

Mineral Hill Mine Resource and Reserve Statement

Key Points:

- Total Mineral Hill Mine Mineral Resource
 - 5.9Mt @ 1.20g/t Au, 23g/t Ag, 0.7% Cu, 1.0% Pb & 0.6% Zn^{1,2}
 - 229Koz Au, 4,461Koz Ag, 43Kt Cu, 60Kt Pb, 35Kt Zn
- Total Mineral Hill Mine Ore Reserve
 - 2.1Mt @ 1.40g/t Au, 5g/t Ag ^{1,2}
 - \circ 71Koz Au and 346Koz Ag

Kingston Resources Limited (ASX: KSN) (Kingston or the Company) is pleased to report a Mineral Resource and Ore Reserve statement for the Mineral Hill Mine, Condobolin NSW. These estimates have been prepared by the previous owners of Mineral Hill, Quintana Minerals Corporation and KBL Limited. All the Resource and Reserve estimates have been previously released to the public except for the Mineral Resource and Ore Reserve Estimate for the Mineral Hill Tailings Reprocessing Project. This announcement contains the initial release for the Mineral Hill Tailings Reprocessing Project.

Kingston's acquisition of the Mineral Hill Mine is subject to the satisfaction of the conditions of the Transaction and is expected to complete by mid to late January 2022. Kingston expects to release an updated Resource and Reserves estimate as part of its annual Group Mineral Resource and Ore Reserve Statement. Application of Kingston's internal estimation methodology to the deposits at Mineral Hill may result in changes to the Mineral Resource. Application of Kingston's estimation methodology to the deposits at Mineral Hill may potentially result in a downgrade in the classification of the Mineral Resource and/or Reserve compared to existing estimates.

Cautionary statement: Mineral Resource and Reserve estimates for Parkers Hill and Pearse are JORC 2004 estimates and as such are not reported in accordance with the JORC 2012 code. A competent person has not done sufficient work to classify these estimates as mineral resources or ore reserves in accordance with the JORC 2012 Code. It is uncertain that following evaluation and/or further exploration work that the estimates will be able to be reported as mineral resources or ore reserves in accordance with the JORC 2012 code. It is uncertain that following evaluation and/or further exploration work that the estimates will be able to be reported as mineral resources or ore reserves in accordance with the JORC code. Nothing has come to the attention of Kingston that causes it to question the accuracy or reliability of the former owner's estimates; but Kingston has not independently validated the former owner's estimates and therefore is not to be regarded as reporting, adopting or endorsing those estimates.



ASX: KSN Shares on Issue: 286M Market Cap: A\$68M Cash: A\$7.5M (31 Sept 2021) 201/110 Pacific Hwy, North Sydney, NSW 2060 +61 2 8021 7492 info@kingstonresources.com.au www.kingstonresources.com.au

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Mineral Resources for Mineral Hill Mine have been compiled for five separate ore bodies within the Mine Lease area. Ore Reserves have been compiled for three deposits at TSF, Pearse and Pearse North.

Mineral Hill Resources have been estimated as:

5.9Mt @ 1.20g/t Au, 23.5g/t Ag, 0.7% Cu, 1.0% Pb & 0.6% Zn for 229Koz Au, 4,461Koz Ag, 43Kt Cu, 60Kt Pb, 35Kt Zn (Table 1).

Mineral Hill Mine Ore Reserves for TSF, Pearse and Pearse North have been estimated as:

• 2.1Mt @ 1.40g/t Au, 5g/t Ag for 71Koz Au and 346Koz Ag (Table 2).

Existing Mineral Resources and Ore Reserves provide a solid foundation for Kingston to unlock the potential of the Mineral Hill asset, with minimal capital required to access several production-ready open pit and underground deposits.

Mineral Resources and Ore Reserves for Pearse, Parkers Hill and the Southern Ore Zone have been adjusted for mining depletion using the production wireframes created by the site survey department at the time of mining¹.

The Southern Ore Zone (SOZ) and Tailings Storage Facility (TSF; Tails Reprocessing Project) Estimates have been prepared in accordance with JORC Code 2012 and are current. Parkers Hill and Pearse Mineral Resource Estimates that have been prepared by a Competent Person in accordance with the JORC Code 2004 and have not been updated to comply with the JORC Code 2012 on the basis that the information has not materially changed since it was last reported.

Table 1: Consolidated Mineral Resources for Mineral Hill Mine1,2,3,4

					Тс	otal						
	Deposit	Tonnes Mt	Au (g/t)	Ag (g/t)	Cu (%)	Pb (%)	Zn (%)	Au (Koz)	Ag (Moz)	Cu (Kt)	Pb (Kt)	Zn (Kt)
9	TSF	1.86	1.13					67				
	Pearse	0.14	4.82	149				22	0.68			
1	Pearse North	0.30	2.70	26				26	0.25			
4	SOZ	1.78	1.79	18	1.2	1.2	1.0	102	1.02	20	22	18
7	Parkers Hill	1.84	0.19	43	1.3	2.1	0.9	11	2.52	22	38	17
	TOTAL	5.91	1.20	23	0.7	1.0	0.6	229	4.46	43	60	35

Table 2: Ore Reserves for Mineral Hill Mine1,2,3,4

		Pr	oved		Pro	bable				Total		
		Tonnes (Mt)	Au (g/t)	Ag (g/t)	Tonnes (Mt)	Au (g/t)	Ag (g/t)	Tonnes (Mt)	Au (g/t)	Ag (g/t)	Au (Koz)	Ag (Koz)
	TSF				1.81	1.13		1.81	1.13		43	
-	Pearse				0.08	5.12	85	0.08	5.12	85	14	227
	Pearse North	0.06	2.30	17	0.12	2.60	22	0.18	2.50	21	15	119
	TOTAL	0.06	2.30	17	2.02	1.38	5	2.07	1.41	5	71	346



Table 3: Measured Component of Mineral Hill Mine Mineral Resources

		Measured ⁴				
	Tonnes (Mt)	Au (g/t)	Ag (g/t)	Cu (%)	Pb (%)	Zn (%)
TSF						
Pearse	0.14	4.82	149			
Pearse North	0.07	2.40	19			
SOZ	0.49	2.03	12	1.2	0.6	0.4
Parkers Hill						
TOTAL	0.70	2.63	40	0.8	0.4	0.3

Table 4: Indicated Component of Mineral Hill Mine Mineral Resources

		Indicated ⁴				
	Tonnes (Mt)	Au (g/t)	Ag (g/t)	Cu (%)	Pb (%)	Zn (%)
TSF	1.86	1.13				
Pearse						
Pearse North	0.21	2.90	30			
SOZ	0.69	1.63	22	1.1	1.7	1.4
Parkers Hill	1.79	0.19	42	1.3	2.1	0.9
TOTAL	4.54	0.92	21	0.7	1.1	0.6

Table 5: Inferred Component of Mineral Hill Mine Mineral Resources

		Inferred ⁴				
	Tonnes (Mt)	Au (g/t)	Ag (g/t)	Cu (%)	Pb (%)	Zn (%)
TSF						
Pearse						
Pearse North	0.03	2.00	16			
SOZ	0.60	1.79	18	1.3	1.3	1.1
Parkers Hill	0.05	0.20	48	0.7	1.8	2.4
TOTAL	0.67	1.68	20	1.2	1.3	1.2

The Ore Reserve and Mineral Resources estimates were prepared by a Competent person in accordance with the JORC Code 2012. The Parkers Hill and Pearse Mineral Resource Estimates that have been prepared by a Competent Person in accordance with the JORC Code 2004 and have not been updated to comply with the JORC Code 2012 on the basis that the information has not materially changed since it was last reported. Pearse, Parkers Hill and the Southern Ore Zone Mineral Resource estimates and Ore Reserves have been adjusted by mining depletion using the production wireframes created by the site survey department at the time of mining. These wireframes represent the mining activities at these deposits to the best of Kingston's knowledge although they are not to be viewed as complete or accurate in their entirety and therefore mining depletion may be revised when Kingston is able to produce revised determinations on more complete data and verification thereof.

Mineral Resources are reported inclusive of Ore Reserves

See Competent Person details and year of original release on page 12

Rounding to significant figures may cause minor computational discrepancies

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JORC 2012 Resource and Reserves

Mineral Hill Tailings Deposit

The Mineral Resource for the Mineral Hill Tailings Deposit (TSF) is estimated as:

• 1.9Mt @ 1.13g/t Au for 67Koz Au.

The TSF Ore Reserve is estimated as:

• 1.8Mt @ 1.13g/t Au for 43Koz Au.

The Mineral Resource and Ore Reserve estimation for the Mineral Hill Tailings Deposit was completed by Groundworks Plus and Burnt Shirt Pty Ltd on work programs organised by Atom Minerals in January 2020 and have been prepared in accordance with JORC-2012.

