ASX ANNOUNCEMENT

22 July 2019 **ASX: G1A**

GALENA DELIVERS OUTSTANDING FEASIBILITY STUDY FOR ABRA BASE METALS PROJECT

HIGHLIGHTS:

- **16-year mine life producing a high-value, high-grade lead-silver concentrate containing 95ktpa of lead and 805kozpa of silver after ramp-up**
- **Outstanding economics, with pre-tax NPV of A$553M at spot prices**
- **C1 direct cash cost to be among the lowest for global primary lead producers at US$0.44/lb**
- **Estimated pre-production capital expenditure of A$170M**
- **Higher NPV, longer mine life and lower C1 direct cash cost compared to PFS**
- **Initial project development works already advancing including fabrication of initial camp and procurement of certain long lead-time items**
- **Mining-experienced international bank appointed to lead the process of structuring and concluding the project financing debt package**

GALENA MINING LTD. ("**Galena**" or the "**Company**") **(ASX: G1A)** announces completion of a bankable / definitive feasibility study ("**FS**") for its Abra Base Metals Project ("**Abra**" or the "**Project**"), located in the Gascoyne region of Western Australia. The FS results confirm outstanding project metrics and provide a higher level of confidence with respect to engineering design, construction requirements, project finance and risk assessments. The FS shows an improvement in most key metrics compared to the Abra pre-feasibility study ("**PFS**") completed in September 2018 (*see Galena ASX announcement of 25 September 2018*). The FS pre-tax net present value ("**NPV**") of A$553M is A$25M (5%) higher than the PFS outcome.

Managing Director, Alex Molyneux commented, ***"I'm very pleased that Abra has now completed FS-level technical and engineering work, with the Project continuing to demonstrate sector-leading financial returns with a pre-tax NPV of A$553M."***

Managing Director, Alex Molyneux went on to say, ***"It's also important to have completed the study on time given that it is a milestone to moving through the final phase of the project financing debt process, which is well underway."***

FS – Cautionary statement

The FS Mine Model (defined below) includes a mix of material taken from Probable Ore Reserves (67%) and Inferred Mineral Resources (33%), with no reduction factor applied to the tonnes and grades of the Inferred Mineral Resources. Inferred Mineral Resources have a lower level of geological confidence and can't be included in the calculation of Ore Reserves, and there can be no guarantee that a Mineral Resource estimate update will convert Inferred Mineral Resources to Indicated Mineral Resources or return the same grade and tonnage distribution. This may affect mining studies and outcomes (including economic) from the FS. The Abra Ore Reserve will be reviewed in conjunction with an upcoming update of the Mineral Resource estimate following completion of the ongoing 2019 project development drilling program.

At the time of publication of the FS, Galena has completed approximately 80% and received assays for approximately 40% of the ongoing 2019 project development drilling program. A key objective of the program is specifically targeting the material that is expected to be mined in the first 3-years of production. The results to date provide confidence and validation to the Company in regard to the assumptions and geological models which underpin Mineral Resource estimates as well as the target for conversion of certain mineralised material currently in the Inferred Mineral Resource category to the Indicated or better category (*see Galena ASX releases of 5 June 2019 and 19 July 2019*). Based on the status of geological information, Galena believes it has a strong basis for inclusion of certain Inferred Mineral Resource material in the FS Mine Model (defined below) at this time and whilst remaining within feasibility study level tolerances. To further test its basis, Galena ran the FS financial model on a check scenario assuming a zero grade for any Inferred Mineral Resource material in the FS Mine Model and that produced a substantial positive NPV outcome.

Process and engineering designs for Abra's FS were developed to support capital and operating estimates to an accuracy of ±10%. Key assumptions that the FS was based on (including those defined as Material Assumptions under ASX Listing Rule 5.9.1) are outlined in the body of this announcement and Appendix 1. Galena believes the production target, forecast financial information derived from that target and other forward-looking statements included in this announcement are based on reasonable grounds.

Several key steps need to be completed in order to bring Abra into production. Many of these steps are referred to in this announcement. Investors should note that if there are delays associated with completion of those steps, outcomes may not yield the expected results (including the timing and quantum of estimated revenues and cash flows).

The economic outcomes associated with the FS are based on certain assumptions made for commodity prices, concentrate treatment and recovery charges, exchange rates and other economic variables, which are not within the Company's control and subject to change from time to time. Changes in such assumptions may have a material impact on the economic outcomes (including the timing and quantum of estimated revenues and cash flows).

To develop the Project as per the assumptions set out in the FS will require additional capital. Investors should note that any failure to precure the required additional capital may result in a delay, change in nature and scale, or even suspension of the Project.

OVERVIEW OF KEY FS OUTCOMES

Abra is a globally significant lead-silver deposit situated within a granted mining lease and having received all relevant major permits for the commencement of construction, located in the Gascoyne region of Western Australia. The outstanding FS confirms technical feasibility with low risk and strong projected economic returns for the development of the Project as a combined underground mine and conventional flotation concentrator to produce a high-value, high-grade lead-silver concentrate. Key FS outcomes are presented in Table 1, Table 2 and Table 3 (below).

Table 1: Key FS outcomes – Production metrics

	Annual[1]	LOM
Mill throughput[2]	1.2Mt	16.3Mt
Diluted mined ore grade:		
- Lead		8.1%
- Silver		20.2g/t
Life of mine ("**LOM**")		16-years
LOM recoveries:		
- Lead		94%
- Silver		94%
Production (metal in concentrate):		
- Lead	95kt	1.24Mt
- Silver	805koz	10.6Moz
High-value lead-silver concentrate grade:		
- Lead		75%
- Silver		200g/t

Notes: 1. Average of steady-state years 3-15. 2. 67% of the FS Mine Model (defined below) is included within Probable Ore Reserves and the remainder is currently included in Inferred Mineral Resources, with no reduction factor applied to the tonnes and grades of the Inferred Mineral Resources. Inferred Mineral Resources have a lower level of geological confidence and can't be included in the calculation of Ore Reserves, and there can be no guarantee that a Mineral Resource update will convert Inferred Mineral Resources material into Indicated Mineral Resources or return the same grade and tonnage distribution.

Table 2: Key FS outcomes – Capital investment, operating cost and assumptions

	LOM
<u>Capital investment assumptions</u>	
Pre-production capital expenditure[1]	A$169.6M
Construction period	15-months
<u>Operating cost</u>	
Lead C1 direct cash cost of production[2]	US$0.44/lb (A$0.63/lb)
<u>Financial assumptions and Project economics</u>	
Metal payability[3]	95%
Lead metal price	US$0.92/lb
Silver metal price	US$16.00/oz
Lead treatment charge	US$96/t conc.
Exchange rate – US$ per A$1	0.70

Notes: 1. Including A$7.7M of contingency, A$15.0M of EPCM and A$15.8M of owners and indirect costs. 2. Includes a by-product credit for net silver revenue of US$0.04/lb (A$0.06/lb). 3. Subject to standard deductions (ie, 3 units for lead and 50g/t for silver).

Table 3: Key FS outcomes – Project economics

	LOM
Pre-tax net present value ("**NPV**") (8% discount rate)	A$553M
Pre-tax internal rate of return ("**IRR**")	39%
Payback (from first full year of commercial production)	2-years
Post-tax NPV (8% discount rate)[1]	A$381M
Post-tax IRR[1]	32%

Notes: 1. Calculated assuming AMPL available tax losses of A$42M as at the commencement of project implementation and the inclusion of an A$106M project financing loan (5-year tenor and 3.25% interest margin) as part of the overall project funding package.

FS COMPARISON TO PRIOR PFS

The Abra FS announced today compares favourably with the PFS announced by Galena on 25 September 2019 on most key outcomes. Table 4 (below) provides a side-by-side analysis of selected key outcomes from both studies.

Table 4: Selected key study outcomes – FS vs. prior PFS

	FS (22 Jul 2019)	PFS (25 Sep 2018)	FS B/(W) PFS[1]	FS B/(W) PFS[1]
Average annual mill throughput	1.2Mtpa	1.2Mtpa	n/c	n/c
Mine life	16-years	14-years	2-years	14%
Total LOM lead metal production	1.24Mt	1.1Mt	0.14Mt	13%
Total LOM silver metal production	10.6Moz	9.6Moz	1.0Moz	10%
Pre-production capital expenditure	A$170M	A$154M	(A$16M)	(10%)
Lead C1 direct cash cost of production	US$0.44/lb	US$0.48/lb	US$0.04/lb	8%
Pre-tax NPV	A$553M	A$528M	A$25M	5%

Certain financial assumptions changed from the PFS to the FS. The lead price and exchange rate used for the PFS were US$0.95/lb and A$1 = US$0.73 respectively (ie, an Australian Dollar equivalent lead price of A$1.30/lb) whereas for the FS these are US$0.92/lb and A$1 = US$0.70 respectively (ie, an Australian Dollar equivalent lead price of A$1.31/lb), which were the spot levels as at close of business on 18 July 2019.

UPCOMING PROJECT MILESTONES

Abra has received all major permitting approvals required to commence construction (*see Galena ASX release of 3 July 2019*) and is nearing completion of the project development drilling program (*see Galena ASX release of 19 July 2019*), including the drilling required to have finalised design and positioning of the surface box-cut, mine portal and initial decline. Furthermore, Galena and its operating subsidiary, Abra Mining Pty Limited ("**AMPL**") have access to substantial equity capital. At 30 June 2019 Galena and AMPL held a combined cash balance of A$28M and in accordance with the Shareholders Agreement and Investment Agreement between Galena and Toho Zinc Co., Ltd. ("**Toho**") of Japan, AMPL expects to receive an additional A$10M following delivery of the FS and a further A$60M on confirmation of project financing debt (*see Galena ASX announcement of 30 January 2019*). As a result, current Project works are mainly focused on moving to the construction phase, including:

- Finalising offtake – Under the AMPL Shareholders Agreement, each of AMPL's shareholders has the right to purchase their pro-rata share of Abra's production. Galena has, together with customers investigated the potential to generating positive returns at the Galena level from purchasing its share of AMPL's high-grade, high-value lead-silver concentrate production and on-selling the product in international markets. Currently, Galena is in advanced discussions to implement such arrangements.

- Project financing debt – AMPL has appointed a mining-experienced international bank to lead the process of structuring and concluding the project financing debt package for the Project, including a potential contribution from debt available through attractive programs for Japan-related projects. Discussions are continuing with respect to due diligence, structuring and commercial terms for the project financing debt.

- Initial Project development works – Initial development preparation activities have commenced. The Company has purchased the initial camp module for Abra (first 80 accommodation units, kitchen and ancillaries), which is currently being fabricated. An existing pastefill plant that meets the Project's requirements has also been identified and AMPL has entered into an option agreement with the current owner to secure its right to purchase that plant, have it refurbished and then relocated to Abra. In addition, certain long-lead time items have already been ordered. Galena and AMPL will accelerate Project development activities throughout the second half of the 2019 calendar year.

