ASX ANNOUNCEMENT



Galena Mining Limited

ASX : G1A

Shares on Issue 55,600,000 (pre 1:5 share split)

Cash (Dec Qtr) \$3.1m

Directors & Management

Non-Executive Chairman Adrian Byass

CEO Edward Turner

COO Troy Flannery

Non-Executive Directors Jonathan Downes Oliver Cairns Tim Morrison

Company Secretary Stephen Brockhurst

<u>Registered Office</u> Level 11, 216 St Georges Tce Perth WA 6000 T 08 9481 0389

<u>Contact</u> 5/245 Churchill Ave, Subiaco WA 6008

T 08 6166 3750 E admin@galenamining.com.au W www.galenamining.com.au

14 March 2018

WORLD CLASS LEAD-SILVER RESOURCE EXCEEDS EXPECTATIONS

Highlights

- High-grade resource of 11.2Mt (Indicated and Inferred) @ 10.1% lead and 28g/t silver within;
 - o 36.6Mt (Indicated and Inferred) @ 7.3% lead and 18g/t silver
- Resource grade and size confirms Abra as one of the largest undeveloped lead-silver projects in the world
- High-grade resource now being integrated into Pre-Feasibility study led by newly appointed COO
- Extensive copper and gold mineralisation at depth not included in this resource estimate

Galena Mining Limited (ASX: G1A) ("Galena" or the "Company") is pleased to announce a new world class resource at its 100% owned Abra lead-silver project. This follows a very successful +8,000m drilling programme completed in December 2017. The combined JORC 2012 resource estimate (using inverse distance interpolation) is as follows;

Indicated Resource of 5.3 Mt at 10.6% lead & 28 g/t silver and an Inferred Resource of 5.9 Mt at 9.7% Pb & 29 g/t silver (using a 7.5% Pb cut-off) for a combined

11.2Mt @ 10.1% lead and 28g/t silver

within an

Indicated Resource of 13.2 Mt at 7.9% lead & 19g/t silver and an Inferred Resource of 23.5 Mt at 6.9% Pb & 17 g/t silver (using a 5.0% Pb cut-off) for a combined

36.6Mt @ 7.3% lead and 18g/t silver

Galena CEO Ed Turner commented:

"These resource numbers have exceeded our expectations and confirm Abra as a truly world class asset with global significance in the lead market. What is even more exciting for the Company and its shareholders is that this looks like just the beginning of a much bigger project and that potential upside exists in and around where we have drilled to date.



We have a clear strategy to bringing Abra on line as one of Australia's next base metals producers and our focus now is progressing a robust Pre-Feasibility Study over the coming months."

Resource Estimation

The resource was calculated using 46,424m of diamond core and 14,413 samples. Galena Mining completed 8,024m of diamond drilling between September and December 2017 to test a high-grade, stratiform and structural control model (ASX announcement dated 1 February 2018). Drilling conducted by previous owners, in addition to that completed by Galena, has been included in the dataset for this Resource Estimate.

The Abra resource estimate is primarily based upon geological and assay data from diamond drilling programs completed at Abra from 1981 until 2017. Mineralised intervals were diamond drilled using NQ diameter, geologically logged, cut and then ½ core samples were submitted to the laboratory for analysis. Samples were oven dried, crushed, pulverised and analysed for base metals using either a three acid or four digest followed by an AAS or ICP-OES finish. Gold was assayed by fire assay using a 25 g or 30 g charge.

Geological and resource modelling utilised Micromine software. Wireframing was carried on 50 spaced N-S orientated cross sections which was cross checked in plan. A 3D geological model was developed which encompassed the major litho-stratigraphic units, alteration zones, brecciation zones, hydrothermal vein zones, and faults. The 3D geological model was used to guide the mineralization wire-frame interpretation on 50m spaced N-S orientated cross sections. Solid wireframes were created for the "Apron" zone (at Pb>2% and Pb>5% lower cut-offs) and for the "Core" zone (at Pb>2% and Pb>5% lower cut-offs) (Figure 2).

Lead is the primary economic element and was modelled using both ordinary kriging and inverse distance squared interpolation. Secondary metals silver, zinc, copper and gold were estimated using inverse distance squared interpolation. Search ellipse maximum axes ranging from 95 to 220 metres depending on the domain. Kriging parameters were based on lead variography. Ancillary items estimated included the number of holes and composites used to estimate a block, kriging variance and regression line slope. These were used to assist in resource classification. Outlier samples were cut and 2 metre composites used for the estimate.

A model block size of 10m (X) by 10m (Y) by 4m (Z) was used with sub-celling to 2m (X) by 2.5m (Y) by 2.5m (Z). This block size is believed to be appropriate for the data set and for evaluation as an underground mine. Block grades were estimated at the parent block size. Bulk densities were assigned to each domain based on the mean measured density from test-work for each domain. Bulk densities applied range from 2.8 to 3.6 depending on the domain.

The resource classification for Abra is based upon review of critical modifying factors including data density, data quality, geological confidence, geostatistics, variography and quality of the estimate. On this basis the Resource has been classified as Indicated in areas where there is high geological confidence (ie the Apron and Core >5% Pb modelled domains) and there is appropriate drill spacing (from generally 50m by 50m but in some areas on 70m by 70m where there is good continuity of geology and grade). Inferred Resources are reported where drill spacing is generally greater than 50 by 50 constrained by the Apron and Core >5% Pb and >2% Pb domains. The maximum distance from a drill hole is 150m for an appropriately informed block estimate.