Competent Persons for Mineral Resources and Ore Reserves are presented in Table 10 and Table 11.

Geology and Geological Interpretation

Mineralisation at Mineral Hill is hosted within the Silurian Mineral Hill Volcanics near its contact with the overlying Talingaboolba formation. The sequence was folded resulting in a south-east plunging anticline, with the north-eastern limb having been displaced around 100m vertically by the Parkers Hill Fault. Multiple phases of mineralisation are present and it is suggested that the gold-dominant mineralisation preceded the base metal-dominant mineralisation. The gold-dominant mineralisation consists of pyrite-gold-native bismuth ± arsenopyrite within quartz veins or breccia. The base metals-dominant mineralisation consists of sulphides, the composition of which varies in a vertical zonation as follows:

- Lower levels: gold-chalcopyrite-bismuthinite-bornite
- Mid levels: sphalerite-galena-tetrahedrite/tennantite/freibergite
- High levels: gold-silver-electrum-arsenopyrite-stibnite

Secondary copper oxides and carbonates, lead carbonates and sulphates and a variety of silver halides occur in the oxidised zones of the mineralised system.

Mineralised material in the tailings storage facilities consists of clay to fine sand sized particles deposited in sub horizontal layers from numerous outflow sites located around the perimeter of the facilities. The particles contain remnant gold and copper that were not separated from the gangue during the beneficiation process. TSF1 is a raised "turkey's nest" type dam, measuring approximately 300m by 250m and an average of 15m depth. The dam walls were raised over time using the upstream method of construction. TSF2 is immediately adjacent to TSF1 and is also a "turkey's nest" design, with a compartment, or cell, partitioned from the main body of tailings with an earthen wall. TSF2 cell measures approximately 200m by 120m and an average of 2m in depth.

Drilling Techniques

The tailings contained within TSF1 have been investigated by drilling programs in 2008 (CBH Resources) and 2019 (Atom Minerals). Overall, 54 holes were used in this Resource estimate study of TSF1, totalling 855 m of drilling, of which 24% was completed using push tube methods, and 76% by air core methods. The 2019 drilling was completed using a 6 x 6 Landcruiser mounted air core rig (ex-Wallis Drilling) with auxiliary compressor, drilling approximately 80mm diameter holes. The high-grade compartment of TSF2 was drilled in 2019 using a petrol powered 90mm auger. Push tube methods were utilised in the 2008 drilling program however the specifications of the rig and hole sizes are not available.

Drill and Data Spacing

Drilling density is on a notional 50 m x 50 m grid, with closer spaced drilling in the north-eastern corner (25 m x 25 m) (Table 6) and numerous pairs of drill holes at around 10m separation (Figure 1). Down hole sampling intervals are approximately 1m. Maximum thickness of tailings encountered in the drilling was 17m in TSF1 and 1.75m in TSF2.



	Drilling and Sampling Statistics												
	TSF1												
	Drilling	6	No Holes			Automath		Total Length		NI- 0			
	Program	Company	Push Tube	Air Core	Hand Auger	Av length	Push Tube	Air Core	Hand Auger	No. Assays			
	2008	СВН	15			13.7	205.2			204			
	2019	Atom Minerals		43		15		650		648			
TSF2													
	2019	Atom Minerals			12	1.4			17.2	12			

Table 6: Drilling Statistics for Mineral Hill Tailings Deposit



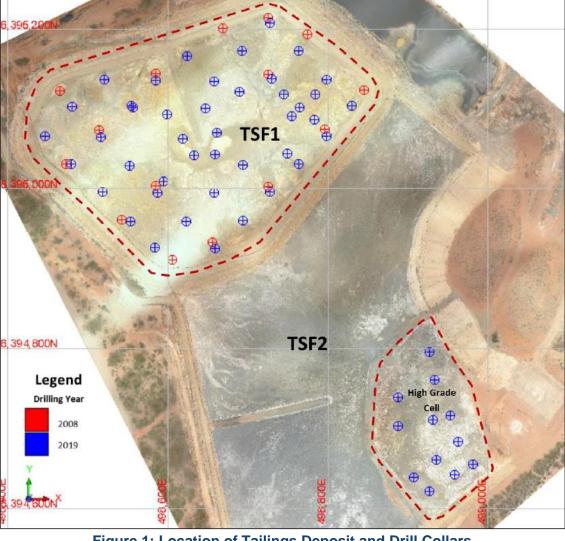


Figure 1: Location of Tailings Deposit and Drill Collars



Sampling and Sub Sampling Techniques

During the 2008 push tube drilling program, samples were split laterally with one half composited to generally 1m intervals. The remaining half of the sample was retained on site. During the 2019 aircore drilling program (TSF1), samples were collected from the cyclone underflow at 1m intervals. The internal surface of the cyclone was washed with clean water after wet intervals were encountered to reduce the likelihood of contamination. The 1m samples were reduced through a riffle splitter to obtain an approximate 2-3kg sample for assay. Wet samples were dried in calico bags prior to splitting.

During the 2019 auger drilling program (TSF2), sample was collected at the collar and the entire hole length was treated as one composite. Sample weights were recorded after the samples had been dried and processed through the riffle splitter. While the results don't provide an absolute recovery percentage, they indicate that recoveries improved with depth down the hole, and trend towards better recoveries in successive holes. There also appears to be no relationship between recovery and Au grade.

Sample Analysis Method

Samples from the 2008 drilling program were sent to ALS-Chemex Laboratory in Orange and assayed by Fire Assay (AAS finish) for Au and acid digest (ICP-MS finish) for Cu, Pb, Zn and Ag. Samples from the 2019 drilling program were also sent to the ALS Laboratory in Orange and assayed for a suite of elements by method ME-ICP41 (aqua regia digestion, ICP-AES finish) and for Au by method AA26 (50g fire assay, AAS finish).

The sample preparation process normally includes:

- Sorting and checking.
- Weighing.
- Drying at 100°C as necessary.
- Splitting to obtain a 1 kg sample.
- Pulverizing with LM2 with testing of 1 in 40 samples screened to ensure 90% passing 75 µm.
- Subsampling by scoops for four subsamples, weighing either 200 g or 50 g each for different assaying purposes.

A total of 32 samples from TSF1 and 6 samples from TSF2 were submitted for specific gravity determination by air pycnometer methods. Samples were chosen to represent an even distribution of tailings both laterally and vertically

Estimation Methodology

Resource grade estimation for Au in TSF1 was undertaken using Ordinary Kriging (OK) as the estimation methodology. The limited sample coverage in TSF2 supported grade estimation using Inverse Distance Weighting (IDW) methodology.

Cut-Off Grades

An economic cut-off grade of 0.47 g/t Au was calculated based on a gold price of AU\$2,000 per ounce and expected recoveries and mining and processing costs. It is noted that no blocks in the high-grade domain of TSF1 and no blocks in the high grade cell of TSF2 fall below the Resource cut-off grade of 0.47 g/t Au.

Resource Classification

The key parameters considered during the resource categorisation are as follows:

- Geological knowledge and interpretation.
- Deposit style.
- Confidence in the sampling and assay data.
- The spacing of the exploration drill holes.
- Variogram model ranges in relation to the local data spacing and the estimation variance.
- Prospects for eventual economic extraction.

The tailings deposited in TSF1 and the high-grade cell of TSF2 have reasonable prospects for eventual economic extraction for the following reasons:

- Proximity to an existing CIL processing plant.
- Both deposits are immediately adjacent to a partially filled tailings storage facility (main area of TSF2)
- $^{
 m D}$ reducing up front capital costs.
- Metallurgical test work indicates good recoveries for the high-grade domains.

Based on the consideration of items listed above, and review of the Resource block model estimate quality, the entire volume of tailings within TSF1 high grade domains, and tailings within TSF2 high grade cell are classified as Indicated.

Low grade domains of TSF1 were not assigned a Resource category because of lower recoveries and more expensive processing costs associated with higher reagent consumption of the upper low-grade domain.

Domoin	Indicated Resources					
Domain	Tonnes (Mt)	Au (g/t)				
TSF1 High Grade Domain	1.80	1.05				
TSF2	0.06	3.47				
Total	1.81	1.13				

Table 7: Mineral Hill Tailings Mineral Resource Estimate 1

Rounding to significant figures may cause minor computational discrepancies

Reserve Summary

The Ore Reserve for the Mineral Hill Tailings Project was completed by Burnt Shirt Pty Ltd on work programs organised by Atom Minerals in January 2020. Atom commissioned sufficient Mineral Resources, engineering, process engineering and metallurgical studies to satisfy the requirements of the JORC 2012 code. The Ore Reserve is based on a Mineral Resource estimate and a Feasibility Study.