- Preparation of an updated Mineral Resource estimate and Ore Reserve statement for Abra – The ongoing 2019 project development drilling program is expected to increase the overall drilling on Abra by approximately 30%. Following its completion, an updated Mineral Resource estimate and Ore Reserve statement for the Project will be prepared.

Galena continues to target initial production for Abra in 2021 and the first full year of steady state commercial production in 2022.

SUMMARY OF FS

Abra is a globally significant lead-silver project located in the Gascoyne region of Western Australia. AMPL owns 100% of the Project, which was discovered in 1981 and has been the subject of historical and modern exploration, and previous scoping-level and PFS studies. There has been no previous mining activity at the Project and the deposit does not outcrop.

AMPL is currently owned 91.11% by Galena and 8.89% by Toho and subject to a Shareholders Agreement and Investment Agreement, under which it is intended Toho will inject a further A$70M into AMPL prior to construction of the Project, resulting in AMPL being owned 60% by Galena and 40% by Toho.

The Project is located within the granted mining lease M52/776 and AMPL has received all necessary major permits from the Western Australian Department of Water and Environment Regulation and Western Australian Department Mines, Industry Regulation and Safety to commence construction. Abra is also subject to an existing Indigenous Land Use Agreement and Heritage Agreement with the Jidi Jidi Aboriginal Corporation, the relevant native title claimant group.

The FS outcomes provide confirmation of technical feasibility with low risk and strong projected economic returns for the development of Abra as a combined underground mine and conventional processing facility (flotation concentrator) to produce a high-value, high-grade lead-silver concentrate. The FS was prepared at a higher level of engineering, design and estimation than the PFS (September 2018).

The FS was prepared in conjunction with GR Engineering Services Limited ("**GRES**"), which completed works including: study management; process design; process layout; and surface infrastructure requirements. AMPL internally completed the works associated with mining and mining infrastructure.

The accuracy level in the FS for both operating costs and capital expenditure is ±10%. The estimates for capital expenditure items were predominantly obtained during first quarter 2019 and is in Australian Dollars. Where pricing was received in a foreign currency, it was converted to Australian Dollars at the foreign exchange rates prevailing during the first quarter 2019.

The FS estimates include contingency at or better than the feasibility study level of design and estimating confidence, which on average is 10%. Contingency in the estimates vary for different types of costs according to the level of accuracy associated with equipment/materials pricing, estimates of material quantities, estimates of equipment and labour requirements and site costs. The allowances are based on the project outlined in this study and do not include potential for changes to the process flow sheet, process plant design or major equipment selections.

The FS is based on a 1.2 million tonne per annum steady-state mining and processing rate achieving a 16-year LOM. The FS Mine Model (defined below) includes some mix of material taken from Probable Ore Reserves (67%) and Inferred Mineral Resources (33%), with no reduction factor applied to the tonnes and grades of the Inferred Mineral Resources. Inferred Mineral Resources have a lower level of geological confidence and can't be included in the calculation of Ore Reserves, and there can be no guarantee that a Mineral Resource update will convert Inferred Mineral Resources into Indicated Mineral Resources or return the same grade and tonnage distribution. This may affect mining studies and outcomes (including economic) from the FS. The Abra Ore Reserve will be reviewed in conjunction with an upcoming Mineral Resource update following completion of the ongoing 2019 project development drilling program.

Geology, Mineral Resources and Ore Reserves

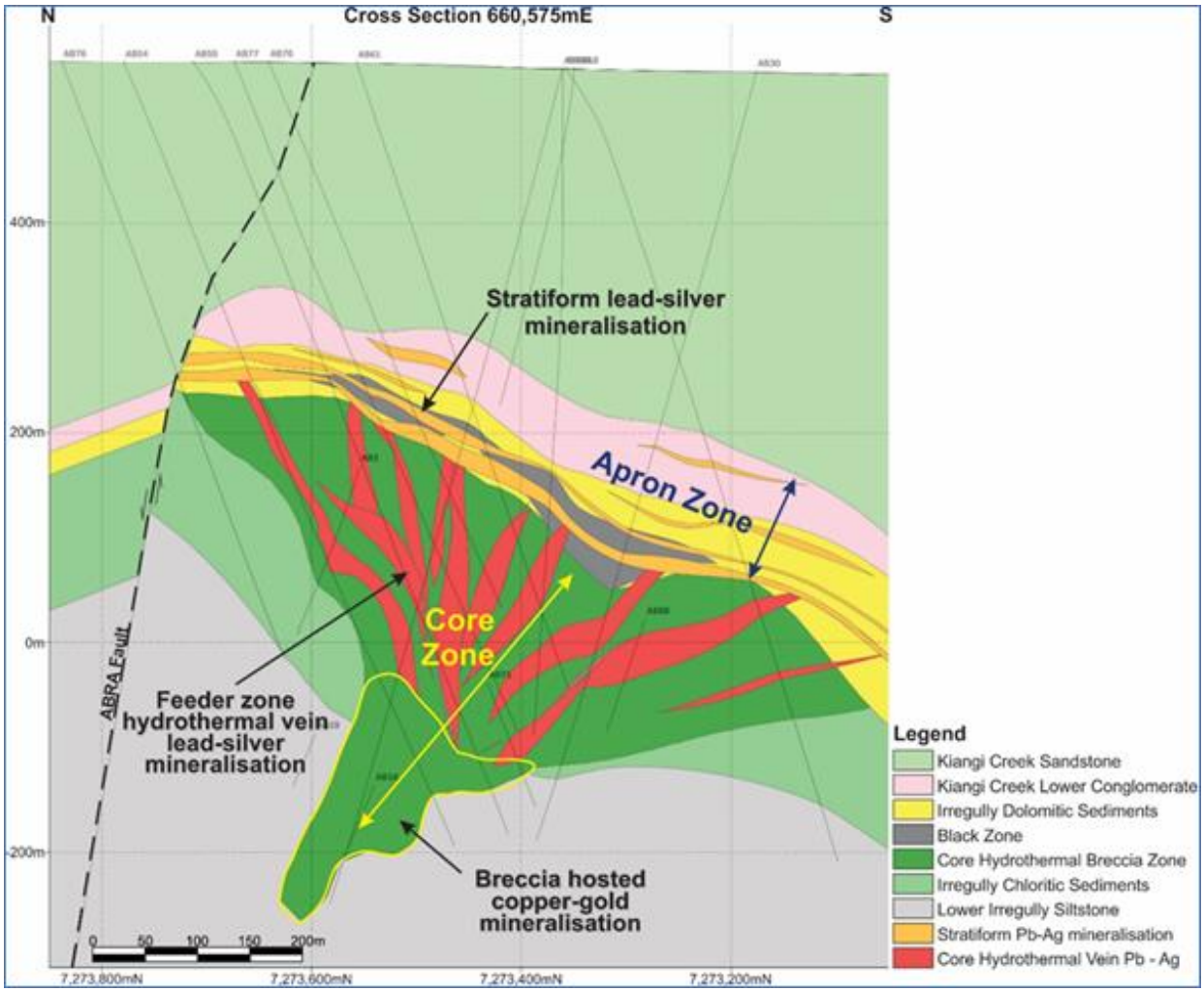
Abra is one of the largest undeveloped lead deposits in the world. It is a base metal replacement-style deposit hosted by sediments of the Proterozoic Edmund Group. The primary economic metal is lead but it also contains significant silver and some presence of copper, zinc and gold.

The Abra deposit can be divided into two main parts. The upper, overlying Apron Zone comprises stratiform massive and disseminated lead sulphides (galena) and minor copper sulphides (chalcopyrite), within a highly altered sequence of clastic and dolomitic sediments. Alteration products include jaspilitic rich sediments (the Red Zone) and a distinctive stratiform zone of hematite-magnetite alteration (the Black Zone).

The Core Zone underlies the Apron Zone and comprises an elongate funnel shaped body of structurally controlled hydrothermal breccias, veining and intense alteration overprinting gently south dipping sediments. The veining and breccia zones in the Core Zone form a feeder style flower shaped geometry in cross section. Hydrothermal veining strikes broadly east-west and dips moderately south on the northern flank, sub-vertically in the central parts and gently to the north

on the southern margins. 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 Zone. Hydrothermal veining strikes broadly east-west and dips moderately south on the northern flank, sub-vertically in the central parts and gently to the north on the southern margins. Figure 1 shows a north-south cross section of the deposit showing the main geological features.

Figure 1: Stylised geological cross section of Abra at 660,575mE looking east



Source: Galena.

The FS incorporates the most recent Mineral Resource estimate for Abra, which was independently prepared by Optiro Pty Ltd ("**Optiro**") known as the December 2018 Resource (*see Galena ASX release of 18 December 2018*).

The December 2018 Resource was prepared assuming mining and processing can be economically undertaken using underground mining methods and conventional flotation processing. A 5% lead cut-off grade was selected having regard to practical mining, processing and economic modelling. The Abra December 2018 Resource estimate at a 5.0% lead cut off is shown in Table 5 (below).

Table 5: Abra JORC Mineral Resource estimate (December 2018 Resource)[1]

Resource classification	Tonnes (Mt)	Lead grade (%)	Silver grade (g/t)
Measured	-	-	-
Indicated	15.0	8.7	22
Inferred	22.4	6.7	15
Total	37.4	7.5	18

Notes: 1. Calculated using ordinary kriging method and a 5.0% lead cut-off grade. 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.

The December 2018 Resource was based on the results of geological and assay data from diamond drilling programs conducted from 1981 through to late-2018. A total of 102 diamond core drill-holes (59,751 cumulative linear metres) and 18,724 samples were interpreted, including 21 diamond core drill-holes for approximately 12,900 cumulative linear metres of drilling completed in 2018.

Most holes were diamond drilled from surface to minimise hole deviation using HQ diameter and reduced to NQ diameter between 80 metres and 200 metres. Mineralised intervals were diamond drilled using NQ diameter holes, geologically logged, cut and then half core samples were submitted to a laboratory for analysis. Samples were oven dried, crushed, pulverised and analysed for base metals using either a three or four acid digest followed by an AAS or ICP-OES finish. From drill-hole AB84 and after, samples were analysed using XRF with a lithium metaborate / tetraborate flux. Gold was assayed by fire assay using 25 g, 30 g or 50 g charges. Industry standard QAQC protocols were adopted.

The December 2018 Resource utilised the geological and mineralisation domains from the Abra Leapfrog Geo 3D model interpreted by AMPL. Mineralisation wireframes were created for the Apron Zone alteration envelope (~ >0.5% lead cut-off) and the high grade stratiform lead-silver domains (~ >5.0% lead cut-off). Mineralisation wireframes were interpreted for the Core Zone hydrothermal vein zones (at ~ >1.5% lead cut-off) and the high-grade domains within these zones (~ >5.0% lead cut-off). A copper-gold zone was modelled in the lower part of the deposit at a nominal 0.2% copper cut-off. This zone was found to correlate well with the boundary of the hydrothermal breccia zone so the Core Zone hydrothermal breccia domain was used to constrain the copper and gold estimates.

