

# High-Grade Copper in Barbara Drilling Confirms Resource Growth Potential

## Highlights

- Initial assay results received from the first three holes of BTM's maiden diamond drilling program at the Barbara Copper-Gold Project (BCGP), part of the North Queensland Copper-Gold Project (NQCG), Mt Isa, Queensland. Drilling remains ongoing with further results pending.
- All three holes successfully achieved their geological objectives, confirming both resource growth opportunities within the existing MRE footprint and extension potential below the current resource boundary.
- **26BAR001** Confirms a wider and higher-grade Main Lode than currently modelled within the South Pit area.
  - **35m @ 1.34% Cu, 1.40% CuEq** from 204m  
Including **18m @ 2.18% Cu, 2.34% CuEq** from 204m  
Including **11m @ 3.02% Cu, 3.23% CuEq** from 204m
- **26BAR002** Confirms the Barbara mineralised system extends beyond the current resource boundary and remains open at depth.
  - **36m @ 0.52% Cu, 0.54% CuEq** from 343m  
Including **3m @ 2.17% Cu, 2.23% CuEq** from 347m and;  
Including **8m @ 1.07% Cu, 1.12% CuEq** from 368m
- **26BAR003** Confirms a wider and higher-grade Main Lode than currently modelled within the southern extension of the Northern Lode.
  - **18m @ 0.82% Cu, 0.90% CuEq** from 100m  
Including **6m @ 2.16% Cu, 2.35% CuEq** from 107m

### Breakthrough Minerals Managing Director, Nigel Broomham, commented:

*“These initial results provide a strong validation of our geological model and reinforces our belief that Barbara has excellent potential for significant resource growth.”*

*“Perhaps most encouraging is that every hole reported today achieved its intended objective. Whether testing for additional tonnes within the existing resource footprint or evaluating extensions beyond the current boundaries, the initial three holes have delivered exactly the outcomes we were seeking.”*

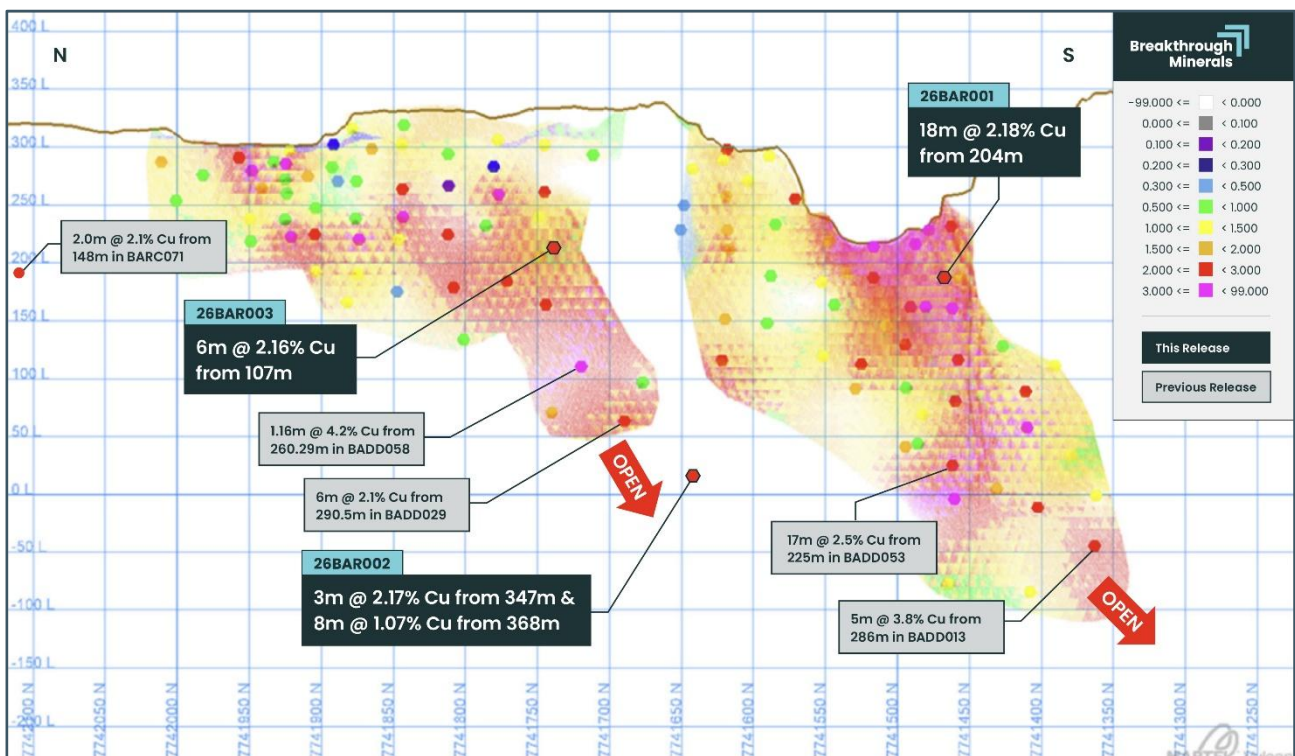
*“These results represent an excellent start, and there is still considerable upside ahead of us. Barbara remains open in multiple directions; drilling is ongoing and further assay results are pending. As we continue to unlock the broader potential of the North Queensland Copper-Gold Project through our 10,000m drill program, we remain focused on growing our copper inventory at a time when long-term market fundamentals for the commodity continue to strengthen.”*

*“With a 200kt CuEq resource that remains entirely uncommitted, Breakthrough is well positioned to benefit from future resource growth, rising demand for copper and increasing strategic interest in quality copper assets within North Queensland.”*

**Breakthrough Minerals Limited** (ASX: BTM; **Breakthrough** or the **Company**) is pleased to report initial assay results from the first three holes of its maiden ~2,000m diamond drilling program at the Barbara Copper-Gold Project (**BCGP**). This is the first drilling program undertaken by Breakthrough at Barbara since completing the acquisition of the North Queensland Copper-Gold Project (**NQCGP**) in March 2026, with drilling commencing just three weeks after transaction completion.

The first three holes reported from the ongoing Barbara drilling program were designed to test key gaps within the existing resource model and evaluate the down-dip extension potential of the Barbara Shear Zone. Results have successfully confirmed high-grade copper mineralisation within the existing MRE footprint and demonstrated continuity of mineralisation below the current resource boundary, supporting both resource growth and depth extension opportunities.

The Barbara MRE currently stands at **6.5Mt @ 0.97% CuEq, containing 63,000 tonnes of CuEq metal**, with the deposit remaining open at depth and along strike. Barbara hosts approximately one third of the NQCG Project global resource of **18.8Mt @ 1.07% CuEq for 200,000t CuEq**. **Drilling at BCGP is ongoing, focused on resource extensional drilling and further assay results will be reported progressively as received.**



**Figure 1:** Barbara long section showing the existing Mineral Resource model and selected high-grade drill intersections within the Main Lode that forms the core of the broader Barbara mineralised system.

