

# Copper Mountain Mining Announces Addition to Eva Copper Mineral Resource, Increases Measured & Indicated Resource by 836 Million Pounds of Copper with Blackard Deposit

Vancouver, B.C., October 15, 2019 – Copper Mountain Mining Corporation (TSX:CMMC | ASX:C6C) ("Copper Mountain" or the "Company") is pleased to announce drill results from a recently completed exploration program, metallurgical testwork results and a new Mineral Resource for the Blackard deposit. Blackard is a large stratabound deposit located within the Company's Eva Copper Project mining leases, five kilometres from the proposed Eva Copper processing plant, in Queensland, Australia (See Appendix 1 for Location Map).

## Drill hole results highlights:

- Hole BCR910 returned 125 metres of 0.57% Cu including 21.5 metres of 1.30% Cu
- Hole BCR911 returned 78 metres of 0.69% Cu including 24 metres of 1.17% Cu
- Hole BCR917 returned 86 metres of 0.59% Cu including 46 metres of 0.86% Cu
- Hole BCR918 returned 94 metres of 0.55% Cu including 44 metres of 0.75% Cu
- Hole BCR919 returned 72 metres of 0.57% Cu including 20 metres of 0.68% Cu

The Company also recently completed extensive metallurgical testwork that has confirmed economic recoveries at Blackard. Based on these results, flotation recoveries are expected to be 90% for the Copper Sulphide Zone and 63% for the Copper Zone, both producing saleable concentrates.

The Blackard Mineral Resource consists of a Measured and Indicated Mineral Resource of 77 million tonnes grading 0.49% copper containing 836 million pounds of copper and an Inferred Mineral Resource of 19 million tonnes grading 0.49% copper containing 206 million pounds of copper. The new Mineral Resource at Blackard improves the grade and increases the size of the Eva Copper Project's Measured and Indicated Mineral Resource to 228 million tonnes grading 0.42% copper containing 2.1 billion pounds of copper. See Appendix 2 for Eva Copper Project Mineral Resource.

Gil Clausen, Copper Mountain's President and CEO, commented, "We are extremely encouraged by the potential that exists at Eva Copper. These results lead us to believe that Blackard could significantly increase the mill feed and copper production at the Eva Copper Project. We intend to incorporate the information from the Blackard Mineral Resource and metallurgical testwork into an updated feasibility study for Eva Copper, the results of which we expect to announce in the first quarter of 2020."

Mr. Clausen added, "The Blackard deposit is only one of seven historical copper deposits within the Eva Copper Project area that are not included in the current mine plan. We are continuing to drill and advance the other deposits, which we believe could add even more value to the Eva Copper Project."

#### **October 2019 Mineral Resource Estimate**



A summary of Blackard's October 2019 Mineral Resource estimate is provided below. The new resource estimate is based on approximately 60,600 metres of drilling, which includes drill and assay information up to August 2019.

	Tonnes	Copper	Copper
	('000s)	(%)	(M lbs)
Measured Resource			
Copper Zone	19,960	0.57	251
Transition Zone	1,910	0.50	21
Copper Sulphide Zone	6,290	0.44	61
Sub-total	28,160	0.54	333
Indicated Resource			
Copper Zone	15,980	0.50	177
Transition Zone	2,600	0.47	27
Copper Sulphide Zone	30,580	0.45	300
Sub-total	49,160	0.47	504
Measured and Indicated Resource			
Copper Zone	35,940	0.54	427
Transition Zone	4,510	0.48	48
Copper Sulphide Zone	36,870	0.44	361
Sub-total	77,320	0.49	836
Inferred Resource			
Copper Zone	235	0.41	2
Transition Zone	22	0.48	0.2
Copper Sulphide Zone	19,050	0.49	204
Sub-total	19,307	0.49	206

The mineral resource has been contained within a U\$\$3.50 per pound copper whittle-pit shell. Mineral Resources that are not Mineral Reserves do not have demonstrated economic viability. Numbers may not add due to rounding, contained metal calculated at 3 significant figures. Cutoff values used for the reporting of each geo-metallurgical zone are based on projected metallurgical recoveries and are 0.23% Cu, 0.20% Cu and 0.17% Cu for the copper, transition and copper sulphide zones, respectively.

The Copper Sulphide Zone consists of primary sulphide material which occurs in carbonate altered sediments and includes bornite, chalcopyrite and hypogene chalcocite copper-sulphide species. Mineralization within the Copper Zone is primarily fine-grain native copper and lesser chalcocite which are hosted within altered metasedimentary schists. The deposit is covered by a shallow weathered cap of ferruginous oxide material that is considered as waste rock. Given the shallow nature of the cap and that the mineralized material at Blackard is near surface, the Company anticipates a low waste to ore ratio. (See Appendix 3 for 3D Graphic of Conceptual Pit).

The Mineral Resource and metallurgical testwork results on Blackard are currently being incorporated into the Eva Copper mine plan. The Company plans to complete an updated Eva Copper Mineral Reserve and Mineral Resource estimate and Bankable Feasibility Study in the first quarter of 2020. Ausenco Limited has been retained for the Bankable Feasibility Study.



#### 2019 Drill Results

In 2019, Copper Mountain recently completed an 18-hole drill program (2,695 metres) at the Blackard deposit with the objective of validating the existing deposit model and test for extensions to mineralization. The drill results are included in the October 2019 Mineral Resource. A summary of significant drill results from this program are provided below. See Appendix 4 for a Drill Hole Location Map, Appendix 5 for cross sections, and Appendix 6 for a Hole Collar Details.

		From	То	Interval	Grade
Hole ID		(m)	(m)	(m)	Cu%
BCR904		158	162	4	0.18%
		204	300	96	0.43%
	Incl.	236	300	64	0.51%
BCR906		12	46	34	0.59%
	Incl.	22	44	22	0.80%
BCR907		20	60	40	0.26%
	Incl.	24	34	10	0.41%
		66	84	18	0.44%
	Incl.	66	82	16	0.47%
		90	110	20	0.31%
	Incl.	94	98	4	0.59%
	Incl.	104	108	4	0.41%
BCR909		12	40	28	0.52%
	Incl.	14	40	26	0.54%
BCR910		2	20	18	0.37%
	Incl.	10	20	10	0.47%
		26	151.5	125.5	0.57%
Incl.		130	151.5	21.5	1.30%
BCR911		8	16	8	0.23%
		48	96	48	0.40%
	Incl.	56	86	30	0.53%
		112	134	22	0.52%
Incl.		114	128	14	0.67%
		170	206	36	0.38%
Incl.		180	206	26	0.45%
		212	290	78	0.69%
Incl.		212	236	24	1.17%
Incl.		242	290	48	0.50%
BCR912		18	22	4	0.18%
BCR913		10	18	8	0.16%
BCR915		0	8	8	0.19%
		18	22	4	0.18%



BCR916	0	48	48	0.70%
Incl	4	44	40	0.79%
	62	70	8	0.31%
Incl	62	66	4	0.41%
	122	126	4	0.28%
	132	140	8	0.22%
BCR917	0	86	86	0.59%
Incl.	0	16	16	0.34%
Incl.	34	80	46	0.86%
	94	102	8	0.22%
	118	128	10	0.56%
Incl	118	126	8	0.66%
BCR918	14	108	94	0.55%
Incl	36	108	72	0.66%
	114	118	4	0.19%
BCR919	104	176	72	0.57%
Incl	132	152	20	0.68%
	182	186	4	0.88%
BCR920	42	66	24	0.29%
Incl	44	50	6	0.44%

Note: Holes BCR905, BCR908, BCR914 & BCR921 Had No Significant Intercepts. Significance considered a 0.15% Cu Cut-off Grade.

