

# Significant Increase in Mineral Resources at SOZ, Mineral Hill

- The Mineral Resource Estimate (MRE) at SOZ, Mineral Hill, has significantly increased to 3.8Mt @ 1.29g/t Au, 19.2g/t Ag, 0.9% Cu, 1.6% Pb and 1.4% Zn.
- This represents a 114% increase in total tonnage and increases of 54% and 64% in contained gold and copper respectively.
- Key updates from the previous estimate include a considerably better understanding of the geological controls, refined geology interpretations and the use of a \$50/t net smelter return reporting cut-off.
- The new MRE will assist in identifying additional targets for potential resource expansion, as well as optimising the underground production schedule as part of Kingston's overall fiveyear mine plan which is currently being developed.

Kingston Resources Limited (ASX: KSN) (Kingston or the Company) has produced an update Mineral Resource Estimate (MRE) for the Southern Ore Zone (SOZ) at the Mineral Hill Mine. This is a major advancement for the company and marks the first update of Mineral Resources since the asset was acquired in January 2022. This type of work at Mineral Hill is continuing to reveal the potential value that can be created from modern and thorough technical work.

The updated MRE for SOZ is shown in Table 1. Total Resources have increased substantially compared to the May 2016 estimation, with 114% increase in total tonnage, 54% in contained gold and 64% contained copper. Contained silver, lead and zinc have also increased by 131%, 175% and 193% respectively.

Table 1: Southern Ore Zone (SOZ) Mineral Resource Estimation, November 2022.

	Tonnage		Grade				Metal				
Resource Category	(Kt)	Au (g/t)	Ag (g/t)	Cu %	Pb %	Zn %	Au (koz)	Ag (koz)	Cu (kt)	Pb (kt)	Zn (kt)
Measured	228	2.11	10.9	1.3%	0.5%	0.3%	15.5	80	3,000	1,200	700
Indicated	1,622	1.28	19.9	1.0%	1.8%	1.5%	66.8	1,038	16,200	28,500	24,200
Inferred	1,954	1.20	20.0	0.7%	1.6%	1.5%	75.4	1,256	14,500	30,500	28,900
Total	3,804	1.29	19.2	0.9%	1.6%	1.4%	157.6	2,349	33,600	60,200	53,800

#### Kingston Resources Managing Director, Andrew Corbett, said:

"This updated Resource for SOZ provides insight into what's possible at Mineral Hill in terms of maximising value. We are making rapid progress on delivering our five-year plan and this MRE is another milestone towards that outcome. This work has created huge excitement about the potential of transitioning to open pit and/or underground mine production in the near term to deliver a significant impact on Australia's critical minerals output.







SOZ contributes significantly to our Mineral Resource base in terms of tonnage, grade and metal. We also have other deposits within our Mineral Hill pipeline that have significant potential to grow the company. Our strategy will be to continue adding resource updates to feed into our five-year mine plan, while exploring other undeveloped sites within our land package to ensure Mineral Hill has access to high-quality gold and copper resources now and into the future.

Our team is dedicated to creating long-term returns for shareholders by continuously looking for new opportunities to create additional value for shareholders."

Key updates in the current MRE include refined geology interpretations and the use of a \$50/t net smelter return reporting cutoff. The previous MRE for SOZ used a 1.5% CuEq reporting cutoff. The updated metrics proved a better reflection of the reasonable prospects for economic extraction given the current critical minerals landscape.

Figure 1 shows the location of SOZ in relation to the surface infrastructure at Mineral Hill. Mining was historically undertaken using underground drive development and long-hole stoping. The mineralisation at SOZ comprises an epithermal polymetallic vein and breccia system hosted within the Late Silurian to Early Devonian Mineral Hill Volcanics. The mineralised breccias are sub-parallel and en-echelon, generally dipping 65° to the west at over 500m of strike. Mineralisation currently extends from 150m to 300m depth below surface. The deposit is open at depth and along strike.

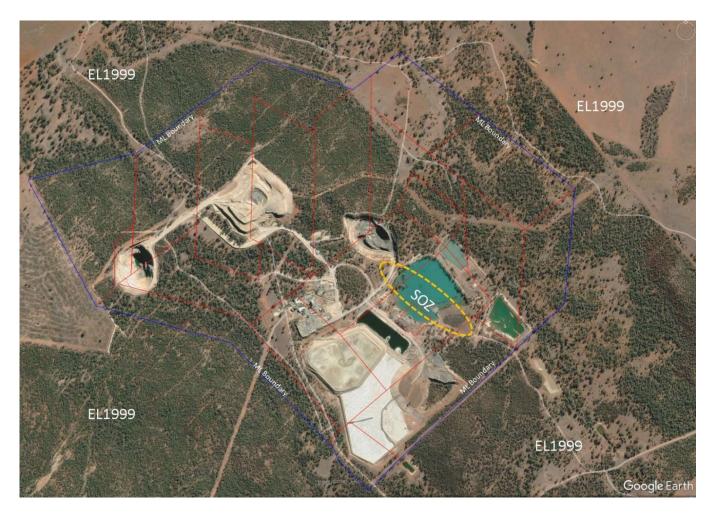


Figure 1: Mineral Mill Mine- Mining Lease areas with surface projection of the location of Southern Ore Zone deposit



Lodes identified as A (most eastern), B and C commonly occur as breccias, composed of volcanic wall rock and older quartz-sulphide vein fragments set in a silica and sulphide matrix and locally containing massive sulphide. Lodes D, G and H are dominantly copper-gold bearing and lead-zinc poor. Figure 2 shows an oblique section with the interpreted lodes and existing underground development.

Recent drilling highlights at SOZ include:

- 39m @ 1.1% Cu, 0.7% Pb, 0.8% Zn, 0.93g/t Au, 12g/t Ag from 161m; and
- 9.8m @ 4.22g/t Au, 0.7% Cu, 3.2% Pb, 3.2% Zn, 30g/t Ag from 166m<sup>1</sup>.

Kingston is targeting the re-establishment of mining at SOZ underground, leveraging the existing decline development and infrastructure for a low-cost restart.

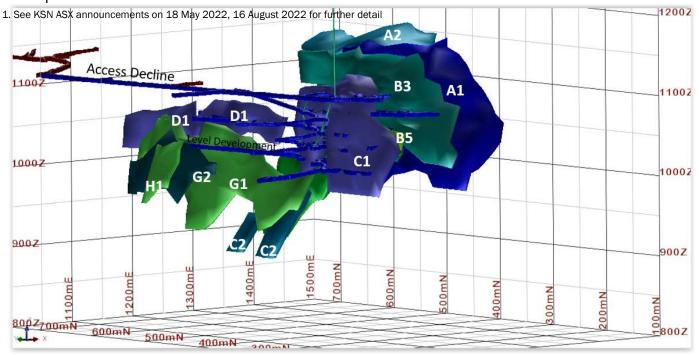


Figure 2: Oblique View showing interpreted domains

#### Kingston Resources Chief Geologist, Stuart Hayward, said:

"This MRE update is significant for the company, as it marks the first release of an estimate we have ownership over directly as a technical team. SOZ continues to have huge potential for extending our five-year mine development plan. Our team is working hard to continue building our knowledge and confidence of this outstanding mineral system, which we look forward to sharing with the market as soon as it gets finalised."

#### **Next Steps**

With the SOZ MRE updated, our mining engineering team will use this to develop a production target and Mineral Ore Reserve. Subsequently, we aim to re-enter the underground workings and complete underground drilling to infill and extend the mineralisation.



This release has been authorised by the Kingston Resources Limited Board. For all enquiries please contact Managing Director, Andrew Corbett, on +61 2 8021 7492.

#### **About Kingston Resources**

Kingston Resources is a gold producer, focused on building a mid-tier gold and base metals company, with current production from the Mineral Hill gold and copper mine in NSW, and advancing its development asset, the 3.8Moz Misima Gold Project in PNG.

Mineral Hill is a gold and copper mine located in the Cobar Basin of NSW. Alongside current production, exploration is focusing on near mine production opportunities from both open pit and underground targets located on the existing MLs. The aim will be to expand and update the existing Resource base to underpin mine feasibility work and approvals to ensure an immediate transition to open pit and/or underground feed at the completion of the tailings reprocessing.

Misima hosts a JORC Resource of 3.8Moz Au and an Ore Reserve of 1.73Moz. Misima was operated as a profitable open pit mine by Placer Pacific between 1989 and 2001, producing over 3.7Moz before it was closed when the gold price was below US\$300/oz. The Misima Project also offers outstanding potential for additional resource growth through exploration success targeting extensions and additions to the current Resource base. Kingston's interest in Misima is held through its PNG subsidiary Gallipoli Exploration (PNG) Limited.

The Misima Mineral Resource and Ore Reserve estimate outlined below was released in ASX announcements on 24 November 2020, 15 September 2021 and 6 June 2022. Further information is included within the original announcements.

#### Misima JORC 2012 Mineral Resource & Ore Reserve summary table

Resource Category	Cut-off (g/t Au)	Tonnes (Mt)	Gold Grade (g/t Au)	Silver Grade (g/t Ag)	Au (Moz)	Ag (Moz)
Indicated	0.3	97.7	0.79	4.3	2.5	13.4
Inferred	0.3	71.3	0.59	3.8	1.4	8.7
Total	0.3	169	0.71	4.1	3.8	22.1
Reserve	Cut-off (g/t Au)	Tonnes (Mt)	Gold Grade (g/t Au)	Silver Grade (g/t Ag)	Au (Moz)	Ag (Moz)
Probable	0.3	75.6	0.79	4.2	1.73	4.1

#### Mineral Hill JORC 2012 & JORC 2004 Mineral Resource & Ore Reserve summary table

Resource	Tonnes	Au	Ag	Cu	Pb	Zn	Au	Ag	Cu	Pb	Zn
Category	(kt)	(g/t)	(g/t)	%	%	%	(koz)	(koz)	(kt)	(kt)	(kt)
Measured	228	2.11	11	1.3%	0.5%	0.3%	59	904	5.9	3	2
Indicated	4,974	1.01	26	0.8%	1.3%	0.8%	134	3,126	30.1	49.7	25.1
Inferred	2,076	1.21	20	0.7%	1.5%	1.5%	36	438	8	9	8
Total	7,278	1.10	24	0.8%	1.4%	1.0%	258	5,516	57	100	71
Reserve	Tonnes	Au	Ag	Cu	Pb	Zn	Au	Ag	Cu	Pb	Zn
Reserve	(kt)	(g/t)	(g/t)	%	%	%	(koz)	(koz)	(kt)	(kt)	(kt)
Proved	55	2.30	17.0				4	31			
Probable	2,017	1.38	4.9				67	315			
Total	2,072	1.41	5.2				71	346			

#### **Competent Persons Statement and Disclaimer**

The information in this report that relates to Exploration Results and Mineral Resources is based on information compiled by Mr. Stuart Hayward BAppSc (Geology) MAIG, a Competent Person who is a member of the Australian Institute of Geoscientists. Mr. Hayward is an employee of the Company. Mr. Hayward has sufficient experience that is relevant to the style of mineralisation and type of deposit under consideration and to the activity being undertaken to qualify as a Competent Person as defined in the 2012 Edition of the "Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves". Mr. Hayward confirms that the information in the market announcement provided is an accurate representation of the available data and studies for the material mining project and consents to the inclusion in this report of the matters based upon the information in the form and context in which it appears.