The Resource estimate has been prepared assuming mining will be undertaken using conventional underground mining methods. A range of cut-off grades are reported which are believed to be appropriate for underground mining.

It is assumed that lead and silver sulphide mineralisation can be economically extracted using conventional flotation methods. Preliminary metallurgical test work in 2008 was encouraging indicating that a float recovery of 95% is achievable for lead in the lead domain and an expected concentrate grade of approximately 55% to 65% Pb is achievable. Galena has sent 130 half core samples from six zones representing the major mineralization styles to ALS Chemex in Burnie, Tasmania for metallurgical testwork. Results of this program are pending.

The Abra Resource Estimate using inverse distance squared interpolation is presented in Table 1 and for ordinary kriging is shown Table 2. The grade tonnage curve for the estimate is shown in **Figure 1**.

INDICATED RESOURCE					
Pb% Cut off	Vol m³	Tonnes	Pb%	Ag g/t	
5.0*	3,800,000	13,200,000	7.9	19	
6.0	2,700,000	9,300,000	8.9	22	
7.0	1,800,000	6,300,000	10.1	26	
7.5*	1,500,000	5,300,000	10.6	28	
8.0	1,300,000	4,500,000	11.1	30	
9.0	900,000	3,200,000	12.2	35	
10.0	700,000	2,300,000	13.2	42	
INFERRED RES	OURCE				
Pb% Cut off	Vol m³	Tonnes	Pb%	Ag g/t	
5.0*	6,900,000	23,500,000	6.9	17	
6.0	4,000,000	13,400,000	8.0	21	
7.0	2,300,000	7,800,000	9.1	26	
7.5*	1,700,000	5,900,000	9.7	29	
8.0	1,300,000	4,600,000	10.2	32	
9.0	900,000	3,000,000	11.2	39	
10.0	600,000	2,000,000	12.0	46	
TOTAL RESOU	RCE (INFERRED	AND INDICATE	D COMBINED)		
Pb% Cut off	Vol m³	Tonnes	Pb%	Ag g/t	
5.0*	10,700,000	36,600,000	7.3	18	
6.0	6,600,000	22,700,000	8.4	21	
7.0	4,100,000	14,100,000	9.5	26	
7.5*	3,300,000	11,200,000	10.1	28	
8.0	2,700,000	9,100,000	10.7	31	
9.0	1,800,000	6,300,000	11.7	37	
10.0	1,300,000	4,300,000	12.7	44	

Table 1: Abra March 2018 JORC Resource Estimate (Inverse Distance interpolation)

* denotes preferred cut-offs for resource reporting

Nb Tonnages are rounded to the nearest 100,000t, lead grades to one decimal place and silver to the nearest gram. Rounding errors may occur when using the above figures.



Pb% Cut off Vol m ³ Tonnes		Pb%	Ag g/t	
5.0*	3,900,000	13,600,000	7.6	18
6.0	2,800,000	9,600,000	8.5	2:
7.0	1,900,000	6,400,000	9.5	20
7.5*	1,600,000	5,400,000	10.0	28
8.0	1,300,000	4,400,000	10.4	30
9.0	900,000	2,900,000	11.5	3
10.0	500,000	1,800,000	12.8	48
INFERRED RES				
Pb% Cut off	Vol m ³	Tonnes	Pb%	Ag g/t
5.0*	6,800,000	23,200,000	6.7	17
6.0	3,800,000	12,800,000	7.6	2:
7.0	1,900,000	6,600,000	8.8	2
7.5*	1,400,000	4,900,000	9.3	3:
8.0	1,100,000	3,600,000	9.9	30
9.0	600,000	2,100,000	10.9	4
10.0	400,000	1,400,000	11.6	53
		AND INDICATED CON	,	
Pb% Cut off	Vol m ³	Tonnes	Pb%	Ag g/t
5.0*	10,700,000	36,800,000	7.0	17
6.0	6,500,000	22,300,000	8.0	2:
7.0	3,800,000	13,000,000	9.1	20
7.5*	3,000,000	10,300,000	9.7	29
8.0	2,300,000	8,000,000	10.2	33
9.0	1,500,000	5,000,000	11.2	40
10.0	900,000	3,200,000	12.3	5:

 Table 2: Abra March 2018 JORC Resource Estimate (Ordinary kriged interpolation).

* denotes preferred cut-offs for resource reporting

Nb Tonnages are rounded to the nearest 100,000t, lead grades to one decimal place and silver to the nearest gram. Rounding errors may occur when using the above figures.



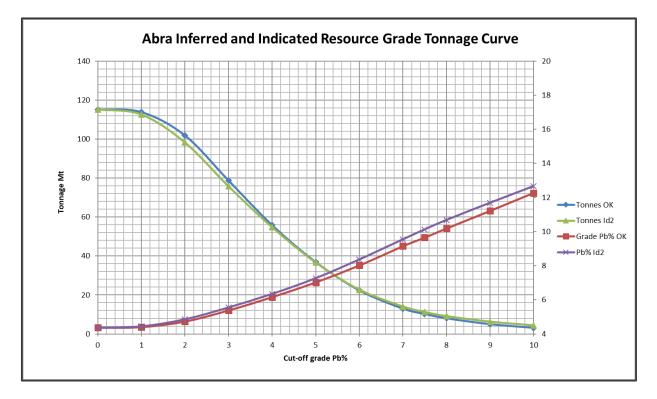


Figure 1: Abra March 2018 Resource Estimate grade tonnage curve.