Mining

The TSF project comprises a 1.8 Mt Ore Reserve which is likely to reprocessed at 100 t/hr (0.79 Mt/a); over a mine life of approximately three years.

The criteria for selection of mining technique were:

- Safety of personnel and assets.
- Consistent provision of slurry to the processing plant.
- Availability and usage of water on site.
- Maintenance of a constant slurry delivery rate (design of 100 t/hr of solids = 156 m³/hr).
- Maintenance of a consistent pulp density (target 45% solids).
- Capex, opex and cash flow considerations.

The Tailings project exploits an existing tailings dam and the chosen mining techniques are considered appropriate to the type of deposit. The tailings dam parameters have been selected based on studies completed by GHD, of Perth, that meet all relevant Australian standards. Pit and stope optimisation is not considered necessary as the project is tailings reprocessing and no stoping or hard rock mining is to take place.

Data acquired from the Resource drilling campaign indicated variable rheology and moisture content within TSF1. This led to the classification of two mining zones which will require different mining approaches. The Wet Zone, located in the centre of TSF1 surrounding the original decant pond, and the Dry Zone extending outward from the Wet Zone centre to the TSF containment walls.

Atom proposed to refurbish and use an existing HY-85-160 model Dragflow pump mounted on an excavator, assisted by a bulldozer to reclaim the tailings, and pump the resultant slurry for retreatment in the existing modified CIL plant. The Dragflow pump is rated to pump up to 300 m³/hr with a total dynamic head of 150 m.

Ore Loss & Dilution

Ore loss and dilution are considered to occur at the interfaces between ore and overburden, ore and waste, and ore and TSF walls. The mining strategy is to remove the overburden layer by over-digging by 0.2 m, resulting in a volume of 15,709 m3 of ore loss. Dilution at the horizontal interface between ore and waste at the base of Lift 1 has been assumed as 5% based on the geometry of the tailings and the proposed excavation techniques.

Processing and Metallurgical Recovery

The tailings slurry is to be retreated in a conventional, existing CIL plant, with minor modifications to the feed and thickeners. The existing CIL circuit, completed in 2016, has a nominal capacity of 0.4 Mtpa and includes CIL tanks, reagent systems, residue detoxification, elution, gold room, carbon handling and regeneration equipment. The mine site includes all infrastructure necessary to support a 0.3 Mtpa mining operation including tails dams, workshops and offices.

Mincore assessed the existing CIL plant and developed an operational readiness plan covering process design, capital equipment requirements and estimated operating costs.

JT Metallurgical Services (JTMS) examined two batches of samples from Mineral Hill gold to understand the metallurgical attributes of the different domains and identify an optimal flowsheet based on the existing plant. Testwork identified gold grade, recovery, and cyanide soluble copper variability across TSF1 and TSF2. A single Master Composite sample representing future mill feed was prepared from metallurgical subsamples and all testwork was conducted in site water considered representative of future mill feed. JTMS estimates an average gold recovery of 64.5%, based on a 16-hour leach/adsorption residence time. Variability leach tests indicate periods of higher and lower recovery across life-of mine.

Processed Tailings Storage & Geotechnical Consideration

Sufficient processing stream water is available from existing storages in abandoned pits and shafts, and dams in the vicinity of the Mineral Hill plant. Atom engaged GHD, of Perth, to develop a feasibility study and supporting designs to enable safe mining of tailings; deconstruction of TSF1 embankment and alteration and raising of TSF2 embankment walls for future tails storage. The project is a tailings reprocessing project and dam stability a primary consideration. The new TSF is to be constructed by lifting redundant cells on the existing TSF2 with GHD engineering design criteria based on:

- Currently accepted practice for dam engineering in Australia.
- Australian National Committee on Large Dams Guidelines.
- New South Wales Dam Safety Committee guidelines and requirements.

Tenure & Permits

The Mineral Hill operations comprises 20 Mining Leases and one Exploration Licence under New South Wales legislation and which are registered in the name of Mineral Hill Pty Ltd. All Mining Leases and Exploration Licences are in good standing.

Mineral Hill tailings retreatment project lies entirely within the granted mining leases, and proximal to licensed processing and TSF infrastructure, in a demonstrably stable jurisdiction and, in Burnt Shirts' experience, can see no impediment to its operations.

Infrastructure

The Mineral Hill tailings retreatment project takes place at a recently operating mine and utilises existing and established infrastructure. The Competent Person considers that all necessary infrastructure appears to be in place and has been appropriately considered and described by GHD in its report to commence tailings reclamation, processing, and production of dore.



Pearse North

The Pearce North Mineral Resource is estimated as:

• 298Kt @ 2.70g/t Au and 26g/t Ag for 26Koz Au and 249Koz Ag.

The Pearce North Ore Reserve is estimated as:

• 179Kt @ 2.50g/t Au and 21g/t Ag for 15Koz Au and 119Koz Ag.

The Mineral Resource Estimate for Pearse North was released by a prior owner of the Mineral Hill Mine in 2016. For information to access that original ASX release see Tables 9 and 10. Mineral Resources for Pearse North are reported above a cut-off of 1g/t Au for oxide and 1.5g/t Au for transitional and fresh material. Kingston is not in possession of any new information or data relating to the estimate that materially impacts on the reliability of the estimates or Kingston's ability to verify the estimate as a Mineral Resource in accordance with the JORC 2012 code. The Supporting information originally supplied continues to apply and has not materially changed.

Southern Ore Zone

The Southern Ore Zone Mineral Resource is estimated as

1.78Mt @ 1.79g/t Au, 18g/t Ag, 1.2% Cu, 1.2% Pb and 1.0% Zn for 102Koz Au, 1.0Moz Ag, 20Kt Cu, 22Kt Pb and 18Kt Zn.

An Ore Reserve estimate for SOZ has not been completed.

The Mineral Resource Estimate for the Southern Ore Zone was released by a prior owner of the Mineral Hill Mine in 2014. For information to access that original ASX release see Table 9 and 10. The numbers represented in this report reflect the original model accounting for mining depletion using the site stope and development wireframes. The depleted model reports using the same cut-off as in the original release – above a 1.5% Cu Equivalent. The formula for the Cu Equivalency calculation is:

 $CuEq = Cu(\%) + 0.136 \times Pb(\%) + 0.008 \times Ag(g/t) + 0.467 \times Au(g/t)$

Table 8: Commodity Assumptions underlying historical SOZ Cu-equivalent calculation

Commodity	Price	Recovered in Copper Flotation	Recovered in Lead Flotation	Payability (Cu Con - Pb Con)
Copper	\$US6600/tonne	79%	No Credits	95.5% -NA
Gold	\$US1300/oz	43.90%	11.60%	93% - 50%
Lead	\$US2000/tonne	No Credits	50.10%	NA - 95%
Silver	\$US20/oz	36.10%	29%	90%-80%

The copper equivalency formula accounts for the actual treatment charges (at date of initial release), refining costs, transport costs and incorporates individual metal factors (reflecting metal prices at the time of estimation in 2014), and recoveries from the sequential flotation pathway at Mineral Hill. Kingston is not in possession of any new information or data relating to the estimate that materially impacts on the reliability of the estimates or Kingston's ability to verify the estimate as a Mineral Resource in accordance with the JORC 2012 code. The supporting information originally supplied continues to apply and has not materially changed.

JORC 2004 Resources and Reserves

Pearse

The Pearse Mineral Resource is estimated as:

141Kt @ 4.82g/t Au and 149g/t Ag for 22Koz Au and 676Koz Ag (JORC2004).

The Pearse Ore Reserve is estimated as:

• 83Kt @ 5.12g/t Au and 85g/t Ag for 14Koz Au and 227Koz Ag (JORC2004).

Cautionary statement: These estimates are not reported in accordance with the JORC 2012 code. A competent person has not done sufficient work to classify the historical estimates as mineral resources or ore reserves in accordance with the JORC 2012 Code. It is uncertain that following evaluation and/or further exploration work that the historical estimates will be able to be reported as mineral resources or ore reserves in accordance with the JORC code. Nothing has come to the attention of Kingston that causes it to question the accuracy or reliability of the former owner's estimates; but Kingston has not independently validated the former owner's estimates and therefore is not to be regarded as reporting, adopting or endorsing those estimates.

The Mineral Resource estimate for Pearse was reported by a prior owner of the Mineral Hill Mine. The former owner reported an Ore Reserve with supporting studies defined at the Pre-Feasibility level and implemented a mining plan during production. The Pearse Mineral Resource and Ore Reserve are reported as a JORC 2004 estimate. The following statements are provided in accordance with ASX Listing Rules Guidance Note 31.

