RDD020	551,250	7,471, 559	320	-60	240	951.50#

Hole extended from 501.50m to 951.50m in May 2023

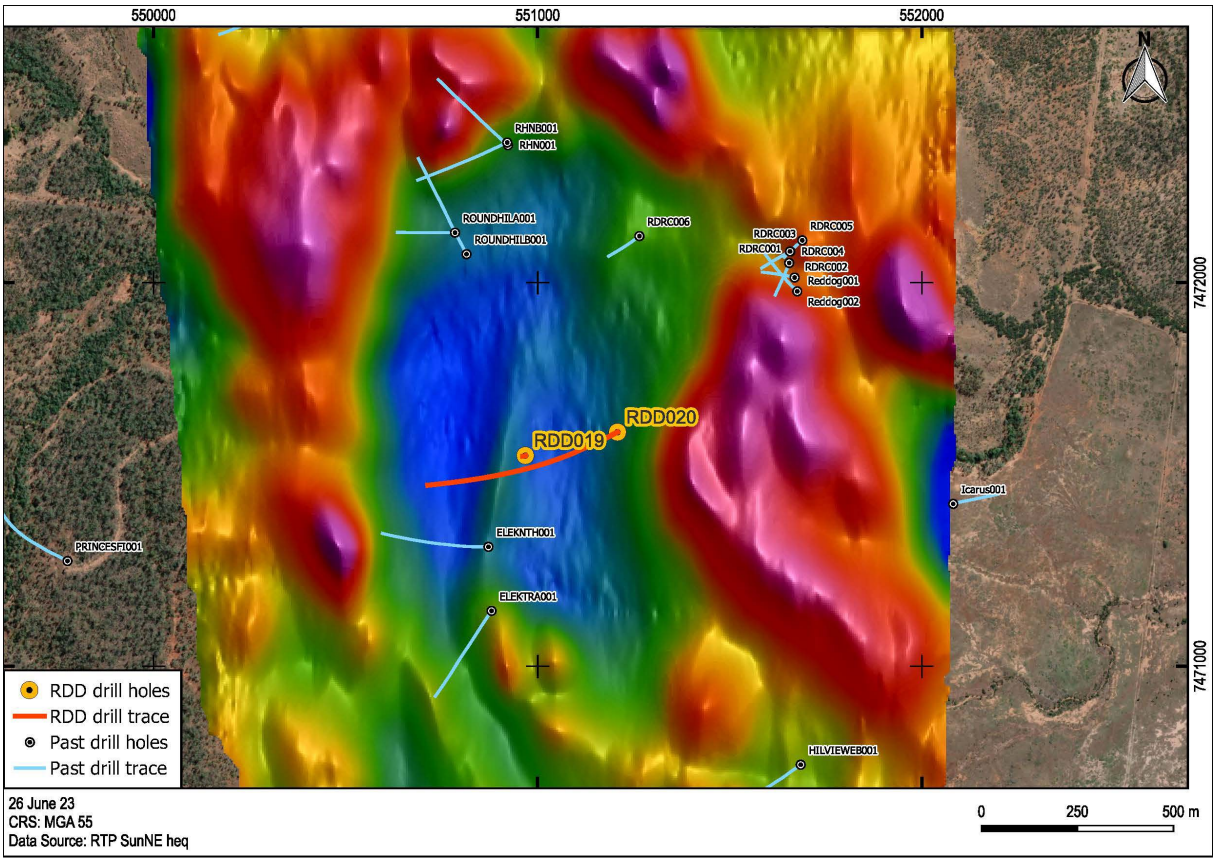

Figure 1. Clermont Porphyry Prospect – RDD0202 - Drill hole location and drill hole trace (superimposed on the TMI image)

A table to results showing zones of + 500ppm Cu or + 0.10 g/t Au or +100ppm Mo are presented in Table 2. The core for the 1m zone (789m to 790m) which assayed 0.41% Cu, 0.62 g/t Au and 228ppm Mo is shown in Figure 2 and an idealised cross section showing the drill hole trace with respect to the modelled magnetic anomaly is shown in Figure 3.