Geological Model

Abra is a very large deposit with zonation at depth transitioning from dominant lead-silver type in the upper zones (which starts at approximately 230 vertical metres below surface) to a copper-gold style deposit at depth. There is some overlap in mineralisation styles.

The deposit can be divided into two main parts. The upper "Apron" zone comprises strata-form massive and disseminated lead- sulphides (galena) and minor copper sulphides (chalcopyrite) within a highly altered sequence of clastic and dolomitic sediments. Alteration products include jasperlitic rich sediments (the "Red Zone") and a distinctive stratiform zone of hematatite-magnetite alteration (the "Black Zone". The Apron zone extends for 1,000m along strike, 700m down dip and dips gently south.

The "Core" zone underlies the Apron and comprises an elongate funnel shaped body of hydrothermal breccias, veining and intense alteration overprinting gently south dipping sediments. The veining and breccia zones in the Core typically dip steeply to the north. High grade lead sulphide mineralisation is predominantly hosted in intensely veined zones. High grade zinc sulphide mineralisation (sphalerite) is found in the central parts of the Core. Copper (chalcopyrite) and gold mineralisation is sporadically found throughout the upper parts of the Core zone but forms coherent body at the base of Core. The core zones extends from 300 to 750m below surface and can be traced for 400m along strike.

Abra is a significant, world-class undeveloped lead-silver deposit with in excess of 4Mt contained lead defined. The deposit is sedimentary hosted replacement style with the upper sections dominated by stratabound lead-silver horizons that dip shallowly to the south. These horizons are fed by steeper dipping vein dominant mineralised zones that again contain high grade lead and silver but can also contain zinc and copper and gold at depth. These veins maintain a higher density under the centre or core of the deposit however they can also be found under the peripheral parts of the stratabound (or apron) mineralisation. The apron extends over an area of approximately 1,000 metres by 800 metres and has not been closed off by drilling.

Significant copper and gold intersections occur at depth within the vein mineralisation. These include:

- 4m @ 6.3% Cu and 0.2 g/t Au from 716m in AB22A (including 1m @ 10.5% Cu from 716m); and
- 8m @ 5.8 g/t Au and 1.0% Cu from 506m in AB3 (including 1m @ 15.0 g/t Au from 509m).

A high grade resource estimate was not completed for these commodities at this time.



Figure 2 is a 3 dimensional representation of the significant mineralised zones within both the apron and vein zones.

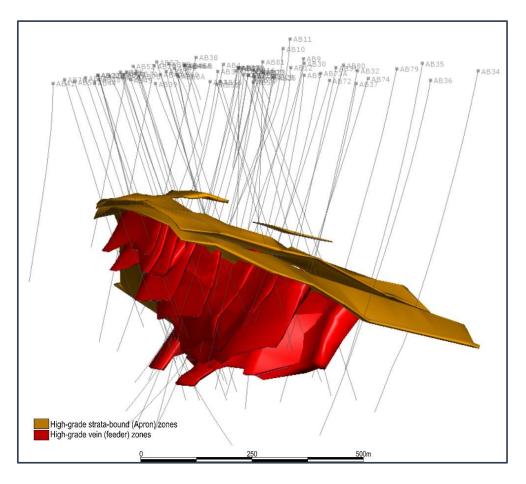


Figure 2: 3D view of Abra looking south east highlighting the high grade mineralised zones and scale.

The Lead Market

Demand for lead continues to rise with the price as of Monday 12th March of US\$2,342/t (A\$2,974). In January 2018 lead hit its highest price since 2011 driven by lower stockpiles and increasing consumption and the lead price has increased by more than US\$1,000/t (60%) in the last two years.

The primary use of lead is within batteries with over 75% of lead demand utilised in lead-acid batteries, in vehicles and for solar power storage. Most of today's hybrid vehicles contain lead-acid batteries as well as lithium-ion batteries and this is expected to grow in line with the EV expansion around the world.

Figure 3 below show the correlation between reducing stockpiles and the lead price, emphasising how important Abra is as a new world class lead project.



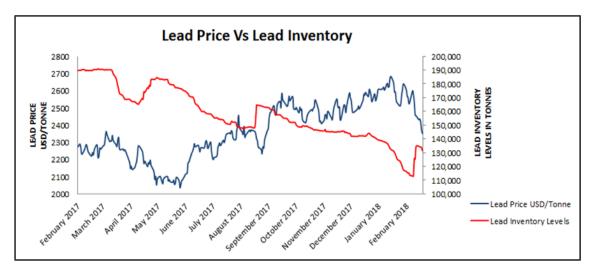


Figure 3: Lead Price versus inventories.

Pre-feasibility Study Update

Pre-feasibility work at Abra is well underway under the supervision of COO, Troy Flannery. Key work programs already initiated include engineering, hydrogeological, geotechnical, environmental, transport and logistics and metallurgical studies and these will be reported on as and when appropriate.

The Company is funded and on track to deliver a robust Pre-Feasibility Study in H2 2018.