The Competent Person signing off on the overall Misima Ore Reserves Estimate is Mr John Wyche BE (Min Hon), of Australian Mine Design and Development Pty Ltd, who is a Fellow of the Australasian Institute of Mining and Metallurgy and who has sufficient relevant experience in operations and consulting for open pit metalliferous mines. Mr Wyche consents to the inclusion in this report of the matters based upon the information in the form and context in which it appears.

Kingston confirms that it is not aware of any new information or data that materially affects the information included in all ASX announcements referenced in this release, and that all material assumptions and technical parameters underpinning the estimates in these announcements continue to apply and have not materially changed.

www.kingstonresources.com.au



## **Mineral Hill Mine**

# Southern Ore Zone Mineral Resource Estimation

## **24 November 2022**

Prepared by

Kingston Resources Limited

Authors:

Mineral Resource Stuart Hayward (Kingston)
Mineral Resource Ian Taylor (Mining Associates)

Effective Date: 24 November 2022 Submitted Date: 24 November 2022





#### **Executive Summary**

The Southern Ore Zone (SOZ) (32°34'45" S and 146°59'00"E) is one of the deposits identified within Kingston Resources' Mineral Hill Project. The Mineral Hill Project is located in New South Wales of Australia, 60 km north of Condobolin. The SOZ deposit lies within several small mining leases.

Mining Associates Pty Ltd ("MA") was commissioned by Kingston Resources. ("KSN", or the "Company"), a mineral exploration and development company currently listed on the Australian Stock Exchange ("ASX"), to prepare a Mineral Resource Estimate ("MRE") and Technical Report on the SOZ deposit.

Based on the reported study, the mineral resource estimate of the SOZ Deposit has portions classified as Measured, Indicated and Inferred Mineral Resource according to the definitions outlined in JORC (2012). Confidence and classification regarding the grade estimates are based on several factors including, but not limited to, sample and drill spacing relative to geological and geostatistical observations, the continuity of mineralisation, historical surface mining, bulk density determinations, accuracy of drill collar locations and quality of the assay data.

The deposit lies approximately 150 m below the surface and is considered amenable to underground development the deposit has been reported above a Net Value per tonne (or Net Smelter Return) over \$50. The NSR considers the concentrate grade, processing costs and metallurgical recoveries, payables and deductions of copper, lead, zinc, gold and silver.

Table 1. SOZ Mineral Resource Summary (> \$50 NSR)

	Tonnage			Grade					Metal		
Resource Category	(Kt)	Au (g/t)	Ag (g/t)	Cu %	Pb %	Zn %	Au (koz)	Ag (koz)	Cu (kt)	Pb (kt)	Zn (kt)
Me asure d	228	2.11	10.9	1.3%	0.5%	0.3%	15.5	80	3,000	1,200	700
Indicate d	1,622	1.28	19.9	1.0%	1.8%	1.5%	66.8	1,038	16,200	28,500	24,200
Inferred	1,954	1.20	20.0	0.7%	1.6%	1.5%	75.4	1,256	14,500	30,500	28,900
Total	3,804	1.29	19.2	0.9%	1.6%	1.4%	157.6	2,349	33,600	60,200	53,800

<sup>\*</sup> Due to rounding to appropriate significant figures, minor discrepancies may occur, tonnages are dry metric tonnes.

Mineral Resources are not Ore Reserves and do not have demonstrated economic viability.

Inferred resource have less geological confidence than Measured or Indicated resources and should not have modifying factors applied to them. It is reasonable to expect that with further exploration most of the inferred resources could be upgraded to indicated resources.

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#### 1 SCOPE

The Southern Ore Zone Mineral Resource refers to a series of en-echelon mineralised structures that make up the Southern Ore Zone at Mineral Hill.

This report is not an update of any other Resources or Reserves at Mineral Hill.

#### 2 CONTRIBUTING PERSONS

The November 24<sup>th</sup> Southern Ore Zone Mineral Resource Statement is prepared by Mr Stuart Hayward (Kingston) and Mr Ian Taylor (Mining Associates) and is supported by contributions from the persons listed in Table 3.

#### 3 ACCORD WITH JORC CODE 2012

This Mineral Resource Statement has been prepared in accordance with the guidelines of the Australasian Code for the Reporting of Resources and Reserves 2012 Edition (the JORC Code 2012).

The work reported here was undertaken by Ian Taylor, FAusIMM (CP), and assessed by Stuart Hayward, MAIG. Mr Taylor is a full-time employee of MA, Mr Haywood is a full-time employee of Kingston Resources. Mr Haywood is a Member of the Australian Institute of Geoscientists and has sufficient experience which is relevant to the style of mineralisation and type of deposit under consideration to qualify as a Competent Person in terms of JORC standards for resource estimation.

#### 4 MINERAL RESOURCE SUMMARY

The Mineral Resources Estimate is summarised in Table 2.

	Tonnage			Grade					Metal		
Resource Category	(Kt)	Au (g/t)	Ag (g/t)	Cu %	Pb %	Zn %	Au (koz)	Ag (koz)	Cu (kt)	Pb (kt)	Zn (kt)
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Table 2 Southern Ore Zone Mineral Resource Estimate





Expert Person/Company	Area of Expertise	References / Information Supplied
Stuart Hayward Kingston Resources Limited	Geology and Mineral Resource Estimation	CP; Geology model and Mineral Resource Estimate
lan Taylor Mining Associates	Geology and Mineral Resource Estimation	Validation and verification of geological interpretation and spatial data inputs; Mineral Resource Estimate; Mineral resource estimation document
Darin Rowley Kingston Resources Limited	Data compilation and validation; geological interpretation and 3D modelling	Validate drill hole data set; 3D wireframe interpretation of mineralised lodes and mineral system extents;
Geoff Merrell Kingston Resources Limited	Geology, mining and mineral processing	Geology model review; Lode specific metallurgy recovery parameters from historical production data as input to NSR Script
John Wyche AMDAD	Mining engineering and design	NSR scripting for calculation and application of NSR to block model

Table 3 Contributing Experts

The contributing experts listed above are responsible for elements of the Mineral Resource or Modifying Factors.





#### 5 PROJECT DESCRIPTION

#### 5.1 Location

The Mineral Hill Mine is located 60km north of Condobolin in central western New South Wales (**Error! Reference source not found.**). The project sits within contiguous granted and fully permitted Mining Leases (**Error! Reference source not found.**).

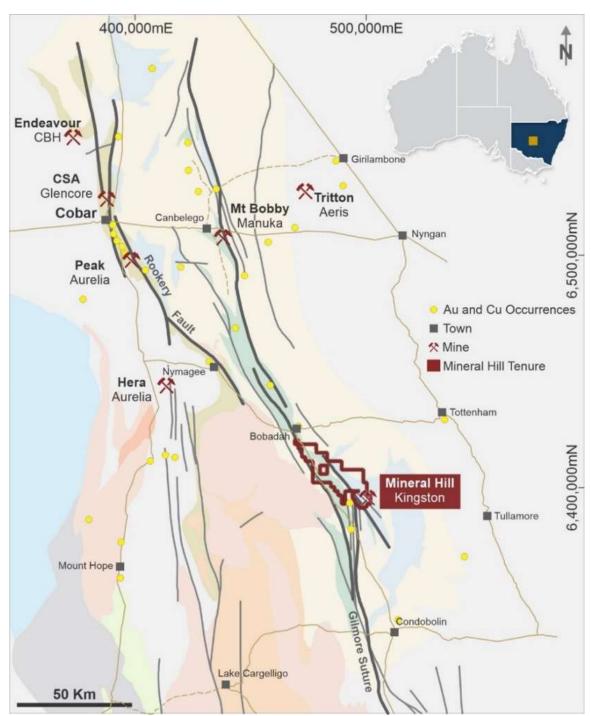


Figure 1 Mineral Mill Mine-location map







Figure 2 Mineral Mill Mine- Mining Lease areas with surface projection of the location of Southern Ore Zone deposit

#### **5.2** History and Past production

Mineral Hill was discovered in 1908 (Jones & MacKensie 2007), production until 1957 was focused on the Lead-Silver mineralisation with 14,300 t at 24 oz/t Ag and 19% Lead being produced. Triako Resources mined the deposit from 1989 to 2004, treating 2.1 million tonnes of ore at an average grade of 6.4 g/t gold and 1.1% copper for 360 koz of gold and 20,000 t of copper. (CBH Resources Limited 2007?) The project was subsequently acquired by KBL in 2009, which produced 12,498 t of copper, 3,566 t of lead, 1,472 t of zinc, 34,507 oz of gold and 615,160 oz of silver between September 2011 and mid-2016.

Mining was halted due to a high debt burden and the mining operation being impacted by a pit wall failure and weather event at the Pearse open pit mine that led to KBL being placed into administration and Mineral Hill was placed on Care and Maintenance. Quintana MH Holdings Co. LLC (Quintana) subsequently acquired the project in 2018, refurbishing the CIL plant with the view to re-process onsite tailings that feature high gold content. Kingston acquired the project via an agreement to purchase 100% of Mineral Hill Pty Ltd from Quintana in January 2022 (KSN:ASX 18/01/22), drilling commenced in February 2022 (KSN:ASX 07/02/22).

The mill has been recommissioned and old underground tailings are being processed (KSN:ASX 15/09/22).





#### 5.3 Geology and geology interpretation

The SOZ at Mineral Hill is an epithermal polymetallic (Cu – Au to Cu, Pb, Zn, Ag, Au system) vein and breccia system hosted by the Late Silurian to Early Devonian Mineral Hill Volcanics, a pile of proximal rhyolitic volcaniclastic rocks with minor reworked volcaniclastic sedimentary rocks.