The source and date of historical estimates: See Table 9 and 10 for details on ASX release date.

Reported JORC edition: Mineral Resources and Ore Reserves are reported to JORC 2004 which include the same categories of mineralisation; inferred, indicated and measured. JORC 2004 estimates may not conform to the requirements in the JORC Code 2012.

Relevance of historical estimate to entity: The Pearse Resource Estimate and Ore Reserve has been historically mined with approximately 20% of the original Reserve remaining unmined. Mining of the remaining Reserve material is a logical next step after the tailings reprocessing ceases and as such Kingston intends to focus near term work programs on the Pearse and Pearse North deposits

The reliability of the estimates (including reference to any of the criteria in Table 1): The reliability of the estimates is deemed satisfactory. Historical records and reports document the sampling techniques, drilling techniques, logging standards and QAQC activities undertaken as input into the estimations. Additionally historical audits have been undertaken to verify the quality of inputs into the estimates. KSN believe the estimates were conducted using data that was of industry standard at the time of estimation. The historical Reserve was completed to a PFS level and further enhanced through the implementation of a mine plan during operations. During production there was good reconciliation to the Resource Estimate as well as expected metallurgical recoveries. The production data shows that the reliability of the original estimates is high. Commodity prices have increased significantly since the original mining study was conducted which is expected to have a positive impact on any future production and modifying factors.

Summary of known work programs on which historical estimates are based. Summary of key assumptions, mining and processing parameters and methods used to prepare historical estimate: The Resource Estimate and Ore Reserve represented in this report reflect the original Resource model accounting for mining depletion using the site topographic surface dated 08/09/2016. Mineral Resources for Pearse are reported above a cut-off of 1.00g/t Au for oxide and transitional and 2.00g/t Au for fresh material.

Resource classification was not included as a field in the MRE model supplied for depletion but >99% of the original Resource was classified as Measured with only a minor immaterial amount as indicated. The remaining resource at Pearse is not constrained by a pit shell.

Following the significant drilling programs in early to mid-2010, an updated mineral resource was calculated for the Pearse Deposit in April 2010. The increased drilling density for the deposit resulted in the resources

being upgraded to Measured and Indicated status. A 1g/t Au cut-off was employed for the oxidised zone of the deposit, while 2g/t Au was used for the primary zone. The estimate was undertaken using ordinary Kriging for grade interpolation into blocks of 3x3x3 metres. This estimate used was based on 4,672 metres of RC drilling additional to that employed in the 2009 estimate.

In January 2011 a further update of the Pearse Mineral Resource was made that included all RC and diamond drilling completed at the Pearse Deposit to date. The 2011 Resource utilised the same estimation approach and parameters with updated domains as the April 2010 estimate, with the result being a very slight reduction in tonnage of the Resource. There was however a corresponding increase in the total percentage of the resource classified as Measured to over 94%, with the remainder classified as Indicated.

Summary of Resource Estimation Methodology

- Drill hole samples were composited to 1 m intervals and coded per estimation domain.
- Top-caps set at mean +2SD for the variables to be estimated (Au, Ag, As, Sb, S), but no further explanation.
- A block model with parent block sizes of 3 mE x 3 mN x 3 mRL, sub-blocked to 1.5 mE x 1.5 mN x 1.5 mRL at the domain boundaries was constructed and coded per estimation and oxidation domain.
- Variography presented in a table, that is the same as used in 2010 with a nugget effect and single structure.
- Block estimation was via Ordinary Kriging, with search ellipse orientations consistent with the variograms, with a minimum of 1 and maximum of 12 samples used, restricted to 5 samples per drill hole.
- Initial search ellipse radii were the same as the ultimate variogram range (42 x 16 x 13 m).
- Density was assigned per weathering domain (2.25 oxide, 2.35 transitional, 2.57 fresh).
- Model validated visually, statistically and by semi-local statistics (swath plots).

Any more recent estimates or data relevant to the mineralisation: There is no new data at the Pearse deposit that materially affects the original estimate.

The evaluation or exploration work that needs to be completed to verify the historical estimates in accordance with JORC 2012: Work needed to ensure accord with JORC 2012 consists of verifying the assumptions and geological model presented in the original estimate, potentially a program of twinned holes to verify the mineralisation and the production of a JORC Table 1 consistent with the JORC 2012 guidelines.

The proposed timing of any evaluation and or exploration work and comment on funding: Operations at Mineral Hill will be centred on the tailings reprocessing project for the first two years. During this period Kingston intends to update the historical JORC 2004 Resource estimates to comply with the JORC 2012 guidelines. As part of the proposed transaction Kingston is raising capital to fund exploration and development works at Mineral Hill.



Parkers Hill

The Parkers Hill Mineral Resource is estimated as:

1.84Mt @ 0.19g/t Au, 43g/t Ag, 1.3% Cu, 2.1% Pb and 0.9% Zn for 11Koz Au, 2.52Moz Ag, 22Kt Cu. 38Kt Pb and 17Kt Zn.

Cautionary statement: The estimate is not reported in accordance with the JORC 2012 code. A competent person has not done sufficient work to classify the historical estimates as mineral resources or ore reserves in accordance with the JORC 2012 Code. It is uncertain that following evaluation and/or further exploration work that the historical estimates will be able to be reported as mineral resources or ore reserves in accordance with the JORC code. Nothing has come to the attention of Kingston that causes it to question the accuracy or reliability of the former owner's estimates; but Kingston has not independently validated the former owner's estimates and therefore is not to be regarded as reporting, adopting or endorsing those estimates

An Ore Reserve estimate for Parkers Hill has not been completed.

The Mineral Resource estimate for the Parkers Hill was released by a prior owner of the Mineral Hill Mine in 2011. The numbers represented in this report reflect the original Resource estimate accounting for mining depletion using the site stope and development wireframes. Mineral Resources for Parkers Hill are reported above a cut-off of 0.6% Cu, 2% Pb & 100g/t Ag for oxide material, and 0.6% Cu for sulphide material. Classification fields were not included in the model provided for mining depletion although the original Parkers Hill estimate is entirely indicated except for 50,000t of inferred sulphide material that has been wholly retained in this report. The silver supergene component of the original Resource estimate has been conservatively excluded from figures presented in this report as they could not be re-reported. They are deemed immaterial as they only comprised 100,000t out of approximately 1,842,000t in the main Parkers Hill sulphide and supergene domains.

The Parkers Hill Mineral Resource is reported as a JORC 2004 estimate. The following statements are provided in accordance with ASX Listing Rules Guidance Note 31.

The source and date of historical estimates: The Mineral Resource estimate for the Parkers Hill was released by a prior owner of the Mineral Hill Mine in 2011. For information to access that original ASX release see Table 9 and 10.

Reported JORC edition: Mineral Resources and Ore Reserves are reported to JORC 2004 which include the same categories of mineralisation; inferred, indicated and measured as JORC 2012. JORC 2004 estimates may not conform to the requirements in the JORC Code 2012.

Relevance of historical estimate to entity: The Parkers Hill deposit contains a large portion of tonnes included in the total Mineral Hill Resource. The deposit presents as a potential supply of future feed to the processing plant.

The reliability of the estimates: The reliability of the estimates is deemed satisfactory. Historical records and reports document the sampling techniques, drilling techniques, logging standards and QAQC activities undertaken as input into the estimations. Additionally historical audits have been undertaken to verify the quality of inputs into the estimates. KSN believe the estimates were conducted using data that was of industry standard at the time of estimation. The drilling density at Parkers Hill is high, resulting in the large majority of the Resource classified (to JORC 2004 standards) as indicated. The high drill hole data density gives Kingston increased confidence in the reliability of the historical estimate.

To the extent known a summary of work programs on which historical estimates are based. Summary of key assumptions, mining and processing parameters and methods used to prepare historical estimates: Parkers Hill has been subject to extensive drilling since the 1960's. In total there are 369 drill holes for 31,779m of drilling in the Parkers Hill area. In recent times drilling by Triako Resources between 1987 and 2003 produced 11,539m. CBH Resources drilled 39 holes for 4793m between 2007 - 2008 and KBL drilled 162 holes for 12,064m between 2010 – 2013. Some underground mining focusing on the sulphide material has been completed historically at the Parkers Hill deposit. During previous operations, initial recoveries from that mining were lower than expected so mining was refocused on the Red Terror lode.