For more information visit www.galenamining.com.au

Contact

Ed Turner CEO Galena Mining Limited <u>eturner@galenamining.com.au</u> 08 6166 3750

Competent Person Statement

The information in this report related to the Abra Mineral Resource estimate is based on work completed by Mr A Byass, B.Sc Hons (Geol), B.Econ, FSEG, MAIG a Director of Galena Mining Limited and Mr Don Maclean MSc (Geol), MAIG and RP Geo (Exploration and Mining), MSEG, a consultant to Galena Mining. Mr Byass was responsible for technical oversight and reporting of the estimate. Mr Maclean was responsible for data review, QAQC, development of the geological model and resource estimation. Mr Byass and Mr Maclean have sufficient experience relevant to the style of mineralisation and type of deposit under consideration and to the activity which they are undertaking to qualify as a Competent Person as defined in the 2012 Edition of the Australasian Code for Reporting of Exploration Results, Exploration Targets, Mineral Resources and Ore Reserves. Mr Byass and Mr Maclean consent to the inclusion in the report of the matters based on this information in the form and context in which it appears.

The information in this report to which this statement is attached that relates to Exploration results and drilling data is based upon information compiled by Mr E Turner B.App Sc, MAIG who is an employee of Galena Mining. Mr Turner has sufficient experience relevant to the style of mineralisation and type of deposit under consideration and to the activity which they are undertaking to qualify as a Competent Person as defined in the 2012 Edition of the Australasian Code for Reporting of Exploration Results, Exploration Targets, Mineral Resources and Ore Reserves. Mr Turner consents to the inclusion in the report of the matters based on this information in the form and context in which it appears.

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	 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. 	 The Abra resource estimate is primarily based upon geological and assay data from di from 1981 until 2017. The database used for the estimate contains 77 holes for 46,424 holes (8,024m) were drilled by Galena Mining Limited (GML). Mineralised intervals we geologically logged, cut and then ½ core samples were submitted to the laboratory for crushed, pulverised and analysed for base metals using either a three acid or four dige Gold was assayed by fire assay using a 25 g or 30 g charge. Sample intervals were based upon geological logging and ranged from 0.5 to 3.0m. Pr was typically sampled on 2m intervals. GML's sampling was generally on 1m intervals mineralisation within the deposit. Sampling was continuous throughout the mineralisec core taken. The sampling methodology is considered to be representative and appropri (poly-metallic lead-zinc-silver-copper-gold).
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).	 Most holes were diamond drilled from surface to minimise hole deviation using HQ dia 80 and 200m. Several holes were RC pre-collared through the barren upper sequence diameter drilling. Diamond drilling was by wireline methods using standards tubes. Co 400 to 955 m with and average depth of 650m. Most core holes were oriented. Pre-GML mining holes were either orientated using a s GML's 2017 drilling was systematically oriented using either a Reflex ACT Mk.3 or Tru of hole was marked on the core as a reference for structural measurements. Only relia obtaining structural measurements.
Drill sample recovery	Method of recording and assessing core and chip sample recoveries and results assessed.	All diamond core was measured/recorded for drilling recovery by GML staff (and its pre
	 Measures taken to maximise sample recovery and ensure representative nature of the samples. 	Overall core recovery is excellent due to the silicified and competent nature of the rock
	• 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.	 No grade versus recovery sample biases due to loss or gain of material has been iden

diamond drilling programs completed at Abra 424m of drilling (14,137 samples). Of this 12 were diamond drilled using NQ diameter, for analysis. Samples were oven dried, ligest followed by an AAS or ICP-OES finish.

Prior to GML involvement in the project drilling als to assist in better delineating high grade ed intervals with the right hand side of the opriate for the style of mineralisation at Abra

diameter and reduced to NQ diameter between ace rocks, cased and diamond tailed using NQ Completed hole depths range in depth from

a spear or Ballmark/Ezymark type systems. FrueCore core orientation system. The bottom eliable core orientations were used for

predecessors).

ock with core recoveries typically being 100%.

entified.