#### 5.3.1 Local Geology and Mineralisation

The mine area sequence consists of Girilambone metasediments as the basement, this is overlain by the Mineral Hill volcanics and Mineral Hill Sediments, these units are uncomformably overlain by the Talingboolba Sediments.

The mineralisation is structurally controlled and comprises lodes centred on hydrothermal breccia zones within and adjacent to numerous faults, surrounded by a halo of quartz-sulphide vein stockwork mineralisation. Wall rock alteration consists of quartz-chlorite-illite-sericite.

Individual sub parallel en-echelon west-dipping mineralised breccia zones make up SOZ. Lodes are identified as A (most eastern), B and C lodes. These lodes are similar, with mineralisation commonly hosted in the form of breccias, composed of volcanic wall rock and older quartz-sulphide vein fragments set in a silica and sulphide matrix and locally comprising massive sulphide. Lodes D, G and H are lead zinc poor, and carry copper-gold mineralisation.

A cross section through the wireframe models show lodes A, B, C in the south, Figure 4. Figure 5 shows the smaller volumes of lodes A, B, C, D and G lodes further north. The mineralisation wireframes generally strike N-S (local grid) and dip around 65° to the west. To the south the lodes A, B and C show a southerly plunge, North of about 400 mN no apparent plunge is discernible.





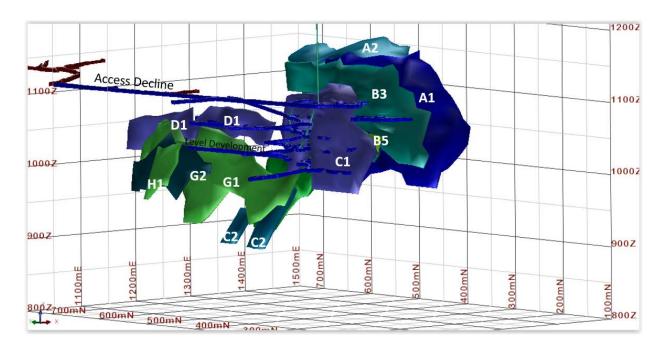


Figure 3. Oblique View showing interpreted domains

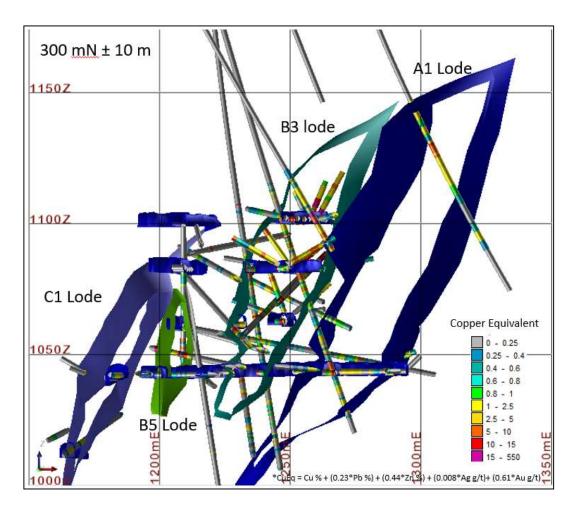


Figure 4. SOZ Lodes (E-W section 300 m N  $\pm$  10 m)





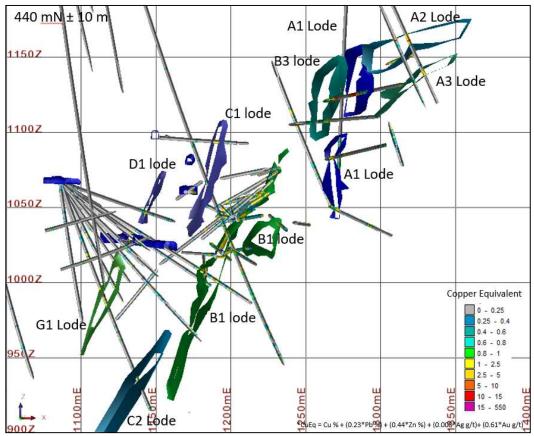


Figure 5. Main and hanging wall lodes, Cross Section (440 m N ± 10 m)

#### 5.4 Drilling techniques

The Southern Ore Zone (SOZ) historical dataset contains drill holes collared between 800mE and 1400mE, and south of 775mN (local mine grid), that intersect the Mineral Hill Volcanics host rocks.

Diamond drilling using HQ core diameter and a standard barrel configuration is most common. Core from underground drilling was not routinely orientated. Orientation was attempted on numerous surface drill holes with mostly good results. Methods used over time included traditional spear and marker, and modern orientation tools attached to the core barrel. The SOZ sampling dataset also includes assays from over 5800 metres of underground sampling performed by Triako from faces and walls, and sludge sampling from underground probe and blast percussion holes. The face wall and sludge samples were used to guide the interpretation but not used in the estimation resource grade.

A qualified geologist logged the core for geological and geotechnical features. Logging captured, lithological, alteration, mineralisation, structural and weathering information. Geological logging is qualitative in nature noting the presence of various geological features and their intensities. Quantitative features of the logging include structural alpha and beta measurements and magnetic susceptibility data. All holes are are logged and photographed both wet and dry.

#### 5.5 Sampling and sub-sampling techniques

Historical core regarded as significantly mineralised was half sawn for sampling. This approach has the potential to miss finely disseminated gold mineralisation, and in some cases low grade Cu, high Pb—Zn mineralisation was regarded as uneconomic and ignored. The short underground core holes drilled by KBL were fully sampled (sawn half core) and submitted for assay. All cored sections of KBL





surface drill holes were assayed unless the volume of rock was deemed to have been effectively sampled by a pre-existing drill hole, for example in the case of wedging where the wedge hole trajectory is close (typically < 5 m) from the parent hole.

When sub sampling RC chips a riffle splitter or conical splitter is typically employed directly off the cyclone. Dry sampling was ensured by use of a booster air compressor when significant groundwater was encountered in RC drilling. Field duplicates were periodically assayed by Triako and CBH, but KBL did not routinely submit duplicates for analysis.

A typical 1 m half NQ core sample weighs approximately 4.0-4.5 kg. The 5" diameter bit, used as standard in RC drilling, collected a typical bulk sample weighing up to 34 kg per metre drilled, from which a split 1/10 sub-sample ( 2 to 3.0 kg ) was submitted for assay.

KSN Core drilling core was subsampled by the logging geologist. Sampling intervals varied between 30 cm to 1 m honouring any geological contacts capturing the finer geological detail not available in RC drilling. Core was cut in half using a modified brick saw with the cut line situated about 5 degrees to the left of the orientation line where available.

#### 5.5.1 Collar Survey

The holes historically have been surveyed in Mineral Hill mine grid and also the national grid. Triako have been surveyed by mine surveyors and are consistent with surveyed underground workings. KBL Mining Ltd collar locations were either surveyed by qualified mine surveyors or by real-time differential GPS (DGPS) in areas at surface distant from reliable survey stations. The Mineral Hill Local Grid (MHG) has Grid North as a bearing of 315 relative to True North and a grid origin at (MGA Zone 55) 498,581.680 mE, and 6,394,154.095 mN. Topographic control is reported to have been good with elevation surveyed in detail over the mine site area and numerous survey control points recorded. KSN holes are picked up using a Differential GPS (DGPS) by the Senior Geologist. Data is collected in Geographic Datum Australia (GDA) released 1994- GDA94 Zone 55 and subsequently converted to MHG, both coordinate systems are stored in the drill hole database.

KSN provided a Digital Terrain Model (DTM) of the site, the DTM was constructed by a registered Surveyor.

#### 5.6 Sample analysis

Three dominant drilling phases have occurred at the project, Triako from 2001 to 2005, KBL from 2011 to 2016 and Kingston the current project operators.

Triako sample were sent to ALS and assayed with aqua-regia and analysed for copper, lead, zinc, silver and gold. Gold values >5 g/t were then repeated with a 50 g Fire Assay). Over-grade samples ( >1%Cu, >1%Pb, >1% Zn, and/or >25g/t Ag) were repeated with method Aqua Regia digest and flame AAS finish. KBL set samples to ALS and routinely assayed for copper, lead, zinc, silver, arsenic, antimony, and bismuth using aqua regia and ICP finish. Over-grade samples ( > 10000 ppm Cu, Pb, Zn or 100 ppm for Ag, are reanalysed with an ore-grade method of Aqua Regia digestion and ICP finish. Gold was analysed with the 50g fire-assay—AAS finish. KSN uses SGS for sample preparation and analysis. Samples are analysed a 4-acid digest with an ICP-OES finish for copper, lead, zinc, gold, silver, arsenic and antimony. Gold analysis is determined by Fire Assay using lead collection technique with an AAS.

Sample methods used through out the project are considered suitable for this style of mineralisation and appropriate for the use in resource estimation.





#### **5.7 QAQC**

Triako inserted standards at the start and end of each batch of samples sent to ALS. KBL inserted two standards every 30 samples, one Certified Ore Grade Base and precious metal Reference Material provided by Geostats Pty Ltd. KSN utilised QAQC in the form of standards, blanks and duplicates in the diamond drilling program.

Based on the results of standard analysis, in addition to the internal QA/QC standards, repeats and blanks run by the laboratory, the laboratory was deemed to provide an acceptable level of accuracy and precision.

#### 5.8 Estimation methodology

The Mineral Resource statement reported herein is a reasonable representation of the SOZ deposit based on current sampling data. Grade estimation was undertaken using Geovia's Surpac™ software package (v7.5). Ordinary Kriging ("OK") was selected for grade estimation of copper, lead, zinc, gold and silver. Ancillary elements As Sb and S were also estimated into the block model using OK.

Copper, Lead and Zinc are the primary economic element, gold and silver are likely to be economically significant. Elements are estimated using the copper equivalent domains as hard boundaries. Within the individual lodes a dynamic search ellipse was utilised to select informing composites. The entire mineralised resource is below the weathering profile, all material is fresh material.

The block model utilises parent blocks measuring 5 m x 10 m x 5 m with sub-blocking to 1.25 m x 1.25 m x 1.25 m (XYZ) to better define the volumes. Blocks above topography are flagged as air blocks. Estimation resolution was set at the parent block size for the higher grade domains and twice the parent block size for the halo mineralization.

Grade capping was applied to all elements except sulphur.

Experimental variograms were generated where possible. For domains and elements where experimental variograms could not be created, variogram models were borrowed from similar domains or elements (with weak to moderate correlations to the element under investigation).

The default density of the block model based on the dominant host rock (Tuff) and assigned 2.65 t/m³. No oxide or transitional material is defined, mineralisation occurs approximately 150 m below the surface. KSN have 488 density measurements. Using the percentages of the three main sulphide minerals and attributing density values to each mineral, it was possible to calculate a density value for each sample using the following formula.