#### **Competent Persons Statement**

The information in this report that relates Mineral Resources or Reserves is based on information compiled by Peter Holbek, B.SC (Hons), M.Sc. P. Geo. Mr. Holbek is a full time employee of the Company and has sufficient experience which is relevant to the style of mineralization and type of deposit under consideration and to the activity being undertaken to qualify as a Competent Person as defined in the 2012 Edition of the 'Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves'. Mr. Holbek does consent to the inclusion in this news release of the matters based on their information in the form and context in which it appears.

The information in this report that relates to Exploration Targets and Exploration Results is based on information compiled by Mr. George Ross, BSc, MSc, MBA, MAIG. Mr. Ross is a full time employee of the Company and has sufficient experience which is relevant to the style of mineralization and type of deposit under consideration and to the activity being undertaking 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. Ross consents to the inclusion in the report of the matters based on his information in the form and context in which it appears.

#### **Qualified Persons Statement**

Mr. Peter Holbek and Mr. George Ross are both deemed a Qualified Person as defined by National Instrument 43-101 and has reviewed and approved the contents of this press release.



#### **About Copper Mountain Mining Corporation:**

Copper Mountain's flagship asset is the 75% owned Copper Mountain mine located in southern British Columbia near the town of Princeton. The Copper Mountain mine currently produces approximately 90 million pounds of copper equivalent annually, with average annual production expected to increase to over 110 million pounds of copper equivalent in 2020. Copper Mountain also has the permitted, development-stage Eva Copper Project in Queensland, Australia and an extensive 4,000 km² highly prospective land package in the Mount Isa area. Copper Mountain trades on the Toronto Stock Exchange under the symbol "CMMC" and Australian Stock Exchange under the symbol "C6C".

Additional information is available on the Company's web page at www.CuMtn.com.

On behalf of the Board of

## **COPPER MOUNTAIN MINING CORPORATION**

"Gil Clausen"

Gil Clausen, P.Eng. Chief Executive Officer

#### For further information, please contact:

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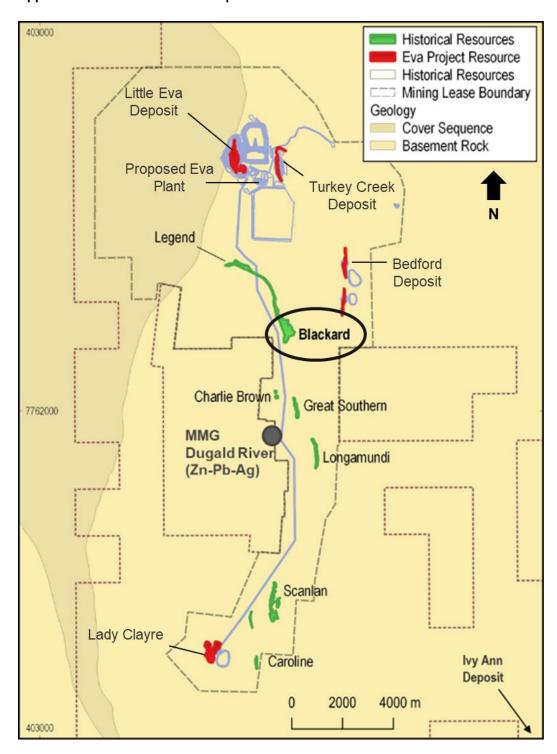
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#### **Cautionary Note Regarding Forward-Looking Statements**

This news release may contain forward-looking statements and forward-looking information (together, "forward-looking statements") within the meaning of applicable securities laws. All statements, other than statements of historical facts, are forward-looking statements. Generally, forward-looking statements can be identified by the use of terminology such as "plans", "expects", "estimates", "intends", "anticipates", "believes" or variations of such words, or statements that certain actions, events or results "may", "could", "would", "might", "occur" or "be achieved". Forward-looking statements involve risks, uncertainties and other factors that could cause actual results, performance and opportunities to differ materially from those implied by such forward-looking statements. Factors that could cause actual results to differ materially from these forward-looking statements include the successful exploration of the Company's properties in Canada and Australia, the reliability of the historical data referenced in this press release and risks set out in Copper Mountain's public documents, including in each management discussion and analysis, filed on SEDAR at www.sedar.com. Although Copper Mountain believes that the information and assumptions used in preparing the forward-looking statements are reasonable, undue reliance should not be placed on these statements, which only apply as of the date of this news release, and no assurance can be given that such events will occur in the disclosed time frames or at all. Except where required by applicable law, Copper Mountain disclaims any intention or obligation to update or revise any forward-looking statement, whether as a result of new information, future events or otherwise.



## **Appendix 1: Blackard Location Map**





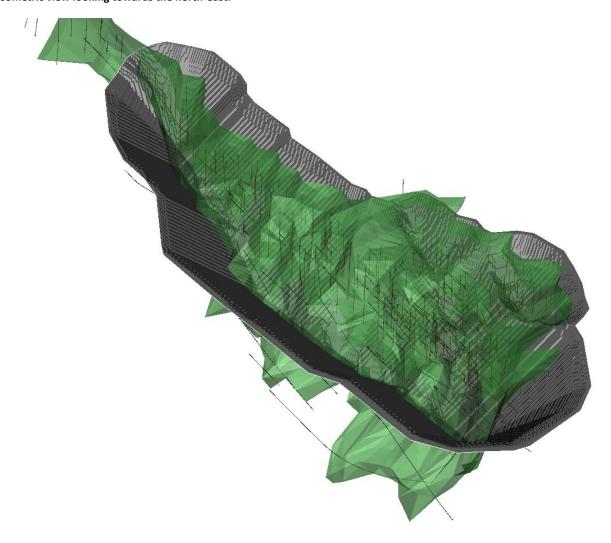
#### **Appendix 2: Eva Copper and Blackard Mineral Resources**

	Tonnes (000s)	Copper	Gold	Copper (Mlbs)	Gold
5 5 1 15 5 1 1	(0003)	(%)	(g/t)	(IVIIDS)	(koz)
Eva Project Resources, before Blackard					
Measured	69,829	0.40	0.07	621	160
Indicated	81,292	0.36	0.07	639	172
Measured & Indicated	151,121	0.38	0.07	1,259	330
Inferred	22,368	0.35	0.07	174	53
Blackard Resources					
Measured	28,160	0.54	-	333	-
Indicated	49,160	0.47	-	504	-
Measured & Indicated	77,320	0.49	-	836	-
Inferred	19,307	0.49	-	206	-
Eva Project with Blackard					
Measured	97,989	0.44	0.05	954	160
Indicated	130,452	0.40	0.04	1143	172
Measured & Indicated	228,441	0.42	0.05	2,095	330
Inferred	41,675	0.41	0.04	380	53

Mineral Resource Notes: 1. CIM definitions were followed for Mineral Resources. 2. Eva Mineral Resources are reported at a cut-off grade of 0.17% Cu for copper. Cutoff values used for Blackard vary with metallurgical zone based on predicted recoveries and are 0.23% Cu, 0.19% Cu and 0.17% Cu for the copper, transition and copper sulfide zones, respectively. 3. Mineral Resources are inclusive of Mineral Reserves. 4. Mineral Resources are estimated within whittle pit shells generated using: mining costs of US\$2.01/t, processing and G and A costs of US\$9.35/t milled, a copper price of US\$3.52/lb, and a gold price of US\$1,600 per ounce, a US\$/AU\$ exchange rate of AU\$1.35 = US\$1.00 for the Eva Project deposits; and \$3.50/lb Cu price for the Blackard deposit. 6. Bulk density ranges from 2.08 t/m3 to 3.00 t/m3. 6. Numbers may not add due to rounding. 7. Eva Copper Mineral Resource estimates originally published in the Company's Oct 1, 2018 press release and corresponding 43-101 Technical Report.