Table 2. *RDD020 Extension, Significant Results*

From	To	Intercept	Cu (%)	Au (g/t)	Ag (g/t)	Mo (ppm)
501.5	503.0	1.5	0.10	0.02	1.67	1.88
509.0	511.0	2.0	0.05	<0.005	0.55	4.89
576.0	577.0	1.0	0.01	0.02	0.16	682.0
616.0	617.0	1.0	0.24	0.09	1.36	31.0
646.0	647.0	1.0	0.25	0.05	1.69	216.0
650.0	651.0	1.0	0.20	0.03	1.03	1.46
770.0	772.0	2.0	0.13	<0.005	0.47	23.0
780.0	782.0	2.0	0.07	0.01	0.40	5.0
789.0	792.0	3.0	0.16	0.35	2.67	77.0
Inc:789.0	790.0	1.0	0.41	0.62	7.00	228

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Figure 2. RDD020, 789.0 to 780.0m, 1m @ 0.41% Cu, 0.62g/t Au and 228ppm Mo from 789m

Note: *Visual estimates of mineral abundance should never be considered a proxy or substitute for laboratory analyses where concentrations or grades are the factor of principal economic interest. Visual estimates also potentially provide no information regarding impurities or deleterious physical properties relevant to valuations.*

The intense magnetic low was not explained by the results of the deepened drill hole, with the magnetic susceptibility readings remaining constant down the hole, however the drill hole trace through the modelled anomaly indicates the magnetic low was tested, Figure 3. Idealised cross Section through modelled magnetic low showing drill Hole trace RDD0202 and copper in ppm