## Discussion of Drill Results

### 26BAR001

26BAR001 was drilled as an infill hole within the existing resource footprint in the South Pit area, targeting a gap in drilling in the model. The hole returned a broad mineralised interval of **35m @ 1.34% Cu from 204m**, consistent with the overall width and position of the mineralised envelope predicted by the existing resource model.

Within this broader mineralised zone, a substantial high-grade Main Lode intersection of **18m @ 2.18% Cu from 204m** was returned, including **11m @ 3.02% Cu from 204m**. The width and grade of the Main Lode compare favourably to the current resource model and indicate the high-grade core of the system may be more robust than previously interpreted in this area.

The high-grade zone also contains two discrete copper-rich pods, comprising 2m @ 6.60% Cu (205–207m) and 2m @ 4.48% Cu (212–214m), indicative of semi-massive chalcopyrite concentrations consistent with the ISCG style of mineralisation at Barbara. The combination of a broad mineralised envelope together with a wider and higher-grade Main Lode supports the potential for resource growth and grade enhancement within this portion of the deposit.

### 26BAR002

26BAR002 was drilled as a step-out hole down-dip from the current resource boundary, testing the continuity of mineralisation within the Barbara Shear Zone beyond the limits of the existing MRE. The hole returned a broad mineralised interval of **36m @ 0.52% Cu from 343m**, confirming the Barbara mineralised system extends below the current resource model and remains open at depth.

Within the broader mineralised envelope, two distinct high-grade zones were intersected, comprising **3m @ 2.17% Cu from 347m** and **8m @ 1.07% Cu from 368m**. The presence of these higher-grade intervals within a broad mineralised package demonstrates that the characteristic Main Lode style mineralisation observed elsewhere within the Barbara deposit persists beyond the current resource boundary.

The successful intersection of both broad mineralisation and discrete high-grade zones outside the existing MRE confirms the mineralised architecture remains intact at depth and establishes a compelling target area for future resource extension drilling.

### 26BAR003

26BAR003 was drilled as an infill hole within the existing resource footprint in the North Pit area, targeting the southern extension of the Northern Lode. The hole returned a broad mineralised interval of **18m @ 0.82% Cu from 100m**, consistent with the overall mineralised envelope predicted by the existing resource model.

Within this broader interval, a high-grade Main Lode intersection of **6m @ 2.16% Cu from 107m** was returned. The width and grade of this high-grade zone compare favourably with the current resource model and indicate the Northern Lode may be more robust than previously interpreted in this area.

The result is particularly encouraging given the relatively shallow depth of approximately 100m vertical, confirming the continuity of high-grade copper mineralisation within the southern extension of the Northern Lode. The presence of a broader and higher-grade Main Lode than currently modelled supports the potential for resource growth and grade enhancement within this portion of the deposit.

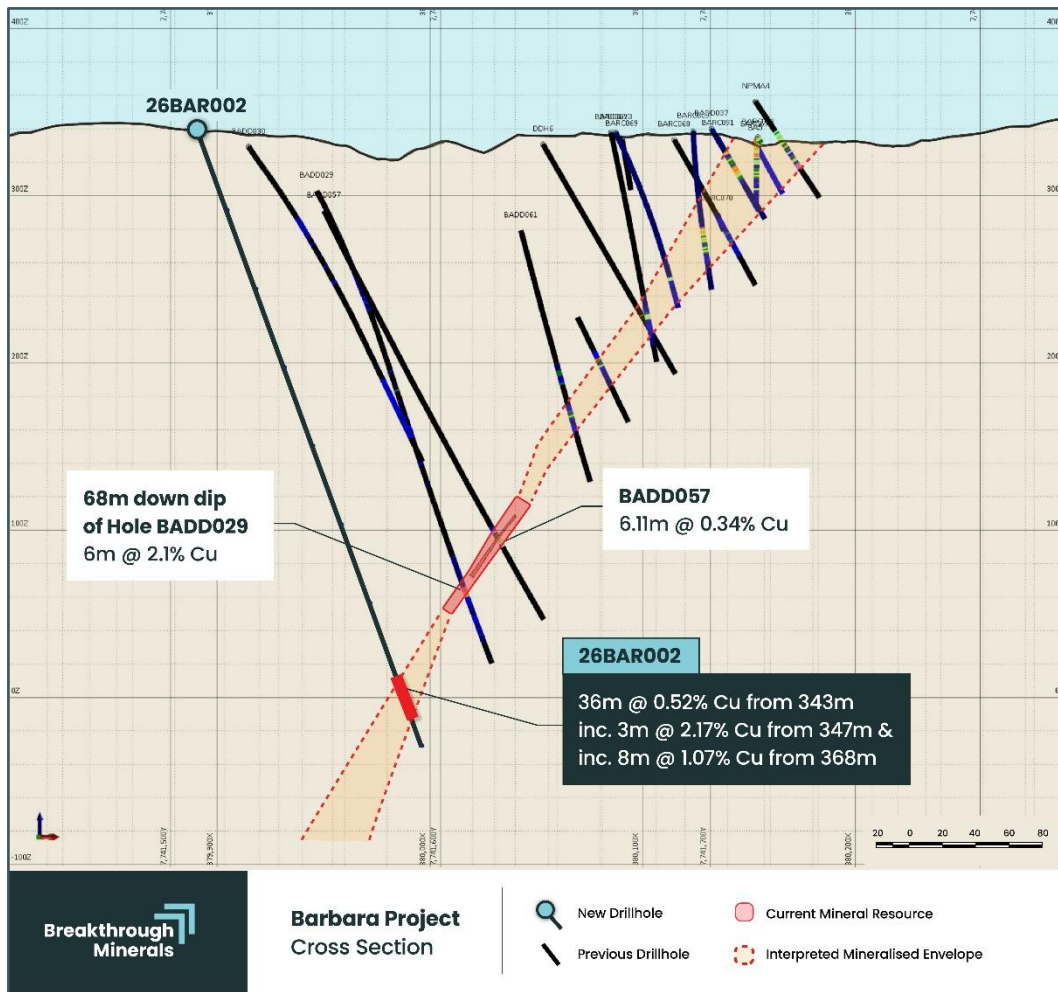


Figure 2: 26BAR002 Cross Section

## Drill Results

Table 1: >0.1 Cu% Drillhole Intercepts. All intercepts are downhole lengths

Hole ID	From (m)	To (m)	Interval (m)	Cu (%)	Au (g/t)	CuEq (%)	Notes
26BAR001	204	239	35	1.34	0.12	1.40	Mineralised zone
26BAR001	204	222	18	2.18	0.19	2.34	High-grade zone within mineralised envelope
26BAR001	204	215	11	3.02	0.26	3.23	Within high-grade zone
26BAR002	343	379	36	0.52	0.03	0.54	Mineralised zone
26BAR002	347	350	3	2.17	0.07	2.23	High-grade zone within mineralised envelope
26BAR002	368	376	8	1.07	0.05	1.12	High-grade zone within mineralised envelope
26BAR003	100	118	18	0.82	0.10	0.90	Mineralised zone
26BAR003	107	113	6	2.16	0.23	2.35	High-grade zone within mineralised envelope