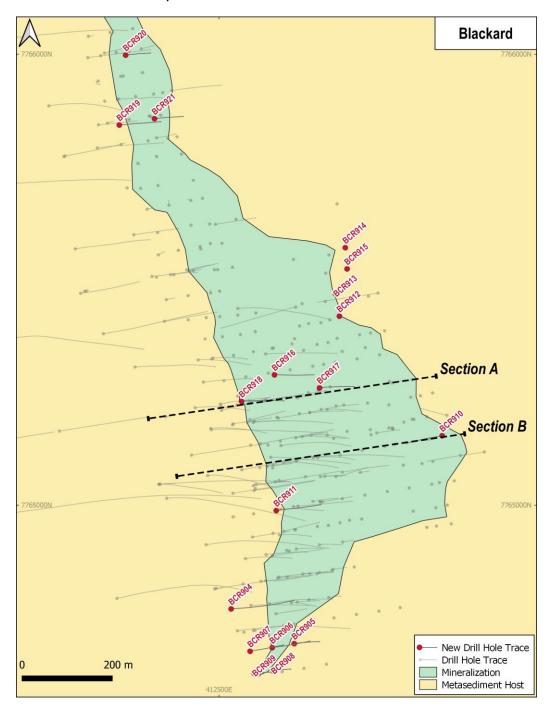


Appendix 3: Blackard mineralization (green) and US\$ 3.50/lb Cu whittle pit shell (grey). Completed drill holes shown as grey strings. Isometric view looking towards the north-east.





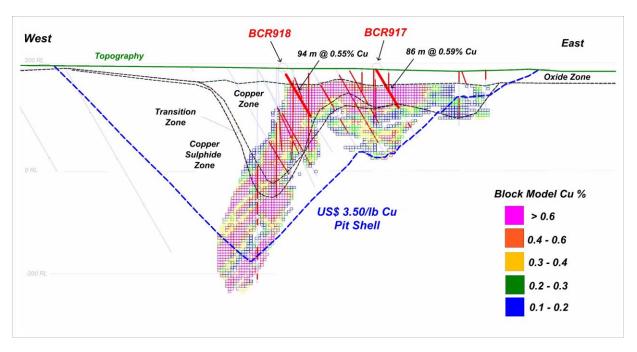
Appendix 4: Plan view - Drill Hole Location Map



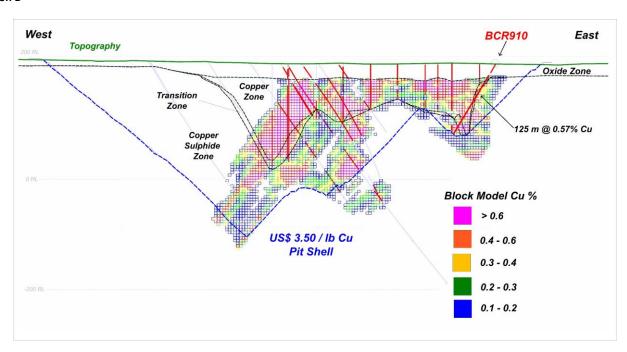


#### Appendix 5: Cross Sections A and B (New Drilling denoted in Red Font)

#### **Section A**



#### Section B





## Appendix 6: 2019 Hole Collar Details

Hole ID	Easting (m)	Northing (m)	Elevation (m)	Azimuth (°)	Dip (°)	Maximum Depth (m)
BCR904	412527	7764770	191	81.5	-60	300
BCR905	412667	7764693	191	80	-60	110
BCR906	412618	7764684	192	80	-60	170
BCR907	412569	7764676	193	80	-60	152
BCR908	412620	7764632	192	80	-60	80
BCR909	412578	7764627	193	80	-60	98
BCR910	412995	7765154	187	260	-60	151.5
BCR911	412627	7764988	187	80	-70	296
BCR912	412767	7765419	185	0	-90	108
BCR913	412758	7765469	187	0	-90	90
BCR914	412780	7765571	187	0	-90	60
BCR915	412784	7765524	186	0	-90	138
BCR916	412623	7765289	189	82.5	-60	180
BCR917	412723	7765260	189	80	-60	152
BCR918	412550	7765230	191	80	-60	183
BCR919	412279	7765843	188	80	-60	188
BCR920	412293	7765998	187	80	-60	110
BCR921	412357	7765857	186	80	-60	128



## **APPENDIX 7: JORC 2012 DISCLOSURE REQUIREMENTS**

#### 1. GEOLOGY

## 1.1. Setting

The Eva Copper Project is located within Proterozoic rocks of the Mount Isa Province of Queensland, Australia. The region is one of the world's premier base metal provinces with mining continuing uninterrupted since discovery of copper and gold near Cloncurry in the 1860s. The Mount Isa Province hosts numerous copper, lead, zinc and silver mines, including several of global significance.

The Project is situated within the Mary Kathleen Domain and to a lesser extent the Canobie Domain of the late Palaeoproterozoic Eastern Fold Belt of the Inlier. These rocks have undergone polyphase deformation, metamorphism and metasomatism during the Isan Orogeny (1600-1500 million years). Deformation and late to post orogenic plutonism is most pronounced in the Eastern Fold Belt where it is associated with widespread high temperature sodium-iron metasomatism expressed as magnetite or hematite alteration assemblages. IOCG style mineralization is a variant of this alteration and the Project deposits are examples of such mineralization.

The Project straddles the northern portion of a north-south striking corridor up to 10 kilometres wide and 80 kilometres long, bound to the east by the regionally significant Rose Bee Fault and to the west by the Coolullah Fault which is the eastern bounding fault of the Phanerozoic Landsborough Graben (Figure 1).

The Project area predominantly consists of variably metamorphosed sedimentary and igneous rocks of Proterozoic age that typically outcrop with limited residual regolith cover. Regolith cover tends to thicken east of the Rose Bee Fault and a thick sequence of Phanerozoic sediments overlies Proterozoic rock to the west of the Coolullah Fault in the Landsborough Graben.

The Little Eva copper-gold deposit (the Project's largest resource) is hosted within an intermediate igneous complex within the Corella Formation. These are similar to rocks to the south-east that host the major Ernest Henry copper-gold mine.

The Roseby Schist is structurally juxtaposed with the Corella Formation across major faults. It consists of fine-grained and grey muscovite-quartz-biotite +/- scapolite schists (psammopelite) interbedded with carbonate-rich layers. The schists host the Project's 'copper-only' deposits. Within the top (west) of the Roseby Schist is the Dugald River Shale Member (carbonaceous zinc-rich slates) which hosts the Dugald River zinc-lead-silver deposit of 63 million tonnes at 12.5% zinc, 1.9% lead and 31g/t silver.

#### 1.2. Deposit geology



The copper deposits within the Project are of the IOCG style of hydrothermal mineralization. Significant examples of Australian IOCG deposits include Olympic Dam and Prominent Hill in South Australia and Ernest Henry, located some 60 kilometres from Little Eva.