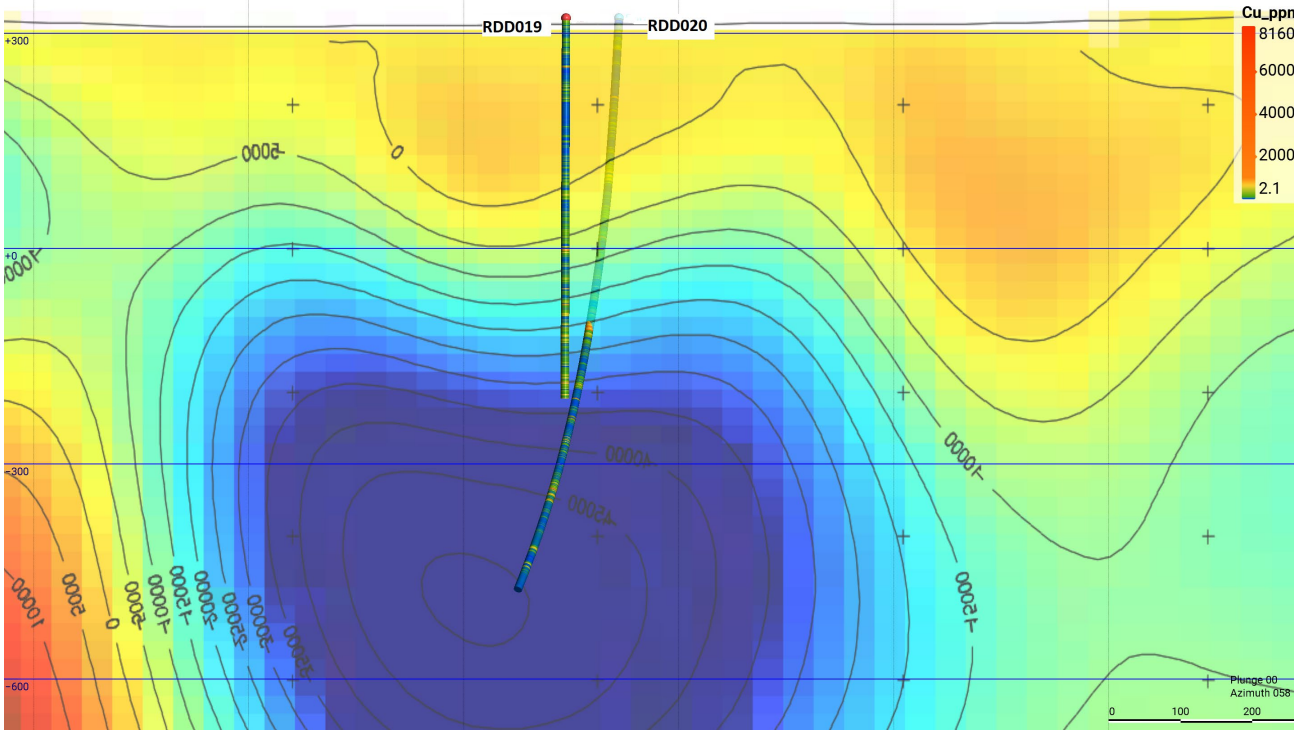

Figure 3. Idealised cross Section through modelled magnetic low showing drill Hole trace RDD0202 and copper in ppm

It is postulated that the progenitor intrusive responsible for the alternation and mineralisation seen in holes RDD019 and RDD020 drilled at Clermont has not been intersected as the observed mineralisation is confined to late-stage quartz – pyrite veins and as fracture fill. Additional geochemical studies will now be undertaken to obtain a better understanding of the porphyry system.

Porphyry Model

Porphyry systems are modelled as having distinct metal zonation around a copper rich core, with Arsenic (As) Bismuth (Bi) and Tellurium (Te) occurring distal to the copper zone and Sn and W occurring proximal to the copper rich core, Figure 4. A geochemical analysis of data from holes RDD019 and the top 500m of RDD020 drilled in 2022 indicated that these two holes failed to intersect the main mineralised core of the porphyry system. The extension to hole RDD020 completed in 2023 also failed to intersect the core of the porphyry system.

An analysis of the geochemical data for the 450m extension to hole RDD020 drilled in 2023 will now be completed to see if this additional data will assist in helping vector in on the location of the core of the porphyry system or the potential progenitor intrusive which could be responsible for the alteration seen in holes RDD019 and 020.