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. 	 All drill core was logged geologically and geotechnically in detail sufficient to support the Mineral Resource estimate, mining and metallurgical studies. Logging included lithology, texture, veining, grain size, structure, alteration, hardness, fracture density, RQD, alteration, mineralisation, magnetic response. Core logging was both qualitative and quantitative. Lithological observations were qualitative. All geotechnical observations and core photographs were quantitative. 100% of all mineralised core intervals were logged.
	The total length and percentage of the relevant intersections logged.	
Sub-sampling techniques and sample	 If core, whether cut or sawn and whether quarter, half or all core taken. 	 Almost all holes were routinely sampled as half cut NQ core for assaying. Two holes drilled in 2012 which were quarter cored. The estimate is based entirely on diamond drill core.
preparation	 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. 	 All core was appropriately orientated and marked up for sampling by company geologists prior to core cutting. Sample widths range from 0.5m to 3.0m. GMLs sampling was generally in 1m intervals whereas its predecessors were generally 2m intervals. ½ core samples were submitted to the commercial laboratories in Perth laboratory for analysis. Sample preparation comprised industry standard oven drying, crushing, and pulverisation to less than 75 microns. Homogenised pulp material was used for assaying.
	Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.	 Blanks samples were routinely dispatched to the laboratory to monitor sample preparation. These generally performed within acceptable tolerances. Some elevated lead values are present which is likely the result of cross sample contamination by soft lead caking the sample preparation bowls. The magnitude of this is not of material impact on the lead values estimates in the resource estimate.
	 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. 	 In GML's 2017 drill program duplicates of crushed core (proxy for a field duplicate) were routinely assayed. Results showed an excellent correlation demonstrating a high level of repeatability. Historically some original half core (110 samples) was later quarter cored to compare assaying results from earlier generations of drilling/assaying. Results were consistent with the earlier assays. GML has sent 130 samples of the second half of the core for metallurgical testwork. These will be routinely analysed for base metals and other trace elements. Assay results for this work are pending at the time of this report. Sample sizes were typically 3 to 6 kg (depending on the length of the sample) and are considered appropriate to the fine – medium grained grain size common in the host rock and galena mineralisation.
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, duplicates, external laboratory checks) and whether acceptable levels of accuracy (ie lack of bias) and precision have been established. 	 Several different laboratories have been used for assaying of Abra samples over the projects life prior to GML. Sample analysis for the older holes (1981-1995) was generally a three acid digest with an AAS finish for the base metals. Silver and gold were determined by fire assay using a 30 g or 100g charge. From 2005 samples analysed using a four acid digest with either and AAS or ICP-OES finish. Later samples were NaOH fusion for base metals followed by ICP-OES. Gold was analysed using either a 25 or 40g fire assay. GML's samples were analysed by SGS Laboratories in Perth. An ore grade 4 acid digest was used followed by an ICP-AES finish. Gold was by fire assay with a 50g charge. The assaying methods are appropriate for the style and tenor of mineralisation at Abra. No XRF or other geophysical data is reported here Geopeko verified its assay data by submission of duplicate samples and cross checks by umpire laboratories. RGC submitted standards every 20 samples. The majority of holes were either drilled by AML or GML (2005 - 2017) who used industry standard QAQC programs. Blanks, certified standards and duplicates were regularly submitted to the assaying laboratory and monitored. Both AML and GML completed umpire assaying by an alternate laboratory with results returned consistent with the primary samples. The QAQC data indicates that assaying data accuracy and precision is of an appropriate quality for resource estimation work.

Verification of sampling and assaying	The verification of significant intersections by either independent or alternative company personnel.	 Most historic significant intersections were verified by GML Geologists Angelo Scopel and I relogging program in 2017 Due to the depth to mineralisation no twinned holes have been attempted yet.
	 The use of twinned holes. Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols. 	 Due to the depth to mineralisation no twinned holes have been attempted yet. Prior to GML primary geological logging and sampling data was firstly recorded on paper at Electronic copies were transferred periodically to the Perth head office where the master data data were kept onsite after validation. Duplicates of all paper copies of sample data were mineralised of the periodical sector.
		 During GML's 2017 drilling program geological logging and sampling data was firstly record computer according to then entered into an electronic Excel and Access database files ons and routinely transferred to the Perth head office. All paper documents are scanned onsite data are kept in Perth office after validation. Assay data was imported and merged directly uploaded in an Access Database. All data has recently been migrated to a Datashed database
	Discuss any adjustment to assay data.	No adjustments were made to assay data.
Location of data points	 Accuracy and quality of surveys used to locate drill holes (collar and down-hole surveys), trenches, mine workings and other locations used in Mineral Resource estimation. 	 All drill hole collars were surveyed using a DGPS by Haines Surveys (2005), MHR Survey DGPS accuracy is within 0.02m.
		 Prior to 2008 diamond holes were routinely surveyed evey 30 to 50m downhole during dril A number of these holes were later gyroscopically surveyed due to the magnetite rich rock renders the Eastman azimuths inaccurate. Some inconsistancies between the Eastman si historic reviews, which was largely attributed to incorrect set-up azimuths being provided to QAQC controls. The pre-GML dowhole downhole survey data was reviewed and erroneous
	 Specification of the grid system used. Quality and adequacy of topographic control. 	corrected to be consistant with neighbour reliable surveys. From 2008 electronic multi-sho routine surveying every 30 m while drilling. A north seeking gyro was used to survey all 12 historic holes. Drill hole trace acurracy is considered to within several metres downhole (de
		Data is captured in Map Grid of Australia GDA 94, Zone 50.
		• The topography of the area is very flat. The topographic model used for the resource estin surveys which is of sufficient accuracy for the resource estimate. A detailed site topograph studies.
Data spacing and distribution	Data spacing for reporting of Exploration Results.	 The footprint of the Abra deposit extends 1,000m east-west along strike and 800m north so centres on the periphery to 100 and 50m spacing in the central parts of the deposit. In som by 25m. The deposit lies from between 250m and 700 m below surface.
aistribution	• 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.	Data spacing is sufficient to establish geological and grade continuity to establish a mineral
	 Whether sample compositing has been applied. 	No sample compositing has been applied.
Orientation of data in relation to geological	 Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type. 	Some initial drill holes may have been drilled sub-parallel to mineralised structures which d holes are oriented to the south so as to sample possible structures in an unbiased manner. are relatively shallow dipping to the south and can therefore be drilled in either direction.
structure	If the relationship between the drilling orientation and the orientation of key mineralized structures is considered to have	It is not considered that there is a significant sampling bias.

d Don Maclean while completing a core

and then entered into electronic files onsite. database was administered. Duplicates of the made for site and head office.

orded on either paper or in a Toughbook onsite. Electronic copies are backed up onsite te and electronic copies kept. Duplicates of the tly from lab digital files in excel then later abase to ensure data integrity.

eys (2007) and Galt Mining Solutions (2017).

drilling using an Eastman Single Shot camera. bocks present in some parts of the deposit which single shot and gyro data was identified in d to the gyro-operators and some poor gyro eous data discarded or azimuths were shot (Ranger and Ezi-shot) tools were used for 12 holes drilled by GML in 2017 drilling and 6 (depending on the depth).