Mineral deposits occurring within Mt Isa Province IOCG system are associated with relatively high temperature, iron-rich hydrothermal alteration (typically hematite or magnetite) which is both spatially and temporally related to felsic plutons. Mineralization can manifest in a variety of styles including vein networks, breccias, disseminations and replacements. Deposits are typically localised in dilation zones of structures active during pluton emplacement and cooling.

In the Eastern Mt Isa Inlier deposits are interpreted to have formed during the waning stages of the Isan Orogeny (1530-1495 million years) in association with intrusion of the Williams Naraku batholith suites. This is coincident with wrench reactivation of earlier large crustal scale faults, which saw dextral displacement on north-northwest trending transfer faults and some regional north-south structures suggesting northwest-southeast compression.

In the Project area, deposits fit into two categories, 'copper-gold' and 'copper-only'.

The Roseby copper-only deposits are a distinct metasediment-hosted stratabound mineralization style in the region unique to the Mount Roseby Schist. The Blackard deposit is currently the largest of the seven stratabound deposits defined along the eastern margin of the Knapdale Range.

The Blackard deposit is an epigenetic hydrothermal copper deposit hosted within calc-silicate/shaley-siltstone horizons of the Mount Roseby Schist. These sediments have been deformed into strongly developed, tight, sub-vertical to overturned isoclinal folds axes that are predominantly north-trending in the south, and northwestly trending in the north. Mineralization is typically sub-parallel to lithology and generally occurs in trough-like structures parallel to the anticlinal fold axis.

The main zones of mineralization generally strike north-south and dip 65° to the west of the fold axis. To the east of the anticlinal structure, mineralization within fresh rock is interpreted as dipping at 60° to the east. In the north, mineralization strike is predominantly north-northwest. In the central part of the deposit the eastern extents of the orebody have near horizontal dips, which may reflect the juxtaposition of two folds.

Deposit mineralization is is divided into four Zones: Oxide, Copper, Transition, and Copper Sulphide on the basis of contained copper mineralogy.

The deposit is capped by a completely weathered Oxide Zone that is typically 20 to 30 metres thick. Copper bearing minerals within the Oxide zone include malachite, azurite, cuprite, hydrobiotite and iron-copper complexes. The underlying partially oxidised Copper Zone is up to 120m thick and generally comprises native copper with lesser cuprite, hydrobiotite and chalcocite. The Copper Sulphide Zone is characterised



by unweathered bedrock, with copper contained within copper sulphide mineral species including hypogene chalcocite, bornite, and chalcopyrite. Native copper and hydrobiotite are absent from the Copper Sulphide Zone. Sulphide disseminations and clots are strongly associated with pervasive and veinlet carbonate alteration. An additional zone, the Transition Zone, is a narrow (1-15 metres thick) zone defined as mineralised material located above the top of fresh rock and below the base of native copper occurrence.

Extensive metallurgical testing has been completed, and average, projected metallurgical recoveries have been calculated for each zone. See 'Metallurgy' section for further details.

#### 2. METALLURGY

The Blackard deposit has been subject to extensive metallurgical testwork campaigns by Copper Mountain and previous owners. Test programmes have explored various flotation, gravity and leach methods for copper concentration. A combined total of 309 batch, locked cycle and pilot scale flotation tests have been completed with various grind sizes and reagent schemes.

Recent work by Copper Mountain has confirmed historical recovery testwork assumptions for the Mineral Resource Zones. Importantly, this work has confirmed that native copper contained within the Copper Zone is amenable to processing with a conventional flotation and gravity circuit similar to that currently used at a Canadian mine, processing a blend of sulphide and native copper ore types. It is anticipated that only minor modifications will be required to the currently planned Eva Project plant (see ASX/TSX announcements dated 5<sup>th</sup> October 2018).

The selected flotation-gravity flowsheet is anticipated to achieve a 63% copper recovery for a commercially saleable native copper concentrate from the Copper Zone.

Increased recoveries are achieved in the Transition Zone (77%) and the Copper Sulphide Zone (90%) reflecting the higher sulphide abundance. The Oxide Zone has poor recoveries and is currently regarded as waste rock.

#### 3. MINERAL RESOURCE ESTIMATE

#### 3.1. Overview

Recent and extensive metallurgical testing has defined recoveries for the different mineralogical zones within the Blackard deposit and together with completion of the 2019 drill program has resulted in an updated Mineral Resource Estimate. Measured and Indicated resources total 77 million tonnes grading 0.49% copper containing 836 million pounds of copper. The Inferred Resource is 19 million tonnes of 0.49% copper containing 206 million pounds of copper.



Copper Mountain is confident of 63% recovery from the upper Copper Zone (fine-grained native copper and chalcocite), 77% recovery for the Transition Zone, and 90% for the lower Copper Sulphide Zone (bornite, chalcocite and chalcopyrite).

#### 3.2. Estimation Methodology

Resource estimation was carried out in Vancouver, British Columbia using methods appropriate for the deposit characteristics and the probable style of mining operation. Further information is provided in the JORC (2012) Tables and throughout the announcement.

## 3.2.2 Drilling and Sampling

Resource Estimates were primarily based on reverse circulation and diamond drilling. Drilling was conducted by; CRAE 1978 to 1996, Bolnisi 2002 to 2003, Universal 2002 to 2010, Xstrata 2005 to 2011, Altona 2011 and Copper Mountain 2019. RC drilling typically utilised face sampling hammers (5  $\frac{1}{4}$ ", 5  $\frac{1}{2}$ " or 6") and diamond drilling mainly provided NQ or HQ core samples. Samples were routinely collected on 1 or 2 metre intervals. Where necessary, sub-standard data was excluded from the estimation process due to low sample quality, uncertain assay quality or poor recovery.

The majority of collar locations have been surveyed by licensed surveyors using a Differential Global Positioning System (DGPS) with approximately 0.1m or better horizontal accuracy. Elevation accuracy is considered to be within 0.5m. Downhole surveys have been completed using a variety of methods including down-hole cameras and gyroscopic surveying (gyro) systems, with a small number of holes having collar orientations only.

Drill spacing is deemed sufficient to establish geological and grade continuity appropriate for resource estimation and classification. Most of the drilling is systematically spaced with 20 to 30m spaced drill holes along 50m spaced sections. No bias related to drill hole orientation was detected within the data.

## 3.2.3 Assaying and Verification

Different commercial laboratories, with differing procedures, were employed over time by the various operators of the drilling campaigns.

Copper Mountain, Altona, Universal and Xstrata used ALS and SGS for routine drill sample analyses, with other laboratories used as required (Ammtec and Ultratrace). Samples were crushed and pulverised at the respective laboratories; base metals were assayed via standard multi-element methods; (acid digests with either AAS or ICP-AES/OES finishes). Samples reporting more than 1% copper were re-assayed using methods optimised for precision and accuracy at high concentrations. Gold was assayed via Fire Assay with either AAS or ICP-OES finishes or Aqua Regia Digest with AAS or ICP-MS finishes.



Copper Mountain, Altona, Universal, Xstrata and Bolnisi implemented and maintained a programme of quality control involving certified reference materials for both copper and gold, blank samples and duplicates to monitor accuracy and precision of the laboratory. Relevant QAQC data was reviewed internally by the Company and/or externally by independent consultants Optiro and McDonald Speijers. In each case the laboratory performance was appropriate, with only minor issues affecting very small percentages of the data.