Summary of Resource Estimation Methodology:

- Sulphide domain Resource is reported using a 0.6% cut off grade.
- Within the supergene zone the high-grade lead domain had a cut-off grade of lead >2% for material that had silver grades less than 100g/t and the high-grade silver domain had a cut-off grade of silver >100g/t for material with a lead grade greater than 1%.
- An upper limiting cut-off grade of 680 g/t was used for silver which represents the mean silver grade plus 2 standard deviations.
- Within the saprock zone the cut-off grade was 0.6% copper Only assays that are contained within a particular domain are used for the calculation of grades within that domain.
- The high-grade assays were restricted to prevent smearing into other domains.
- Ordinary Kriging with 1m composites was used to calculate the metal grades of primary blocks of 5m x 5m x 5m. These were then sub-blocked to 2.5m x 2.5m x 2.5m to infill domain boundaries with the sub-blocks calculated on a parent block basis.
- Metal grades for copper, lead, zinc, silver and gold were interpolated into each block.
- Specific gravity was interpolated into the model on a domain basis from a data base of 9494 sg determinations. The sg determinations were conducted on site using the water displacement method.

The mineralisation style at Parkers Hill is particularly complex in the oxide zone. Various metallurgical studies have been conducted since the early 2000's aiming to understand the metallurgical performance of this mineralisation type and optimize it for processing plant performance. Further metallurgical test work is planned in parallel with mining studies.

Any more recent estimates or data relevant to the mineralisation: There is no new data at the Parkers Hill deposit that materially affects the original resource estimate.

The evaluation or exploration work that needs to be completed to verify the historical estimates in accordance with JORC 2012: Work required to update the historical estimate to be in accordance with JORC 2012 consists of verifying the assumptions and geological model presented in the original estimate, potentially a program of twinned holes or resampling of historical core or pulps to verify the mineralisation, and the production of a JORC Table 1 consistent with the JORC 2012 guidelines. It is anticipated that much of the future work programs will be focused on validation of the underlying geological and structural model, and metallurgical studies to increase the confidence in predicted recoveries as well as mining optimisation studies.

The proposed timing of any evaluation and or exploration work and comment on funding: Work programs at Parkers are expected to commence after Kingston has completed programs at Pearse, Pearse North, SOZ and Jacks Hut. It is anticipated that future work programs at Parkers Hill will be funded by cash flow from operations.

Competent Persons Statement and Disclaimer

The information in this report that relates to compiling and reporting of historical and previously released Resource and Reserve Estimates in this report 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 Kingston Resources. 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 Mineral Resources Report for the Mineral Hill Tailings Deposit (TSF1 & TSF2) has been compiled in accordance with the guidelines defined in the 2012 Edition of the 'Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves' (2012 JORC Code). The information in this report that relates to Exploration Results and Mineral Resources for the Mineral Hill Tailings Deposit is based on information compiled by Troy Lowien, a Competent Person who is a Member of The Australasian Institute of Mining and Metallurgy. Troy Lowien is employed by Groundwork Plus Pty Ltd. Troy Lowien 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. Lowien 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 Ore Reserves Estimate for the Mineral Hill Tailings Deposit is Mr Jeremy Peters (BSc, BEng), a Fellow of the Australasian Institute of Mining and Metallurgy and Chartered Professional Geologist and Mining Engineer of that organisation. Mr Peters is a full-time employee of Burnt Shirt Pty Ltd and has sufficient relevant experience to act as Competent Person in this instance. Mr Peters 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.

	Deposit	JORC	ASX Announcement	Competent Person	Company		
1	TSF	2012	KSN 18/11/2021	Jeremy Peters	Burnt Shirt		
	Pearse North	2012	KBL 16/06/2016	Peter Gilligan	KBL		
	Pearse	2004	KBL 20/10/2011	Robert Besley	KBL		

Table 9: Competent Persons and Access Details for Reported Ore Reserves

Table 10: Competent Persons and Access Details for Reported Mineral Resources

	Deposit	JORC	ASX Announcement	Competent Person	Company
_	TSF	2012	KSN 18/11/2021	Troy Lowien	Groundwork Plus
-	Pearse North	2012	KBL 16/06/2016	Owen Thomas	KBL
	Southern Ore Zone	2012	KBL 19/08/2014	Anthony Johnston – Exploration Results Rupert Osborn – MRE	KBL H&SC Consultants
	Pearse	2004	KBL 29/10/2010	Robert Besley – Exploration Results Colin Lutherborrow– MRE	KBL Ziloc Pty Ltd
	Parkers Hill	2004	KBL 13/09/2011	Anthony Johnston	KBL

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 metals exploration company which is focused on exploring and developing the worldclass Misima Gold Project in PNG. Misima hosts a JORC Resource of 3.8Moz Au and an Ore Reserve of 1.35Moz. 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. Kingston has concluded a Pre-Feasibility Study for Misima and is continuing to advance development activities. 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.



KSN

RESO

The Misima Mineral Resource estimate outlined below was released in an ASX announcement on 15 September 2021. Further information relating to the resource is included within the original announcement.

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	0.70	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	48.3	0.87	4.2	1.35	6.48

Misima JORC 2012 Mineral Resource & Ore Reserve summary table

JORC Code, 2012 Edition – Table 1 - Tailings Storage Facility (TSF) Deposit

Section 1 Sampling Techniques and Data

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

Criteria	JORC Code explanation	Commentary
Sampling techniques	 Nature and quality of sampling (eg cut channels, random chips, or specific specialised industry standard measurement tools appropriate to the minerals under investigation, such as down hole gamma sondes, or handheld XRF instruments, etc). These examples should not be taken as limiting the broad meaning of sampling. Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used. Aspects of the determination of mineralisation that are Material to the Public Report. In cases where 'industry standard' work has been done this would be relatively simple (eg 'reverse circulation drilling was used to obtain 1 m samples from which 3 kg was pulverised to produce a 30 g charge for fire assay'). In other cases more explanation may be required, such as where there is coarse gold that has inherent sampling problems. Unusual commodities or mineralisation types (eg submarine nodules) may warrant disclosure of detailed information. 	 2008 drilling – Approximately 1m samples were obtained from push tube method. The sample was spilt vertically down the middle and composites sent to an external lab to be pulverized and split to produce a charge for fire assay. 2019 drilling Aircore – Samples were collected at 1m intervals from the cyclone underflow, split to approximately 3kg and sent to an external lab to be pulverised and reduced to a 50g charge for fire assay. Hand Auger – Samples were collected from the collar of the hole and combined to form one composite for the total hole depth. Samples were split to approximately 3kg and reduced to a 50g charge for fire assay.
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, face-sampling bit or other type, whether core is oriented and if so, by what method, etc). 	 2008 drilling – Push tube methods where casing is advanced down the hole and a solid "core" of unconsolidated material is extracted from within the casing. 2019 drilling Aircore methods on TSF1 where a 100mm cutting bit with a hollow centre is pushed through unconsolidated material using rotation. Air is pumped through an annulus between the inner and outer tubes of the drill string and out through orifices in the cutting head. Sample is returned up the centre of the drill string and collected in a cyclone. Hand Auger method on TSF2, where a petrol powered 90mmm auger was used to bring sample to the surface where it was collected at the collar. Maximum tailings

Criteria	JORC Code explanation	Commentary
		depth encountered in the drilling was 1.75m.
Drill sample recovery	 Method of recording and assessing core and chip sample recoveries and results assessed. Measures taken to maximise sample recovery and ensure representative nature of the samples. Whether a relationship exists between sample recovery and grade and whether sample bias may have occurred due to preferential loss/gain of fine/coarse material. 	 The 1m samples from the aircore drilling were weighed after drying and splitting. The results show varied recoveries, with trends towards better recovery down hole and with successive holes. There is no apparent relationship between sample recovery
Logging	 Whether core and chip samples have been geologically and geotechnically logged to a level of detail to support appropriate Mineral Resource estimation, mining studies and metallurgical studies. Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc) photography. The total length and percentage of the relevant intersections logged. 	 Detailed logging of the tailings is considered impractical and unnecessary as the tailings have been homogenised from processing. Material changes were noted when drill holes intersected the base of the tailings dam.
Sub- sampling techniques and sample preparation	 If core, whether cut or sawn and whether quarter, half or all core taken. If non-core, whether riffled, tube sampled, rotary split, etc and whether sampled wet or dry. For all sample types, the nature, quality and appropriateness of the sample preparation technique. Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples. Measures taken to ensure that the sampling is representative of the in situ material collected, including for instance results for field duplicate/second-half sampling. Whether sample sizes are appropriate to the grain size of the material being sampled. 	obtain a 1kg sample than pulverized to 75 μ m and further sub-sample by scoop to obtain final 50g fire assay aliquot.
Quality of assay data and laboratory tests	 The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total. For geophysical tools, spectrometers, handheld XRF instruments, etc, the parameters used in determining the analysis including instrument make and model, reading times, calibrations factors applied and their derivation, etc. Nature of quality control procedures adopted (eg standards, blanks, 	 Samples from the 2008 drilling program were sent to ALS-Chemex Laboratory in Orange and assayed by Fire Assay (AAS finish) for Au and acid digest (ICP-MS finish) for Cu, Pb, Zn and Ag. Samples from the 2019 drilling program were also sent to the ALS Laboratory in Orange and assayed for a suite of elements by method ME-ICP41 (aqua regia digestion, ICP-AES finish) and for Au by method AA26 (50g fire assay, AAS finish). Fire assay is considered a total technique and appropriate for the