timate was generated from DGPS drill collar phic survey is recommended for future mining

south. Drill spacing ranges from 150m spaced ome small areas drill spacing was close to 50m

ral resource estimate.

a dip steeply to the north but the majority of drill er. The upper sections of the mineralisation

	introduced a sampling bias, this should be assessed and reported if material.	
Sample security	The measures taken to ensure sample security.	• The various companies that drilled the deposit maintained their own sample security measures site to Perth assay laboratories either by company personnel or by courier. All remaining contract twice daily from the drill rig, immediately following completion of day shift and night shift restricted as the security following completion of day shift and night shift restricted as the security following complete the security measures are security measures as the security as the security measures are security as the security measures are security as the security measures are security as the security as the security as the security measures are security as the securety as the security as the security as the security as the securety
		• For GML drilling core was transported to the core yard where it was logged and sampled. S either transported by GML staff from the Abra site to Meekatharra for commercial trucking to by GML contractors.
Audits reviews	• The results of any audits or reviews of sampling techniques and data.	No audits or reviews of sampling techniques and data have been completed.

Section 2 Reporting of Exploration Results

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

Criteria	JORC Code explanation	Commentary
Mineral tenement and land tenure status	• Type, reference name/number, location and ownership including agreements or material issues with third parties such as joint ventures, partnerships, overriding royalties, native title interests, historical sites, wilderness or national park and environmental settings.	 Abra Mining holds 100% interest in the Mulgul Project, consisting of Mining Lease M52/0776 3.0% Net Smelter Royalty exists over leases M52/0776 and E52/1455. Miscellaneous licence 100% by Abra Mining and these fall within E52/1455. Within the adjoining Jillawarra Project Abra Mining holds 100% of E52/1413 and E52/357 E52/1413.
	 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. 	 All tenements are in good standing and have existing Aboriginal Heritage Access Agreemen negotiated.
Exploration done by other parties	Acknowledgment and appraisal of exploration by other parties.	 Initial exploration around the Abra deposit by Amoco Minerals in 1974 but they failed to dissignificant magnetic anomaly associated with the mineralisation. Geopeko Limited entered the discovery hole in 1981. In total they drilled 8 diamond core holes (AB1-11) before being complete any exploration. In 1995 RGC Exploration joint ventured in and drilled another de daughter hole wedged from it (AB22B). Both North and RGC were subject to takeovers and Old City Nominees Pty Ltd, a private company, the acquired the ground and subsequently (AML).
		• AML resumed drilling in 2005 and has completed all holes between and including AB23-59 of the deposit and completed various drilling programs focussing on establishing a high ton be amenable to bulk underground mining. Preliminary mining, geotechnical and metallurgic
		 ABL was subsequently taken over in 2011 by Chinese company Hunan Nonferrous Metals' Ltd (HNC), following a lengthy acquisition process. Two diamond holes were drilled in 2012 Mining acquired the project in 2017 and floated on the ASX.
		Historic exploration work on the project is of a very high standard and the data sets genera resource estimate.
Geology	Deposit type, geological setting and style of mineralisation.	• The Abra deposit lies within sediments of the Proterozoic Edmund Group. Abra is a base sediments. The primary economic metal is lead. Silver, copper, zinc and gold are also pres

asures. All sampled core was transmitted from core is stored on site. Drill core was taken respectively.

. Securely sealed sample bulka-bags were g to the laboratory in Perth or trucked directly

776 and Exploration Licence E52/1455. A ences G52/286 and L52/021 are also held

575. A 0.5% Net Smelter Royalty exists over

ents in place. No mining agreement has been

discover the Abra deposit when testing the ed into a JV with Amoco in 1980 and drilled ing taken over by North Limited which did not deep diamond core hole (AB22A) with a and the tenement was relinquished in 1999. Iy vended the project into Abra Mining Limited

59. Abra Mining drilled out the main extents onnage, low grade lead resource that would gical studies were completed.

als' Australian subsidiary, HNC Resources Pty 012 HNC divested the project in 2016. Galena

erated are appropriate for use in the mineral

se metal replacement-style deposit hosted by esent but are of much lower tenor.

		 The deposit can be divided into two main parts. The upper "Apron" zone comprises s sulphides (galena) and minor copper sulphides (chalcopyrite) within a highly altered se Alteration products include jasperlitic rich sediments (the "Red Zone") and a distinctive strat (the "Black Zone". The Apron zone extends for 1,000m along strike, 700m down dip and di The "Core" zone underlies the Apron and comprises an elongate funnel shaped body of alteration overprinting gently south dipping sediments. The veining and breccia zones in the grade lead sulphide mineralisation is predominantly hosted in intensely veined zones (sphalerite) is found in the central parts of the Core. Copper (chalcopyrite) and gold mineral upper parts of the Core zone but forms coherent body at the base of Core. The core zone and can be traced for 400m along strike.
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 Abra resource estimate is primarily based upon geological and assay data from dia from 1981 until 2017. The database used for the estimate contains 77 holes for 46,424r RC precollars that were never tailed and a number of core holes that were abandon due to hole deviation or drilling issues. In total the database includes 64 holes success A complete listing of all drill hole details and drillhole intercepts used in the estimate is information has been previously reported and its exclusion does not detract from the utility of the success.
Data aggregation methods	 the understanding of the report, the Competent Person should clearly explain why this is the case. 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 shown in detail. 	 No exploration results are reported in this report Non aggregated exploration data is reported here No metal equivalents are reported here
Relationship between mineralisatio n widths and intercept lengths	 The assumptions used for any reporting of metal equivalent values should be clearly stated. 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. 	 No exploration results are reported here. The upper strata-bound mineralisation is gently dipping and drilling intercepts are typically of the lower vein-hosted mineralisation is generally steeply dipping and drilling intercepts are mineralisation
	 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'). 	
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.	A plan view of the resource outline and appropriate sections and views of the resource are

strata-form massive and disseminated leadsequence of clastic and dolomitic sediments. ratiform zone of hematatite-magnetite alteration dips gently south.