The Abra Mineral Resource block model was created by Optiro using Datamine Studio RM software. Grade estimation was via ordinary kriging of top-cut two metre downhole composites. Grade estimation was constrained within stratiform mineralisation, vein and alteration domains from the geological model. All vein and stratiform mineralisation domain grades were estimated using a process that projected all data onto a plane based on the centreline of each vein/domain. The alteration and vein interpretations were used to constrain all grade estimation. Alteration and vein domain boundaries were treated as hard grade boundaries during grade estimation.

A block size of 10 mE by 10 mN by 10 mRL was employed for grade estimation. Domain boundaries were represented using subcells of 2.5 mE by 2.5 mN by 2.5 mRL. Drill spacing is variable due to holes been orientated to dip to both the north and south. Nominal spacing is 50 metres by 50 metres in the centre of the deposit although the crossing of drill-holes results in considerably closer spacing at some depths (50 metres by 25 metres). At the periphery of the deposit, nominal spacing opens to 80 metres.

Lead was the primary element estimated as it is the primary metal of economic significance. A weak correlation exists between lead and silver and a very weak correlation exists between copper and gold. These correlations have not been directly utilised during grade estimation, however, the estimation search neighbourhoods applied during estimation remained fixed for all elements.

Mineral 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. The deposit is classified as an Indicated Mineral Resource and Inferred Mineral Resource. The bulk of the Indicated Mineral Resource (90%) is contained within the central part of the Apron Zone mineralisation, with 10% in the Core Zone.

The distribution of the Inferred Mineral Resource material is on the margins and downdip areas of the Apron Zone and comprises most of the Core Zone. The classification of the Apron Zone Indicated Mineral Resource is based on the demonstration of geological continuity of the host lithologies in the Apron Zone (Red Zone, Black Zone). These are tabular and predictable, with the evolution of drilling programs at Abra supporting the expected mineralisation locations and grades.

A plunge line identified in variography of higher-grade mineralisation and thickness trending 150 degrees was also used to guide a boundary string which was interpreted around consistent zones of geological and grade confidence. This boundary excluded the periphery of the deposit to the west, south and east, which due to lower geological confidence, broad spaced drilling and grade extrapolation was classified as Inferred Mineral Resource. A zone of thinner, low grade mineralisation on the northern edge of the Apron Zone was also categorised as Inferred Mineral Resource.

The classification of Indicated Mineral Resource in the Core Zone is based on the assessment of continuity of the veins in the feeder zone. A section of the Core Zone was deemed to have sufficient confidence in geological and grade continuity to meet the Indicated Mineral Resource criteria of drill spacing less than 50 metres x 50 metres (down to 50 m x 25 m) and high confidence in the geological continuity of the central part of the vein. Review of sample data, geological logging, structural data and core photographs of drill intersection by AMPL indicates that this can be interpreted as a consistent broad steeply dipping zone. Outside of this domain the mineralisation is complex and drill/sample spacing is variable. On this basis all other Core Zone vein domains have been classified as Inferred Mineral Resource.

The December 2018 Resource was prepared assuming mining and processing can be economically undertaken using underground mining methods and conventional flotation processing. A 5% lead cut-off grade was selected having regard to the practical mining, processing, and economic modelling associated with the Abra PFS, which was the main economic study available at the time.

The FS incorporates the most recently prepared Ore Reserve estimate for the Abra deposit, which was prepared by AMPL and finalised in December 2018 ("**December 2018 Reserve**"), following completion of the December 2018 Resource (*see Galena ASX announcement of 18 December 2018*).

As per the PFS, which had been completed prior to the December 2018 Reserve, AMPL continues to assume long-hole open stoping ("**LHOS**") as the primary mining method for Abra, with cement paste backfill. The room and pillar ("**RAP**") mining method will be applied for certain shallow

dipping areas within the Apron Zone. These assumptions remain current for the FS. Whilst these mining methods remain unchanged from the PFS, the schedule and mining sequence has been revised for the FS.

The Reserve estimation methodology on the December 2018 Mineral resource Estimate was to prepare a 3D mine design model to determine shapes and locations of individual stopes. The December 2018 Mine Model was prepared by running mine shape optimiser ("**MSO**") software on the December 2018 Resource. MSO interrogations were run at both a 6.0% lead cut-off grade and a 5.5% lead cut-off grade. The shapes were then established for the December 2018 Mine Model implementing a practical approach to designing a mine on the 6.0% lead cut-off MSO initially, then incorporating additional stopes as a 'tail' from the 5.5% lead cut-off MSO, which had not been otherwise sterilised and were within the practical infrastructure and development envelope already established. The total package of shapes established for the December 2018 Mine Model was then tested against the December 2018 Resource block model in order to eliminate shapes that were not within the Indicated Mineral Resource and to overlay appropriate dilution and mining recovery assumptions (modifying factors).

For the December 2018 Reserve, an overbreak of 0.5 metres was assumed and immediate halo dilution material ranged from approximately 4% to 5% lead (depending on domain and lode). Pillars were not designed but an allowance for ore loss in pillars was included in the stope recovery factor. Subsequently, a range of stope recoveries were applied for different mining methods. These range from 92% in the RAP areas, up to 98% for LHOS with paste backfilled areas, where no pillars are planned. Based on this, the December 2018 Resource assumes an average overall stope tonnes recovery of 96%. Minimum mining width was assumed to be 5 metres.

Table 6 (below) summarises the current Abra Ore Reserve estimate.

Table 6: JORC Ore Reserve statement (December 2018 Reserve)[1]

Reserve classification	Tonnes (Mt)	Lead grade (%)	Silver grade (g/t)
Proved	-	-	-
Probable	10.3	8.8	24
Total	10.3	8.8	24

Notes: 1. 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.

All December 2018 Reserve tonnes are derived from the Indicated category of the December 2018 Resource. However, only 68% of such Indicated Resources became Probable Ore Reserves following the application of the relevant modifying factors.

Ongoing project development drilling

At the time of publication of the FS, two diamond drill rigs are operating at Abra site as part of an extensive (approximately 18,000 cumulative linear metres, ie, an additional 30% to the current drilling database) infill and project development drilling program. This program is focussed some specific objectives including:

(1) Conversion of high-grade Inferred Mineral Resources on the north western margin of the Apron Zone to Indicated Mineral Resources;

(2) Infill drilling of the first three years of proposed mine production in the upper parts of the Apron Zone to <50 m centres to assist with mine design optimisation and resource risk mitigation; and
(3) Pre-development 25 m spaced drilling of the first year's production.

An updated Mineral Resource estimate is to be compiled towards the end of 2019, following completion of the current drilling program.

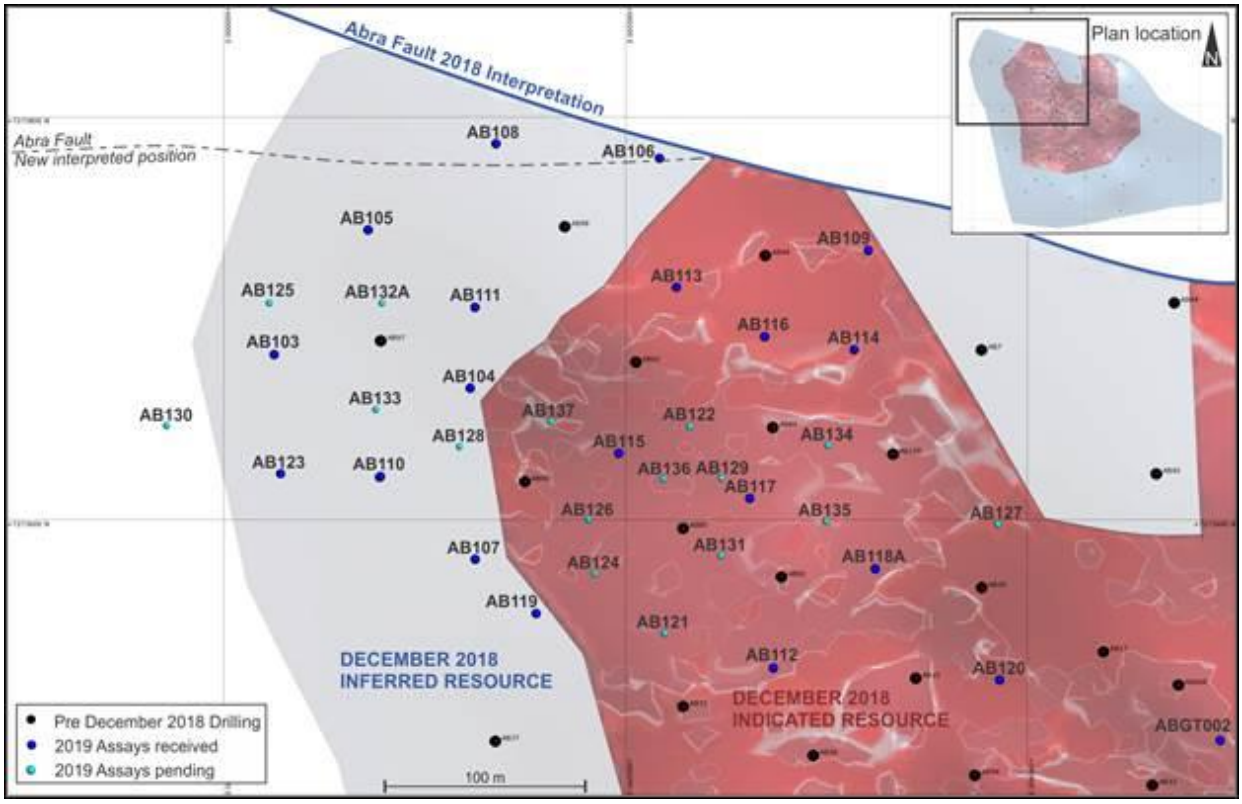
The Company has completed approximately 80% of this programme and received assays for approximately 40% of the intended 2019 project development drilling program. The results to date provide confidence and validation in regard to the assumptions and geological models which underpin the Project's Mineral Resource estimate. This impacts the potential conversion of certain targeted mineralised material currently in the Inferred Mineral Resource category to Indicated Mineral Resources or better. The current drilling activity is specifically targeting those areas within the first 3-years of production which are currently Inferred Mineral Resources. As a result, the FS Mine Model (defined below) is 33% made up of material currently included in Inferred Mineral Resources. Galena believes it has a strong basis for this approach given the observed drilling results. The remaining 67% of the FS Mine Model (defined below) is included in Probable Ore Reserves.

To avoid uncertainty, the FS Mine Model excludes all material in the far north-western area of the December 2018 Resource where recent drilling suggests the location of the Abra Fault should be re-interpreted further south, resulting in likely reduction of Inferred Mineral Resources in that particular area.