Density =  $(cu\%/0.3463 \times 4.2 + pb\%/0.8660 \times 7.5 + zn\%/0.6709 \times 3.75 + (100 - cu\%/0.3463 - pb\%/0.8660 - zn\%/0.6709) \times 2.65)/100$ 

The theoretical stoichiometry formula was plotted against the measured readings showed a good correlation. The stoichiometry formula was applied to the estimated grades within the block model. The average density of resource estimate is 2.5t/m<sup>3</sup>.

Block model validation consisted of visual checks in plan and section, global comparisons between input and output means, alternative estimation techniques, swath plots and to previous estimates.

#### 5.9 Cut-off grades

For the reporting of the MRE, a Net Smelter Return (NSR) value has been used to reflect the polymetallic nature of mineralisation. NSR in A\$/t, represents the potential economic value of mineralisation net of all costs after it leaves site, and was applied to each block within the block model after estimation. The NSR





(A\$/t) formula includes assumptions regarding metal prices, exchange rates, metallurgical recoveries, metal marketing terms (including payabilities and deductions/penalties), freight, smelting and refining charges, and royalties.

#### The NSR formula is:

NSR = (metal grades x metallurgical recoveries x payabilities x A\$ metal prices) less (concentrate freight and treatment charges, penalties and royalties)

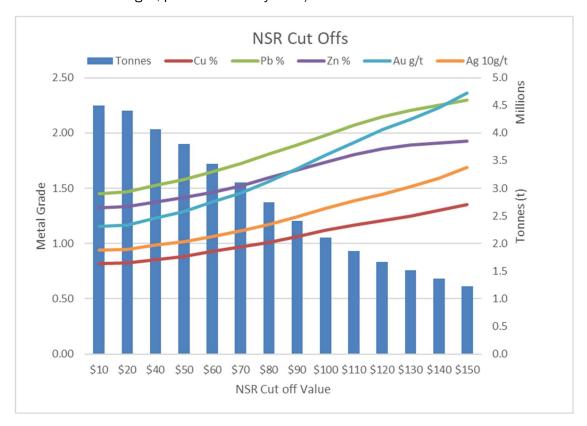


Figure 6 shows the resource as grade tonnage curves by resource category.





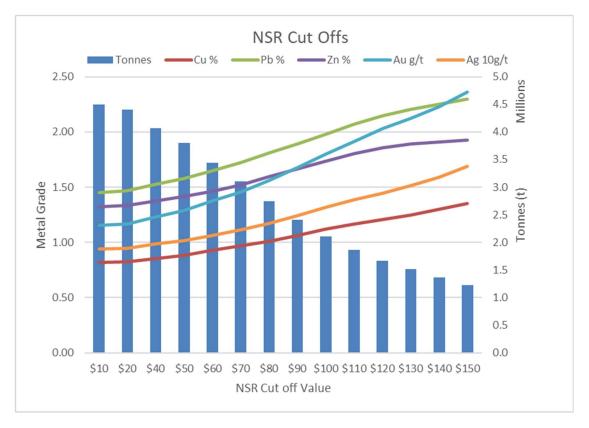


Figure 6. Classified Resource - Grade Tonnage Curves

#### 5.10 Criteria used for classification

Resource classification is based on data quality, drill density, number of informing samples, kriging efficiency, conditional bias slope, average distance to informing samples and geological continuity (deposit consistency). The confidence in the quality of the data and the presence of historic mining justified the classification of Measured, Indicated and Inferred Resources.

A mineral resource is not an ore reserve and does not have demonstrated economic viability.





5.11 JORC Code, 2012 Edition - Table 1 Southern Ore Zone - Mineral Hill Mine NSW

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

### **Section 1 Sampling Techniques and Data**

(Criteria in this section apply to all succeeding sections.)

Criteria	JORC Code explanation	Commentary
Sampling techniques	<ul> <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</li> </ul>	<ul> <li>Historically (Triako era), chip samples from RC drilling at SOZ were composited into four metre intervals for assay by riffle splitting the individual metre bulk samples and combining. Composite intervals returning assay results of economic significance were then resampled in 1m intervals from the bulk samples using a riffle splitter and re-assayed. No sample compositing was applied by KBL during drilling at SOZ.</li> <li>A diamond core drill rig was used to produce rock samples of core. Run length was variable between 3m and 1m depending on the ground conditions and any expected mineralisation.</li> <li>Triple Tube PQ and HQ barrel set up was utilised to maximize recoveries. PQ was used in weathered zone, typically approximately the first 30m followed by HQ3.</li> <li>Mineralisation is typically determined by the presence of sulphides, namely pyrite, and alteration mineralogy. This is a visual assessment and at times verified by pXRF analysis.</li> <li>Diamond drill core is orientated where orientation tools provided an outcome that is assessed as reliable.</li> <li>The geologist selects sample intervals based on logged lithology, alteration, mineralisation and structures with a minimum sample length of 0.3m and a maximum of 1.0m. Drill core is sampled only within potentially mineralised zones and extending up to 10m outside of mineralised zones as determined by visual and/or pXRF analysis.</li> <li>All drill core is sampled using an automated/mechanical core cutting machine with diamond cutting blade. Samples comprise half core for HQ3, and quarter core for PQ3 with sample intervals determined by the geologist and recorded as a cut sheet.</li> <li>For orientated drill core a cutting refence line is drawn approximately 15mm offset form the orientation line. Drill core is cut along the cut line with the orientation line not sampled and returned to the core box for future reference.</li> <li>Non-orientated drill core is cut along a reference line that is the best approximation of the extensions of</li></ul>





Criteria	JORC Code explanation	Commentary
	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.	<ul> <li>the orientation reference line with the intent of ensuring the same half core is sampled.</li> <li>Samples are placing calico bags and dispatched to SGS laboratory where they are received and registered with a sample receipt document provided as a record of the chain of custody process.</li> </ul>
Drilling techniques	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, facesampling bit or other type, whether core is oriented and if so, by what method, etc).	<ul> <li>Historical:- The Southern Ore Zone (SOZ) dataset contains drill holes collared between 800mE and 1400mE, and south of 775mN (local mine grid), that intersect the Mineral Hill Volcanics host rocks. Numerous holes have failed in overlying unmineralised Devonian sedimentary rocks and are not included. Historical drilling at the SOZ has seen a higher proportion of diamond core holes than is typical at Mineral Hill with 139 diamond holes, 17 RC holes, and three percussion holes in the pre-2013 historical dataset. Diamond drilling using HQ (61.1-63.5mm) core diameter and a standard barrel configuration is most common. Core from underground drilling was not routinely orientated. Orientation was attempted on numerous surface drill holes with mostly good results. Methods used over time included traditional spear and marker, and modern orientation tools attached to the core barrel. The SOZ sampling dataset also includes assays from over 5800 metres of underground sampling performed by Triako from faces and walls, and sludge sampling from underground probe and blast percussion holes.</li> <li>KSN:- Triple tube diamond core, PQ3 collar followed by HQ3 tail.</li> <li>Where possible core was oriented using a Reflex down hole digital orientation tool.</li> </ul>
Drill sample recovery	<ul> <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</li> </ul>	<ul> <li>Recoveries were measured by the driller and/or offsider whilst in the splits on the rack at the rig site using a handheld tape measure. Recoveries were written in permanent marker on a core block placed in the core tray. The Geologist and/or field assistant measured the length of recovered core in the trays when meter marking the core. Recovery is recorded as a percentage per run.</li> <li>PQ diameter core was used in more broken ground close to surface in order to maximise recoveries. Additionally, the driller adjusted the length of runs depending on ground conditions, shorter runs were used in intervals of more challenging ground conditions. The driller used variable penetration rates in order to maximise recoverable core.</li> <li>At this point there is no observed relationship between sample recovery and grade.</li> </ul>





Criteria	JORC Code explanation	Commentary
	may have occurred due to preferential loss/gain of fine/coarse material.	
Logging	<ul> <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, channel, etc) photography.</li> <li>The total length and percentage of the relevant intersections logged.</li> </ul>	<ul> <li>A qualified geologist logged the core for geological and geotechnical features. Logging captured, lithological, alteration, mineralisation, structural and weathering information.</li> <li>Geological logging is qualitative in nature noting the presence of various geological features and their intensities using a numerical 1-5 scale. Quantitative features of the logging include structural alpha and beta measurements captured as well as magnetic susceptibility data.</li> <li>The entire hole was logged and photographed both wet and dry.</li> <li>Recent era digital photos and scans of film photography are stored electronically.</li> </ul>
Sub- sampling techniques and sample preparation	<ul> <li>If core, whether cut or sawn and whether quarter, half or all core taken.</li> <li>If non-core, whether riffled, tube sampled, rotary split, etc and whether sampled wet or dry.</li> <li>For all sample types, the nature, quality and appropriateness of the sample preparation technique.</li> <li>Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.</li> <li>Measures taken to ensure that the sampling is representative of the in situ material collected, including for instance results for</li> </ul>	• Historical: ore regarded as significantly mineralised was cut in half for subsequent assay. This approach has the potential to miss finely disseminated gold mineralisation, and in some cases low grade Cu, high Pb—Zn mineralisation was regarded as uneconomic and ignored. Underground core drilled by KBL was fully sampled (sawn half core) and submitted for assay. All cored sections of KBL surface drill holes were assayed unless the volume of rock was deemed to have been effectively sampled by a pre-existing drill hole, for example in the case of wedging where the wedge hole trajectory is close (typically <5m) from the parent hole. There was no standard procedure regarding the line of cutting with any veins and structural fabrics. However, an attempt was made to obtain an equivalent sample of mineralised material in both halves of the core. Poorly mineralised core was typically cut perpendicular to any dominant fabric. Water used in the core cutting was unprocessed and hence unlikely to introduce contamination to the core samples. When sub sampling RC chips a riffle splitter or conical splitter is typically employed directly off the cyclone. In cases when sampling low grade or background intervals after determination with portable XRF, 4m composite intervals were assembled by spearing. If anomalous results were received from the Lab, the composite intervals were resubmitted from the remaining bulk sample as 1m intervals by riffle splitting. Dry sampling was ensured by use of a booster air compressor when significant groundwater was encountered in RC drilling. Field duplicates were periodically assayed by Triako and CBH, but KBL did not routinely submitted duplicates for analysis. The HQ and HQ3 diameter core was deemed by KBL to provide a representative sample of the SOZ sulfide mineralisation which generally