## 3.2.4 Density Measurements

Average bulk density values for the different metallurgical zones were determined from over 618 historical data records including down-hole gamma-gamma well logs as well as measurements on core samples, sourced from a variety of companies and consultants. Copper Mountain completed 24 new bulk sample tests to confirm historic findings. Density values correlate well with lithology, alteration and the degree of weathering. Assigned values by material type are: Oxide Zone 2.08t/m³, Copper Zone 2.18t/m³, Transition Zone 2.36t/m³ and Sulphide Zone 2.5t/m³.

## 3.2.5 Data Management

Copper Mountain has standard operating procedures and protocols for the collection, recording and managing of all drilling and geological data that form the basis of the Mineral Resource Estimates. All drilling data has been validated and loaded into Maxwell GeoServices DataShedTM database system. Accordingly, data is consistent, complete, validated, secure and easily interrogated.

## 3.2.6 Geological Framework

The Blackard geological model is well supported by various datasets, including geochemical surface sampling, field mapping, aeromagnetic surveys, IP surveys, drill hole logging and sampling. Combined with a good understanding of regional geology, confidence in the geological framework supporting these Resource Estimates is moderate to high.

#### 3.3. Estimation

Mineral Resource estimates were completed in-house by qualified technical personnel.

A 5m x 5m x 5m block size was chosen to provide a reasonable size of mining unit while maintaining an appropriate degree of selectivity. The model was constrained by 3-dimensional geological domains. Drill hole sample data was composited to 2.5 metre downhole lengths. The deposit area was segregated into geological and/or structural domains and statistical and geostatistical properties of the estimation domains were then analysed which informed data treatment (top-cut analysis, or transformations) and search parameters. Unsampled areas in drill holes were assigned zero grade. A combination of both hard and soft boundaries was used during the interpolation process. Interpolation used an inverse distance squared, anisotropic weighting system. The deposit was subdivided into four metallurgical zones or



domains based on copper mineralogy and associated projected metallurgical recovery after grade interpolation based on the position of the block centroid relative to the metallurgical domain boundaries.

#### 3.4. Model validation

Considerable care was taken to examine the block model on section and plan to ensure block grades were representative of drill data and grade projections were reasonable. Model validation included wireframe versus block model volume comparison, average composite grade versus block model grade comparisons (statistics), and comparisons with previous, and current, alternative estimation methods.

#### 3.5. CLASSIFICATION

Mineral Resources have been classified on the basis of data density and grade continuity. Grade values are interpolated into the block model using anisotropic search ellipses in three passes with increasing search sizes. Measured, Indicated and Inferred classification is based on decreasing minimum number of composite values and informing drill-holes occurring within the interpolation search ellipse. Metallurgical recoveries were inserted into blocks based on mineralogical domain. An economically based, Whittle pit shell using a US\$3.50/lb copper price, predicted recoveries, and appropriate mining, milling and G&A costs was generated to constrain reported resources, and therefore Inferred resources are deemed to have a reasonable prospect of recovery.



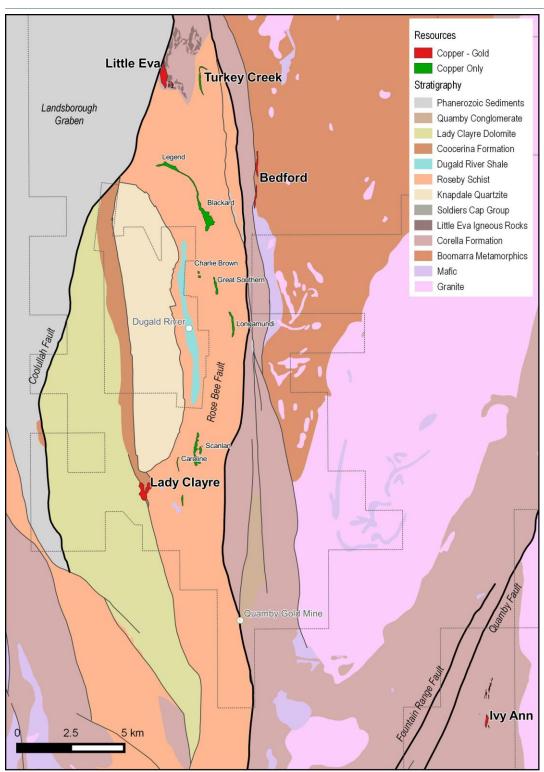


Figure 1: Eva Copper Project area geology, tenure and major deposits



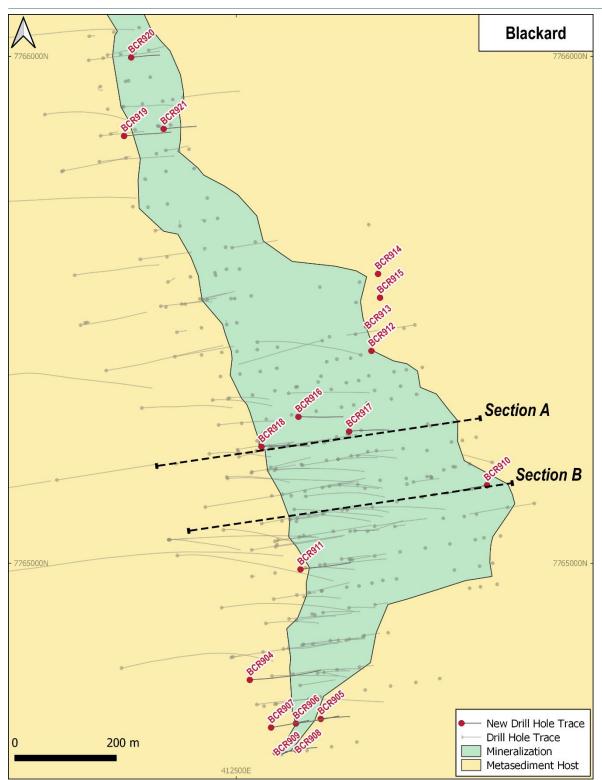


Figure 2: Blackard deposit mineralization plan and location of new exploration drill holes.



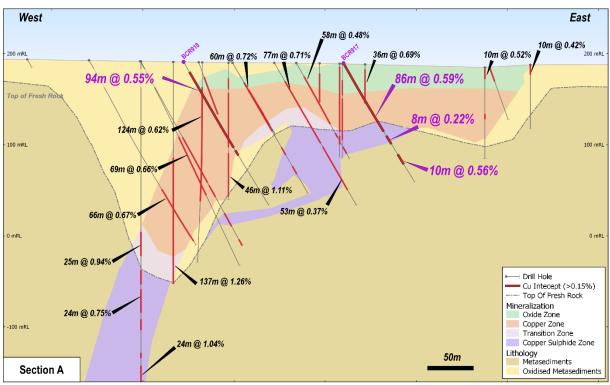


Figure 3: 'Section A' through the Blackard deposit with new drill holes BCR917 & BCR918 (see Figure for location)



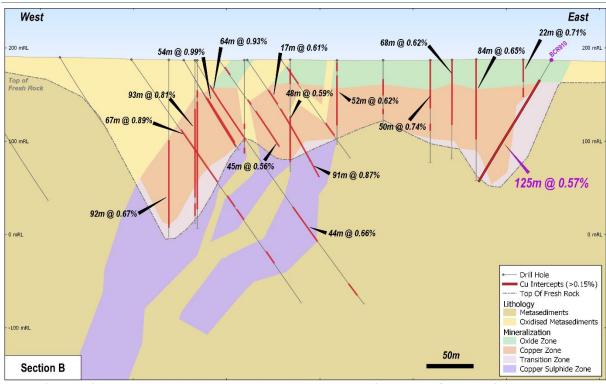


Figure 4 'Section B' through the Blackard deposit with new drill hole BCR910 (see Figure 2 for location)



#### PRIOR MINERAL RESOURCE AND ORE RESERVE DISCLOSURE

ASX Release Date	Title of ASX Release	Outline of Relevance
3 July 2012	15% Resource Upgrade at Roseby Project	Resource estimates for the Blackard and Scanlan deposits with relevant 2004 JORC Table 1.
2 August 2017	Updated DFS delivers Bigger and Better Cloncurry Copper Gold Project	Update of prior studies.