The Inferred Mineral Resource material incorporated into the FS Mine Model has not had a reduction factor applied to its tonnes and grade. Inferred Mineral Resources have a lower level of geological confidence and cannot be used in the estimation of Ore Reserves. The ongoing project development drilling program has not been completed in its entirety and nor have the results been modelled into an updated Mineral Resource estimate. There can be no guarantee that the future Mineral Resource estimate update will convert Inferred Mineral Resources into Indicated Mineral Resources or return the same grade and tonnage distribution, which may affect the FS and its economic outcomes. The Abra Ore Reserve estimate will be reviewed in conjunction with the coming Mineral Resource update.

Figure 2 shows the current project development drilling program drill collars and assays received, overlying a plan of the main Apron Zone mineralisation.

Figure 2: Current drilling program drill collars and assays overlying Apron Zone mineralisation



Source: Galena.

Mining and FS Mine Model

A geotechnical review of the Project was completed by Keogh Geotechnical Consulting Pty Ltd ("**Keogh Geotech**") for the FS. Laboratory rock strength results indicate that the main lithological units can be classified as very strong to extremely strong with uniaxial compressive strength (UCS) values typically in the 130 – 340 MPa range.

The results of geotechnical assessments in the Apron Zone indicate that ground conditions should be favourable for both LHOS and RAP mining methods, depending on orebody dip. AMPL's intention to backfill most of the Apron Zone stopes with cement pastefill will reduce the risk of adverse geotechnical conditions arising. Ground conditions are expected to be favourable for the implementation of LHOS in the Core Zone of the deposit. AMPL intends to use cement pastefill also for most of the stopes in the central area of the Core Zone to maximise recovery.

Based on geotechnical analysis it is currently planned that Abra develops a 25-metre deep box-cut where the underground mine portal will be established. The central decline and all secondary declines are to be developed in strong and competent rocks. It is intended that the lower southwest Apron Zone stopes will be accessed via the west decline which will be developed in the Apron Zone hangingwall. Locating the west decline in the Apron Zone hangingwall positions it in very competent rock and any underlying Apron Zone stopes to be backfilled with cement pastefill.

LHOS is the primary mining method selected for the FS, with cement paste backfill. However, certain shallow dipping areas within the Apron Zone will be mined as RAP. Ground conditions are expected to allow relatively large stopes to be mined.

The methodology used to establish the mineralised material to be included in the mine plan ("**FS Mine Model**") involved preparing an updated 3D mine design model to determine shapes and locations of individual stopes. The mine model was developed by running MSO software on the December 2018 Resource to establish shapes for practical mine designs at both 6.0% and 5.5% lead cut-off grades. MSO software automates the design of optimal stope shapes based on constraints and design parameters such as cut-off grade, strike length, width, level interval and dip angle.

The MSO shapes were tested against the December 2018 Resource block model with a view to minimising stopes that were not within Indicated Mineral Resources and to overlay dilution and recovery assumptions. Whilst the underlying model includes some Inferred Mineral Resources, typically seen on the margins of proposed mining areas, a reasonable and logical approach was taken in that the extension of some of these proposed mining areas would occur following additional drilling and evaluation. Also in doing this, certain areas were excluded based on results received from the ongoing project development drilling program. In the relatively flat dipping Apron Zone, MSO shapes were generated in 15 metre x 15 metre, blocks with a vertical thickness confined by the footwall and hangingwall of the individual lodes. To generate stopes with a strike length of 45-60 metres length to maintain a maximum hydraulic radius of eight, three to four MSO stope solids were combined (along strike) to form one solid shape using the Deswik design software.

In the steeply dipping Core Zone, MSO shapes were generated with a vertical height of 25 metres, strike length of 10 metres and width defined by the lode HW and FW. The MSO shapes were combined using the Deswik design software to generate stopes with a strike length of 20-60 metres. Using the FS geotechnical data, an overbreak of 0.3 metres was estimated for the hangingwall span of Apron Zone stopes and 0.2 metres for the footwall and hangingwall of the Core Zone stopes. Pillars were not designed but an allowance for ore loss in pillars was included in the stope recovery factor.

Subsequently, a range of stope recoveries were applied for different mining methods. These range from 92% in the RAP areas, up to 98% for LHOS areas with paste backfill, where no pillars are planned.

The FS Mine Model contains 16.3 million tonnes at 8.1% lead and 20.2g/t silver.

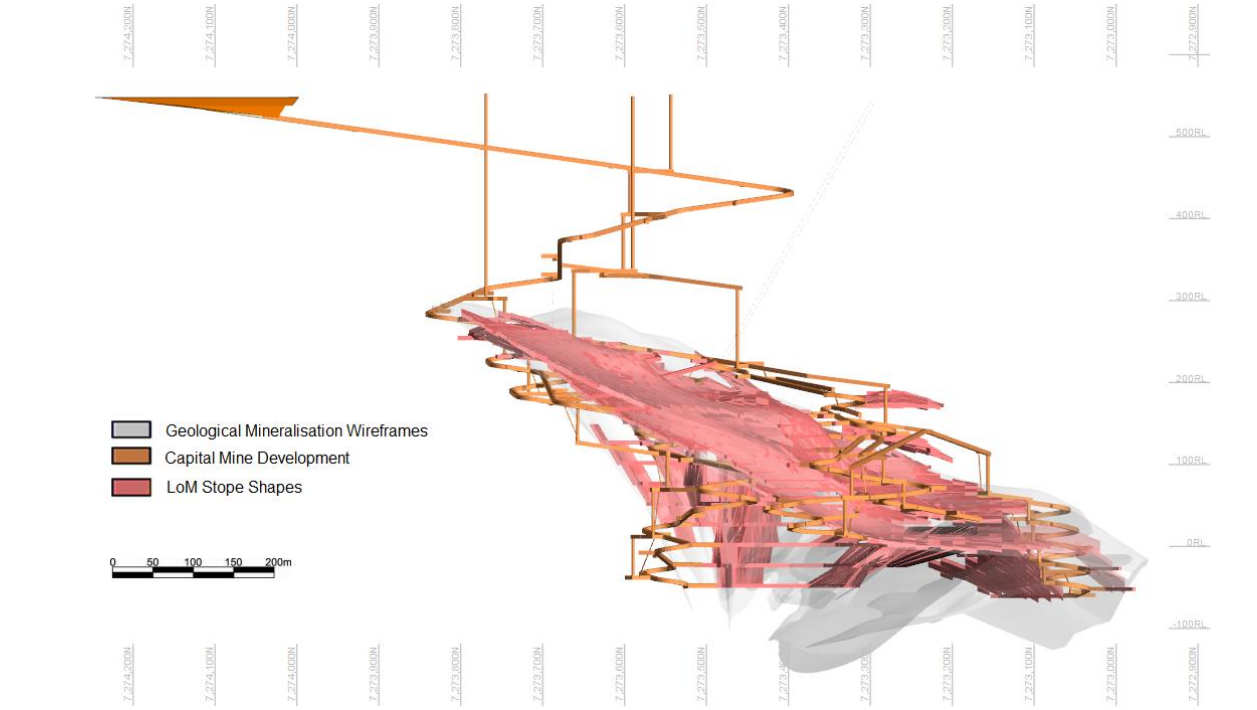
The FS Mine Model includes some mix of material taken from Probable Ore Reserves (67%) and Inferred Mineral Resources (33%), with no reduction factor applied to the tonnes and grades of the Inferred Mineral Resources. Inferred Mineral Resources have a lower level of geological confidence and can't be included in the calculation of Ore Reserves, and there can be no guarantee that a Resource update will convert Inferred material into Indicated or return the same grade and tonnage distribution. This may affect mining studies and economic outcomes from the FS. The Abra Ore Reserve will be reviewed in conjunction with an upcoming Mineral Resource update following completion of the 2019 project development drilling program.

To avoid uncertainty, the FS Mine Model excludes all material in the far north-western area of the December 2018 Resource where recent drilling suggests the location of the Abra Fault should be

re-interpreted further south, resulting in likely reduction of Inferred Mineral Resources in that particular area.

Figure 3 shows a 3D visualisation of the FS Mine Model overlying the December 2018 Resource.

Figure 3: FS Mine Model overlying the December 2018 Resource



Source: AMPL.

Abra's underground mine design generates the following mining metrics:

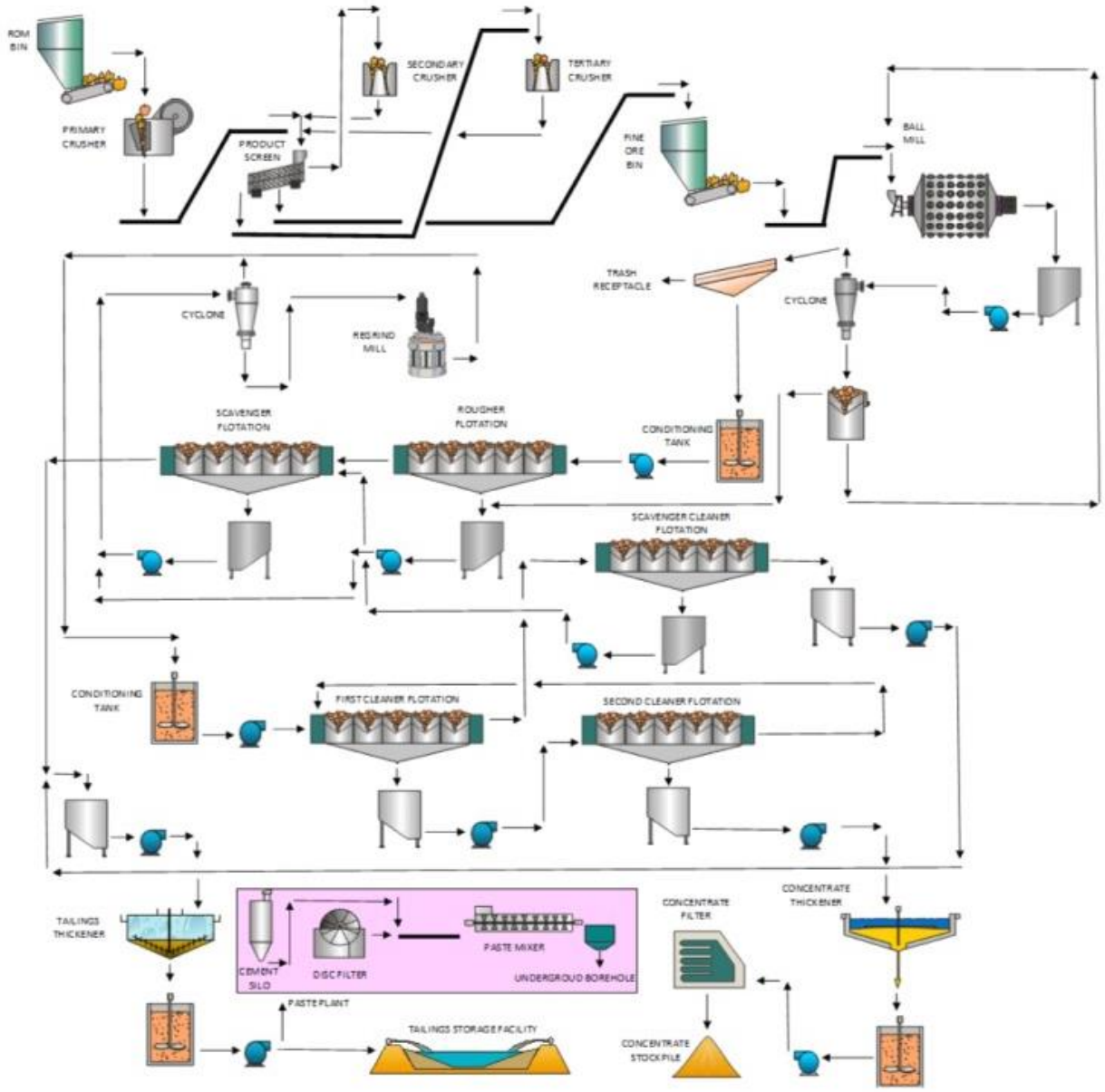
- Average tonnes per vertical metre = 46,600 t/vertical m;
- Total development = 51.5 km; and
- Total stoping tonnes and lead grade = 14.1 Mt @ 8.31% lead.