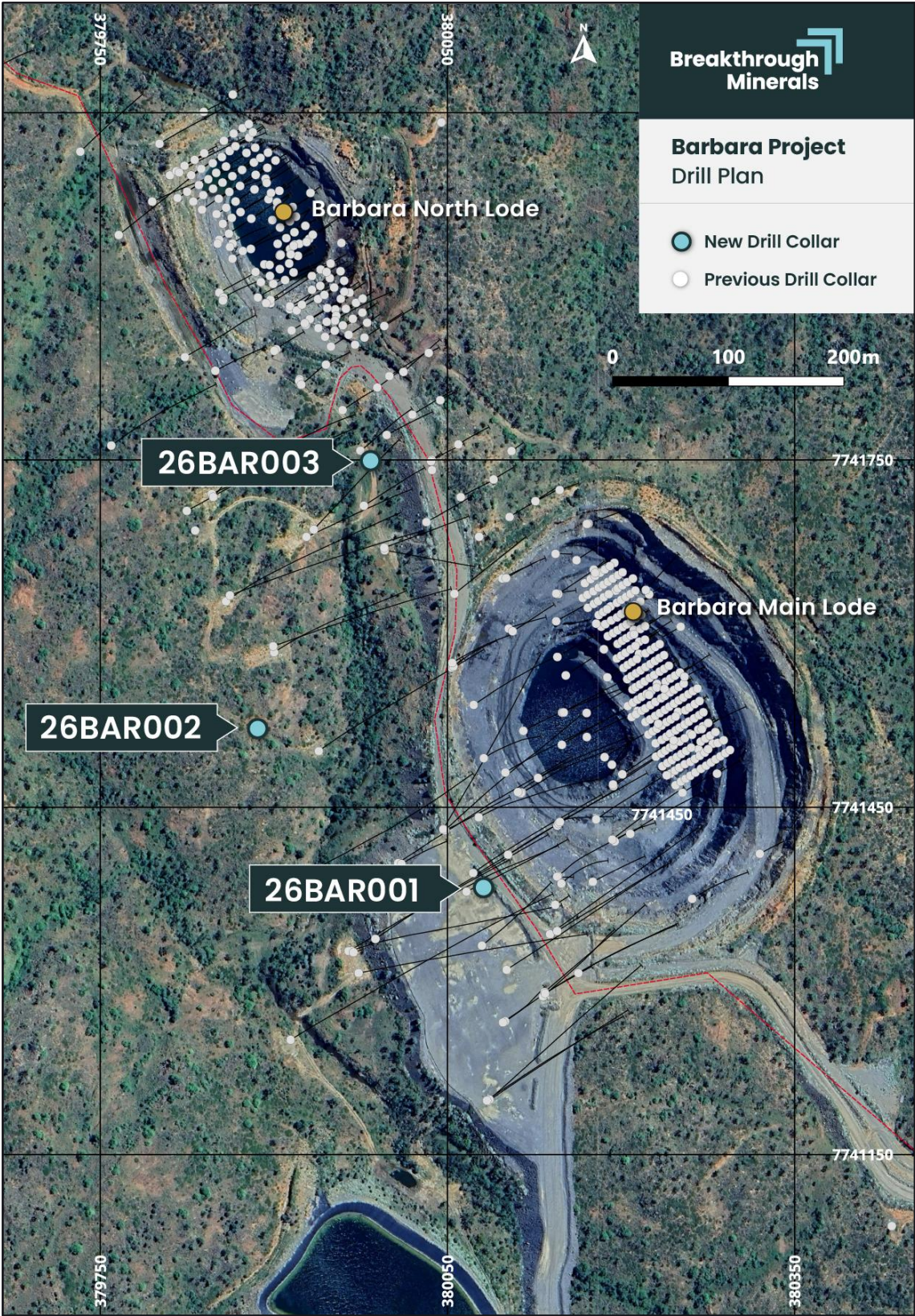


Figure 3: Barbara Project Collar Map

## Context: Barbara Deposit and Historic Drilling

The Barbara Copper-Gold Deposit is the cornerstone asset within Breakthrough Minerals' North Queensland Copper-Gold Project and hosts a current Mineral Resource Estimate of 6.5Mt @ 0.97% CuEq for 63,000 tonnes of contained CuEq metal. The deposit forms part of the broader North Queensland Copper-Gold Project global resource inventory of 18.8Mt @ 1.07% CuEq containing approximately 200,000 tonnes of CuEq metal<sup>1</sup>.

Barbara is a well-defined iron sulphide copper-gold (ISCG) deposit hosted within the biotite-rich Barbara Shear Zone, a regionally significant structure characterised by semi-massive, stringer and disseminated chalcopyrite-pyrrhotite-pyrite mineralisation enriched in copper, gold and silver. Mineralisation is developed within a broad alteration corridor and contains higher-grade Main Lodes that form the core of the deposit and contribute a significant proportion of the contained metal inventory.

The deposit has approximately 700m of defined strike extent and more than 400m of vertical continuity, remaining open both along strike and at depth. Historical drilling has demonstrated the continuity of high-grade copper mineralisation throughout the system, with previous notable intersections including:

Previously reported high-grade intersections along the Barbara Shear Zone include:

- **17m @ 2.5% Cu** from 225m (BADD053)
- **5m @ 3.8% Cu** from 286m (BADD013)
- **6m @ 2.1% Cu** from 290.5m (BADD029)
- **2.0m @ 2.1% Cu** from 148m (BARC071)

## Next Steps

**Drilling at Barbara is ongoing targeting resource expansion.** Assay results from the remaining holes in the ~2,000m program are pending and will be reported progressively as received. Selected holes will be surveyed using **downhole electromagnetic (EM) techniques** to identify additional conductor targets outside the current resource boundary.

Upon completion of the current Barbara program, drilling is expected to commence at the **Turpentine Deposit** within the **Hazel Creek Project**, before progressing to additional near-mine targets as part of the broader **10,000m 2026 North Queensland Copper-Gold Project** exploration campaign.

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<sup>1</sup> ASX Announcement 30 October 2025 – BTM to Acquire North Queensland Copper-Gold Project and Complete \$8.15M Placement