Criteria	JORC Code explanation	Commentary
	field duplicate/second-half sampling.  • Whether sample sizes are appropriate to the grain size of the material being sampled.	comprises a fine- to medium-grained (1—5mm) intergrowth of crystalline sulfide phases such as chalcopyrite, pyrite, galena and sphalerite; with quartz—mica— carbonate gangue. A typical 1m half core sample weighs approximately 3.5-4.5 kg. The 5 "diameter bit, used as standard in RC drilling, collected a typical bulk sample weighing up to 30kg per metre drilled, from which a split 1/10 sub-sample typically weighing between 1.5 and 2.5 kg was submitted for assay. The split sub-sample was deemed representative of the entire metre sampled.  • KSN:- The recovered core was subsampled by the logging geologist. Samples ranged in size from 30cm to 1m. all samples were delineated to geological contacts. Individual samples were cut in half using a modified brick saw. The blade was consistently situated 5 degrees to the left of the orientation line where available.  • Half core HQ samples were collected to a minimum size of 30cm to ensure sufficient representivity of sample for assay. This method is appropriate to capture the finer levels of geological detail not available in RC drilling. The increased detail of logging and sampling will provide greater confidence in ensuing geological and resource models.  • Routine QAQC was used in the sampling process. Blank material was introduced ration of 1:20. Certified Reference Material was introduced at a ratio of 1:10 and in areas of identified mineralization.  • Lab duplicates were used of the crushed primary sample. Two samples of the primary crushate were analysed and assessed for reproducibility.  • Half Core sampling is a standard industry practice and appropriate for the nature of this drill campaign (Validation of previous results).
Quality of assay data and laboratory tests	<ul> <li>The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total.</li> <li>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.</li> <li>Nature of quality control procedures adopted (eg</li> </ul>	Historical:- During the Triako era drilling at SOZ (2001—2005), samples were analysed for copper, lead, zinc, silver and gold using ALS Method IC581. All gold values >5 g/t were then repeated with method AA26. All pulps returning >1%Cu, >1%Pb, >1% Zn, and/or >25g/t Ag were repeated with method OG46/AA46 (mixed acid digest, flame AAS). KBL routinely assayed for copper, lead, zinc, silver, arsenic, antimony, and bismuth using ALS Method ME-ICP41, with pulps returning over 10000ppm for Cu, Pb, Zn or 100ppm for Ag, reanalysed with the ore-grade method ME-OG46. The aqua regia ME—ICP41 and ME-OG46 methods are regarded as a total digestion technique for the ore minerals present at SOZ. Gold was analysed with the 50g fire-assay—AAS finish method Au-AA26. In the more recent KBL drilling programs two standards were inserted every 30 samples in the sample stream. The standards comprised Certified Ore Grade base and precious metal Reference Material provided by Geostats Pty Ltd. The analysis of standards was checked upon receipt of batch results—all base metal standards analysed with the KBL core samples had ore elements within two standard deviations (SD) of the provided mean standard grade with 53% of these having all ore element concentrations within one SD. Based on the results of standard analysis, in addition to the internal QA/QC standards, repeats and blanks run by the laboratory, the laboratory was deemed to provide an acceptable level of accuracy and





Criteria	JORC Code explanation	Commentary
	standards, blanks, duplicates, external laboratory checks) and whether acceptable levels of accuracy (ie lack of bias) and precision have been established.	<ul> <li>precision. For historical drilling from 2001—2005, standards were inserted at the start and end of each batch of samples sent to ALS. The laboratory was requested to repeat any high grade standards which returned values &gt; 10% from the quoted mean, and &gt;20% for the low grade standards.</li> <li>KSN:-</li> <li>A multi (42) element suit was used for full geochemical coverage. This was a 4 Acid Digest with an ICP-OES finish. The 4 Acid digest is a total method. Historically Aqua Regia has been used at Mineral Hill. Kingston has decided to use the more robust 4 acid digest for its drilling programs. The sample 0.2g is digested with nitric, hydrochloric, hydrofluoric and perchloric acids to effect as near to total solubility of the sample as possible. With most silicate based material, solubility is to all intents and purposes complete, however, elements such as Cr, Sn, W, Zr, and in some cases Ba, may prove difficult to bring into solution. This digest is in general unsuited to dissolution of chromite, titaniferous material, barite, cassiterite, and zircon. In sulphidic samples, some of the sulphur may be lost (as H2S) or is partially converted to insoluble elemental sulphur. Antimony can also partly be lost as volatiles under this digest. Some minerals may dissolve, or partly dissolve and precipitate the element of interest. Examples are silver, lead in the presence of sulphur/sulphate, barium in the presence of sulphur/sulphate , Sn, Zr, Ta, Nb through hydrolysis.</li> <li>Gold analysis is determined by fire assay (FA) by using lead collection technique with a 50g sample charge weight and AAS instrument finish. Gold by Fire Assay (FA) is considered a "complete or total" method for total recovery of gold in sample.</li> <li>KSN utilised QAQC in the form of standards, blanks and duplicates in the diamond drilling program. There were no 2SD exceedances in the QAQC performance with the assay results. Submitted QAQC samples will contribute to KSN's ongoing monitoring of laboratory performance.</li> </ul>
Verification of sampling and assaying	<ul> <li>The verification of significant intersections by either independent or alternative company personnel.</li> <li>The use of twinned holes.</li> <li>Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.</li> <li>Discuss any adjustment to assay data.</li> </ul>	<ul> <li>Historical:- Significant intersections were checked by the Senior Mine Geologist, Senior Exploration Geologist, and Chief Geologist. Original laboratory documents from historical drilling exist in physical form though have were not reviewed by KBL for completeness. The Mineral Hill drilling database exists in electronic form as a Microsoft Access database. The assay data were imported into the database from digital results tables sent by the laboratory, without manual data entry. The Senior Mine Geologist and Chief Geologist managed the drill hole assay database. 3D validation of drilling data and underground sampling occurred whenever new data was imported for visualisation and modelling by KBL geologists in Micromine*" and SurpacTM software. No adjustment were reported to have been made to assay data received from the laboratory.</li> <li>The Senior Geologist and Chief Geologist checked and verified significant intersections.</li> <li>The results are for the first hole of a 8-hole program.</li> <li>Primary data was collected into an excel logging template. The Senior Geologist managed the database and entered the primary data into a Microsoft Access database that is hosted onsite whilst the company</li> </ul>





Criteria	JORC Code explanation	Commentary
		<ul> <li>progresses with a database translation to a third-party provider.</li> <li>Assay data are not adjusted except for results that fall under the detection limit for the analytic method and element. These entries are imputed with an absolute value of half the detection limit.</li> </ul>
Location of data points	<ul> <li>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.</li> <li>Specification of the grid system used.</li> <li>Quality and adequacy of topographic control.</li> </ul>	<ul> <li>Historical:- The collar positions of holes drilled by Triako have been surveyed by mine surveyors and are consistent with surveyed underground workings. The holes were surveyed in Mineral Hill mine grid and also the national grid. The CBH drill hole collars were established by GPS using the national grid and converted to mine grid using the conversion established by Triako. KBL Mining Ltd collar locations were either surveyed by qualified mine surveyors or by real-time differential GPS (DGPS) in areas at surface distant from reliable survey stations. Coordinates were recorded in a local Mine Grid (MHG) established by Triako in which Grid North has a bearing of 315 relative to True North (MGA Zone 55). The local grid origin has MGASS coordinates of 498581.680 mE, 6394154.095 mN. Topographic control is reported to have been good with elevation surveyed in detail over the mine site area and numerous survey control points recorded.</li> <li>KSN:- A Differential GPS (DGPS) was used by the Senior Geologist to collect the collar co-ordinate information. DGPS are robust survey collection tools that provide co-ordinates to the cm scale.</li> <li>Data is presented in Geographic Datum Australia (GDA) released 1994- GDA94 Zone 55.</li> <li>Kingston has a Digital Terrain Model (DTM) of the site constructed by a registered Surveyor. This is used for planning purposed when designing drill holes</li> </ul>
Data spacing and distribution	<ul> <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> <li>Historical:- Historical surface drilling at SOZ, like most of the Mineral Hill field, was mainly designed on an east-west grid (relative to Mine Grid). Surface holes were drilled from drill pads arranged on a grid of approximately 50 x 50m, typically with two to five separate holes drilled from each pad. Underground drilling at SOZ has also occurred from numerous sites, most commonly in the hanging wall of the mineralisation, and drill holes have a greater range of orientations. As a whole, the drilling has typically intersected the A, B, C, &amp; D lodes at a spacing 25m x 25m between 160 mRL and 0 mRL (between 147m and 307 metres depth from surface) with closer drill spacing in many areas. Drilling has intersected the mineralisation at an average spacing of approximately 50x50m between 0 mRL and -100 mRL (307m to 407m depth from surface). Below – 100 mRL, only sporadic drilling has been carried out. Historical drilling into the G &amp; H lodes was mostly from underground sites. Drilling has intersected the mineralised envelope with a spacing of approximately 25-30 m at G Lode and 30_50m at H Lode. The majority of drill holes have been selectively sampled MA considered the data spacing to be sufficient to classify the resources at SOZ as Measured, Indicated and Inferred.</li> <li>KSN:- Drilled an additional eight holes into A lode.</li> <li>No compositing has been applied to primary sample intervals.</li> </ul>
Orientation of data in	Whether the orientation of	Historical:- Surface drill hole designs at SOZ mostly dip between 60 and 75 degrees to the to the east,