of hydrothermal breccias, veining and intense the Core typically dip steeply to the north. High nes. High grade zinc sulphide mineralisation eralisation is sporadically found throughout the ones extends from 300 to 750m below surface

diamond drilling programs completed at Abra 44m of drilling. The database includes several oned before mineralisation was encountered essful holes for 43,887m (14,137 samples).

is not appropriate for this report. All drill hole understanding of this report.

close to true width.

re greater than the true width of the

re included with 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.	No exploration results are reported here.
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.	 GML and its predecessors have collected a substantial amount of bulk density from drill cor techniques (over 7,100 readings). This data was used to appropriately assign density in the A small preliminary metallurgical testwork program was completed in 2008 which indicated version of the preliminary geotechnical studies were completed by AML. No major geotechnical issues have a substantial amount of bulk density from drill cor techniques (over 7,100 readings). This data was used to appropriately assign density in the
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. 	 The resource estimate documented in this report will form the basis of Scoping and Pre-feat will examine such aspects as: Mining methods Geotechical Hydrology Metallurgically Plant and infrastructure design Transport and shipping Environmental studies Social impact studies Additional drilling is recommended to improve geological confidence to upgrade the resource Inferred Resource to Indicated Resource, and from Indicated Resource to Measured Resource

Section 3 Estimating and Reporting of Mineral Resources

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

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. 	•	Diamond drilling geological and assay data was stored in an Access database which wa was validated for inconsistencies, overlapping intervals, out of range values, and any ot All data was visually validated on import. Other validation steps included visual compari systematic checking of high grade assay values against source data.
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 CP for the geological/assay data and geological interpretation Mr Ed Turner is an e Abra in 2017. Mr Turner was also previously an employee of AML and worked on Abra The CP is of the opinion that this work has all been completed in line with industry best mineral resource reported.
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. 	•	The geological interpretation is based upon geological logging data from diamond drill or orientated drill core and historic structural studies were important guides for the interpret Geological modelling utilised Micromine software. Wireframing was carried on 50 space cross checked in plan. A 3D geological model was developed which encompassed the rebrecciation zones, hydrothermal vein zones, and faults. The deposit comprises the gent the steeply north dipping hydrothermal veins and breccias of the "Core" zone. The 3D geological model was used to guide the mineralization wire-frame interpretation Solid wireframes were created for the "Apron" zone (at Pb>2% and Pb>5% lower cut-off Pb>5% lower cut-offs). These form continuous coherent zones. Interpretation parameter down hole width and a maximum of 4m internal dilution (although in some cases material continuous coherent continuous is the steep of the solid wireframe cases material continuous coherent zones.

ore using standard water immersion ne resource estimate

d very favorable lead recoveries.

have been identified.

easibility level studies (PFS). These studies

rce to higher confidence categories (ie from ource to aid in future Reserve estimates.

was exported into Micromine as csv files where it other erroneous data. arison of data to historic cross sections and

n employee of GML and spent extensive time at ra from 2008 to 2010 as Exploration Manager.

st practice and to an appropriate standard for the

I core for the Abra deposit. Structural data from pretation.

ced N-S orientated cross sections which was e major litho-stratigraphic units, alteration zones, ently south dipping stratiform "Apron" zone and

on on 50m spaced N-S orientated cross sections. offs) and for the "Core" zone (at Pb>2% and eters were at least 2 holes, a minimum of 4m erial below cut-off was included if it was close to

		the cut-off or to maintain a geologically coherent shape).
		• A copper-gold zone was modelled in the lower part of the deposit at a nominal 0.2% cop volumes of lower grade material that was necessary to include to create a coherent min
		 The primary lode domains were interpreted using lead grades and then the geometry re Silver correlates with lead grade suggesting silver is present in argentiferous galena. Zin associated with the lead domains but generally not of sufficient tenor to warrant domain zinc may be horizontally zoned and it may be able to be domained separately with addired
		Copper and gold mineralisation is spatially related and the is a clear copper-gold zone I
		 No alternate interpretations have been considered as the model developed is believed l understanding of the deposit.
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 encompasses all of the Abra Lead Deposit which extends for 10 resource lies between 250 and 700 metres below surface.
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). In the case of block model interpolation, the block size in relation to the average sample spacing and the search employed. 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. 	 Resource modelling was carried out using Micromine software. Sample assays were composited to 2.0m which is the most common sample length and block size. Lead is the primary economic element and was modelled using both ordinary kriging an Secondary metals silver, zinc, copper and gold were estimated using inverse distance s Search ellipse maximum axes ranging from 95 to 220 metres depending on the domain aligned to the overall dip and strike of each mineralised domain. Kriging parameters were based on lead variography. Ancillary items estimated included estimate a block, kriging variance and regression line slope. These were used to assist Pb, Zn, Cu, Au and Ag were estimated for each domain using only composites from with Three estimation passes were used to estimate each block (at 60%, 100% and 150% o number of samples and holes required for each block estimate varied depending on the 24) composites from 4 holes was required. For pass 3 a minimum of 4 samples (max 24) to be appropriate for the data set and for evaluation as an underground mine. Block grades were estimated at the parent block size. Samples were cut to the 99th percentile. Sample cutting has minimal impact on the cont Validation of the estimate included systematic visual cross checking of the model in cro estimated grades to composite data and cross checking of wireframe volumes.
Moisture	• Whether the tonnages are estimated on a dry basis or with natural moisture, and the method of determination of the moisture content.	Model estimates are done on a dry basis.
Cut-off parameters	• The basis of the adopted cut-off grade(s) or quality parameters applied.	A range of cut-off grades are reported which are believed to be appropriate for undergree
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	The Resource estimate has been prepared assuming mining will be undertaken using c