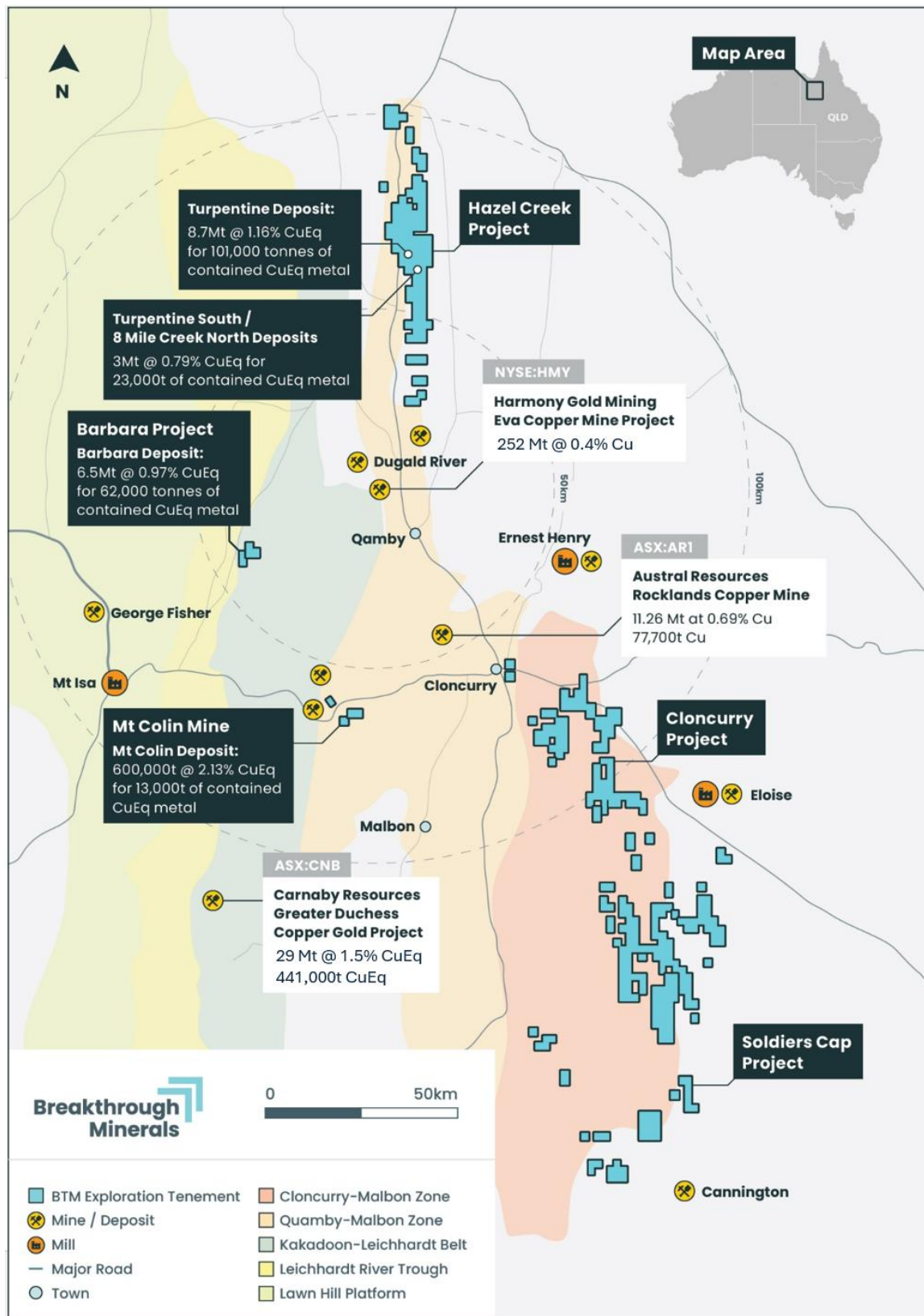


Figure 4: Queensland Copper-Gold Projects – Mt Isa Region, Queensland<sup>2</sup>

<sup>2</sup> Third party Resources and Reserves sources: AR1 MRE Annual Report ASX 30 March 2026; HMY Eva Reserve Release 24 Nov 2025; CNB MRE ASX 16 March 2026

## BTM Barbara Drillhole Collar Information

**Table 2: BTM Barbara Collar Information**

Drillhole	Easting (m)	Northing (m)	Elevation (m)	Total Depth (m)	Azimuth	Dip	Hole type
26BAR001	380,083	7,741,381	340	249.5	46.4	-50.3	DD
26BAR002	379,887	7,741,517	339	390.8	53.7	-70.2	RC-DDT
26BAR003	379,986	7,741,759	320	159.8	30.7	-77.7	RC-DDT

## Mineral Resource Estimates

**Table 3: Project Summary of Mineral Resources for North Queensland Copper-Gold Project**

Asset	Resource Category	Tonnes (Mt)	Grade				Contained Metal			
			Cu (%)	Au (g/t)	Ag (g/t)	CuEq (%)	Cu (kt)	Au (koz)	Ag (koz)	CuEq (kt)
Barbara	Measured									
	Indicated	5.8	0.90	0.08	1.55	0.97	52	15	288	57
	Inferred	0.7	0.91	0.06	1.72	0.96	6	1	38	6
	<b>Total</b>	<b>6.5</b>	<b>0.90</b>	<b>0.08</b>	<b>1.57</b>	<b>0.97</b>	<b>58</b>	<b>16</b>	<b>326</b>	<b>63</b>
Mt Colin	Measured	0.2	2.30	0.50		2.71	5	3		6
	Indicated	0.3	1.40	0.30		1.64	4	3		5
	Inferred	0.1	1.60	0.30		1.84	2	1		2
	<b>Total</b>	<b>0.6</b>	<b>1.80</b>	<b>0.40</b>		<b>2.13</b>	<b>11</b>	<b>7</b>		<b>13</b>
Turpentine	Measured									
	Indicated									
	Inferred	8.7	1.03	0.16	0.34	1.16	90	46	96	101
	<b>Total</b>	<b>8.7</b>	<b>1.03</b>	<b>0.16</b>	<b>0.34</b>	<b>1.16</b>	<b>90</b>	<b>46</b>	<b>96</b>	<b>101</b>
Turpentine South & Eight Mile Creek North	Measured									
	Indicated									
	Inferred	3.0	0.68	0.13	0.20	0.79	20	12	19	23
	<b>Total</b>	<b>3.0</b>	<b>0.68</b>	<b>0.13</b>	<b>0.20</b>	<b>0.79</b>	<b>20</b>	<b>12</b>	<b>19</b>	<b>23</b>
<b>Total</b>	<b>Measured</b>	<b>0.2</b>	<b>2.30</b>	<b>0.50</b>		<b>2.71</b>	<b>5</b>	<b>3</b>		<b>6</b>
	<b>Indicated</b>	<b>6.1</b>	<b>0.93</b>	<b>0.09</b>	<b>1.55</b>	<b>1.00</b>	<b>56</b>	<b>18</b>	<b>287</b>	<b>62</b>
	<b>Inferred</b>	<b>12.5</b>	<b>0.94</b>	<b>0.15</b>	<b>0.39</b>	<b>1.06</b>	<b>118</b>	<b>60</b>	<b>153</b>	<b>132</b>
	<b>Total</b>	<b>18.8</b>	<b>0.96</b>	<b>0.14</b>	<b>0.76</b>	<b>1.07</b>	<b>179</b>	<b>81</b>	<b>441</b>	<b>200</b>

**Notes:**

- Mineral Resource Estimates are reported using a variety of cutoff criteria (NSR) depending on which is best suited to each deposit
- Discrepancy in summation may occur due to rounding
- For full details including JORC tables, please refer to ASX Announcement 30 October 2025

## Enquiries

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## Forward Looking Statements

This announcement includes forward-looking statements. These statements relate to the Company's expectations, beliefs, intentions or strategies regarding the future. These statements can be identified by the use of words like “will”, “progress”, “anticipate”, “intend”, “expect”, “may”, “seek”, “towards”, “enable” and similar words or expressions containing same.