Criteria	JORC Code explanation	Commentary
relation to geological structure	sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type.  If the relationship between the drilling orientation and the orientation of key mineralised structures is considered to have introduced a sampling bias, this should be assessed and reported if material.	<ul> <li>intersecting the interpreted steeply west-dipping lodes at a favourable angle. In the central part of the G &amp; H Lode domain, most of the drill holes are oriented at a non-ideal angle either down-dip or along strike relative to the interpretation of mineralisation. The angle of existing drilling to interpreted mineralisation is more favourable in the northern and southern parts of the G &amp; H Lodes. Due to limited underground drill sites</li> <li>KSN drill holes are drilled approximately perpendicular to the overall dip and strike of the flatter dipping A2 and A3 mineralized lenses at SOZ. No sampling bias is expected in the KSN drill holes.</li> </ul>
Sample security	The measures taken to ensure sample security.	<ul> <li>Historical:- For diamond drilling, historically, half core was collected in calico sample bags marked with a unique sample number which were tied at the top. Samples were couriered by independent contractors from the mine site to the ALS Laboratory, Orange, NSW. Specific records of historical sample security measures were not recorded, however the methods were regarded as normal industry practice during an external audit of Triako's historical data base, quality control procedures, survey, sampling and logging methods in 2005. For historic RC drilling, representative samples from the rig were deposited into individually numbered calico bags which were then tied at the top Samples were couriered by independent contractors from the mine site to the ALS Laboratory. For diamond drilling, half core was collected in calico sample bags marked with a unique sample number which were tied at the top Samples were couriered by independent contractors from the mine site to the ALS Laboratory in Orange, NSW.</li> <li>KSN:- Core is stored at the Mineral Holl core yard which is situated within the gated confines of the mine area. Only authorised personnel with a swipe on key card can gain access. The drillers deliver the core to the core yard where it is received by KSN.</li> <li>A KSN employed Field Assistant personally drives the samples to the SGS facility in West Wyalong where it is handed over for laboratory analysis.</li> <li>Samples are received and checked at the dispatch center. Samples are transported to Townsville via road. Samples are then received, checked and verified, and a formal receipt of samples supplied by the Townsville laboratory.</li> </ul>
Audits or reviews	<ul> <li>The results of any audits or reviews of sampling techniques and data.</li> </ul>	<ul> <li>Historical:- The historical data base, quality control procedures, survey, sampling and logging methods were reviewed by Barret, Fuller and Partners (BFP) in June 2005 on behalf of Triako Resources Ltd. The BFP report was authored by C.E. Gee and T.G. Summons and concluded that the Triako database and procedures were of "normal industry practice". CBH Resources, and subsequently KBL Mining Ltd</li> </ul>





Criteria	JORC Code explanation	Commentary
		<ul> <li>maintained the Triako drilling and sampling procedures, bringing the database standards up to practice during there tenure. A detailed QA/QC review of the Mineral Hill drill hole database was carried out in 2013-2014 by independent consultant geologist, Mr Garry Johansen. This work was performed as an integral part of building a 3D digital geological model of the Mineral Hill district.</li> <li>KSN has engaged an external consultant to provide an initial assessment of the database and it has been reported to be of acceptable quality.</li> <li>No new audits have been completed to date outside of the database review.</li> </ul>





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

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

Criteria	JORC Code explanation	Commentary					
Mineral	Type, reference name/number,	Tenement	RegisteredHolder	Grant Date	ExpiryDate	Status	Area
tenement and	location and ownership	EL 1999 (1973)	Mineral Hill Pty Ltd	4/03/1983	4/03/2023	Current	17 Units
land tenure	including agreements or	EL 8334 (1992)	Mineral Hill Pty Ltd	23/12/2014	23/12/2022	Current	100 Units
status	material issues with third	ML 1695 (1992)	Mineral Hill Pty Ltd	7/05/2014	7/05/2035	Current	8.779 Ha
	parties such as joint ventures,	ML 1778 (1992)	Mineral Hill Pty Ltd	7/12/2018	28/05/2036	Current	29.05 Ha
	partnerships, overriding	ML 5240 (1906)	Mineral Hill Pty Ltd	14/03/1951	14/03/2033	Current	32.37 Ha
	royalties, native title interests,	ML 5267 (1906)	Mineral Hill Pty Ltd	22/06/1951	14/03/2033	Current	32.37 Ha
	historical sites, wilderness or	ML 5278 (1906)	Mineral Hill Pty Ltd	13/08/1951	14/03/2033	Current	32.37 Ha
	national park and	ML 5499 (1906)	Mineral Hill Pty Ltd	18/11/1955	14/03/2033	Current	32.37 Ha
	environmental settings.	ML 5621 (1906)	Mineral Hill Pty Ltd	12/03/1958	14/03/2033	Current	32.37 Ha
	<ul> <li>The security of the tenure held</li> </ul>	ML 5632 (1906)	Mineral Hill Pty Ltd	25/07/1958	14/03/2033	Current	27.32 Ha
	at the time of reporting along	ML 6329 (1906)	Mineral Hill Pty Ltd	18/05/1972	14/03/2033	Current	8.094 Ha
	with any known impediments to	ML 6365 (1906)	Mineral Hill Pty Ltd	20/12/1972	14/03/2033	Current	2.02 Ha
	obtaining a licence to operate in	ML 332 (1973)	Mineral Hill Pty Ltd	15/12/1976	14/03/2033	Current	22.36 Ha
	the area.	ML 333 (1973)	Mineral Hill Pty Ltd	15/12/1976	14/03/2033		28.03 Ha
		ML 334 (1973)	Mineral Hill Pty Ltd	15/12/1976	14/03/2033	Current	21.04 Ha
		ML 335 (1973)	Mineral Hill Pty Ltd	15/12/1976	14/03/2033	Current	24.79 Ha
		ML 336 (1973)	Mineral Hill Pty Ltd	15/12/1976	14/03/2033	Current	23.07 Ha
		ML 337 (1973)	Mineral Hill Pty Ltd	15/12/1976	14/03/2033	Current	32.27 Ha
		ML 338 (1973)	Mineral Hill Pty Ltd	15/12/1976	14/03/2033	<u> </u>	26.3 Ha
		ML 339 (1973)	Mineral Hill Pty Ltd	15/12/1976	14/03/2033	Current	25.09 Ha
		ML 340 (1973)	Mineral Hill Pty Ltd	15/12/1976		Current	25.79 Ha
		ML 1712 (1992)	Mineral Hill Pty Ltd	28/05/2015	28/05/2036	Current	23.92 Ha
		The current m	ineral resource is si	tuated with	in several app	roved mini	ng leases.
		<ul> <li>As part of the</li> </ul>	recent transaction wo on at the Mineral H	ith Quintar			•
Exploration done by other parties	<ul> <li>Acknowledgment and appraisal of exploration by other parties.</li> </ul>		s were discovered b Triako between 200			The majori	ty of drilling
Geology	Deposit type, geological setting	<ul> <li>The SOZ at M</li> </ul>	ineral Hill is an epith	nermal poly	metallic (Cu–	–Au to Cu–	-PbZn





Criteria	JORC Code explanation	Commentary
	and style of mineralisation.	system hosted by the Late Silurian to Early Devonian Mineral Hill Volcanics, a pile of proximal rhyolitic volcaniclastic rocks with minor reworked volcaniclastic sedimentary rocks. The mineralisation is structurally controlled and comprises lodes centred on hydrothermal breccia zones within and adjacent to numerous faults, surrounded by a halo of quartz—sulfide vein stockwork mineralisation. Mineralisation at A Lode is mostly in the form of breccia, composed of volcanic wall rock and older quartz-sulphide vein fragments set in a silica and sulphide matrix and locally comprising massive sulphide. This Lode is the easternmost of the parallel to en-echelon west-dipping breccia zones which make up the SOZ. There is a general zonation from Pb-Zn-Ag rich mineralisation at higher levels such as the A lode to more Cu-Au dominant mineralisation at lower levels.
Drill hole Information	<ul> <li>A summary of all information material to the understanding of the exploration results including a tabulation of the following information for all Material drill holes:         <ul> <li>easting and northing of the drill hole collar</li> <li>elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar</li> <li>dip and azimuth of the hole</li> <li>down hole length and interception depth</li> <li>hole length.</li> </ul> </li> <li>If the exclusion of this information is justified on the basis that the information is not Material and this exclusion does not detract from the understanding of the report, the Competent Person should clearly explain why this is the case.</li> </ul>	See Table 1, 2 & 3 above For historical Mineral Hill drill results See ASX announcement 18th May 2022  See Table 1, 2 & 3 above For historical Mineral Hill drill results See ASX announcement 18th May 2022





Criteria	JORC Code explanation	Commentary
Data aggregation methods	<ul> <li>In reporting Exploration Results, weighting averaging techniques, maximum and/or minimum grade truncations (eg cutting of high grades) and cut- off grades are usually Material and should be stated.</li> <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>	<ul> <li>No exploration new exploration results are discussed in this report.</li> <li>A Copper Equivalent (CuEq) using the following formula. Proportions are based on spot USD\$ commodity pricing and are not inclusive of metallurgical recovery or mining costs.</li> <li>CuEq = (Au_ppm*0.61)+ (Ag_ppm*0.008)+ (Cu%*1.0)+ (Pb%*0.234) + (Zn%*0.436)</li> <li>Spot Commodity Pricing: Copper USD\$9098/t; Lead USD\$2128/t; Zinc USD\$3967/t; Gold USD\$1729/oz; Silver USD\$22.64/oz</li> <li>Cu metals equivalents are only used to determine significant intercepts to be included in the interpreted mineralized wireframes.</li> </ul>
Relationship between mineralisation widths and intercept lengths	<ul> <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> <li>Significant intercepts widths are reported as down hole length, width not known.</li> <li>Drilling was approximately perpendicular to the overall strike of mineralization.</li> <li>Intercept widths are close to true across-strike/dip widths.</li> </ul>
Diagrams	Appropriate maps and sections (with scales) and tabulations of	See the body of this announcement for maps, diagrams, and tabulations.





Criteria	JORC Code explanation	Commentary
	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.	
Balanced reporting	Where comprehensive reporting of all Exploration Results is not practicable, representative reporting of both low and high grades and/or widths should be practiced to avoid misleading reporting of Exploration Results.	<ul> <li>Comprehensive reporting was conducted on all KSN drill holes.</li> <li>To ensure consistency in reporting between historical and recent drill holes, and relative significance of intercepts, both historical and new mineralised intercepts have been determined based on the same CuEq calculation based on updated economic assumptions.</li> <li>Cu metals equivalents are only used to determine significant intercepts, and CuEq is not reported for individual intervals for either historical or recent drill holes or the resource estimate in this release.</li> </ul>
Other substantive exploration data	Other exploration data, if meaningful and material, show 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.	There are numerous historical exploration data sets at Mineral Hill mine, these are not deemed meaningful or relevant for the purposes of this release.
Further work	<ul> <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</li> </ul>	<ul> <li>Kingston plans to carry out ongoing programs of RC and Diamond drilling from surface and UG (at SOZ).</li> <li>These holes will be testing depth and lateral extensions of the deposits.</li> </ul>





Criteria	JORC Code explanation	Commentary
	the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.	

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

(Criteria listed in section 1, and where relevant in section 2, also apply to this section.)