Criteria	JORC Code explanation	Commentary
	duplicates, external laboratory checks) and whether acceptable levels of accuracy (ie lack of bias) and precision have been established.	 mineralisation style. Quality control procedures adopted during the 2019 drilling program include submission of commercially available CRM's, blanks at a rate of about 1 in 10 samples and duplicate assays of pulp sample in the lab for every sample. Review of assay results for the submitted QAQC samples, as well as the lab's internal QAQC results, indicate an acceptable level of accuracy and precision has been established for the 2019 drilling results. No QAQC data is available for the 2008 drilling program.
Verification of sampling and assaying	 The verification of significant intersections by either independent or alternative company personnel. The use of twinned holes. Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols. Discuss any adjustment to assay data. 	 The drilling database was validated for overlapping sample intervals, compatibility of hole depths between database tables as well as collar elevations compared to surface surveys and visual checks of drill hole traces in Surpac. No issues were found. A number of holes in the 2019 drilling program were drilled close to the collar locations of holes drilled in the previous drilling program in 2008, and serve as a good comparison between the different drilling and sampling methods used in these programs Holes located less than 10m apart were assessed and found to have satisfactory levels of similarity and acceptable to be used jointly in Resource estimation.
Location of data points	 Accuracy and quality of surveys used to locate drill holes (collar and down-hole surveys), trenches, mine workings and other locations used in Mineral Resource estimation. Specification of the grid system used. Quality and adequacy of topographic control. 	 The drill hole collars from the 2019 drilling program were surveyed by a registered surveyor using RTK GNSS methods. It is not known by which methods the collar locations from the 2008 drilling program were located. There were no downhole surveys undertaken on the drill holes. All holes were drilled vertically and were relatively short (>15m depth), and therefore any downhole deviation would have negligible effects on the location of datapoints. The level of accuracy for drill hole locations is considered appropriate for Resource estimation purposes. This Resource estimate was undertaken using the MGA94 grid coordinate system. A recent, detailed surface topography survey of the Mineral Hill mine and surrounds was supplied in MGA94 coordinate system. The survey was undertaken using aerial photogrammetry methods, with a

	Criteria	JORC Code explanation	Commentary
			resolution of 1m.
)	Data spacing and distribution	 Data spacing for reporting of Exploration Results. Whether the data spacing and distribution is sufficient to establish the degree of geological and grade continuity appropriate for the Mineral Resource and Ore Reserve estimation procedure(s) and classifications applied. Whether sample compositing has been applied. 	 Drilling density is broadly on a notional 50 m x 50 m grid, with closer spaced drilling in the north-eastern corner (25 m x 25 m) and numerous pairs of drill holes at around 10m separation. Down hole sampling intervals are approximately 1m. The data spacing and distribution is sufficient to establish grade continuity appropriate for the Mineral Resource estimation procedures and classifications applied. Samples in TSF1 were composited to 1m intervals. Sample in TSF2 were collected as entire hole length composites.
	Orientation of data in relation to geological structure	 Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type. If the relationship between the drilling orientation and the orientation of key mineralised structures is considered to have introduced a sampling bias, this should be assessed and reported if material. 	 Tailings were deposited sub-aerially forming beaches with a slight slope towards the centre of the storage facility. Therefore, any grade variations over time will be represented by sub-horizontal layering. Drilling of vertical drill holes ensures sampling is undertaken as close as possible orthogonal to the direction of maximum grade continuity.
	Sample security	The measures taken to ensure sample security.	 All samples from the 2019 drilling program were collected and sub- sampled on site by staff from Mineral Hill and Groundworks Plus. Sample were submitted to the external laboratory using standard paperwork and delivered by Mineral Hill staff.
	Audits or reviews	• The results of any audits or reviews of sampling techniques and data.	Sampling techniques and data were guided and reviewed by the Competent Person.

Section 2 Reporting of Exploration Results

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

Criteria	JORC Code explanation	Commentary	
<i>Mineral tenement and land tenure status</i>	 Type, reference name/number, location and ownership including agreements or material issues with third parties such as joint ventures, partnerships, overriding royalties, native title interests, historical sites, wilderness or national park and environmental settings. The security of the tenure held at the time of reporting along with any known impediments to obtaining a licence to operate in the area. 	 The project is located within granted Mining leases ML334, ML1695, ML5240, ML5499, ML5621, ML6365 with the earliest expiry date of 14 March 2033. The leases are held by Mineral Hill Pty Ltd. Atom Minerals have an agreement with Mineral Hill Pty Ltd to investigate and mine/process the tailings under commercial terms. The site is covered by EPL 3151, scheduled activity is mining for minerals. 	

Criteria	JORC Code explanation	Commentary	
• Acknowledgment and appraisal of exploration by other parties. done by other parties		 The tailings in TSF1 were previously drilled in 2008 by CBH Resources. The drilling was undertaken by standard methods and the results used to generate an approximate tonnage and grade. 	
Geology	• Deposit type, geological setting and style of mineralisation.	 The tailings consist of clay to fine sand sized particles deposited in sub-horizontal layers from numerous outflow sites located around the perimeter of the facilities. The particles contain remnant gold and copper that were not separated from the gangue during the beneficiation process. 	
Drill hole Information	 A summary of all information material to the understanding of the exploration results including a tabulation of the following information for all Material drill holes: easting and northing of the drill hole collar elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar dip and azimuth of the hole down hole length and interception depth hole length. 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. 	 A table of drill hole data is included in Attachment 2 of this report. 	
Data aggregation methods	 In reporting Exploration Results, weighting averaging techniques, maximum and/or minimum grade truncations (eg cutting of high grades) and cut-off grades are usually Material and should be stated. Where aggregate intercepts incorporate short lengths of high grade results and longer lengths of low grade results, the procedure used for such aggregation should be stated and some typical examples of such aggregations should be shown in detail. The assumptions used for any reporting of metal equivalent values should be clearly stated. 	 No data aggregation methods have been used in the table of drill hole data. 	
Relationship between mineralisation widths and intercept lengths	 These relationships are particularly important in the reporting of Exploration Results. If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported. If it is not known and only the down hole lengths are reported, there should be a clear statement to this effect (eg 'down hole length, true width not known'). 	 Holes were drilled vertical, intersecting the direction of main grade continuity at approximate right angles. 	

Criteria	JORC Code explanation	Commentary	
Diagrams	 Appropriate maps and sections (with scales) and tabulations of intercepts should be included for any significant discovery being reported These should include, but not be limited to a plan view of drill hole collar locations and appropriate sectional views. 	 Maps and sections of the drill hole locations, mineralised intercepts and domain interpretations are included in this report. 	
Balanced reporting	 Where comprehensive reporting of all Exploration Results is not practicable, representative reporting of both low and high grades and/or widths should be practiced to avoid misleading reporting of Exploration Results. 	All of the dill results used in the Resource estimate have been reported in Attachment 2.	
Other substantive exploration data	 Other exploration data, if meaningful and material, should be reported including (but not limited to): geological observations; geophysical survey results; geochemical survey results; bulk samples – size and method of treatment; metallurgical test results; bulk density, groundwater, geotechnical and rock characteristics; potential deleterious or contaminating substances. 	 Bulk density measurements and metallurgical test results are available. 	
Further work	 The nature and scale of planned further work (eg tests for lateral extensions or depth extensions or large-scale step-out drilling). Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive. 	No further exploration work is planned.	

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	 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. Data validation procedures used. 	 Drill hole collar locations (2019) were read directly from the Surpac string file generated by the licensed surveyor. Assay files were downloaded from the laboratory's internet-based retrieval system as csv files and loaded directly into the Microsoft Access database. The following database validation activities have been carried out: Ensure compatibility of total hole depth data in the collar and assay drill hole database files. Check for overlapping sample intervals.