The forward-looking statements reflect the Company's views and assumptions with respect to future events as of the date of this announcement and are subject to a variety of unpredictable risks, uncertainties, and other unknowns. Actual and future results and trends could differ materially from those set forth in such statements due to various factors, many of which are beyond our ability to control or predict. Given these uncertainties, no one should place undue reliance on any forward-looking statements attributable to the Company, or any of its affiliates or persons acting on its behalf. The Company does not undertake any obligation to update or revise any forward-looking statements, whether as a result of new information, future events or otherwise. Neither the Company nor any other person, gives any representation, warranty, assurance, nor will guarantee that the occurrence of the events expressed or implied in any forward-looking statement will actually occur. To the maximum extent permitted by law, the Company and each of its advisors, affiliates, related bodies corporate, directors, officers, partners, employees and agents disclaim any responsibility for the accuracy or completeness of any forward-looking statements whether as a result of new information, future events or results or otherwise.

## Competent person's statement

The information in this announcement that relates to Exploration Results is based upon information compiled by Mr William Dix, who is a Fellow of the AusIMM and serves as a Director of Breakthrough Minerals. Mr Dix has sufficient experience 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 December 2012 edition of the Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves (JORC Code). Mr Dix consents to the inclusion in the announcement of the matters based upon the information in the form and context in which it appears.

## Metal equivalents statement

Metal equivalents have been calculated using the formula  $CuEq = [Cu \text{ grade} / 100 / 0.912 \text{ Cu Recovery} * \$9773] + (Au \text{ grade} * 0.686 \text{ Au Recovery} * \$3300 / 31.1034) / (0.912 \text{ Cu Recovery} * \$9773) * 100$ . Prices of USD9,773/t for Cu, USD3,300/oz for Au and recoveries Cu 91.2% and Au 68.6%. It is the competent person's opinion that all the elements included in the metal equivalents calculation have a reasonable potential to be recovered and sold.

## JORC Code Table 1 – Section 1 Sampling Techniques and Data – Barbara Cu-Au Deposit

Criteria	JORC Code explanation	Commentary
Sampling techniques	<ul style="list-style-type: none"> <li>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.</li> <li>Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.</li> <li>Aspects of the determination of mineralisation that are Material to the Public Report.</li> <li>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.</li> </ul>	<ul style="list-style-type: none"> <li>Breakthrough Minerals, with drilling contractor DDH1 Drilling, have been producing NQ sized core for areas to be sampled. The core was cut longitudinally for samples of 1 m intervals.</li> <li>The weight of the half core sample weights varies between 1.85kg to 3.2kg with 10 quarter core field duplicate samples submitted for analysis with weights varying between 1kg to 1.55kg.</li> <li>Industry standard techniques were used by ALS Laboratories to produce the final split for analysis including crushing and pulverisation of the entire sample in a LM2 ring mill to a grind size of 85% passing at 75 microns.</li> <li>No RC samples were submitted to ALS for analysis in this sample submission.</li> <li>Diamond Core NQ core has a diameter of 51mm.</li> <li>ALS Laboratories conducted coarse split laboratory duplicates at a rate of 1 per 20 samples.</li> </ul>
Drilling techniques	<ul style="list-style-type: none"> <li>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).</li> </ul>	<ul style="list-style-type: none"> <li>The dataset comprises of 3 drillholes for a total of 800.1m.</li> <li>543.6m were Diamond Core (DDH), 68% of total metres, with the remaining 32% or 256.5m being Reverse Circulation (RC) drilling.</li> <li>1 hole PQ, and HQ collar with NQ once into competent rock.</li> <li>2 holes were RC collar with NQ DDH tail.</li> <li>The previous holes in the dataset, drilled before acquisition of the project by Breakthrough Minerals, contained 403 drillholes for a total of 40,942.09m. 63% were RC, 35% DDH and 2% Rotary Air Blast (RAB) holes.</li> </ul>
Drill sample recovery	<ul style="list-style-type: none"> <li>Method of recording and assessing core and chip sample recoveries and results assessed.</li> <li>Measures taken to maximise sample recovery and ensure representative nature of the samples.</li> <li>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.</li> </ul>	<ul style="list-style-type: none"> <li>DDH core recoveries were monitored and logged. Recoveries were uniformly high, exceeding 95%.</li> <li>Core recovery during Aeris drill was also in excess of 95%.</li> <li>Recovery data prior to Aeris drilling not available within the database.</li> <li>Samples were visually checked for recovery, and measures taken to ensure fine material not lost or moved during transportation back to core yard.</li> <li>Previous RC sample recovery (weight) data are not available within the database.</li> </ul>
Logging	<ul style="list-style-type: none"> <li>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.</li> <li>Whether logging is qualitative or quantitative in nature. Core (or costean,</li> </ul>	<ul style="list-style-type: none"> <li>Breakthrough Minerals core and chips samples were logged by a Geologist using logging procedures that were developed to reflect the geology of the area and mineralisation styles accurately.</li> <li>Logging was qualitative and quantitative in nature and captured downhole depth, colour, lithology, texture, alteration, sulphide type, sulphide percentage and structure. All core was digitally photographed.</li> <li>All drillholes were logged in full.</li> <li>No information on logging exists for holes drilled prior to Aeris/Syndicated.</li> </ul>

Criteria	JORC Code explanation	Commentary
	<p><i>channel, etc) photography.</i></p> <ul style="list-style-type: none"> <li><i>The total length and percentage of the relevant intersections logged.</i></li> </ul>	
<p><i>Sub-sampling techniques and sample preparation</i></p>	<ul style="list-style-type: none"> <li><i>If core, whether cut or sawn and whether quarter, half or all core taken.</i></li> <li><i>If non-core, whether riffled, tube sampled, rotary split, etc and whether sampled wet or dry.</i></li> <li><i>For all sample types, the nature, quality and appropriateness of the sample preparation technique.</i></li> <li><i>Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.</i></li> <li><i>Measures taken to ensure that the sampling is representative of the in situ material collected, including for instance results for field duplicate/second-half sampling.</i></li> <li><i>Whether sample sizes are appropriate to the grain size of the material being sampled.</i></li> </ul>	<ul style="list-style-type: none"> <li>NQ sized core was cut in half using an automatic diamond core saw. Sample intervals chosen by a Geologist after all core logging completed, with samples weights vary from 1.85kg to 3.2kg.</li> <li>10 quarter core field duplicate samples submitted for analysis with weights varying between 1kg to 1.55kg.</li> <li>The samples were sent to an accredited laboratory for sample preparation and analysis. ALS Mount Isa Laboratory follows industry best standards in sample preparation including optimal drying of the sample (temperature and time for base metal sample), crushing and pulverization of the entire sample in a LM2 to a grind size of 85% passing at 75 microns.</li> <li>The sample sizes are believed to be appropriate to correctly represent the style and thickness of copper and gold mineralisation in the Mt Isa Inlier.</li> </ul>
<p><i>Quality of assay data and laboratory tests</i></p>	<ul style="list-style-type: none"> <li><i>The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total.</i></li> <li><i>For geophysical tools, spectrometers, handheld XRF instruments, etc, the parameters used in determining the analysis including instrument make and model, reading times, calibrations factors applied and their derivation, etc.</i></li> <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>Breakthrough Minerals sent all samples to ALS Mount Isa for preparation. The ME-ICP41 and ME-OG46 analysis was completed at ALS Mount Isa with the gold analysis AA25 being completed in ALS Townsville.</li> <li>ME-ICP41 uses Aqua Regia Digestion with ME-OG46 for analysis. It's a multi-element analysis which has an upper limit on Cu of 1%. Ag results obtained via this method.</li> <li>Cu was therefore tested within predicted high-grade zones using ME-OG46, Aqua Regia Digest with ICP-AES analysis.</li> <li>AA25 for Au is Fire Assay Fusion with AAS analysis.</li> <li>Quality Control (QC) procedures involved the use of certified reference materials at a minimum of 1 in 20. Blanks were inserted at beginning of submission and at the start of ore zone to minimise potential contamination from host rock.</li> <li>Standards were produced by OREAS and consisted of a medium and high-grade Cu%, along with a low Cu% with known Au value.</li> <li>ALS also produced coarse split laboratory duplicates at a rate of 1 in 20.</li> <li>No geophysical tools were used to determine any element concentrations used in the resource estimate.</li> </ul>
<p><i>Verification of sampling and assaying</i></p>	<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>No verification of sampling and assaying have been completed by Breakthrough Mineral on these initial 3 holes</li> </ul>
<p><i>Location of data points</i></p>	<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</i></li> </ul>	<ul style="list-style-type: none"> <li>Drillhole collars were marked by a Geologist using a handheld GPS. DGPS will be used in future to define exact collar location, and database will be adjusted accordingly.</li> <li>GDA94 MGA Zone 54 datum North was used.</li> <li>Downhole surveys were conducted by DDH1 drilling using Axis Gyro at start of hole, and every 30m as a minimum once drilling commenced.</li> </ul>