Process plant description

The FS metallurgical test work program was designed to build on and improve the confidence around previous comminution and flotation test work conducted by AMPL and others during the previous study stages. The selected process flowsheet has been designed to produce a single high-value, high-grade lead-silver concentrate at maximum recovery. The plant flowsheet is shown in Figure 4 (below) and contains the following processing stages for the production of lead-silver concentrate:

- Three stage crushing with fine ore bin storage and emergency stockpile with feeder;
- Single stage ball mill with a flash flotation cell treating cyclone underflow;
- Flotation and concentrate regrind to produce a lead/silver concentrate;
- Concentrate dewatering utilising a thickener and a filter to produce a transportable concentrate; and
- Tailings thickening and storage in a designated facility.

Figure 4: Abra process plant flowsheet



Source: GRES.

Figure 5: 3D render of Abra proposed crushing circuit

Source: GRES.

Figure 6: 3D render of Abra proposed flotation circuit

Source: GRES.

Grade recovery modelling of flotation data indicates that the Abra process plant will recover 93.0 to 94.7% of the lead, producing a lead concentrate expected to contain 73% to 75% lead and approximately 200 g/t silver.

Product marketing

Analysis and testing of Abra's concentrate (including direct lead smelter testing) confirm Abra's concentrate will be unusually high-grade for a primary lead concentrate product and it does not contain any penalty elements at even near to penalty levels. Furthermore, its specification meets import requirements in all key jurisdictions. As a result, Abra's high-grade, high-value product can be considered a premium product in comparison to existing low-silver primary lead concentrates available on international markets.

AMPL's major shareholder, Galena received expressions of interest for Abra's offtake from nine different parties, including international trading companies and end-user smelting companies from China, Japan, Korea and Europe.

Under the terms of AMPL's Shareholders Agreement each of its existing shareholders (Galena and Toho) have the right to purchase up to their ownership proportion of Abra's concentrate production on arms-length benchmark terms.

The FS does not factor in any potential premium to international benchmark terms.

Outbound logistics

AMPL proposes to ship approximately 125,000 tonnes per annum of lead-silver concentrate through the Port of Geraldton. The Port of Geraldton has all permits and infrastructure required to handle lead sulphide concentrates. It has been an active handler of such materials for decades and continues to currently handle lead sulphide product for at least one third-party mine. AMPL's discussions with the Port of Geraldton confirm more than enough capacity remains available to deal with Abra's concentrate shipment requirements.

AMPL proposes to use a sealed, containerised system to transport the base metals concentrate from the mine to port and then load ships using a mobile harbour crane and rotating mechanism.

Operation and drivers of operating cost model

The Project will operate on a continuous basis 24-hours per day, 365-days per year. Personnel to undertake onsite management, mine technical services, geology, mineral processing operations and maintenance, occupational health, safety and environment and administration will be employees of AMPL. The mining operations will be carried out by a suitably experienced underground mining contractor.

The operating costs for the Project have been developed in accordance with the GRES standard for cost estimation. The basis of the operating cost estimate is a total operations workforce of 246 personnel, most of whom will be employed on 14-days on, 7-days off roster, rotating shifts between day shift and night shift (7-days, 7-nights).

Tailings storage

The tailings storage facility ("**TSF**") has been designed to store 8.5Mt of tailings over a 16-year life. Approximately 1/3 of the total tailings production will be used for paste backfill to the underground mining operations. The TSF will be a two cell, paddock type facility, located to the north of the plant site. The TSF starter embankments will be a zone embankment comprising an

upstream zone of compacted select mine waste and a downstream zone of traffic compacted mine waste.

Water

The Abra water balance estimate has been modelled on steady state conditions at nameplate capacity. This provides a net raw water requirement of approximately 23.4L/s which is expected to be supplied by aquifers within 7km of the proposed processing plant.

The site water needs will change as the Project transitions from construction, into ramp-up to a peak and finally reducing to a steady-state. During the construction phase (approximately 15-months), the main water requirements will be potable supply to the village, mining, earthworks, dust suppression and concreting. Water demand in this period is expected to be approximately half that required at steady state production (ie, approximately 11L/s).

The Project water requirement peaks at 28.4L/s during operational ramp up and where there is initially reduced return water from the TSF and nil mine dewatering. The mine schedule indicates that this peak period will be in 2022. Additional sources of water will be developed to provide extra capacity to the current production bores and ultimately, for redundancy during the steady state period.

At the time of preparing the FS, three water bores have been constructed (APB001, APB002 and APB003). Test pumping has been completed and a hydrogeology report prepared by Rockwater Pty Ltd ("**Rockwater**").

It is recommended that additional sources of water be developed to provide long-term redundancy for the three current production bores. Rockwater's report suggests further targets for hydrogeological drilling within 8km of Abra before additional exploration work may be required.

Power

The power for the mine site and accommodation village will be provided by a dedicated power station located on the mine site. It will consist of modular natural gas fired reciprocating generator sets with n+1 redundancy. Power will be generated at 11kV. Solar generation in the form of photovoltaic cells will be integrated into the power station to offset fuel usage. A battery energy storage system will be installed, primarily for the purpose of providing the step load change capacity required to start the ball mill, and grid support. Power will be provided under a power supply agreement with a build own operate contract. The LNG storage and regasification facility will be built, owned and operated by the LNG supplier.

Other infrastructure

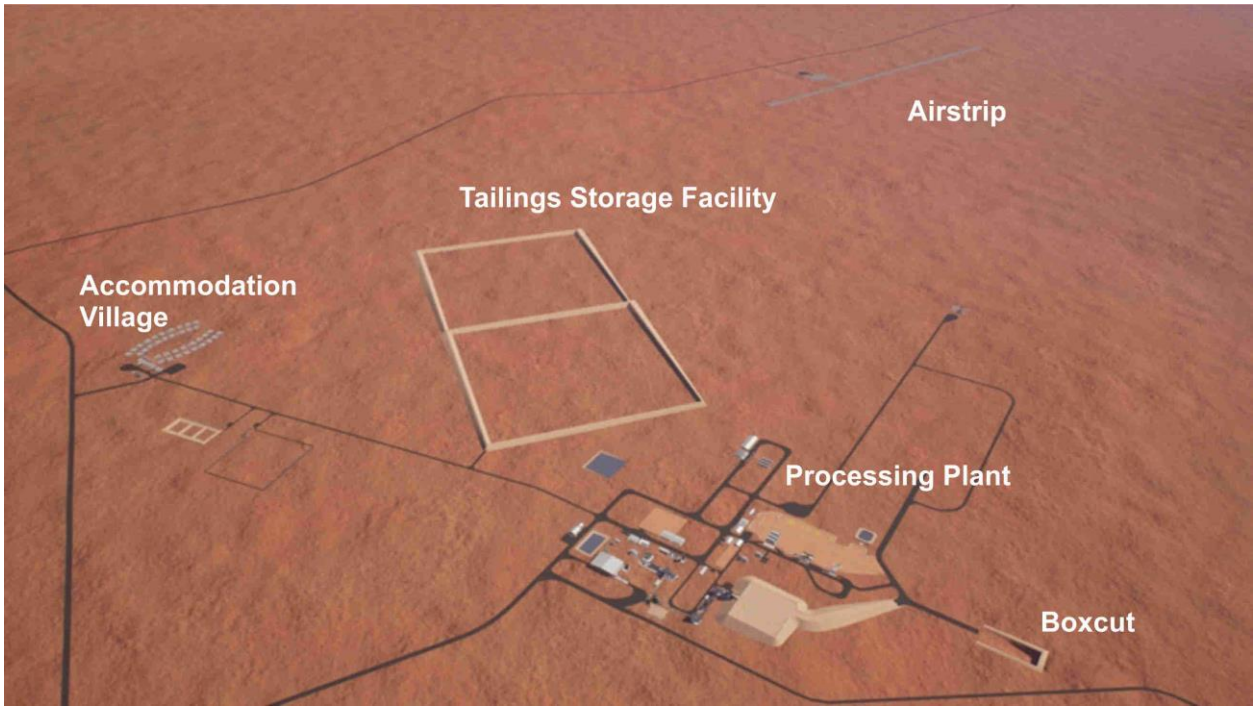
The supporting infrastructure required for development of the Project will include the following:

- Access roads;
- Village for up to 284 personnel (ie, to accommodate peak staffing requirements);
- Airstrip with 1,800m gravel pavement to suit Dash 8-Q300 or equivalent aircraft;
- Bulk earthworks for the process plant site and infrastructure that includes the internal roads, ponds, TSF, airstrip, village, explosive magazine storage and mine service areas;
- Communications network with microwave link from site to the existing Telstra facility at Doolgunna;

- Buildings including offices, change rooms, crib rooms, toilet blocks, plant workshops, warehouse and storage sheds;
- Mine infrastructure including wash down bay, refueling facilities, mine workshops and explosive magazines;
- Power supply and reticulation, including LNG storage;
- Water supply, storage and reticulation;
- Waste management facilities; and
- Logistics including wheel and container wash systems for vehicles.

The proposed Abra site layout is shown in Figure 7.

Figure 7: Abra site layout



Source: GRES.

An aerodrome to service the Project will be constructed approximately 3km east of the process plant and village. Access to the aerodrome will be via the Tangadee Road and the aerodrome access road. The airfield runway (Code 3C) will initially be suitable, for a Dash 8-Q300 (or similar) aircraft and capable of carrying up to 50 passengers.

Abra currently has a smaller Royal Flying Doctor Service airstrip on-site, which has been in regular use for exploration activities and will continue to be utilised through the early construction phases of the Project.