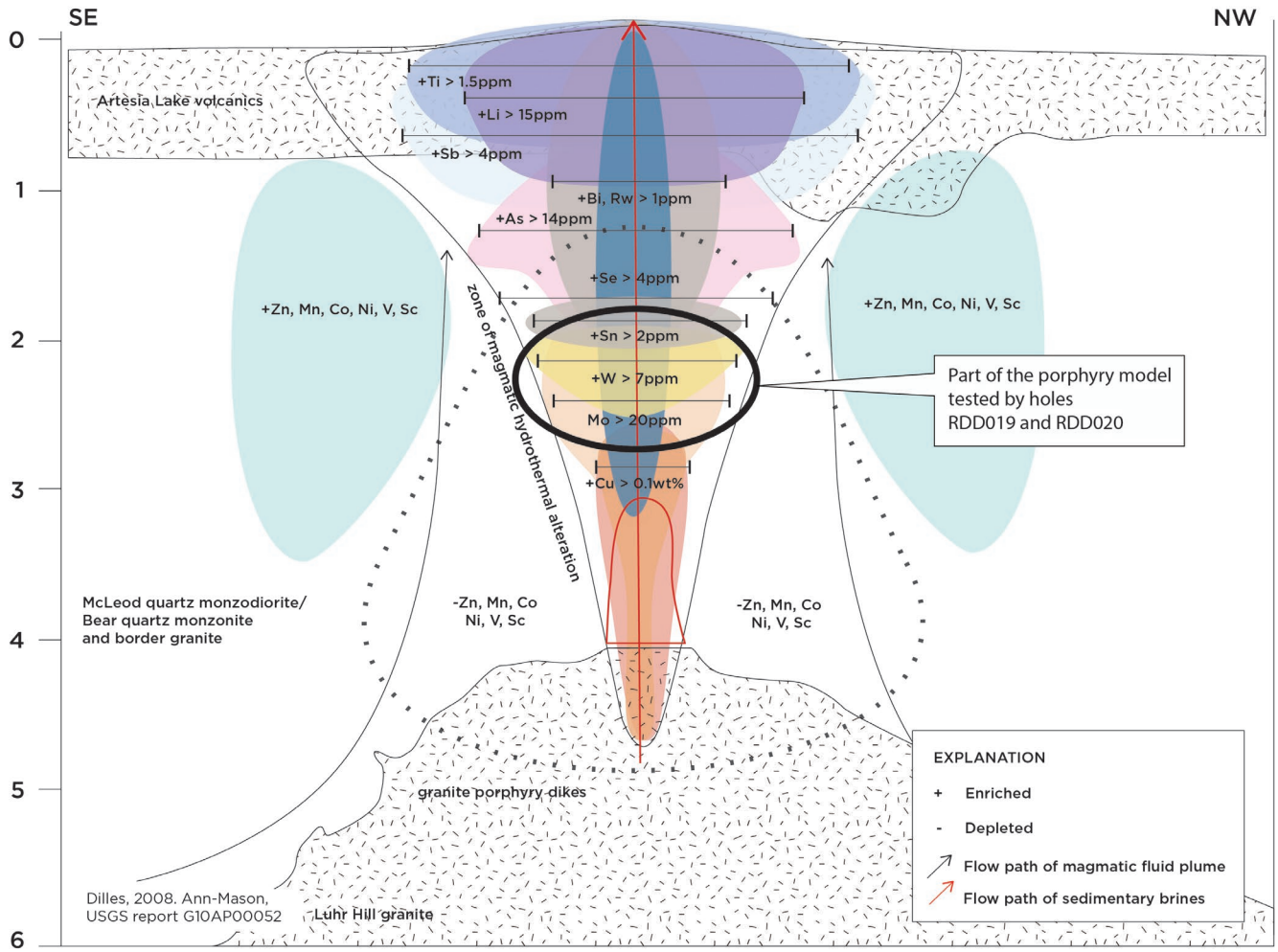

Figure 4. Drilling at the Clermont Porphyry Prospect and relationship to modelled porphyry geochemistry (from the Ann-Mason copper porphyry - Nevada)

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Proposed Future Work
It is planned to review the additional geochemical data from RDD020 in conjunction with data available from historical holes drilled on periphery of the magnetic low. This is expected to further assist in identifying which part of the mineralised porphyry system has been intersected and to aid in recommending further exploration activities.

Project Ownership
Under the terms of the MOU with Diatreme Resources (DRX) on the completion of this drill hole, MLM has now met the expenditure condition to move to a 51% share of the Clermont Project (EPM17968).

This announcement has been approved for release by the Board of Metallica Minerals Ltd.

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About the Clermont Project

The project comprises EPM 17968 and consists of 80 sub-blocks, (approximately 240 km^2) and is located south of the township of Clermont in Central Queensland. The project is held 51% by PGE Minerals Pty Ltd (a 100% owned subsidiary of MLM) and 49% by Chalcophile Resources Pty Ltd (a 100% owned subsidiary of DRX) and was renewed in October 2020 and expires in October 2025.

The Project area lies within the Anakie Inlier of east central Queensland **Figure 6** and contains known gold and copper mineralisation and historical copper and gold mine workings. There are three main targets within the EPM **Figure**) Figure 7, which MLM will assess to determine how prospective each target is and whether significant copper and or gold mineralisation can be identified at the target areas which can then potentially be progressed rapidly to JORC status.