Criteria	JORC Code explanation	Commentary
	control.	
Data spacing and distribution	<ul style="list-style-type: none"> <li>Data spacing for reporting of Exploration Results.</li> <li>Whether the data spacing and distribution is sufficient to establish the degree of geological and grade continuity appropriate for the Mineral Resource and Ore Reserve estimation procedure(s) and classifications applied.</li> <li>Whether sample compositing has been applied.</li> </ul>	<ul style="list-style-type: none"> <li>Drill holes have been designed in line with existing MRE drilling.</li> <li>The spacing of MRE Drilling resulted in mineralisation intercepts in longitudinal projection is between 40m x 40m and 80m x 80m, which the Competent Person considers is sufficient to classify the Barbara Copper gold deposit as an Indicated and Inferred Mineral Resource.</li> <li>Most samples are collected at 1m sample intervals with a small amount of diamond core samples down to 0.25m to conform with geological boundaries. Compositing to 1m was completed while honouring the geological boundaries in a manner consistent with industry standard practice.</li> </ul>
Orientation of data in relation to geological structure	<ul style="list-style-type: none"> <li>Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type.</li> <li>If the relationship between the drilling orientation and the orientation of key mineralised structures is considered to have introduced a sampling bias, this should be assessed and reported if material.</li> </ul>	<ul style="list-style-type: none"> <li>The 3 drillholes completed by Breakthrough Minerals have varied orientations due to topography and access limitations of collar positions. All holes were able to proper measurements of structures.</li> <li>The predominant drill orientation of the historical drilling is -60° to 055°. At this orientation, the intercepts are close to true widths.</li> <li>From the sampling to date no bias has been identified due to the orientation.</li> <li>No bias is currently known.</li> </ul>
Sample security	<ul style="list-style-type: none"> <li>The measures taken to ensure sample security.</li> </ul>	<ul style="list-style-type: none"> <li>Samples have been collected by Breakthrough Minerals from the drill site and returned to a core yard/processing area in the townsite of Cloncurry.</li> <li>Samples then transported to ALS Mount Isa for preparation and analysis. With the Au samples being transported from ALS Mount Isa to ALS Townsville for analysis.</li> <li>Batch details were checked upon receipt by the laboratory and confirmed with BTM prior to analysis.</li> <li>The samples were labelled from the point of collection and retained this unique number throughout the analytical process.</li> </ul>
Audits or reviews	<ul style="list-style-type: none"> <li>The results of any audits or reviews of sampling techniques and data.</li> </ul>	<ul style="list-style-type: none"> <li>No independent audits or reviews have been undertaken.</li> </ul>

## JORC Code Table 1 - Section 2 Reporting of Exploration Results - Barbara Cu-Au Deposit

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

Criteria	JORC Code explanation	Commentary
Mineral tenement and land tenure status	<ul style="list-style-type: none"> <li>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.</li> <li>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.</li> </ul>	<ul style="list-style-type: none"> <li>Barbara is located 74km northwest of Cloncurry, and 60km northeast of Mt Isa.</li> <li>ML 90241 (Barbara Copper Project) was acquired by Breakthrough Minerals on the 26th March 2016 from Aeries Resources.</li> <li>ML 90241 was granted on the 23rd of May 2016 to Round Oak Minerals, who were then acquired by Aeries Resources.</li> </ul>
Exploration done by other parties	<ul style="list-style-type: none"> <li>Acknowledgment and appraisal of exploration by other parties.</li> </ul>	<ul style="list-style-type: none"> <li>Prior to 2014, the Barbara Project contained evidence of only small-scale historical mining/workings. The Project and surrounding areas (Barbara region) have experienced sporadic exploration covering approximately 50 years. As a result, several minor drilling programs from the 1960's to 2000's have contributed only a small proportion to the total drilling on the Project. A summary of work done by previous explorers in the Barbara region has been modified from Exco (2014) and is provided below.</li> <li>Pre 1965 – Messrs Lilly and May: The Barbara region was first worked by</li> </ul>