Project implementation

The Project is intended to be implemented using an engineering, procurement and construction ("**EPC**") methodology. Under this methodology, AMPL will enter into a head contract with a suitably experienced contractor to carry out the following:

- Detailed final engineering;

- Procurement, fabrication and delivery to site of all plant, equipment and materials;
- Construction of the facilities;
- Pre, dry and wet commissioning of the facilities, where appropriate; and
- Ore commissioning assistance of the processing plant facilities by the contractor assisted by AMPL's owners and operations teams.

The key milestones for the implementation phase are listed in Table 7.

Table 7: Key Project implementation milestones

Activity	Timeline
First ore from decline development	Approx. 13-months from construction start
First ore feed to the processing plant	Approx. 15-months from construction start
First concentrate production	Approx. 16-months from construction start

Pre-development capital expenditure

The Project pre-development capital cost estimate developed for the FS is based upon the EPC approach for the process plant and infrastructure. The mining development cost includes the box-cut and decline development to first production. The capital costs are summarised in Table 8.

Table 8: Pre-development capital expenditure estimate summary

Facility / item	Expenditure (A$M)
Process plant	54.8
Mine development	31.7
Village and wastewater treatment plant	16.7
EPC	15.0
Infrastructure	14.5
TSF	9.9
Mobilisation/demobilisation and construction indirect	9.2
Contingency	7.7
Owners	6.7
Roads and fencing	2.0
Aerodrome	1.0
Laboratory	0.3
Total	169.6

Operating costs (non-mining)

The operating cost estimate (excluding underground mining), broken down by category, has been presented in Table 9. These have been developed specifically for Abra but also benchmarked on typical cost for a full year at the design rate of 1.2Mtpa of ore treated.

Table 9: Abra non-mining operating cost breakdown

	(A$M per year)	(A$/t ore)
Processing		
Salaries / labour	8.8	7.35
Power	7.5	6.24
Reagents and consumables	5.3	4.39
Maintenance	3.5	2.95
General	2.6	2.18
Crusher feeding	1.5	1.23
Sub-total processing	29.2	24.34
Administration and other		
Salaries / labour	2.3	1.92
Maintenance	0.6	0.52
Freight	13.6	11.33
General	2.6	2.19
Power	0.4	0.35
Total operating cost	48.8	40.64

Operating costs (mining)

The mining cost estimate covers all activities related to underground mining to deliver ore to the processing plant run-of-mine pad. For the purpose of the cost estimate associated with the FS it has been assumed that experienced Australian contract mining companies will be engaged for the mining works for the life of the project and separate “owners cost” determined for the provision of all primary services, technical and management functions. Six separate well known mining contractors supplied detailed “indicative rates” associated with a 3-year scope of work established from the schedule presented in the FS. These rates were received by the company in March 2019.

The contractor rates strategy used in the “indicative rates” process consisted of a schedule of rates style pricing for the first year (decline access) prior to changing over to a fixed and variable format for the following 2 years (production). This strategy was based on the first year being solely access to the ore body by decline development and the critical nature of achieving that access as quickly as possible.

Due to the varying activities (development and stoping) in the mine on a year to year basis the unit costs will vary. Mine operating unit costs were calculated on a year-by-year basis by allocating fixed costs as a proportion of tonnage to capital lateral development, operating lateral waste development, operating lateral ore development, operating LHOS and operating RAP. The fixed and variable costs of capital vertical development were also calculated on a year-by-year basis for the ventilation airways and escapeways.

The schedule was based on achieving typical industry productivities. Table 10 summarises the key underground mining costs as unit rates.

Table 10: Abra underground mining unit costs by category

	Range employed in model	LOM average
Decline development (A$/m)	3,183 – 5,633	4,483
Capital lateral development (A$/m)	3,426 – 4,492	3,896
Operating lateral development (A$/m)	3,111 – 4,138	3,356
Capital vertical (A$/m)	4,483 – 7,853	5,440
LHOS (A$/t ore)	30.7 – 44.3	33.8
RAP (A$/t ore)	38.7 – 45.5	41.6
Pastefill operations (A$/t backfill)	12.0	12.0
Mining owners' costs (A$/t ore + waste)	4.93	4.93

Lead C1 direct cash cost

Table 11 (below) provides the calculated lead C1 direct cash cost for Abra based on the FS.

Table 11: Abra lead C1 direct cash cost

	(US$/lb)	(A$/lb)
Mining	0.22	0.32
Processing	0.11	0.15
Treatment charges and outbound logistics	0.08	0.12
Other	0.07	0.10
Net silver by-product credit	(0.04)	(0.06)
Lead C1 direct cash cost	0.44	0.63
Royalties[1,2]	0.07	0.10

Notes: 1. 5.0% Western Australian State royalty plus 3.5% in historical, vendor and other royalty equivalent payment obligations for lead. 2. 2.5 % Western Australian State royalty plus 3.5% in historical, vendor and other royalty equivalent payment obligations for silver.

Sustaining capital expenditure

Sustaining and deferred capital has been estimated by GRES for all non-underground mining infrastructure and by AMPL for all mining related capital expenditure. Sustaining and deferred capital will cover the funding required over the life of the project to replace items of plant that have reached their useful life, or new and planned expenditure to modify the plant/equipment as necessary to sustain operations at the rated capacity. Sustaining capital also includes additional TSF lifts over the LOM.

Where applicable sustaining and deferred capital has been estimated either as a percentage of the direct capital cost based on typical industry experience or from first principles. The allocations include:

- Capital lateral development costs (includes decline after initial 18-months) are A$47.1M
- Capital vertical development costs after initial 18-months are A$11.3M
- Process plant projects – 0.25% of the process plant total Installed Capital years 2-14 of production;

- Surface non mining mobile equipment and vehicles – replaced in years 6/7/8, A$3.2M allowed for scheduled replacement;
- Mill refurbishment in year 5 &10 at A$290,000;
- A new tailings cell construction (cell 1B-year two) and TSF wall lift allowance of A$15.2M over the first 13 years; and
- Rehabilitation – provisional sum of A$10M allowed for in year 16.

The sustaining capital allowance excludes other areas of the Project outside the scope of the capital and operating costs. The LOM sustaining capital cost estimated by GRES for non-underground mining infrastructure is A$28.4M or A$1.74 per tonne of ore milled over the life of mine.

FS production metrics, ramp-up assumptions and production profile

Table 12: FS production metrics

	Annual[1]	LOM
Mill throughput[2]	1.2Mt	16.3Mt
Diluted mined ore grade:		
- Lead		8.1%
- Silver		20.2g/t
LOM		16-years
LOM recoveries:		
- Lead		94%
- Silver		94%
Production (metal in concentrate):		
- Lead	95kt	1.24Mt
- Silver	805koz	10.6Moz
High-value lead-silver concentrate grade:		
- Lead		75%
- Silver		200g/t

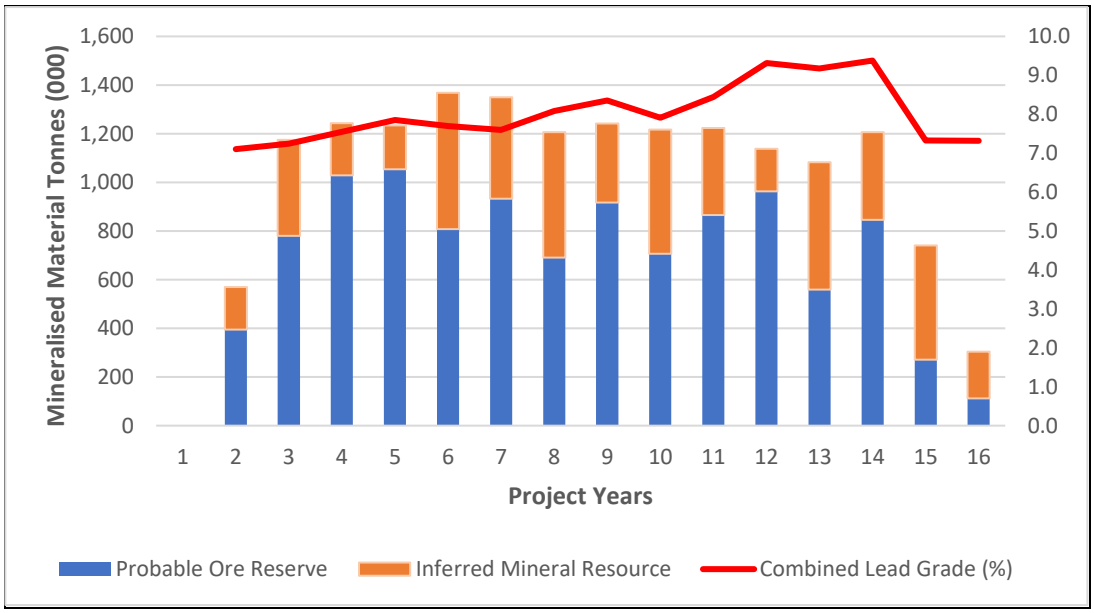
Notes: 1. Average of steady-state year's 3-15. 2. 67% of the mine model material is included within Probable Ore Reserves but the remainder is currently included in Inferred Mineral Resources.

Table 13: FS ramp-up and LOM

	Period
Construction period	Approximately 1.5 years
Ramp-up period	Approximately 7-months
First full-year of steady-state commercial production	Year 3 (CY 2022)
LOM	16-years

The LOM production profile is outlined in Figure 8.

Figure 8: Abra LOM production profile



Source: AMPL (FS Mine Model).

FS financial assumptions

AMPL procured a lead market report from Wood Mackenzie Limited, which forecasts a long-term lead price of US$2,350/t (ie, US$1.07/lb) applicable to most of Abra's LOM. However, based on current spot lead prices being lower, AMPL chose to utilise current 'spot' assumptions (ie, as at close of business on 18 July 2019) for key assumptions (lead metal price, silver metal price, exchange rate and treatment charges).

Assumptions applied in the FS financial model are set out in Table 14.

Table 14: FS financial assumptions

	LOM
Metal payability[1]	95%
Lead metal price	US$0.92/lb
Silver metal price	US$16.00/oz
Lead treatment charge	US$96/t conc.
Silver refining charge	US$1.00/oz silver
Exchange rate – US$ per A$1	0.70
Inflation	Modelled in 'real' 2019 terms
Royalties	
Lead[2]	8.5%
Silver[3]	6.0%

Notes: 1. Subject to standard deductions (ie, 3 units for lead and 50g/t for silver). 2. 5.0% Western Australian State royalty plus 3.5% in historical, vendor and other royalty equivalent payment obligations. 3. 2.5 % Western Australian State royalty plus 3.5% in historical, vendor and other royalty equivalent payment obligations.

Project funding

As at 30 June 2019 AMPL and Galena had combined cash reserves of A$28M. In accordance with the Shareholders Agreement and Investment Agreement between Galena and Toho, AMPL expects to receive an additional A$10M following publication of this FS and a further A$60M on confirmation of project financing debt from Toho.