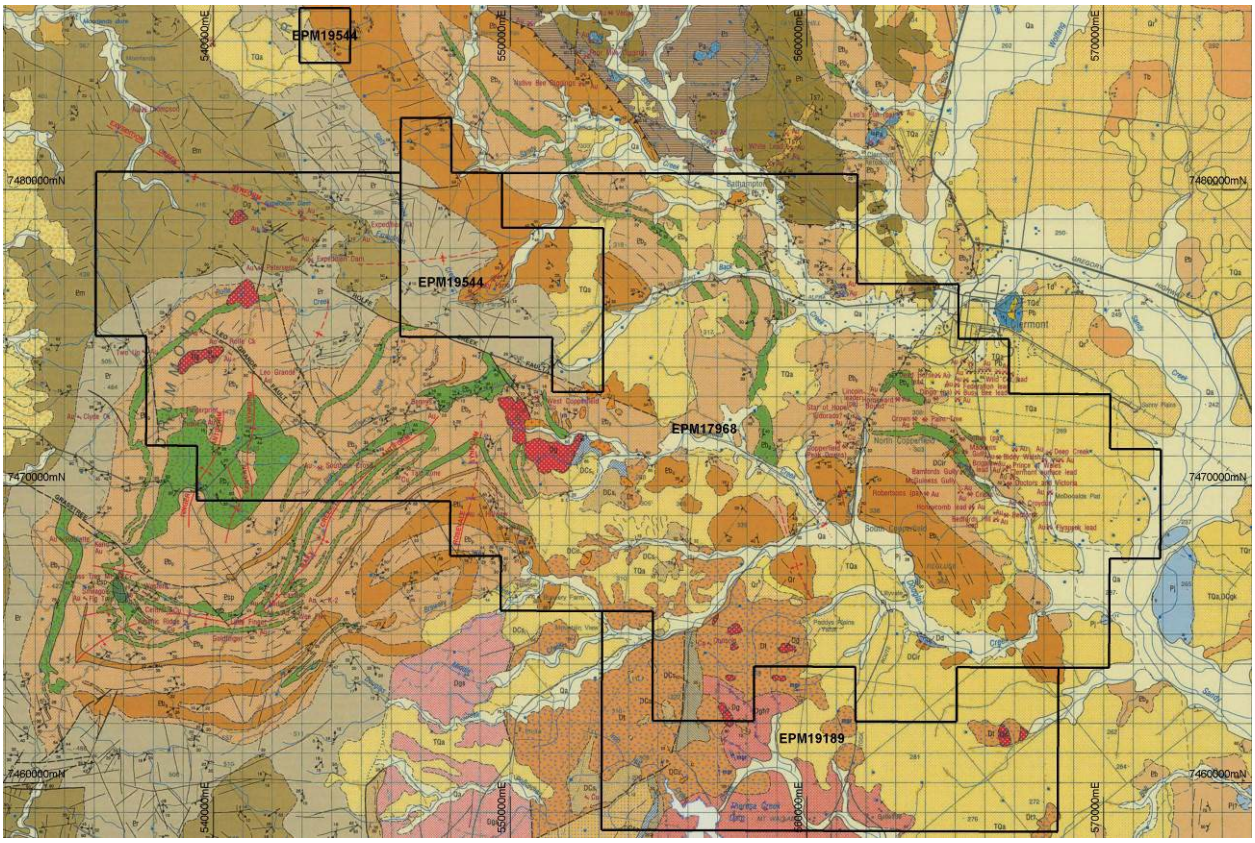

Figure 6 *EPM17968 Geology*

The three targets are:

- The Rosevale Porphyry Corridor (RPC) which has the potential for porphyry related copper, gold and molybdenum mineralisation (Central part of the EPM) and which contains the Clermont porphyry target.
- Structurally controlled gold (vein) mineralisation (Western and Eastern part of EPM 17968)
- VMS related base metal mineralisation associated with the historic Peak Downs copper mine (a VMS style deposit)