Criteria	JORC Code explanation	Commentary
		<p>Messrs Lilly and May who were also involved in mining at Manxman, Lilly May and Mt. Olive. Denaro (2004), records a production of 270 ore tonnes for 29.85 tonnes copper from the area during this early period.</p> <ul style="list-style-type: none"> <li>1957 – Mount Isa Mines – ATP90M – CR227: MIM investigated the Barbara region as part of a regional study of mineralisation associated with the Mount Remarkable Fault. They documented the Barbara Prospect as one of 13 minor copper occurrences found along the Fault Zone.</li> <li>1965 to 1967 – Nippon Mining Australia Ltd – EPM269 – CR’s 1841, 1890, 1945, 2150, 2164: Nippon Mining Australia conducted exploration in the Barbara region between 1965 and 1967. The company conducted a regional silt survey, which failed to highlight the Barbara Prospect. A soil sampling program over Barbara defined copper anomalies coincident with copper-stained zones. Trench sampling was also carried out across the main Barbara lodes in the north and south. An Induced Polarisation (IP) geophysical survey was conducted across the Barbara Prospect. Lines 2, 3 (northern zone) and Line 8 (southern zone) were across gossanous material and showed strong anomalies. Seven diamond drill holes were drilled into the Barbara Prospect. DDH4 in the northern zone near IP Line 3 produced intersections of 2.72 m @ 1.75% Cu and 8 m @ 1.21% Cu. DDH5 drilled into the Southern zone on IP Line 2 produced mineralisation of 29 m @ 1.94% Cu. Nippon later conducted an Electro-Magnetic (EM) geophysical survey over the north end of the mineralisation; however, no EM anomalies were located.</li> <li>1970 – Placer Prospecting (Aust) Pty Ltd (Placer) – ATP723M – CR3497: Placer explored the Barbara region in 1970 and estimated a copper resource; however, they documented reservations about some of the assumptions made during this early estimation.</li> <li>1988 to 1990 – Australian Ores and Minerals (AOM) – EPM’s 5501, 5502, 5503, 5504 – CR’s 22154, 21456, 21029, 20864, 19985: AOM conducted exploration on all prospects within the above EPMs including geological mapping, rock chip sampling and a stream sediment geochemical survey. They also reviewed Placer’s work on the Barbara deposit and re-estimated a mineral resource.</li> <li>1991 to 1993 – Bruce Resources NL (Bruce) EPM’s 8252, 8524 – CR 24600: Bruce joint ventured the Barbara tenements to Cyprus Gold Australia Corporation. In 1992, Northern Exploration Surveys conducted a Transient EM (TEM) geophysical survey and ground magnetics survey at Barbara. The TEM survey was conducted at 25 m interval readings on 300 m long lines spaced at 100 m intervals over three loops. The shear zone produced a conductive response on all lines with two main conductive zones being defined. The geophysicist proposed two drill holes, neither of which were drilled. (Birch, 1992) Bruce was later to be called Pan Australian Resources NL.</li> <li>1993 to 1995 – Cyprus Gold Corporation (Cyprus) EPM’s 8252, 8524 and EPM9681 – CR’s 25383, 26864, 29586: Cyprus reviewed results from the ground magnetics and TEM surveys conducted by Bruce in 1992. Results of this reappraisal are given in CR26864 (page 13). Two main conductors were reported. Firstly, a zone from (9950E/10900N to 10000E/11200N) and secondly a stronger but less extensive conductor centred on 9900E/10500N). The latter conductor had a strike length of &lt;200 m and an interpreted depth to top of 120 m with a southerly plunge. Cyprus drilled two RC holes with diamond core tails at Barbara. Significant results included 18 m @ 3.24% Cu from 14 m in hole BAQ-93-01 and 16.6 m @ 2.61% Cu from 152.4 m in hole BAQ-93-03. Downhole EM was conducted in BAQ93-03. The Z component showed a strong response at 160 m associated with sulphide occurrences in the hole. It was thought that there may be a zone of more conductive material to the north of this hole but the distance to that feature was not determined. Based on this work, the company decided to cease all work at Barbara.</li> <li>1995 – 2000 - Murchison United (Murchison) – EPM9681 – CR’s 26864, 27465, 28360, 29586, 31384: Murchison conducted geological mapping and a shallow percussion drill program of nine shallow holes at Barbara. Economically significant grades were intersected in all holes. From these holes and those of Cyprus, they prepared a resource estimate within the shallow limits of the drilling.</li> <li>2008 - 2016 – Syndicated Metals – EPM15564, EPM16112 – CR’s 62158, 66448, 83038, 76711, and 99007</li> <li>In 2010, further RC drilling, soil sampling (583 soil samples, 19 Rock chip</li> </ul>

Criteria	JORC Code explanation	Commentary
		<p>samples), and multi-element analyses, mapping of geology and structure, and a FLTEM survey were completed. Mapping and soil sampling covered the greater part of the prospective structures in the vicinity of the Barbara Project.</p> <ul style="list-style-type: none"> <li>• In 2011, diamond drilling, RC drilling, and rock chip sampling were completed at the Barbara Project. Additionally, an airborne Versatile Time Domain EM (VTEM) geophysical survey comprised an initial 750-line km, followed by an additional 86 km of 100 m spaced infill surveying was conducted in selected areas. Barbara north, Barbara south and the North Gossan Prospect showed encouraging chargeability.</li> <li>• In 2012, RC drilling, interpretation of results, further mapping, Mineral Resource Estimation, and a preliminary pit optimisation / scoping study were completed.</li> <li>• A regional soil sampling program was completed at the Barbara Project during the 2013 field season over some targets. A total of 3,645 soil samples were taken during the reporting period. Two agreements with Copper Chem for the joint exploration and development of the Barbara Project were executed.</li> <li>• In 2014, resource and extension drilling, a metallurgical drilling program, FLTEM survey over Northern Barbara and a Feasibility study were completed on the Barbara Project</li> </ul>
<p>Geology</p>	<ul style="list-style-type: none"> <li>• <i>Deposit type, geological setting and style of mineralisation.</i></li> </ul>	<ul style="list-style-type: none"> <li>• Regional Geology</li> <li>• The Barbara deposit is located within rocks of the Mary-Kathleen Domain. The Mary Kathleen Domain forms an elongate belt on the east side of Kalkadoon-Leichhardt Domain. It consists of Argylia Formation (1776 ±3Ma) and Boomarra Metamorphics at base of Leichhardt Superbasin sequence (basement not exposed), which are overlain by Ballara Quartzite, Corella Formation, unnamed basalt (~1710Ma), Knapdale Quartzite, Mount Roseby Schist, Dugald River Shale, Coocerina Formation, and Lady Clayre Dolomite (assigned an age of ~1660Ma). The older rocks were metamorphosed to amphibolite facies at ~1740 Ma during Wonga extensional event and intruded by numerous granites and a gabbro in interval 1758 ±8Ma to 1729 ±5Ma. Metamorphosed again to amphibolite facies in Rosebud Syncline at 1581-1570Ma, and yet again to greenschist facies at ~1540Ma. Initiation of the Leichhardt Superbasin is associated with west-northwest/east-southeast directed extension. The Wonga event corresponds to the Big Event further to the west. All except the youngest rocks of the Isa Superbasin were affected by the 1690-1670Ma Gun Event (Late Calvert Superbasin extension). All rocks are affected by the Early (1600-1580Ma), Middle (1570-1550Ma), Mid (1550-1540Ma) and Late (1530-1500Ma) Isan Orogenies.</li> <li>• Project Geology</li> <li>• A set of key geological components in the Barbara Project are interpreted to have provided the tectono-stratigraphic setting for the potential formation of a significant copper-gold mineralising system including: <ul style="list-style-type: none"> <li>• The north-east controlling Mt Remarkable Fault</li> <li>• A series of north-south structures interpreted as major thrust faults.</li> <li>• The presence of the regionally significant Kalkadoon Granite. It is interpreted that the granite body has played a significant role in the lithostructural control within the area.</li> <li>• The Wonga Batholith, which potentially provided the driving heat cell for the mineralising event.</li> <li>• A thrust repeated target stratigraphy of the Magna Lynn Metabasalt Formation and the Leichhardt Volcanic Succession.</li> <li>• A network of intruded dolerite/mafic dykes crosscutting and infilling the BSZ.</li> <li>• The Barbara deposit is hosted by acid volcanics of the Proterozoic-aged Leichhardt Volcanics, within the Mary Kathleen Domain of the Mt Isa Inlier. Locally within the Leichhardt Volcanic Succession, a series of mafic intrusive sills and dykes are believed to play a significant part in the focusing of copper-gold mineralisation. The Barbara deposit is hosted on what is interpreted to be the intersection of a north-west trending second-third order structure interacting with a suite of mafic intrusive rocks.</li> <li>• The mineralisation occurs within a structure obliquely crosscutting the regional north-south strike and is characterised by quartz-tourmaline (+chlorite) alteration, which forms a distinct surface ridge. The north-west</li> </ul> </li> </ul>