The FS assumes AMPL has access to A$80M of equity and procures A$106M of project financing debt (ie, a loan secured by the Project assets) to cover pre-development capital expenditure, working capital and upfront financing costs. The project financing debt is assumed to have a 5-year repayment tenor and bear interest at a 3.25% margin above US Dollar LIBOR.

Tax

The FS assumes A$42M of historical tax losses are available as at 1 July 2019 and the Australian corporate tax rate applicable to AMPL will be 30%.

FS financial outcomes

Table 15 summarises the LOM revenue, costs and cash flows.

Table 15: Abra LOM revenue, costs and cash flow

	(A$M)
Notional gross CIF revenue[1]	3,582
Smelter charges, shipping and port incidentals	(317)
Net smelter return on FOB basis	3,265
Royalties and royalty equivalent payments	(264)
Other operating costs	(1,496)
Capital expenditure (pre-production and sustaining)	(291)
Undiscounted pre-tax project cash flows	1,214

Notes: 1. Gross metal value in concentrate after payability.

Table 16 summarises the EBITDA, margins and project economics.

Table 16: Abra EBITDA, margins and project economics

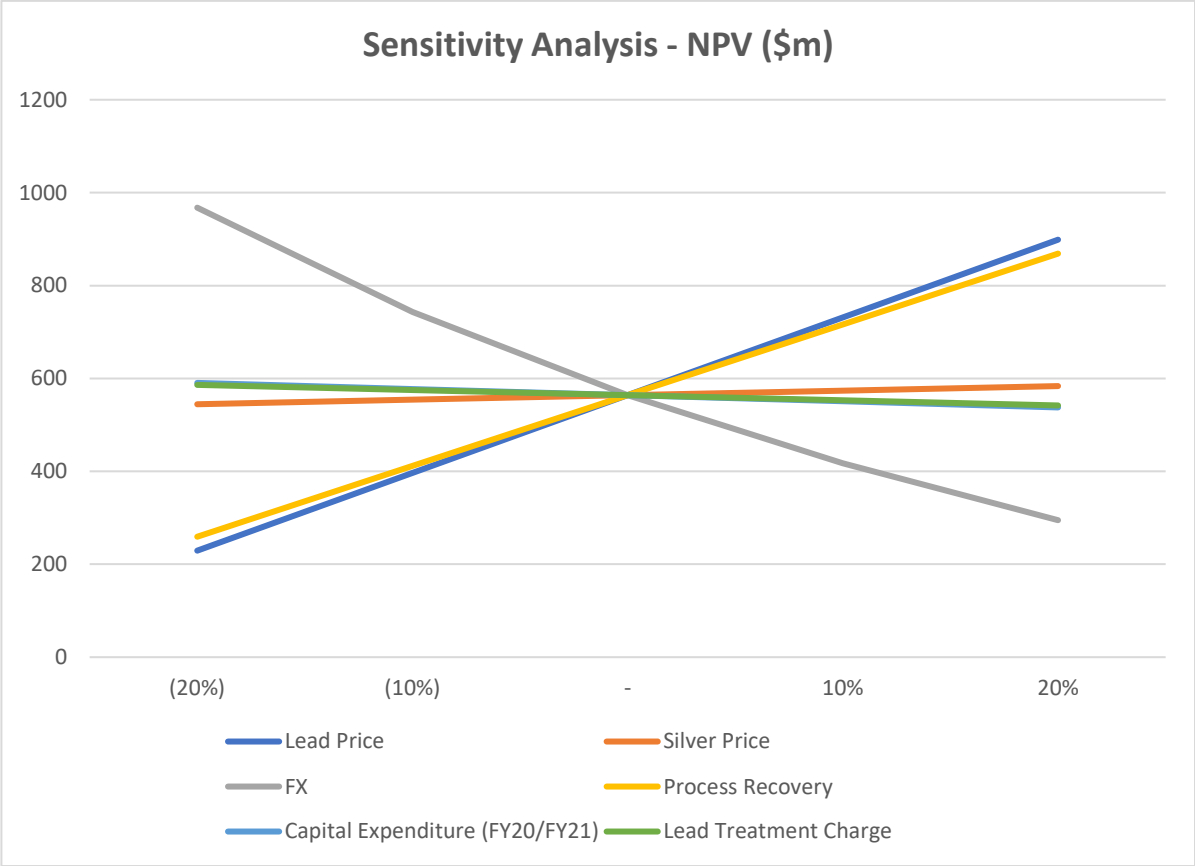
Steady-state commercial production average annual EBITDA (years 3-15)	A$114M
Steady-state commercial production average annual EBITDA margin (years 3-15)	46%
Steady-state commercial post-tax average annual cash flow available for debt service (years 3-15)	A$80M
Pre-tax NPV (8% discount rate)	A$553M
Pre-tax IRR	39%
Post-tax NPV (8% discount rate)[1]	A$381M
Port-tax IRR[1]	32%

Notes: 1. Calculated assuming AMPL available tax losses of A$42M as at the commencement of project implementation and the inclusion of a A$106M project financing loan (5-year tenor and 3.25% interest margin) as part of the overall project funding package.

Sensitivity analysis

Sensitivity analyses using ±20% range pivoting on base case assumptions (displayed in brackets) for lead price (US$0.92/lb), foreign exchange (US$0.70), silver price (US$16.00), process recovery (94%), lead treatment charge (US$96/t concentrate) and pre-development capital expenditure (A$170M) have been prepared and are shown in Figure 9 below.

Figure 9: Abra FS pre-tax NPV sensitivity analysis



Source: AMPL.

Risks and opportunities

A risk assessment was undertaken and identified key processing, safety, financial and environmental risks. The risks identified for the ABMP are typical mining and processing related risks for operations of similar size, located in economically and politically stable countries like Australia. Potential control measures were identified to mitigate the significant risks to more acceptable levels. The FS also identified several opportunities aimed at improving the project plan and design through future optimisation and ongoing work. Furthermore, the Abra deposit remains open in multiple directions, including with the potential for the copper-gold domain at depth to be tested in more detail.

FS preparation – participation by third-party independent consultants

The FS work undertaken by AMPL and their directly engaged third-party consultants is itemised in Table 17.

Table 17: Abra FS workstreams and responsible third-parties

Party	Workstreams
GRES	Detailed process design
	Metallurgy review
	Mass, water & energy balances
	Plant layout
	Multi-vendor pricing for major equipment
	Mechanical equipment list development
	General arrangement drawings
	Capital cost estimate
	Operating cost estimate
	Infrastructure design
Rockwater	Hydrology
Optiro	Geology and Mineral Resource estimate
GALT Geotechnics Pty Ltd	Civil geotechnical services
Aerodrome Management Services Pty Ltd	Preliminary airstrip design
Keogh Geotech	Geotechnical engineering
McArthur Ore Deposit Assessments Pty Ltd	Mineralogy
ALS Metallurgy Pty Ltd; Fremantle Metallurgy; and Applus RTD Pty Ltd	Metallurgical testing
Minelogix	Flotation data modelling
Stantec Incorporated	Environmental studies
Land & Marine Geological Services Pty Ltd	TSF design
Telstra Corporation Limited; and Walker Newman & Associates	Communications
Microanalysis Australia Pty Ltd	Concentrate characterisation
Platek Analytics	Financial modelling
Outotec Pty Ltd	Paste backfill study

Galena Mining Ltd.,

Alex Molyneux
Managing Director

Competent Person's Statement

The information in this report related to the Abra Ore Reserve estimate is based on work completed by Mr Roger Bryant, BEng (Mining, Member AUSIMM). Mr Bryant is an employee of Galena Mining Ltd. Mr Bryant has sufficient experience relevant to the style of mineralisation and type of deposit under consideration and to the activity which he is 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 Bryant consents 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 related to the December 2018 Resource estimate is based on work completed by Mr Don Maclean MSc (Geol), MAIG and RP Geo (Exploration and Mining), MSEG, a consultant to Galena Mining and Mr Mark Drabble B.App.Sci. (Geology), MAIG, MAusIMM, Principal Consultant at Optiro Pty Ltd. Mr Maclean was responsible for data review, QAQC, and development of the geological model. Mr Drabble was responsible for resource estimation, classification and reporting. Mr Maclean and Mr Drabble 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 Maclean and Mr Drabble 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 Don Maclean MSc (Geol), MAIG and RP Geo (Exploration and Mining), MSEG, a consultant to Galena Mining. Mr Maclean 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 Maclean consents to the inclusion in the report of the matters based on this information in the form and context in which it appears.

Forward-looking statements

The contents of this announcement reflect various technical and economic conditions at the time of writing. Given the nature of the resources industry, these conditions can change significantly over relatively short periods of time. Consequently, actual results may vary from those in this announcement.

Some statements in this announcement regarding estimates or future events are forward-looking statements. They include indications of, and guidance on, future earnings, cash flow, costs and financial performance. Forward-looking statements include, but are not limited to, statements preceded by words such as "planned", "expected", "projected", "estimated", "may", "Scheduled", "intends", "anticipates, "believes", "potential", "predict", "foresee", "proposed", "aim", "target", "opportunity", "could", "nominal", "conceptual" and similar expressions.

Forward-looking statements, opinions and estimates included in this announcement are based on assumptions and contingencies which are subject to change without notice, as are statements about market and industry trends, which are based on interpretations of current market conditions. Forward-looking statements are provided as a general guide only and should not be relied on as guarantee of future performance. Forward-looking statement may be affected by a range of

variables that could cause actual results to differ from estimated results and may cause the Company's actual performance and financial results in future periods to materially differ from any projections of future performance or results expressed or implied by such forward-looking statements. So there can be no assurance that actual outcomes will not materially differ from these forward-looking statements.

About Abra Base Metals Project

91.11% owned by Galena, the Abra Base Metals Project ("**Abra**" or the "**Project**") is a globally significant lead-silver project located in the Gascoyne region of Western Australia (between the towns of Newman and Meekatharra, approximately 110 kilometres from Sandfire's DeGrussa Project).

Galena completed an outstanding definitive / bankable -feasibility study ("**FS**") (*see Galena ASX announcement of 22 July 2019*) for development of a mine and processing facility with a 16-year life producing a high-value, high-grade lead-silver concentrate containing approximately 95kt of lead and 805koz of silver per year after ramp-up. Based on a pre-development capital expenditure estimate of A$170 million, the PFS modelled a pre-tax net present value for Abra (at an 8% discount rate) of A$553 million and an internal rate of return of 39%.[1]

Note: 1. Information relating to the production target and financial information derived from the production target is extracted from the ASX announcement of 25 September 2018. Galena confirms that that all material assumptions underpinning the production target, or forecast financial information derived from a production target, in that announcement continue to apply and have not materially changed.