The company confirms that it is not aware of any new information or data that materially affects the information included in the previous market announcements. The company confirms that all material assumptions and technical parameters underpinning the Mineral Resource and Ore Reserve estimates in the previous market announcements continue to apply and have not materially changed. The company confirms that the form and context in which the Competent Person's findings are presented have not been materially modified.



## SECTIONS 1, 2 & 3 OF THE 2012 JORC CODE TABLE 1

The table below is a description of the assessment and reporting criteria used in reporting the Exploration Results and Mineral Resources that reflects those presented in Table 1 of The Australasian Code for the Reporting of Exploration Results, Mineral Resources and Ore Reserves (2012 edition).

Section 1: Sampling Techniques and Data

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Criteria	Commentary
Sampling techniques	<ul> <li>The Resource Estimate was primarily based on reverse circulation (RC) and diamond (DD) drilling. A minimal amount (4%) of percussion (PERC) drilling was included.</li> <li>The majority of drilling was conducted by six companies CRAE 1978 to 1996, Bolnisi 2002 to 2003, Universal 2002 to 2010, Xstrata 2005 to 2011, Altona Mining 2011 and Copper Mountain 2019.</li> <li>Samples were routinely collected on consecutive 2m or 1m intervals representative of the intersected geology.</li> <li>Approximately 2-4kg (1m interval) 4-8kg (2m interval) weights were obtained from each sample interval. Each sample was dried, crushed and pulverised to produce a representative charge for geochemical analysis.</li> <li>Copper Mountain, Altona, Universal, Xstrata and Bolnisi RC samples were collected directly using a cyclone and cone or triple deck riffle splitter. A small number of wet intervals were sub-sampled with a scoop or spear (4%).</li> <li>Copper Mountain Altona, Universal, Xstrata and Bolnisi DD core sampling was guided by geology, with quarter or half core submitted for analysis.</li> <li>CRAE sampling procedures are not available (~9% of total resource estimation dataset).</li> <li>Where necessary, sub-standard data was excluded from the estimation process due to low sample quality (e.g. costean, auger), assay quality (e.g. partial or incomplete).</li> </ul>
Drilling techniques	<ul> <li>RC holes were drilled using 5.375", 5.5", or 6" face sampling hammers.</li> <li>HQ and NQ core sizes were predominantly used in diamond drilling.</li> <li>Most oriented diamond core has been marked using inner tube inlaid systems such as 'Ezy-Mark'.</li> <li>The resource estimation dataset incorporates 294 RC, 85 DD and 17 PERC drillholes for a total of 59,103m.</li> <li>Drilling of RC and DD drillholes was completed by Copper Mountain 5%, Altona 7%,</li> </ul>
	Universal 38%, Xstrata 8%, Bolnisi 34% and CRAE 9% (holes).
Drill sample recovery	<ul> <li>In most drillholes DD core recovery was measured or RC sample recovery visually estimated.</li> <li>Recoveries are considered to be excellent averaging &gt;90%, and typically 100%. Lower recoveries were occasionally observed in the hole collars (top few metres).</li> </ul>



Criteria	Commentary
	<ul> <li>The majority of samples were recorded as dry or moist.</li> <li>Individual RC samples were collected into the cyclone prior to cone splitting.</li> <li>Cyclone and splitters were routinely cleaned to limit contamination.</li> <li>RC sample bias due to preferential loss/gain of fine/coarse material is considered within acceptable limits.</li> <li>Best practice methods were used for diamond coring to ensure the return of high quality core samples.</li> <li>Data on core and RC sample recovery from CRAE and Bolnisi drilling is largely unavailable.</li> </ul>
Logging	<ul> <li>Drillholes were logged by geologists at the rig (RC) or at local central exploration hubs (DD) using company standard logging procedures.</li> <li>Logging was qualitative and quantitative including a combination of colour, lithology, mineralization, alteration, sulphide and oxide mineralogy, sulphide and oxide amount, texture, grain size and structure.</li> <li>Copper Mountain, Universal, Xstrata and Altona utilised digitial logging systems. Earlier drilling was logged onto paper and transferred to a digital form for loading into the database.</li> <li>Geotechnical logging was completed for select diamond core.</li> <li>Representative drill core and RC chips have been retained.</li> <li>Geological logging was routinely carried out on resource drill holes.</li> </ul>
Sub-sampling techniques and sample preparation	<ul> <li>RC chip samples were typically split at an 87.5%: 12.5% ratio using cyclone and cone or riffle splitter to obtain a ~2-4kg sub-sample for analysis. Occasional wet intervals were sub-sampled using a scoop or spear (4%).</li> <li>DD core intervals were halved or quartered to produce sub-samples for analysis.</li> <li>CRAE sampling procedures are not available (~9% of total resource drilling).</li> <li>Samples were sent to extenal laboratories for sample preparation and analysis. All were large independent certified commercial laboratories that use industry standard preparation including drying, crushing and pulverisation.</li> <li>Typical sub-sample sizes &gt;2kg are considered representative for typical copper mineralization in the Project area.</li> <li>For RC chips, field duplicate preparation involved riffle splitting of calico bag or bulk RC samples. For DD core, field duplicate preparation involved splitting of core sub-samples.</li> <li>Duplicate data displays acceptable accuracy and precision.</li> <li>Duplicates were typically collected at a ~1:20 ratio. Bolnisi and Universal collected duplicates at a ~1:40 ratio from 2002 to 2006. Duplicate data is unavailable for CRAE and Bolnisi drilling.</li> </ul>
Quality of assay data	<ul> <li>Different commercial laboratories, analytical methods and QAQC procedures were employed by different operators of the various drilling campaigns over the last 40 years.</li> </ul>