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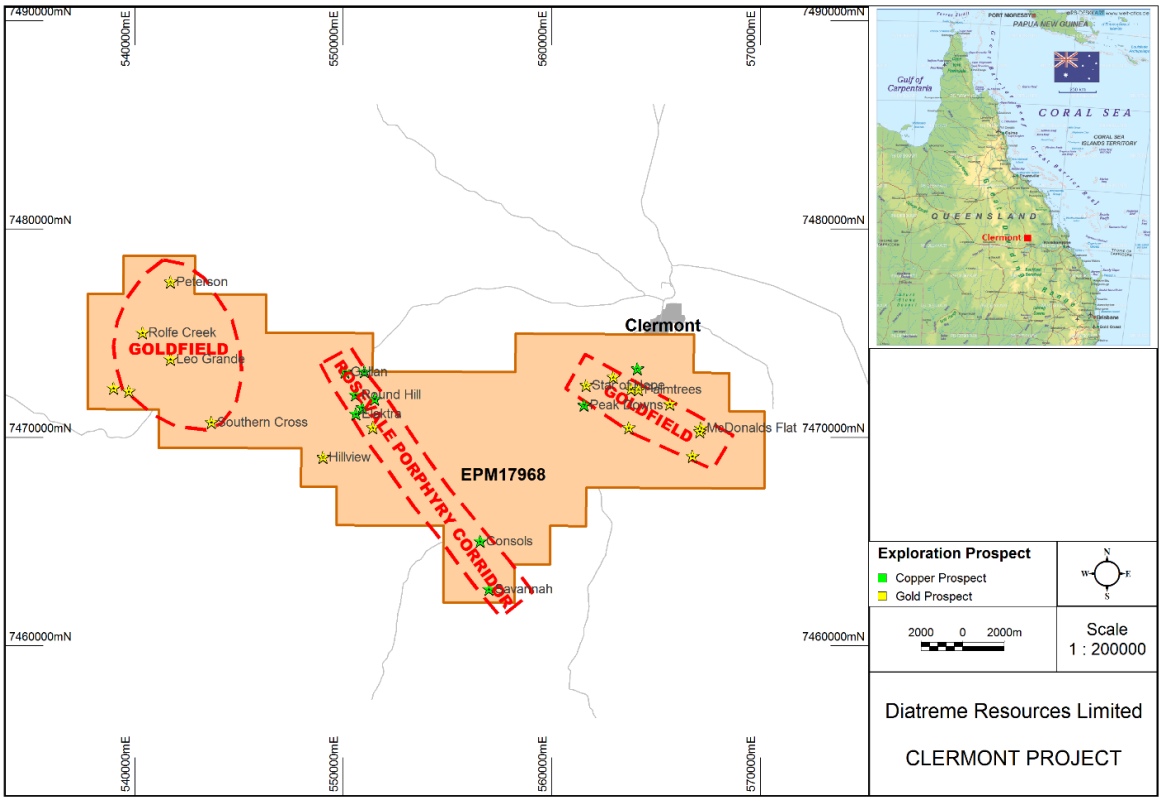

Figure 7 *EPM 17968, Exploration Targets*

Metallica recently announced it had met the expenditure commitment (undertaken in accordance with the MOU with Diatreme Resources Ltd, ASX: DRX) to earn a further 26% of the Clermont project and increase Metallica's share to 51% of the project (refer ASX Release 5 August 2021 "Diatreme agrees farm-out on Clermont Copper/Gold Project"). The process to transfer the additional 26% has commenced and will take some months for the ownership change to be completed.

Competent Person Statement for Clermont Exploration Results

The information in this report that relates to the Exploration Sampling and Exploration Results is based on information compiled by Mr Patrick Smith, a Competent Person who is a Member of the Australasian Institute of Mining and Metallurgy.

Mr Smith is the owner and sole Director of PSGS Pty Ltd and is contracted to Metallica Minerals as their Exploration Manager. Mr Smith confirms there is no potential for a conflict of interest in acting as the Competent Person. Mr Smith has sufficient experience that is relevant to the style of mineralisation and type of deposits 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 Smith consents to the inclusion of this information in the form and context in which it appears in this release/report.