Criteria	JORC Code explanation	Commentary
Database Integrity	<ul> <li>Measures taken to ensure that data has not been corrupted by, for example, transcription or keying errors, between its initial collection and its use for Mineral Resource estimation purposes.</li> <li>Data validation procedures used.</li> </ul>	<ul> <li>MA has undertaken limited independent first principal checks of the database.</li> <li>Historical technical reports accept the integrity of the database.</li> <li>The geological database is managed and updated by KSN staff in conjunction with SampleData management services.</li> <li>Basic database validation checks were run, including checks for missing intervals, overlapping intervals and hole depth mismatches. A list of spurious or holes with missing data including 12 duplicated drill MA identified are recorded in the database and were not used for estimation. All Grab, channel and sludge sampling was not used for estimation of grade.</li> </ul>
Site visits	<ul> <li>Comment on any site visits undertaken by the Competent Person and the outcome of those visits.</li> <li>If no site visits have been undertaken indicate why this is the case.</li> </ul>	<ul> <li>MA has not been to site, the site competent person for this report is Mr.S. Hayward</li> <li>Mr Hayward has been to site numerous times in the past two years.</li> </ul>
Geological interpretation	<ul> <li>Confidence in (or conversely, the uncertainty of) the geological interpretation of the mineral deposit.</li> </ul>	<ul> <li>The geological model and setting are well understood, The Southern Ore Zone(SOZ) at Mineral Hill is a VHMS deposit with epithermal over-prints, the polymetallic (Cu – Au to Cu, Pb, Zn, Ag, Au system) vein and breccia system hosted by the Late Silurian to Early Devonian Mineral Hill Volcanics, a pile of proximal rhyolitic volcaniclastic rocks with minor reworked volcaniclastic sedimentary rocks.</li> </ul>





Criteria	•	JORC Code explanation	Commentary
		Nature of the data used and of any assumptions made. The effect, if any, of alternative interpretations on Mineral Resource estimation. The use of geology in guiding and controlling Mineral Resource estimation. The factors affecting continuity both of grade and geology.	<ul> <li>Geological logging, structural mapping and drill hole assays have been used in the establishment of a resource estimate. The deposit has been developed (2001-2005) underground channel and grab samples along with sludge hole drill results were used to guide interpreted volumes, however the nature of sampling methods associated with these techniques prevented their use in resource estimation.</li> <li>Alternative interpretation/ nomenclature could consider the deposit to be typical "Cobar Style" mineralisation, a common name for mineral deposits hosted in the Cobar Superbasin, includes massive sulphides (VMS), clastic hosted Pb-Zn mineralisation and epithermal gold. Alternate interpretations are unlikely to change the estimated tonnes or grade materially.</li> <li>The SOZ deposit is interpreted to be contained within a broader shear zone with variations in foliation and mineralisation host sites, the anastomosing and en-echelon attitude of the mineralisation has been captured at the scale of drilling.</li> </ul>
Dimensions	•	The extent and variability of the Mineral Resource expressed as length (along strike or otherwise), plan width, and depth below surface to the upper and lower limits of the Mineral Resource.	<ul> <li>The SOZ deposit strikes approximately 500 m within a structural corridor below the Top Shear. The structural corridor dips approximately 65° to the west at depth. the upper proportions of A lode are shallow dipping (20-30° West).</li> <li>The mineralisation extends from approximately 150 m below the surface to 300 m below the surface, previous operators have developed ore drives on 1100 mRL, 1060 mRL, 1040mRL and a shorter drive on the 1010mRL.</li> </ul>
Estimation and modelling techniques	•	The nature and appropriateness of the estimation technique(s) applied and key assumptions, including treatment of extreme grade values, domaining, interpolation parameters and maximum distance of extrapolation from data points. If a computer assisted estimation method was chosen include a description of computer software and parameters used. The availability of check estimates, previous estimates and/or mine production records	<ul> <li>Ordinary Kriging has been used as the interpolation technique to estimate the Mineral Resource. This method is considered appropriate given the nature of the mineralisation. Estimation was undertaken in Surpac 2022 (v7.5).</li> <li>Drill hole intercepts were flagged within individual domains using surpac. Lode flags were manually validated. Intervals were checked for inconsistencies, split samples, edge dilution and mineralisation outside the interpretation. Interpretations were extrapolated 20m, estimated blocks were re-assed with respect to extrapolation during resource classification, several extrapolated areas were removed from the reportable resource.</li> <li>Analysis of the raw samples within the Cu mineralisation domains indicates that the majority of the sample lengths are at 1 m. Samples were composited to 1 m, honouring geological boundaries.</li> <li>3D experimental variogram modelling was undertaken using a nugget (C0) and two spherical models (C1, C2), although occasionally one spherical model was sufficient. Variograms were generated within the larger domains.</li> <li>Cu variograms had nuggets from 0.28 to 0.8 ranges from 40 to 80 m.</li> <li>Pb variograms had nuggets from 0.23 to 0.53 ranges from 40 to 80 m.</li> <li>Zn variograms had nuggets from 0.16 to 0.68 ranges from 40 to 80 m.</li> </ul>





Criteria	JORC Code explanation	Commentary
	and whether the Mineral Resource estimate takes appropriate account of such data.  The assumptions made regarding recovery of by- products.  Estimation of deleterious elements or other non-grade variables of economic significance (eg sulphur for acid mine drainage characterisation).  In the case of block model interpolation, the block size in relation to the average sample spacing and the search employed.  Any assumptions behind modelling of selective mining units.  Any assumptions about correlation between variables.  Description of how the geological interpretation was used to control the resource estimates.  Discussion of basis for using or not using grade cutting or capping.  The process of validation, the checking process used, the comparison of model data to drill hole data, and use of	<ul> <li>Au variograms had nuggets from 0.17 to 0.71 ranges from 45 to 70 m.</li> <li>Ag variograms had nuggets from 0.21 to 0.81 ranges from 36 to 88 m.</li> <li>As variograms had nuggets from 0.23 to 0.53 ranges from 40 to 82 m.</li> <li>Check estimates (NN and ID2) were undertaken, the current resource was reported as a direct comparison to the previous estimates (details in the body of report). The mineral resource has been depleted for past mine production and takes appropriate account of such data (a buffer around the stopes has been flagged as "at risk of collapse" material.</li> <li>Metal recoveries, payable and deductions are accounted for in the NSR calculation (described in the report)</li> <li>Variables estimated include Cu, Pb, Zn, Au, Ag, As, Sb and S. Cu Pb Zn Au and Ag are recoverable, As, Sb and S need to be managed during processing and in waste disposal.</li> <li>A 3D model with a parent block size of 10 m by 20 m by 5 m (XYZ) was used. The drill hole spacing ranges from 10 m to 50 m throughout the deposit. In order for effective boundary definition, a sub-block size of 1.25 m by 1.25 m by 1.25 m (XYZ) has been used; the sub-blocks are estimated at the parent block scale. Halo blocks are estimated at twice the parent block scale accounting for the boarder drill spacing in the halo mineralisation. Search distances were set at 50 m and were doubled for the second pass.</li> <li>The resource estimate assumes an underground mining scenario and likely 20 m stope panels.</li> <li>Lead and silver show a strong correlation and a moderate correlation to Zinc, Copper and Gold show a moderate correlation. These correlations are expected in a VHMS deposit with epithermal over-prints.</li> <li>The geological model (fault interpretations and grade domains) was used to control grade estimation.</li> <li>High grade outliers (Cu, Pb, Zn, Ag, Au, As and Sb) within the composite data were capped. No capping was applied to S. Domains were individually assessed for outliers using histograms, log probability plots</li></ul>





Criteria	•	JORC Code explanation	Commentary
		reconciliation data if available.	
Moisture	•	Whether the tonnages are estimated on a dry basis or with natural moisture, and the method of determination of the moisture content.	Reported tonnages are dry metric tones, the host rock is fresh competent rock.
Cut-off parameters	•	The basis of the adopted cut-off grade(s) or quality parameters applied.	<ul> <li>Following the estimation process, a series of mineable shapes were determined using an NSR cutoff of AU\$50/t. NSR parameters were compiled by KSN. Material at this cut-off is considered by KSN to have reasonable prospects of extraction.</li> <li>The NSR estimation considers metallurgical recovery assumptions derived from metallurgical testwork results.</li> <li>The NSR also takes account of the metal price, exchange rates, freight and treatment and refining charges and discounts and State Royalties. The metal recoveries and metal prices used in the NSR estimation are found in Tables 25 through to 32 in this report.</li> </ul>
Mining factors or assumptions	•	Assumptions made regarding possible mining methods, minimum mining dimensions and internal (or, if applicable, external) mining dilution. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider potential mining methods, but the assumptions made regarding mining methods and parameters when estimating Mineral Resources may not always be rigorous. Where this is the case, this should be reported with an explanation of the basis of the	<ul> <li>The MRE is reported above a AU\$50/t NSR, blocks were checked to ensure on isolated blocks were reporting to the MRE. The assumed smallest mineable unit (SMU) for the SSO shapes is 20 metres long by, 5 metres high, with a minimum mining width of about 3 metres. For each domain, estimates for a small number of peripheral mineable shapes, distal to the main grouping were excluded from the MRE.</li> <li>No HW or FW dilution was applied to the resource shapes however internal dilution has been included where necessary.</li> <li>No minimum pillar has been designed between the ore zones to capture as much mineralisation as possible. The assumption is cemented fill could be used to recover the mineraisation so no pillar is required. Ore blocks within 5 m of old stopes have been flagged, indicating the block is near old workings and may be unrecoverable broken ground.</li> </ul>





Criteria	•	JORC Code explanation	Commentary
		mining assumptions made.	
Metallurgical factors or assumptions	•	The basis for assumptions or predictions regarding metallurgical amenability. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider potential metallurgical methods, but the assumptions regarding metallurgical	<ul> <li>Metallurgical testwork at AMML remains ongoing and the conceptual processing flowsheet is subject to change in the future.</li> <li>It is KSN's opinion that all elements included in the conceptual processing flowsheet have a reasonable potential to be recovered and sold.</li> <li>KSN has assumed a conceptual sequential processing flowsheet for the project comprising: copper float; lead float; and a bulk zinc-lead float. This flowsheet optimises the theoretical NSR value of the mineralisation. Cumulative metallurgical recoveries for the economic metals of interest are listed in the table below:</li> </ul>
		treatment processes and	Element   Total Recovery
		parameters made when reporting Mineral Resources may not always be rigorous.	copper 85%
			lead 85%
		Where this is the case, this	zinc 90%
		should be reported with an explanation of the basis of the metallurgical assumptions made.	gold 75%
			silver 70%
			<ul> <li>Further detail on recoveries is provided in the body of the report</li> <li>Metallurgical testwork remains ongoing and the conceptual processing flowsheet is subject to change in the future.</li> <li>It is Kingston's opinion that all elements included in the conceptual processing flowsheet have a reasonable potential to be recovered and sold.</li> </ul>
Environmental factors or assumptions	•	Assumptions made regarding possible waste and process residue disposal options. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider the potential	<ul> <li>The project lies on several permitted mining leases, normal environmental constraints and expectations will be met</li> <li>KSN is undertaking Metallurgical test work including the potential for acid mine drainage; preliminary results indicate most of the waste material recoverable by mining will have low potential to become acidic.</li> <li>Engineered PAF material storage and management including reuse as stope void backfill is under investigation.</li> </ul>