Criteria	Commentary
and laboratory	Copper Mountain, Altona, Universal and Xstrata utilised ALS and SGS for routine
tests	drill sample analyses, with other laboratories used as required (Ammtec and
	Ultratrace).
	Samples were dried, crushed and pulverised at the respective laboratories; base
	metals were assayed via standard multi-element methods (acid digests with either
	AAS or ICP-AES/OES finishes with samples reporting at more than 1% copper re-
	assayed using ore grade methods optimised for precision and accuracy at high
	concentrations); and, gold via Fire Assay (either AAS or ICP-OES finishes or Aqua
	Regia Digest with AAS or ICP-MS finishes).
	Copper Mountain, Altona, Universal and Xstrata implemented and maintained a  programme of quality control involving field duplicates, blanks and contified
	programme of quality control involving field duplicates, blanks and certified reference materials (CRMs) for copper and gold, to monitor laboratory accuracy and
	precision for each sample batch. The CRM expected analyte grades were unknown
	to the laboratory at the time of testing. Duplicates and CRMs for copper and gold
	were typically inserted into the sampling sequence at a ~1:20 ratio, with Blanks
	inserted at a ~1:40 ratio.
	Bolnisi utilised duplicates and copper CRMs inserted at a ~1:40 ratio.
	Information regarding QAQC by CRAE is not available (26% of total resource)
	drilling). Hard copy records show that CRMs were inserted at various intervals,
	however no record was retained of CRM specifications.
	Reviews of QAQC datasets were reported routinely by Altona's database
	administrator.
	For each resource estimate the relevent QAQC data was reviewed internally by  Copper Mountain, Alterna and/or systemally by independent consultants Optins. In
	Copper Mountain, Altona and/or externally by independent consultants Optiro. In each case the performance of the standards and blanks was appropriate, with only
	minor issues affecting very small percentages of the data.
	No geophysical tools were used to determine the results reported here.
	Sample batches contained a total of 495 blank, 1,156 CRM and 1,471 duplicate
	samples.
	Secondary laboratory umpire checks were completed on 460 samples.
	The resource estimation dataset comprises 35,503 drill sample analyses.
Verification of	Significant intersections were not selectively sampled.
sampling and	Assay validation checks have been completed at multiple stages through resource
assaying	development.
	Field sample logs were collected using paper ledgers or laptops. Sample logs were
	uploaded into the company Datashed database and validated by company database personnel.
	Assay files were mainly received in digital format from Laboratories. Historic paper
	delivered assay results have been retained in hard copy format and/or converted to
	scanned digital versions. Subpopulations of historic database records have been



verified against original paper records.
Data was uploaded into the Altona Datashed database and validated by company database personnel. No manual data inserts took place.
No adjustments have been applied to the results.  DD holes have been twinned with RC holes. In general comparison of results between twin holes is acceptable, although some variation exists in the tenor and location of mineralization. In most cases this can reasonably be attributed to differences in downhole deviation, survey issues and/or small scale variability consistent with the observed and modelled geological variability. In isolated cases
diamond drilling suggests thin, high grade material may be reflected as broader, moderate tenor mineralised zones in RC twin holes.
The majority of collar locations have been surveyed by licensed surveyors or Altona personel using a Differential Global Positioning System (DGPS) with approximately 0.1m or better horizontal accuracy. Elevation accuracy is considered to be less than 0.5m.
Downhole surveys have been completed using a variety of methods including downhole cameras and gyroscopic surveying (gyro) systems, with a minority of holes having collar orientations only.
Drillhole data and resource models utilise the GDA94 MGA Zone 54 Grid.  The DTM was constructed from 1m contour data derived from high resolution airborne radar altimetry (50m line spacing).
~82% of drillhole collars were surveyed by licenced surveyors using DGPS or by traditional surveying methods with ≤3m horizontal accuracy. ~18% of holes were located by GPS. Several holes had no survey method recorded.
42% of holes have no downhole survey, with only a compass survey at the drillhole collar. The majority of these holes are vertical. 0.3% of holes have no downhole survey, with only a nominal (planned) collar survey. 56% have magnetic downhole camera surveys, usually at 10m or 30m intervals. 2% of drillholes have downhole Gyro surveys at 5m intervals.
Drill spacing is deemed sufficient to establish geological and grade continuity appropriate for resource estimation and classification applied.
Drilling has typically been completed at 20m to 40m intervals along 50m spaced east-west sections (Local Grid).
35% of the drilling is oriented east along section at -55° to -70° dip, 62% is subvertical, 2% is oriented west along section at -65° to -70° dip and 1% is oriented in other directions.
The majority of samples were collected at 2m downhole intervals (~58%).
No bias in grade values was detected in drill hole orientation.
Drill sections are normal to the strike of mineralization.  The dip of the mineralization varies from 65° west to subhorizontal. Local grade



Criteria	Commentary
geological structure	continuity follows the dip of the mineralization. Most of the drill holes intersect mineralization at 60° to 90° angles and true widths are estimated to vary from 80-100% of downhole intercepts.
Sample security	<ul> <li>Samples were collected into numbered calico bags at the drill site during the drilling operation. Unique sample numbers were retained during the whole process. Current procedures use pre-numbered bags.</li> <li>Samples were transported to the Company depot at the end of each working day and secured.</li> <li>All samples were then catalogued and sealed prior to dispatch. Samples were delivered to laboratories as they were collected using reputable commercial freight companies.</li> </ul>
Audits or reviews	<ul> <li>QA/QC samples were routinely monitored by the database manager and geologist on a batch and campaign basis. The accuracy of key elements such Cu and Au was acceptable and the field duplicate assay data was unbiased and shows an acceptable level of precision.</li> <li>A comprehensive audit of sampling, assaying and QAQC procedures used by Universal was carried out by independent consultants (McDonald Speijers) in 2006 with no significant adverse findings.</li> <li>QAQC procedures were assessed as part of a broader review of Altona's assets carried out by independent consultants (Optiro) in 2009. With the exception of the early work by CRAE which is poorly documented, procedures employed were found to meet acceptable industry standards.</li> </ul>



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

Criteria	Commentary
Mineral tenement and land tenure status	<ul> <li>The Blackard deposit sits within Mining Lease ("ML") 90164. ML90164 was granted in late 2012 and remains in good standing.</li> <li>No joint ventures apply.</li> <li>There are agreements in place with the native title holders, the Kalkadoon people, and with landholders.</li> <li>No significant historic sites or national parks are located within the reported exploration sites.</li> </ul>
Exploration done by other parties	<ul> <li>Extensive exploration, resource, metallurgy and geotechnical drilling has been completed throughout the Blackard deposit area by previous owners Altona Mining, Universal Resources, Xstrata, Bolnisi and CRAE.</li> </ul>
Geology	<ul> <li>The Blackard deposit is an epigenetic hydrothermal copper deposit hosted within calc-silicate/shaley-siltstone horizons of the Mount Roseby Schist. These sediments have been subject to strongly developed tight sub vertical to overturned isoclinal folds axes are predominantly north-trending in the south and trend northwest in the north. Mineralization is typically sub-parallel to lithology and generally occurs in trough-like structures parallel to the anticlinal fold axis.</li> <li>The main zones of mineralization generally strike north-south and dip 65° to the west of the fold axis. To the east of the anticlinal structure, mineralization within fresh rock is interpreted as dipping at 60° to the east. In the north, mineralization strike is predominantly north-northwest. In the central part of the deposit the eastern extents of the orebody have near horizontal dips, which may reflect the juxtaposition of 2 trough-like structures.</li> <li>Deposit mineralization is split into four components: Oxide Zone, Copper Zone, Transition Zone &amp; Copper Sulphide Zone.</li> <li>The Oxide zone typically contains malachite, azurite, cuprite and goethite. The Copper Zone generally comprises native copper mineralization with lesser cuprite and chalcocite. The Copper Sulphide Zone is characterised by the disappearance of native copper and the appearance of continuous copper sulphides in the form of hypogene chalcocite, bornite &amp; Chalcopyrite. Sulphide disseminations and clots are strongly associated with pervasive and veinlet carbonate alteration. An additional fourth zone, the Transition Zone, is defined as mineralised material located above the top of fresh rock and below the base of native copper occurrence.</li> </ul>
Drill hole Information	<ul> <li>Collar locations, elevations, azimuth, dip and lengths are presented in Error!     Reference source not found. of this release.</li> <li>Down hole intercept widths of the mineralization are presented in Error! Reference source not found. of this release.</li> </ul>