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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.* • *Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.*	• Drilling was completed using a truck mounted UDR1200, • The samples were collected every 1m. The samples are half core samples, obtained by cutting the HQ core in half using a core saw which was set up on the drill site • The half core sample was collected on site and dispatched to the laboratory for crushing and pulverising prior to assay • Samples were submitted to ALS Laboratories in Townsville for assay utlising the Au-AA25 method for gold and for multi-element analysis using the ME-MS61 method • Laboratory reference material was used for QA/QC purposes, MLM did not submit any standards or blanks with these samples due to the exploratory nature of the drilling campaign
Drilling techniques	• *Drill type and details.*	• The drilling technique used was diamond drilling, which was undertaken by Eagle Drilling using a truck mounted UDR1200. The diamond core drilled was HQ (triple tube) from surface to EOH. • The holes were terminated at a pre-determined depth based on geological observations
Drill sample recovery	• *Method of recording and assessing core and chip sample recoveries and results assessed.*	• Visual assessment and logging of sample recovery and sample quality. • Diamond drilling is low disturbance and low impact, minimising drill hole wall impact and contamination. • No sample bias occurred between sample recovery and grade. • The consistent weight of the samples indicates that recoveries of between 90 to 100% was achieved.
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.*	• Geological logging of the total hole by field geologist, with retention of half core in the core boxes to allow for further review of the core at a later date • The total hole was logged, logging includes qualitative descriptions of colour, grain size, alteration style, observations on any mineralisation present and estimates of the sulphide content in the core • Magnetic susceptibility readings were recorded in addition to the core logging and core

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	• *Whether logging is qualitative or quantitative in nature.* • *The total length and percentage of the relevant intersections logged*	orientation work was undertaken on core from the angled hole (RDD020) • Photographs of the core in each core tray was taken so a digital visual record of each of the drill holes was obtained • Logging has been captured through field drill log sheets and transferred through to an excel spreadsheet which is then transferred to a central database and storage.
Sub-sampling techniques and sample preparation	• *If core, whether cut or sawn and whether quarter, half or all core taken.* • *If non-core, whether riffled, tube sampled, rotary split, etc and whether sampled wet or dry.* • *For all sample types, the nature, quality and appropriateness of the sample preparation technique.* • *Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.* • *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.* • *Whether sample sizes are appropriate to the grain size of the material being sampled.*	• Half core samples were submitted for analysis. • The HQ core was sampled at 1m intervals, the core was cut in half, with one half dispatched for assay and the remaining half core kept in the core boxes and stored at a core storage facility near to where the drilling was undertaken • The half core sample was placed in a numbered calico bag, prior to being placed in a poly-weave sack for dispatch to the laboratory • Each sample weighed between 3.05 to 4.0Kg. • The Competent Person considers the sample preparation to be appropriate for drilling of this nature • The Competent Person considers the sample sizes to be appropriate for the type of material being sampled. Appropriate sample sizes and pulverisation of the entire sample support good representivity
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.* • *For geophysical tools, spectrometers, handheld XRF instruments, etc, the parameters used in determining the analysis including instrument make and model,*	• Drilling samples were submitted to ALS Townsville, where they were dried, weighed and split. • Analysis was undertaken by ALS Townsville, samples were assayed for gold using a Fire Assay method with an AAS finish (Au - AA25). • Multi-element analysis was undertaken utilising the ME-MS61 method • QC procedures - No duplicate samples were collected in the field and no standards were submitted by MLM, MLM reviewed the duplicate and standard samples that were undertaken as part of the laboratories QA/QC procedures and no obvious bias or inaccuracies were identified

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	reading times, calibrations factors applied and their derivation, etc. • *Nature of quality control procedures adopted (e.g. standards, blanks, duplicates, external laboratory checks) and whether acceptable levels of accuracy (i.e. lack of bias) and precision have been established.*	
Verification of sampling and assaying	• *The verification of significant intersections by either independent or alternative company personnel.* • *The use of twinned holes.* • *Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.* • *Discuss any adjustment to assay data.*	• All intercepts were verified by a third-party consultant • No holes have been twinned • All data captured and stored in both hard copy and electronic format. No assay data was adjusted • All digital data is verified by the Competent Person. • No adjustments were made to assay data.
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.* • *Specification of the grid system used.* • *Quality and adequacy of topographic control.*	• All holes initially located using handheld GPS with an accuracy of 5m for X, Y. • UTM coordinates, Zone 55L, GDA94 datum. • There is no detailed topographic survey data available for the prospect, and all RL's were recorded using a handheld GPS, the topography of the area is flat
Data spacing and distribution	• *Data spacing for reporting of Exploration Results.* • *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.*	• The drill hole is an exploration hole, and was designed to test a large magnetic low feature which has a modelled depth to top of 500m below surface • Drill spacing, and distribution is sufficient to allow valid interpretation of geological. • There has been no sample compositing.