copper cut-off, although it includes significant ineralized body. reviewed by looking at zinc, copper and silver. Zinc and copper are generally spatially aining separately. There is some indications that ditional drilling. lying at the base of the deposit. best represent the current geological 1000m along strike and 800m across strike. The nd appropriate for the mineralisation style and and inverse distance squared interpolation. squared interpolation. in. The search ellipse and variogram axes were led the number of holes and composites used to st in resource classification. ithin that domain. of the variogram range). The minimum/maximum he pass. For pass 1 and 2 a minimum of 10 (max 24) from 2 holes was required, 2.5m (Y) by 2.5m (Z). This block size is believed ntained metal. ross section and plan, comparison of the ground mining.

conventional underground mining methods.

	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.	
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. 	 It is assumed that lead and silver sulphide mineralisation can be economically extracted Preliminary metallurgical test work was conducted in 2008 by AML on three core sample conceptual study of the project. Test work indicated that a float recovery of 95% is achievable expected concentrate grade of approximately 55% to 65% Pb is achievable. GML has sent 130 half core samples from six zones representing the major mineralizati for metallurgical testwork. Results of this program are pending.
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. 	 The Abra project is on a granted mining lease. No environmental factors/issues have be The project will produce a lead sulphide concentrate that can easily trucked to Geraldton been shipping similar concentrate products from Geraldton for many years.
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 (vughs, 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. 	 A total of 7,137 bulk density measurements were taken from a suite of mineralised and water immersion techniques. Bulk densities were assigned to each domain based on the mean measured density from applied range from 2.8 to 3.6 depending on the domain Bulk density does appear to increase with sulphide content but more work is needed to relationship
Classification	 The basis for the classification of the Mineral Resources into varying confidence categories. Whether appropriate account has been taken of all relevant factors (i.e. 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. 	 The resource classification for Abra is based upon review of critical modifying factor consideration include: Data density is adequate for Indicated/Inferred resources. Drill spacing ranges from Data quality. The diamond drilling all have been carried in accordance with moderr QAQC data to support the assay data. Geological structure. The overall geometry of the main mineralised domains are reageological logging and structural data. However structure is locally complex as can veins/breccias within the "Core" zone. Structure is generally well understood and ge with an appropriate level of confidence. Geostatistics and variography. Reasonable variograms could be obtained for the m the parameters used for the estimate. Based on review of the modifying factors the Competent Person is of the view that the Indicated and Inferred Resource and this is an appropriate reflection of status of the The Resource has been classified as Indicated in areas where there is high geologi modelled domains) and there is appropriate drill spacing (from generally 50 by 50 b is good continuity of geology and grade). Inferred Resources are reported where drill spacing is generally greater than 50 by Pb and >2% Pb domains. The maximum distance from a drill hole is 150m for an a Further drilling/sampling is needed to increase the confidence to a level for an approfrom Inferred to Indicated and Indicated to Measured Resource)

ed using conventional flotation methods. The ples from two holes to support a 2008 Schievable for lead in the lead domain and an

ation styles to ALS Chemex in Burnie, Tasmania

been identified to date. Iton and shipped. The Golden Grove Mine has

d un-mineralised drill core using conventional

rom testwork for each domain. Bulk densities

to reliably estimate bulk densities based on this

tors. Important modifying factors taken into

om 50 by 50m spacing up to 150m spacing. ern industry best practice standards and have

reasonably well understood from diamond core an be seen by some of the complex geological/grade continuity can be demonstrated

major domains which supports continuity and

at the resource should be classified as an the project.

ogical confidence (ie the Apron and Core >5% Pb) but in some areas on 70m by 70m where there

by 50 constrained by the Apron and Core >5% appropriately informed block estimate. propriate for classification in a higher category (ie

Audits or reviews	The results of any audits or reviews of Mineral Resource estimates.	 Brett Gossage of EGRM Consulting Pty Ltd has provided ongoing input and review estimation studies, and the resource classification approach.
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 available. 	 The estimate is based on diamond core drilling with appropriate modern QAQC . The structural data. It is the CP's opinion that the resource classification used is consisted guidelines in the 2012 JORC Code. The estimate is classified as Inferred (global) and Indicated (local) and is intended for the deposit is un-mined and no production data is available

ew of the geological interpretation, grade

The estimate utilises all available geological and istent with the relative accuracy/confidence levels

d for scoping and preliminary PFS level studies