Criteria	JORC Code explanation	Commentary		
	environmental impacts of the mining and processing operation. Where these aspect have not been considered this should be reported with an explanation of the environmental assumptions made.	<ul> <li>Sulphur has been estimated throughout the main lodes and the halo mineralisation where sufficient S assays are present.</li> <li>It is assumed that surface waste dumps will be used to store waste material and conventional storage facilities will be used for the processed plant tailings.</li> </ul>		
Bulk density	<ul> <li>Whether assumed or determined. If assumed, the basis for the assumptions. If determined, the method used, whether wet or dry, the frequency of the measurements, the nature, size and representativeness of the samples.</li> <li>The bulk density for bulk material must have been measured by methods that adequately account for void spaces (vugs, porosity, etc), moisture and differences between rock and alteration zones within the deposit.</li> <li>Discuss assumptions for bulk density estimates used in the evaluation process of the different materials.</li> </ul>	<ul> <li>The default density of the block model based on the dominant host rock (Tuff) and assigned 2.65 t/m3. No oxide or transitional material is defined, mineralisation occurs approximately 150 m below the surface.</li> <li>Current and past bulk density measurements have been collected on site. (n=488) the maximum bulk density recorded was 4.99g/cc.</li> <li>Bulk density within Fresh material was calculated directly from metal estimates, (copper, lead and zinc).</li> <li>Using the percentages of the three main sulphide minerals and attributing density values to each mineral, it was possible to calculate a density value for each sample using the following formula.</li> <li>Density = (cu%/0.3463 x 4.2 + pb%/0.8660 x 7.5 + zn%/0.6709 x 3.75 + (100 - cu%/0.3463 - pb%/0.8660 - zn%/0.6709) x 2.65)/100</li> <li>The results provide sufficient confidence that the density can be calculated from the multielement assays.</li> <li>The Mineral Resource averages 2.80 t/m3.</li> </ul>		
Classification	<ul> <li>The basis for the classification of the Mineral Resources into varying confidence categories.</li> <li>Whether appropriate account has been taken of all relevant</li> </ul>	<ul> <li>Blocks have been classified as Measured, Indicated, Inferred or Unclassified based on drill hole spacing, geological continuity and estimation quality parameters.</li> <li>The above criteria were used to determine areas of implied and assumed geological and grade continuity. Classification was assessed on a per domain basis and resource categories were stamped onto the individual domains.</li> </ul>		





Criteria	•	JORC Code explanation	Commentary		
	•	factors (ie relative confidence in tonnage/grade estimations, reliability of input data, confidence in continuity of geology and metal values, quality, quantity and distribution of the data).  Whether the result appropriately reflects the Competent Person's view of the deposit.	<ul> <li>Unclassified mineralisation has not been included in this Mineral Resource. Unclassified material is contained in isolated blocks above cut-off, too thin, or in distal regions of the deposit associated with isolated drill intercepts.</li> <li>The classification reflects the Competent Person's view of the SOZ deposit.</li> </ul>		
Audits or reviews	•	The results of any audits or reviews of Mineral Resource estimates.	<ul> <li>There has been a limited independent audit of the data performed by MA; there has been no independent review of the Mineral Resource.</li> </ul>		
Discussion of relative accuracy/ confidence	•	Where appropriate a statement of the relative accuracy and confidence level in the Mineral Resource estimate using an approach or procedure deemed appropriate by the Competent Person. For example, the application of statistical or geostatistical procedures to quantify the relative accuracy of the resource within stated confidence limits, or, if such an approach is not deemed appropriate, a qualitative discussion of the factors that could affect the relative accuracy and confidence of the estimate.  The statement should specify whether it relates to global or	<ul> <li>With further drilling, it is expected that there will be variances to the tonnage, grade and contained metal within the deposit. The Competent Person does not expect that these variances will impact the economic assessment of the deposit.</li> <li>The Mineral Resource Estimate appropriately reflects the Competent Person's view of the deposit.</li> <li>Geostatistical procedures (kriging statistics) were used to quantify the relative accuracy of the estimate. Consideration has been given to all relevant factors in the classification of the Mineral Resource.</li> <li>The ordinary kriging result, due to the level of smoothing, should only be regarded as a global estimate, and is suitable as a life of mine planning tool.</li> <li>Should local estimates be required for detailed mine scheduling, techniques such as Uniform Conditioning or conditional simulation could be considered. Ultimately, grade control drilling will be required.</li> <li>Limited records post Triako remain of past production. Total historic production from the SOZ deposit is being compiled from available archive and digital data sources.</li> </ul>		









#### 6 RESOURCE AND RESERVE CATEGORIES – EXPLANATION

According to the Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves (The JORC Code) 2012 Edition:-

A 'Mineral Resource' is a concentration or occurrence of solid material of economic interest in or on the Earth's crust in such form, grade (or quality), and quantity that there are reasonable prospects for eventual economic extraction. The location, quantity, grade (or quality), continuity and other geological characteristics of a Mineral Resource are known, estimated or interpreted from specific geological evidence and knowledge, including sampling. Mineral Resources are sub-divided, in order of increasing geological confidence, into Inferred, Indicated and Measured categories.

An '<u>Inferred Mineral Resource</u>' is that part of a Mineral Resource for which quantity and grade (or quality) are estimated on the basis of limited geological evidence and sampling. Geological evidence is sufficient to imply but not verify geological and grade (or quality) continuity. It is based on exploration, sampling and testing information gathered through appropriate techniques from locations such as outcrops, trenches, pits, workings and drill holes.

An Inferred Mineral Resource has a lower level of confidence than that applying to an Indicated Mineral Resource and must not be converted to an Ore Reserve. It is reasonably expected that the majority of Inferred Mineral Resources could be upgraded to Indicated Mineral Resources with continued exploration.

An 'Indicated Mineral Resource' is that part of a Mineral Resource for which quantity, grade (or quality), densities, shape and physical characteristics are estimated with sufficient confidence to allow the application of Modifying Factors in sufficient detail to support mine planning and evaluation of the economic viability of the deposit.

Geological evidence is derived from adequately detailed and reliable exploration, sampling and testing gathered through appropriate techniques from locations such as outcrops, trenches, pits, workings and drill holes, and is sufficient to assume geological and grade (or quality) continuity between points of observation where data and samples are gathered.

An Indicated Mineral Resource has a lower level of confidence than that applying to a Measured Mineral Resource and may only be converted to a Probable Ore Reserve.

A '<u>Measured Mineral Resource</u>' is that part of a Mineral Resource for which quantity, grade (or quality), densities, shape, and physical characteristics are estimated with confidence sufficient to allow the application of Modifying Factors to support detailed mine planning and final evaluation of the economic viability of the deposit.

Geological evidence is derived from detailed and reliable exploration, sampling and testing gathered through appropriate techniques from locations such as outcrops, trenches, pits, workings and drill holes, and is sufficient to confirm geological and grade (or quality) continuity between points of observation where data and samples are gathered.

A Measured Mineral Resource has a higher level of confidence than that applying to either an Indicated Mineral Resource or an Inferred Mineral Resource. It may be converted to a Proved Ore Reserve or under certain circumstances to a Probable Ore Reserve.

An 'Ore Reserve' is the economically mineable part of a Measured and/or Indicated Mineral Resource. It includes diluting materials and allowances for losses, which may occur when the



material is mined or extracted and is defined by studies at Pre-Feasibility or Feasibility level as appropriate that include application of Modifying Factors. Such studies demonstrate that, at the time of reporting, extraction could reasonably be justified.

The guidelines in the JORC Code state that the term 'economically mineable' implies that extraction of the Ore Reserves has been demonstrated to be viable under reasonable financial assumptions. This will vary with the type of deposit, the level of study that has been carried out and the financial criteria of the individual company. For this reason, there can be no fixed definition for the term 'economically mineable'.

A '<u>Probable Ore Reserve</u>' is the economically mineable part of an Indicated, and in some circumstances, a Measured Mineral Resource. The confidence in the Modifying Factors applying to a Probable Ore Reserve is lower than that applying to a Proved Ore Reserve.

A '<u>Proved Ore Reserve</u>' is the economically mineable part of a Measured Mineral Resource. A Proved Ore Reserve implies a high degree of confidence in the Modifying Factors.

The guidelines provided in the JORC Code note that "A Proved Ore Reserve represents the highest confidence category of reserve estimate and implies a high degree of confidence in geological and grade continuity, and the consideration of the Modifying Factors. The style of mineralisation or other factors could mean that Proved Ore Reserves are not achievable in some deposits."

The following figure, from the JORC Code, sets out the framework for classifying tonnage and grade estimates to reflect different levels of geological confidence and different degrees of technical and economic evaluation.

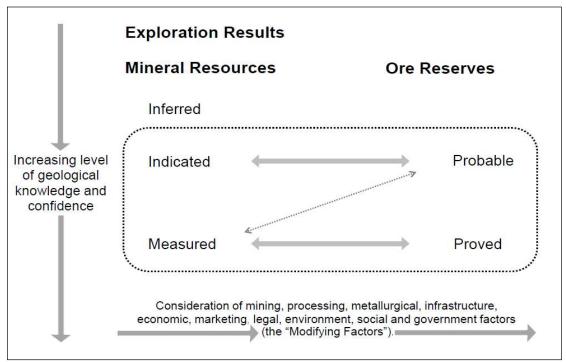


Figure 7 General relationship between Exploration Results, Mineral Resources and Ore Reserves, from 2012 JORC Code Figure 1



Mineral Resources can be estimated on the basis of geoscientific information with some input from other disciplines. Ore Reserves, which are a modified sub-set of the Indicated and Measured Mineral Resources (shown within the dashed outline in the Figure above), require consideration of the Modifying Factors affecting extraction, and should in most instances be estimated with input from a range of disciplines.

Measured Mineral Resources may be converted to either Proved Ore Reserves or Probable Ore Reserves. The Competent Person may convert Measured Mineral Resources to Probable Ore Reserves because of uncertainties associated with some or all of the Modifying Factors which are taken into account in the conversion from Mineral Resources to Ore Reserves.

Inferred Resources cannot convert to Ore Reserves.





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