Criteria	Commentary
Data aggregation methods	<ul> <li>Standard intercepts were calculated using a 0.15% and 0.3% copper cut off. A minimum of 4m intercepts are reported here and narrower intercepts equivalent to or better than 4m at 0.3% copper. Typically, a maximum of consecutive 4 metres of below 0.3% or 0.1% internal dilution was allowed within each intercept for intercepts reported at the two lower cut-offs.</li> <li>No metal equivalent values are reported.</li> </ul>
Relationship between mineralization widths and intercept lengths	<ul> <li>Drilling was planned to approximately perpendicular to the strike and dip of mineralization.</li> <li>Where the deposit is modelled to dip towards the west, drilling was completed by drilling towards the east. In areas interpreted to have shallow or flat dipping mineralization, vertical drill holes were completed.</li> </ul>
Diagrams	Please refer to figures and tables throughout announcement.
Balanced reporting	The table of significant intercepts presents all significant results using the criteria described above. In cases where no significant intercepts were encountered, this is stated.
Other substantive exploration data	<ul> <li>New flotation and gravity metallurgy work discussed in this announcement included a series of bench top and bulk scale tests using a variety of grind sizes and reagent schemes.</li> <li>Tests were completed by Copper Mountain and independent laboratories ALS Ammtec, Gekko Systems</li> <li>Tests were completed upon archived drill core samples stored at Copper Mountain's Cloncurry site or ALS Ammtec in Perth (Australia).</li> <li>Samples were selected to maximise spatial coverage within the deposit.</li> <li>Sample composites were generated from material exclusively within the modelled mineralised zones.</li> <li>Elemental abundance was analysed using industry standard laboratory techniques.</li> </ul>
Further work	Future work will include additional drilling, metallurgy and other activities associated with definition of Mineral Resources and Ore Reserves.

# **Section 3: Estimation and Reporting of Mineral Resources**

Criteria	Explanation
Database	All drilling data has been validated and loaded into Maxwell GeoServices
integrity	DataShedTM database system.



	<ul> <li>Prior to 2006 drill data was logged into field sheets which were subsequently entered into the data system. Since 2006, data has been directly logged into a digital logging system and uploaded to the database.</li> <li>Laboratory data has been received in digital format and uploaded directly into the database and subsequently validated.</li> <li>Accordingly, data is consistent, complete, validated, secure and easily interrogated. Assay and geological data were transferred and loaded into GEMCOM for modelling and resource estimation.</li> </ul>
Site visits	The Competent Person is an employee of Copper Mountain Mining (12 years) and is responsible for resource estimations at the Copper Mountain mine as well as other project areas and last visited the Blackard site in 2015.
Geological interpretation	The geological model for the Blackard deposit is based on lithological and structural data included in the drill hole database. Mineralization is predominately stratabound and favourable strata occurs in gently plunging fold hinge with some localized disruption by faults.
Dimensions	<ul> <li>Mineralization occurs over a north-south strike length of 1,900m, and varies from approximately 500m to 50m wide in an east-west orientation. The vertical dimension achieves a maximum of more than 300m.</li> </ul>
Data and drill- hole spacing	<ul> <li>Drill hole data base contains 397 holes comprised of 17 percussion holes, 293 reverse circulation holes and 87 core holes, collectively totalling 60,600m.</li> <li>Drill holes are typically spaced at 20-40m along 50m spaced section lines oriented at 81° from GDA94-MGA54 national grid.</li> <li>Orientation of the drill holes is typically either vertical and/or dipping approximately normal to the interpreted dip direction of the mineralization.</li> </ul>
Estimation and modelling techniques	<ul> <li>Estimation was performed in GEMCOM software. Interpolation within the block model was by inverse distance squared anisotropic weighting using a flattened elliptical search, with elongation in the strike (maximum continuity) direction and dips parallel to host stratigraphy. Grade is interpolated into 5m cubic blocks from 2.5m drill hole composites. Interpolation is conducted in three passes with increasing search radii and decreasing requirements for number of composites and informing drill holes for Measured, Indicated and Inferred categories. The maximum and minimum number of informing composites are set that so that at least a minimum of 7 composites from at least 3 holes are required for the Measured category; a minimum of 5 and 3 composites from at least 2 holes are required for Indicated and Inferred categories, respectively.</li> <li>There are no deleterious elements known to occur within the deposit.</li> <li>The deposit is divided into four mineralogical zones; an upper oxide zone (considered to be waste), a copper zone containing native copper, and lesser chalcocite; a narrow transition zone containing a mix of native and sulphide copper minerals; and then a copper sulphide zone containing hypogene chalcocite, bornite and minor chalcopyrite. During interpolation the oxide zone boundary was "hard" whereas the boundaries between the other zones were "soft". Different metallurgical recoveries are assigned to each zone based on extensive metallurgical testing.</li> </ul>



	The resource block model was compared to drill hole composites in plan and section to determine reasonable representation of data. Different interpolation methods were compared to one another with results reflecting the normal range of values expected between methods. The proportion of blocks in different grade ranges were compared to a summary of drill hole lengths at the same grade ranges to confirm that the interpolation reflected the actual data distribution for Measured and Indicated categories.
Moisture	<ul> <li>Tonnages are estimated on a dry basis. Moisture is not deemed to have a significant effect on estimation.</li> </ul>
Cut-off parameters	<ul> <li>Resources are reported at various copper only cut-off grades which is determined by the NSR value of ore based on metal price, anticipated processing costs and metallurgical recoveries. Cut-off grades are 0.23%, 0.19% and 0.17% Cu for the Copper Zone, Transition Zone and Copper Sulphide zone, respectively.</li> </ul>
Mining factors or assumptions	Truck and shovel open-pit mining on 5 or 10m benches is assumed. Costs associated with mining (US\$2.01/t), processing and G&A (US\$9.20/t milled), as well as metallurgical recoveries were included in generation of the constraining Whittle pit shell done at US\$3.50/lb Cu.
Metallurgical factors or assumptions	Allocated recoveries were 0%, 63%, 77.5% and 90% for the oxide zone, copper zone, transitional zone and copper sulphide zones, respectively.
Environmental factors or assumptions	No environmental factors were considered for this resource estimate.
Bulk density	<ul> <li>Assigned density rock density values for mineralised zones are consistent with the previously published 2012 Blackard Resource Model.</li> <li>Average bulk density values for the different metallurgical zones were determined from over 618 historical data records sourced from a variety of companies and consultants.</li> <li>Copper Mountain completed 24 new bulk sample tests to confirm historic findings. Density values correlate well with lithology, alteration and the degree of weathering.</li> <li>Methods used for measuring bulk density include down-hole gamma-gamma well logs and direct measurement density from whole HQ core samples using the Archimedes principle.</li> <li>Assigned values by material type are: Oxide Zone 2.08t/m³, Copper Zone 2.18t/m³, Transition Zone 2.36t/m³ and Sulphide Zone 2.5t/m³.</li> </ul>
Classification	Resources have been classified in accordance with Canadian NI:43-101 and JORC Code (2012 ed) definitions.
Audits or reviews	There have been no external audits or reviews of the resource estimate at this stage, however the current estimate is in line with previous estimates by external consultants



D	iscussion of	The competent person considers the global resource estimate to be a good
re	elative	representation of mineable tonnes and grade using appropriate mining methods.
	ccuracy/	The relative accuracy of the estimate is reflected by the resource classification.
C	onfidence	

Abbreviations:

DGPS – Differential Global Positioning System; IOCG – Iron-Oxide-Copper-Gold; SMU – Selective Mining Unit; RC – Reverse Circulation; RAB – Rotary Air Blast; PERC – Percussion; AC – Air Core; RDH – Rotary; DD – Diamond; EA – Environmental Authority