Criteria	JORC Code explanation	Commentary	
		 Checking of drill hole locations against the surface topography. Visual validation in Surpac software. No issues were found with the database. 	
Site visits	 Comment on any site visits undertaken by the Competent Person and the outcome of those visits. If no site visits have been undertaken indicate why this is the case. 	• The competent Person undertook a site visit at the commencement of the 2019 drilling program. A review of the drill method as well as sampling and sub-sampling procedures was carried out. The Competent Person is satisfied the resulting data is fit for use in the Resource estimation.	
Geological interpretation	 Confidence in (or conversely, the uncertainty of) the geological interpretation of the mineral deposit. 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. 	 There is no geological interpretation of the tailings deposits, and it is assumed the tailings were deposited in sub-horizontal layers. The volume of tailings is constrained by surveys of the topography prior and subsequent to the deposition of the tailings. The interface of the internal dam wall and tailings was interpreted based on the style of dam wall design (upstream lifts). The style of deposit (tailings) does not allow for alternative interpretations. The tailings in TSF1 were grouped into grade-based domains which reflect depositional years. The mineralisation within the TSF's is considered continuous with low variability within domains. 	
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. 	 The Resource estimate entails the entirety of TSF1, which measures approximately 300m by 250m and an average depth of 15m, and a cell within TSF2 which measures approximately 200m by 120m and an average of 2m in depth. 	
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 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). 	 Resource estimation was carried out for gold by Ordinary Kriging (OK) method for TSF1. Inverse distance weighting (IDW) method was used for TSF2 due to lower data density. A multi-pass-pass strategy was employed to generate the grade estimates, with the first two passes set at a distance equal to or less than the total range of the variogram. The number of composites for a successful estimate was restricted to a minimum of 5 and a maximum of 30, with an additional constraint of a maximum of 4 composites to be sourced from any one drill hole. The search axes were aligned with directions of maximum continuity derived from variographic analyses of the data sets. Block models were constructed using parent block dimensions of 10m East by 10m North by 1mRL for TSF1 and 25m North by 25m 	

Criteria	JORC Code explanation	Commentary
Moisture	 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 reconciliation data if available. Whether the tonnages are estimated on a dry basis or with natural 	 East by 1m RL for TSF2, with sub-blocking for the purpose of providing appropriate definition of the topographic surface, and grade domain boundaries A high grade cut was applied to composites within the high grade domain of TSF1. The estimated tonnes and grade were compared to data from the processing plant tailings feed. Modeled tonnages are within 2% and grade within 7% of processing records. No assumptions of byproduct recovery have been made. The tailings are already contained within a licensed facility and will be re-processed and deposited into another facility that is licensed to handle potential acid forming material. Block sizes in the block model were chosen based on average drill spacing and results of kriging neighbourhood analyses. No assumptions about correlation between variables has been made. The search radii were aligned to reflect the sub-horizontal nature of tailings deposition. Grade domains were used to constrain composite selection. Validation of the estimate was completed and included both interactive and statistical review. The validation methods included: - Visual comparison of the input data against the block model grade in plan and cross section. Comparison of global statistics. Swath plots, comparing the composite grade and the estimated grade grouped by intervals in plan and section The model was found to be robust.
	moisture, and the method of determination of the moisture content.	
Cut-off parameters	 The basis of the adopted cut-off grade(s) or quality parameters applied. 	 As selectivity is possible with the proposed mining method, a cut-off grade has been applied. The cut-off grade was calculated based on a gold price of \$AU2,000 and the lower end of the expected range of mining and processing costs.
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 	 It is proposed that the tailings will be mined using excavator and mobile slurry plant pumping directly to the process plant.

(Criteria	JORC Code explanation	Commentary
		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 mining assumptions made.	
1	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 treatment processes and parameters made when reporting Mineral Resources may not always be rigorous. Where this is the case, this should be reported with an explanation of the basis of the metallurgical assumptions made.	 Two stages of metallurgical test work have been undertaken on the tailings, including intensive leaching, cyanidation bottle rolls and CIL test work. Laboratory scale test work carried out under plant conditions show potential recoveries up to 64%.
1	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 environmental impacts of the mining and processing operation. While at this stage the determination of potential environmental impacts, particularly for a greenfields project, may not always be well advanced, the status of early consideration of these potential environmental impacts should be reported. Where these aspects have not been considered this should be reported with an explanation of the environmental assumptions made. 	• It is assumed that during mining there will be no run off or breach of the existing dam wall which could potentially contaminate the surrounding surface and groundwater. Once processed, the tailings will be deposited into an existing TSF.
	Bulk density	 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. 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. Discuss assumptions for bulk density estimates used in the evaluation process of the different materials. 	 Specific gravity of 32 samples from TSF1 and 6 samples from TSF2 were determined by air pycnometer methods. Samples were chosen to represent an even distribution of tailings both laterally and vertically. The dry bulk density was calculated using the specific gravity and a typical tailings deposit porosity value of 0.48. An average of 1.4 t/m³ was used for estimation of tonnage. There appears to be no correlation between density and grade, or density and location.
	Classification	 The basis for the classification of the Mineral Resources into varying confidence categories. Whether appropriate account has been taken of all relevant factors (ie relative confidence in tonnage/grade estimations, reliability of input 	 The Resource has been classified as Indicated and Inferred with the key parameters considered during the resource classification being: Geological knowledge and interpretation. Deposit style.

Criteria	JORC Code explanation	Commentary
	 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. 	 Confidence in the sampling and assay data. The spacing of the exploration drill holes. Variogram model ranges in relation to the local data spacing and the estimation variance. Prospects for eventual economic extraction. The estimate reconciles well with historical processing data and has good prospects for eventual economic extraction due to its proximity to an existing CIL plant and partially filled TSF. The lower, low grade section of TSF1 was not classified due to the low number of informing data points compared to the volume of this domain, as well as being potentially non-economic to process. Drilling and sampling methods in the 2019 program, whilst showing no sign of any issues or bias, are not optimal for the material being sampled, as aircore sampling can become problematic when wet samples are encountered. Although the methods used in the 2008 drilling program are considered more robust, the lack of any QAQC information reduces the confidence in these results. The classification reflects the Competent Person's view of the deposit.
Audits or reviews	• The results of any audits or reviews of Mineral Resource estimates.	 There have been no audits or reviews of the estimate apart from internal review by Groundwork Plus.
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 local estimates, and, if local, state the relevant tonnages, which should be relevant to technical and economic evaluation. Documentation should include assumptions made and the procedures used. These statements of relative accuracy and confidence of the estimate should be compared with production data, where available. 	 There has been no attempt to apply geostatistical methods to quantify the relative accuracy of the Mineral Resource to within a set of confidence limits. The Competent Person believes the Mineral Resource estimate provides a good estimate of global tonnes and grade. No change of support adjustment has been made to the block estimates. The accuracy and confidence of this Mineral Resource estimate is considered suitable for public reporting by the Competent Person.

Section 4: Estimation and Reporting of Ore Reserves

Criteria	Explanation	Comment
Mineral Resource estimate for conversion to Ore Reserves	• Description of the Mineral Resource estimate used as a basis for the conversion to an Ore Reserve.	The information in this report that relates to Exploration Results and Mineral Resources is based on information compiled by Troy Lowien, MAusIMM, employed by Groundwork Plus Pty Ltd (Groundwork).
		Burnt Shirt Pty Ltd (Burnt Shirt) is satisfied that the Groundwork Mineral Resource estimate has been undertaken to a standard appropriate for use in an Ore Reserve estimation.
	Clear statement as to whether the Mineral Resources are reported additional to, or inclusive of, the Ore Reserves.	The Ore Reserve is inclusive of the Mineral Resource.
Site visits	• Comment on any site visits undertaken by the Competent Person and the outcome of those visits.	No site visit was undertaken by Mr Peters.
	 If no site visits have been undertaken indicate why this is the case. 	The site is a recently operating mine and Mr Peters accepts representations made variously by Atom Minerals Pty Ltd (Atom) and Mr Troy Lowien.
Study status	• The type and level of study undertaken to enable Mineral Resources to be	Mr Peters considers the level of study to at least be equivalent to a Prefeasibility Study.

	converted to Ore Reserves. The Code requires that a study to at least Prefeasibility Study level has been undertaken to convert Mineral Resources to Ore Reserves. Such studies will have been carried out and will have determined a mine plan that is technically achievable and economically viable, and that material Modifying Factors have been	
Cut-off parameters	 considered. The basis of the cut- off grade(s) or quality parameters applied. 	Cut-off grade has been determined economically. The project contemplates re-processing a tailings dam of relatively consistent grade.
Mining factors or assumptions	• The method and assumptions used as reported in the Pre- Feasibility or Feasibility Study to convert the Mineral Resource to an Ore Reserve (i.e. either by application of appropriate factors by	Atom has commissioned sufficient Mineral Resource, engineering, process engineering and metallurgical reports to satisfy the requirements of the JORC Code.

optimisation or by preliminary or detailed design).	
The choice, nature and appropriateness of the selected mining method(s) and other mining parameters including associated design issues such as pre- strip, access, etc.	The project exploits a tailings dam and the chosen mining techniques are considered to be appropriate.
The assumptions made regarding geotechnical parameters (e.g. pit slopes, stope sizes, etc), grade control and pre- production drilling.	Atom has commissioned GHD, of Perth, to analyse and recommend tailings dam parameters that meet relevant Australian Standards.
 The major assumptions made and Mineral Resource model used for pit and stope optimisation (if appropriate). 	The project exploits a tailings dam and no optimisation is considered necessary.
The mining dilution factors used.	GHD has estimated mining recovery (5%) and dilution (3%) through analysis of over-dig of the tailings.
The mining recovery factors used.	
 Any minimum mining widths used. 	Mining widths are dependent on the degree of saturation of the tailings sands.