	• *Whether sample compositing has been applied.*	
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.* • *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.*	• The orientation of the mineralisation is currently unknown due to the early stage of exploration, the sampling is therefore considered to be unbiased, the target is a large porphyry system and the mineralisation is not confined to large structures or specific horizons and is more likely to be disseminated • This hole is an extension to one of two holes drilled in 2022, which were the first two holes drilled into the targeted magnetic low, and the relationship between any mineralisation and the orientation of key structures is currently unknown
Sample security	• *The measures taken to ensure sample security.*	• Sample collection and transport for RDD020 was from the field was undertaken by contractors working for Metallica, the samples were put into crates and delivered to ALS in Townsville by the contractors. Preparation and analysis of the samples was undertaken by ALS Townsville.
Audits or reviews	• *The results of any audits or reviews of sampling techniques and data.*	• No audit of results has been undertaken, as the drilling is early exploration in nature the sample techniques and data compilation is considered appropriate by the Competent person

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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.* • *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 Clermont Porphyry copper – gold project is contained within EPM 17968 in Central Queensland. The tenement is currently held under a Joint Venture agreement between Chalcophile Pty Ltd a 100% subsidiary of Diatreme Resources Ltd (DRX) and PGE Minerals "Touchstone Resources Pty Ltd a 100% subsidiary of Metallica Minerals Ltd (MLM). • Metallica Minerals Ltd through its 100% held subsidiary, PGE Minerals "Touchstone Resources Pty Ltd has been earning into the project, with the first earn in milestone being met, whereby MLM spent $300,000 to earn a 25% interest in the EPM. • MLM has earned an additional 26% share of the project with the drilling completed on EPM17968 in 2023 and therefore now has a 51.0% share of the project. • MLM are managing the project. • The tenement is in good standing and there are no impediments to conduct exploration programs on the tenements.
Exploration done by other parties	• *Acknowledgment and appraisal of exploration by other parties.*	• All current exploration programs are managed by Metallica Minerals
Geology	• *Deposit type, geological setting, and style of mineralisation.*	• The Clermont project is located in the Anakie Inlier of east central Queensland and contains known gold and copper mineralisation and historical copper and gold mine workings. • The style of mineralisation being targeted, is copper-gold-molybdenum porphyry mineralisation.
Drill hole Information	• *A summary of all information material to the understanding of the exploration results* • *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*	• A tabulation of the material drill holes is included in the body of this report as Table 1. The magnetic data used is from a widespread aeromagnetic survey which was flown at 400m line spacings. The geophysical data was modelled by RAMA geophysics

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	understanding of the report, the Competent Person should clearly explain why this is the case.	
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.* • *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.* • *The assumptions used for any reporting of metal equivalent values should be clearly stated.*	• No weighting or averaging of samples has been undertaken • No top cut has been applied to any samples or intercepts reported • No sample aggregation has been done • There are no equivalency results reported
Relationship between mineralisation widths and intercept lengths	• *These relationships are particularly important in the reporting of Exploration Results.* • *If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported.* • *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').*	• At this stage there is no indication of the true width of the intercepts; mineralisation is predominantly confided to fracture surfaces, with the fractures in the hole occurring at various orientations. The fracture orientation does not appear to have a bearing on the mineralisation.
Diagrams	• *Appropriate maps and sections (with scales) and tabulations of intercepts should be*	• A map of the drill collar locations is incorporated with the main body of the report.

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	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.	
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.*	• All exploration results are reported in a balanced manner. All results are supported by clear and extensive diagrams and descriptions. No assays or other relevant information for interpreting the results have been omitted.
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.*	• All exploration results detailed in attached report.
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).* • *Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive*	Future work planned includes but is not limited to; • Analysis of the geochemical data will be undertaken and the porphyry model of the project will be further refined to determine if there is a potential prohyry within the Rosevale Porphyry corridor at Clermont