Criteria	JORC Code explanation	Commentary
		<p>striking mineralisation has been traced from surface mapping over a distance of 600 m. It dips at approximately 60° to the south-west and varies from 2-30 m true thickness. Host rock lithologies consist of predominantly of felsic rhyolitic to rhyodactitic rocks with lesser amphibolitic units, which appear to focus shearing into an anastomosing shear array. Metamorphic grade is considered to be lower greenschist facies (Meader, 2010).</p> <ul style="list-style-type: none"> <li>• Mineralisation</li> <li>• The Barbara deposit is an Iron-Sulphide Copper Gold (ISCG) deposit characterised by semi massive to disseminated chalcopyrite-pyrrhotite-rich mineralisation hosted within the biotite- rich BSZ. The Barbara mineralised system remains open down-plunge. Mineralisation has been traced approximately 700 m along-strike with 400 m vertical extent in the deepest southern part and dips approximately 60 degrees to the southwest.</li> <li>• The Barbara deposit has been developed during the Isan orogeny, which produced suitable structural architecture for mineralising fluids to pass. During the deformation, the shear zone was crosscut by northeast trending faults and subsequently, the BSZ was intruded by dolerite dykes.</li> <li>• The intersection of the dolerite dykes and the BSZ plays a major role in controlling the orientation of the plunge of the higher grades in the southern zone of the deposit. Three modelled dykes intersect the southern zone and clearly control the location of mineralisation. The plane of intersection between the dykes and the shear zone is interpreted to have produced zones of dilation for mineralising fluids to occupy. These zones of dilation were initially filled with quartz+carbonate veining and then finally with sulphide mineralisation.</li> <li>• The northern zone occurs at a point where numerous dolerite dykes intersect the BSZ. Approximately four dykes intersect the shear zone. The copper mineralisation is hosted within foliation parallel quartz veins, which range in width from 1 mm to 6 cm. The sulphide mineralisation generally occurs mainly on the margins of quartz carbonate veins within the biotite schist. Where the sulphide mineralisation is stronger, the sulphide replaced most of the quartz veins.</li> <li>• The biotite schist mineralisation occurs as linear veins in more ductile environments. The mineralisation in the felsic volcanics is more brittle, occurring as larger clumps of quartz and/or quartz-carbonate veins.</li> <li>• Copper mineralisation typically has an abrupt hanging wall contact sometimes marked by a zone of massive sulphide through to a gradational footwall contact. This can extend over 20 m and is characterised by sulphide-bearing stringer veins in a biotite altered rhyodacite. The mineralisation occurs within an area of chlorite, actinolite and biotite alteration.</li> </ul>
<p><i>Drill hole information</i></p>	<ul style="list-style-type: none"> <li>• <i>A summary of all information material to the understanding of the exploration results including a tabulation of the following information for all Material drill holes:</i> <ul style="list-style-type: none"> <li>○ <i>easting and northing of the drill hole collar</i></li> <li>○ <i>elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar</i></li> <li>○ <i>dip and azimuth of the hole</i></li> <li>○ <i>down hole length and interception depth</i></li> <li>○ <i>hole length.</i></li> </ul> </li> <li>• <i>If the exclusion of this information is justified on the basis that the information is not Material and this exclusion does not detract from the understanding of the report, the Competent Person should clearly explain why this is the case.</i></li> </ul>	<ul style="list-style-type: none"> <li>• Appropriate information is included at Appendix 2 &amp; 3</li> </ul>
<p><i>Data aggregation methods</i></p>	<ul style="list-style-type: none"> <li>• <i>In reporting Exploration Results, weighting averaging techniques,</i></li> </ul>	<ul style="list-style-type: none"> <li>• Low-cut of 0.10% Cu has been used to define reported mineralised intercepts</li> <li>• Metal equivalents have been calculated using the formula <math>CuEq = [Cu \text{ grade}]</math></li> </ul>

Criteria	JORC Code explanation	Commentary
	<p><i>maximum and/or minimum grade truncations (eg cutting of high grades) and cut-off grades are usually Material and should be stated.</i></p> <ul style="list-style-type: none"> <li>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.</li> <li>The assumptions used for any reporting of metal equivalent values should be clearly stated.</li> </ul>	<p>/100 / 0.912 Cu Recovery * \$9773) +(Au grade * 0.686 Au Recovery * \$3300/31.1034) / (0.912 Cu Recovery * \$9773) * 100]. Prices of USD9,773/t for Cu, USD3,300/oz for Au and recoveries Cu 91.2% and Au 68.6%.</p>
Relationship between mineralisation widths and interception lengths	<ul style="list-style-type: none"> <li>These relationships are particularly important in the reporting of Exploration Results.</li> <li>If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported.</li> <li>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').</li> </ul>	<ul style="list-style-type: none"> <li>The Barbara Shear Zone strikes northwest and dips approximately 60° to the southwest. Mineralisation is hosted within a broad shear-hosted envelope containing higher-grade Main Lodes.</li> <li>The majority of drillholes have been oriented approximately perpendicular to the interpreted strike of mineralisation to optimise intersection angles and minimise sampling bias.</li> <li>All reported intersections are downhole lengths. Based on the current geological interpretation, the reported intercepts are considered to approximate true widths; however, true widths have not yet been formally calculated and may vary locally depending on the orientation of individual mineralised lodes and structural controls.</li> <li>No sampling bias is considered to have been introduced by drilling orientation.</li> </ul>
Diagrams	<ul style="list-style-type: none"> <li>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.</li> </ul>	<ul style="list-style-type: none"> <li>Appropriate maps and diagrams have been included in the body of the announcement.</li> </ul>
Balanced reporting	<ul style="list-style-type: none"> <li>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.</li> </ul>	<ul style="list-style-type: none"> <li>Appropriate information is included in the body of the announcement</li> </ul>
Other substantive exploration data	<ul style="list-style-type: none"> <li>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.</li> </ul>	<ul style="list-style-type: none"> <li>All interpretations for Barbara mineralisation are consistent with observations made and information gained during previous mining, exploration and modelling. No other exploration data are considered material.</li> </ul>
Further work	<ul style="list-style-type: none"> <li>The nature and scale of planned further work (eg tests for lateral extensions or depth extensions or large-scale step-out drilling).</li> <li>Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.</li> </ul>	<ul style="list-style-type: none"> <li>Future drilling will be targeting extensions of the defined resource, exploration drilling at near-mine prospects, testing further high-grade mineralisation, increasing the confidence of the MRE and to provide sample for further metallurgical testwork programs.</li> <li>Metallurgical, geotechnical, hydrogeological, engineering, environmental, heritage, and permitting activities and studies are under consideration.</li> </ul>