	• The manner in which Inferred Mineral Resources are utilised in mining studies and the sensitivity of the outcome to their inclusion.	Not applicable.
	 The infrastructure requirements of the selected mining methods. 	There is an existing plant and its modification has been analysed and costed by Atom's metallurgical and engineering consultants.
Metallurgical factors or assumptions	 The metallurgical process proposed and the appropriateness of that process to the style of mineralisation. Whether the metallurgical process 	Conventional gold extraction is proposed, using cyanide.
	is well-tested technology or novel in nature.	
	 The nature, amount and representativeness of metallurgical test work undertaken, the nature of the metallurgical domaining applied and the corresponding 	Atom's metallurgical consultants have tested samples from the tailings dam and drawn conclusions on test results.

	metallurgical recovery factors applied.	
	• Any assumptions or C allowances made for deleterious elements.	Syanide soluble copper has been considered by Atom's metallurgical consultants.
	bulk sample or pilot to scale test work and the degree to which such samples are considered representative of the orebody as a whole.	stom's metallurgical consultants have tested samples from the tailings dam and consider these results o be applicable to the dam.
	 For minerals that are defined by a specification, has the ore reserve estimation been based on the appropriate mineralogy to meet the specifications? 	lot applicable.
Environmental	2	he project exploits an existing, licensed tailings storage facility (TSF) and no waste rock will be produced. Retreated tailings are to be placed in new cells within the existing facility.

	considered and, where applicable, the status of approvals for process residue storage and waste dumps should be reported.	
Infrastructure	 The existence of appropriate infrastructure: availability of land for plant development, power, water, transportation (particularly for bulk commodities), labour, accommodation; or the ease with which the infrastructure can be provided, or accessed. 	The site is an existing, licensed mine site.
Costs	 The derivation of, or assumptions made, regarding projected capital costs in the study. 	Capital costs have been estimated by Atom's consultant engineers, GHD and Mincore Engineering (Mincore), from first principles.
	• The methodology used to estimate operating costs.	Operating costs have been estimated by Atom's consultant engineers, GHD, from first principles.

	3	om's consultant metallurgists, JTMS Metallurgical Services (JTMS) has considered the effect of anide soluble copper.
		e product is gold, for which there is a demonstrably liquid market.
	· · · · · · · · · · · · · · · · · · ·	ot prices have been used in Australian dollars.
	Derivation of No transportation charges.	ot applicable.
	The basis for No forecasting or source of treatment and refining charges, penalties for failure to meet specification, etc.	ot applicable.
		atutory government royalties have been applied and the project is a joint venture between Atom d the owners and a commercial royalty has been applied under this arrangement.
Revenue factors	The derivation of, or assumptions made regarding revenue factors including head grade, metal or commodity price(s)	e product is gold, for which there is a demonstrably liquid market.

	exchange rates,
	transportation and
	treatment charges,
	penalties, net smelter
	returns, etc.
	The derivation of
	assumptions made of
	metal or commodity
	price(s), for the
	principal metals,
	minerals and co-
	products.
Market	• The demand, supply
assessment	and stock situation for
	the particular
	commodity,
	consumption trends
	and factors likely to
	affect supply and
	demand into the
	future.
	A customer and
	competitor analysis
	along with the
	identification of likely
	market windows for
	the product.
	Price and volume
	forecasts and the
	basis for these
	forecasts.

Economic	 For industrial minerals the customer specification, testing and acceptance requirements prior to a supply contract. The inputs to the economic analysis to produce the net present value (NPV) in the study, the source 		(NPV ₈) of A\$19.6 million over	d by its consultants, returns a net prese a 29-month schedule, before tax and
	and confidence of		[
	these economic inputs	Description	Unit	Value
	including estimated	Ore Reserve	Mt	1.81
	inflation, discount	Average head grade	g/t	1.13
	-	Expected gold recovery rate, net of	%	64.2
	rate, etc.	start-up losses		
		Gold produced	OZ	42,634
		Duration (processing activities)	months	29
		Net cash flow (pre-tax)	A\$	23.3
		NPV 5%	20.6	
		Peak negative cash flow (including cash float and capital equipment)	(9.3)	
		Payback period (from start of Project)	months	19
		All-in sustaining cost (AISC), excludes investment capital	A\$/oz	1,251
		Opex costs		29.45
		Over/Underburden & Gold Pond		0.80
		Removal Costs		3.61
		Mining and pulping	A\$ tonne Per processed	21.45
		- Processing		3.45
		- Overhead		0.14
		- Demobilisation/Plant make good		
		Depreciation	A\$/t	5.15
		Capital equipment & TSF Works	A\$ M	9.9
		Security Bond (NSW Government)	A\$ M	3.2
		Gold price	A\$/oz	2,159

	 NPV ranges and 	Sensitivities:						
	sensitivity to		NPVS	Low	Base	High		
	variations in the			Case	Case	Case		
	significant			(A\$M)	(A\$M)	(A\$M)		
	assumptions and		Recovery rate ±3%	16.9		24.4		
	inputs.		A\$ gold price ±10%	12.6		28.7		
	inputs.		Pre-production capital ±10%	22.9		21.6		
			Production throughput - 10%	17.0				
			Opex costs:					
			Over/under burden removal ±10%	20.5	20.6	20.8		
			Mining and pulping costs ±10%	20.1		21.2		
			Processing costs ±10%	17.1		24.2		
			Overhead costs ±10%	20.1	-	21.2		
			Demobilisation costs ±10%	20.6	_	20.7		
			Upside Case			32.9		
			Downside Case	9.2				
Social	The status of agreements with key stakeholders and matters leading to social licence to operate.	The project contem	plates and existing mine si	ite with a	an apparer	ntly supportiv	e local popula	ıti
Other	• To the extent relevant, the impact of the following on the project and/or on the estimation and classification of the Ore Reserves:							

	Any identified material naturally	Nothing has been identified.
	occurring risks.	
	The status of material	Nothing has been identified.
	legal agreements and	
)	marketing	
	arrangements.	
	The status of	The project contemplates an existing, licensed mine site.
	governmental	
	agreements and	
	approvals critical to	
	the viability of the	
	project, such as	
	mineral tenement status, and	
	government and	
	statutory approvals.	
	There must be	
	reasonable grounds to	
	expect that all	
	necessary	
	Government	
	approvals will be	
	received within the	
	timeframes	
	anticipated in the Pre-	
	Feasibility or	
	Feasibility study.	
	Highlight and discuss	
	the materiality of any	
	unresolved matter	
	that is dependent on a	
	third party on which	

	extraction of the reserve is contingent.	
Classification	 The basis for the classification of the Ore Reserves into varying confidence categories. 	Confidence is premised on the classification of the Mineral Resources.
	 Whether the result appropriately reflects the Competent Person's view of the deposit. 	The classification appropriately reflects the Competent Person's view.
	 The proportion of Probable Ore Reserves that have been derived from Measured Mineral Resources (if any). 	Not applicable.
Audits or reviews	The results of any audits or reviews of Ore Reserve estimates.	No audits have been undertaken.
Discussion of relative accuracy/ confidence		The classification appropriately reflects the Competent Person's view, and this has been stated.

	application of
	statistical or
	geostatistical
	procedures to quantify
	the relative accuracy
)	of the reserve within
	stated confidence
	limits, or, if such an
	approach is not
	deemed appropriate,
	a qualitative
	discussion of the
	factors which could
	affect the relative
	accuracy and
	confidence of the
	estimate.
	The statement should
	specify whether it
	relates to global or
	local estimates, and, if
	local, state the
	relevant tonnages,
	which should be
	relevant to technical
	and economic
	evaluation.
	Documentation should
	include assumptions
	made and the
	procedures used.
	 Accuracy and
	confidence discussions

aba uld autoral ta
should extend to
specific discussions of
any applied Modifying
Factors that may have
a material impact on
Ore Reserve viability,
or for which there are
-
remaining areas of
uncertainty at the
current study stage.
 It is recognised that
this may not be
possible or
appropriate in all
circumstances. These
statements of relative
accuracy and
confidence of the
estimate should be
compared with
production data,
where available.
Where available.