Abra JORC Mineral Resource estimate[1, 2]

Resource classification	Tonnes (Mt)	Lead grade (%)	Silver grade (g/t)
Measured	-	-	-
Indicated	15.0	8.7	22
Inferred	22.4	6.7	15
Total	37.4	7.5	18

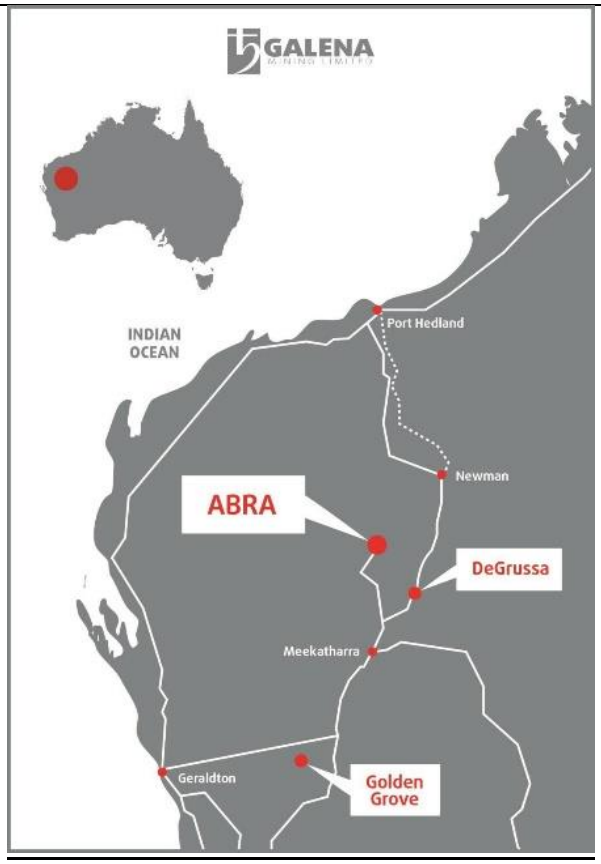
Notes: 1. See Galena ASX announcement of 18 December 2018. Galena confirms that it not aware of any new information or data that materially affects the information included in Galena's ASX announcement of 18 December 2018 and confirms that all material assumptions and technical parameters underpinning the resource estimates continue to apply and have not materially changed. 2. Calculated using ordinary kriging method and a 5.0% lead cut-off grade. 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.

Abra JORC Ore Reserve statement[1, 2]

Reserve classification	Tonnes (Mt)	Lead grade (%)	Silver grade (g/t)
Proved	-	-	-
Probable	10.3	8.8	24
Total	10.3	8.8	24

Notes: 1. See Galena ASX announcement of 18 December 2018. Galena confirms that it not aware of any new information or data that materially affects the information included in Galena's ASX announcement of 18 December 2018 and confirms that all material assumptions and technical parameters underpinning the ore reserve estimates continue to apply and have not materially changed. 2. 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.

Abra location



APPENDIX 2: JORC Code, 2012 Edition – Table 1

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 (e.g. '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 (e.g. submarine nodules) may warrant disclosure of detailed information.	• The Abra resource estimate is primarily based upon geological and assay data from diamond drilling programs completed at Abra from 1981 until 2018. The database used for the estimate contains 102 holes for 59,751m of drilling (18,724 samples). Of these 33 holes (19,640m) were drilled by Galena Mining Limited (Galena). • Mineralised intervals were diamond drilled using NQ2 diameter core, geologically logged, photographed, 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 acid digest followed by an AAS or ICP-OES finish. From drillhole AB84 samples were analysed using XRF with a lithium metaborate / tetraborate flux. Gold was assayed by fire assay using a 25 g, 30 g or 50 g charge. • Sample intervals were based upon geological logging and ranged from 0.5 to 3.0m. Galena's sampling generally used 1m intervals, and earlier drilling was sampled in 2m intervals. Sampling was continuous throughout the mineralised intervals with the right-hand side of the core taken. The sampling methodology is considered to be representative and appropriate for the style of mineralisation at Abra (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 diameter and reduced to NQ2 diameter at between 80 and 200m depth. Several holes were RC pre-collared through the barren upper sequence rocks, cased and diamond tailed using NQ2 diameter drilling. Diamond drilling was by wireline methods. Hole depths ranged from 400 to 955 m with an average depth of 650m. • Most core holes were oriented. Pre-Galena mining holes were either orientated using a Chinagraph spear or Ballmark/Ezymark type systems. Galena's 2017 and 2018 drilling was systematically oriented using either a Reflex ACT Mk.3™ or TrueCore™ core orientation system. The bottom of hole line was marked on the core as a reference for structural measurements. Only reliable core orientations were used for obtaining structural measurements.
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.*	• All diamond core was measured/recorded for drilling recovery by Galena staff (and its predecessors). • Overall core recovery is excellent due to the silicified and competent nature of the rock with core recoveries typically being 100%. • No grade versus recovery sample biases due to loss or gain of material has been identified.
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.*	• 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.

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.*	• All holes were routinely sampled as half cut NQ2 core for assaying, apart from two holes drilled in 2012 which were quarter cored. • The estimate is based entirely on diamond drill core. • 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. Galenas sampling was generally in 1m intervals whereas its predecessors were generally 2m intervals. Half 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. • Blank samples were routinely dispatched to the laboratory to monitor sample preparation. These generally performed within acceptable tolerances. However elevated lead values were returned from some blanks which is thought to either represent cross sample contamination (i.e. soft lead caking the sample preparation bowl) or issues with the high lead values on the AAS plasma. From hole AB78 onwards barren flushes were carried out after each sample in sample preparation. The magnitude of the elevated values is not considered to be a material issue on the lead value estimates in the resource estimate. • In Galena's 2017 and 2018 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. Renison Goldfields Corporation (RGC) Exploration in 1995 selected 110 half core samples for quarter coring to compare assaying results from earlier generations of drilling/assaying. Results were consistent with the earlier assays. • 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 at percent grades.

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 Galena. 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 used the NaOH fusion technique for base metals followed by ICP-OES. Gold was analysed using either a 25 or 40g fire assay. • Galena's samples were analysed by SGS Laboratories in Perth. An ore grade 4-acid digest was used followed by an ICP-AES finish. From hole AB84 samples were analysed using XRF with a platinum crucible using a lithium metaborate / tetraborate flux. Gold was by fire assay with a 50g charge. • The analysis methods used are considered to approach total dissolution thus reporting total assay values and are appropriate for the style and tenor of mineralisation at Abra. • No hand held XRF or other geophysical data is reported here • Previous QAQC is summarised as follows: Geopeko Limited 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 Abra Mining Limited (AML) or Galena (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 Galena 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.* • *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.*	• Most historic significant intersections were verified by Galena Geologists Angelo Scopel and Don Maclean while completing a core relogging program in 2017 • Due to the depth to mineralisation no twinned holes have been attempted yet. • Prior to Galena primary geological logging and sampling data was firstly recorded on paper and then entered into electronic files onsite. Electronic copies were transferred periodically to the Perth head office where the master database was administered. Duplicates of the data were kept onsite after validation. Duplicates of all paper copies of sample data were made for site and head office. • During Galena's 2017-2018 drilling program geological logging and sampling data was firstly recorded on either paper or in a Toughbook computer according to then entered into an electronic Excel and Access database files onsite. Electronic copies are backed up onsite and routinely transferred to the Perth head office. All paper documents are scanned onsite and electronic copies kept. Duplicates of the data are kept in Perth office after validation. Assay data was imported and merged directly from lab digital files in excel then later uploaded in an Access Database. All data has recently been migrated to a Datashed™ database to ensure data integrity. Galena used LogChief™ for logging and sampling for the 2018 drill program • 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.* • *Specification of the grid system used.* • *Quality and adequacy of topographic control.*	• All drill hole collars were surveyed using a DGPS by Haines Surveys (2005), MHR Surveys (2007), Galt Mining Solutions (2017) and ABIMS (2018). DGPS accuracy is within 0.02m. • Prior to 2008 diamond holes were routinely surveyed every 30 to 50m downhole during drilling using an Eastman Single Shot camera. A number of these holes were later gyroscopically surveyed due to the magnetite rich rocks present in some parts of the deposit which renders the Eastman azimuths inaccurate. Some inconsistencies between the Eastman single shot and gyro data was identified in historic reviews, which was largely attributed to incorrect set-up azimuths being provided to the gyro-operators and some poor gyro QAQC controls. The pre-Galena downhole survey data was reviewed, and erroneous data discarded or azimuths corrected to be consistent with neighbouring reliable surveys. From 2008 electronic multi-shot (Ranger and Ezi- shot) tools were used for routine surveying every 30 m while drilling. A north seeking gyro was used to survey all 33 holes drilled by Galena drilling and 13 historic holes. • 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 estimate from a DTM generated as part of an earlier gravity survey over the project area. Drill hole collars were cross checked against the topography DTM. Topographic accuracy is within 0.1 m vertical.
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.*	• The footprint of the Abra deposit extends 1,000m east-west along strike and 800m north south. Drill spacing ranges from 150m spaced centres on the periphery to 100 and 50m spacing in the central parts of the deposit. In some areas drill spacing is close to 50m by 25m. The deposit lies between 250m and 700 m below surface. • Data spacing is sufficient to establish geological and grade continuity to establish a mineral resource estimate. • No sample compositing has been applied.

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 mineralized structures is considered to have introduced a sampling bias, this should be assessed and reported if material.*	• The mineralisation in the Apron Zone consists of tabular shallow south dipping zones can be drilled from north or south with high intersection angles. The Core zone has steeply dipping structures that trend east-west. The majority of drill holes are oriented to the south to sample most of the identified structures in the Core Zone an unbiased manner. Approximately 40 early drillholes were drilled oriented towards the north, which is sub-parallel to some of the mineralised structures in the Core breccia zone. • The Apron Zone is not considered to have any sample bias issues due to the high intersection angles of all the drilling. By virtue of is nature as a feeder zone to the Apron mineralisation, the Core Zone has drilling at low intersection angles to the mineralised structures, but account is made for that in the estimation process.
Sample security	• *The measures taken to ensure sample security.*	• The previous companies that drilled the deposit implemented sample security protocols. All samples were transported from site to Perth assay laboratories either by company personnel or by courier. All remaining core is stored on site. Drill core was taken twice daily from the drill rig, immediately following completion of day shift and night shift respectively. • For Galena drilling core was transported to the core yard where it was logged and sampled. Securely sealed sample bulka-bags were either transported by Galena staff from the Abra site to Meekatharra for commercial trucking to the laboratory in Perth or trucked directly by Galena contractors.
Audits or reviews	• *The results of any audits or reviews of sampling techniques and data.*	• Mitchell River Group completed an audit of the geological database used for the estimate. This audit included review and documentation of sampling and geological data integrity. No issues have been identified • Optiro carried out a review of the sampling and data collection processes during the site visit to Abra and found that the protocols met industry standard with no material issues.

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.* • *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.*	• Abra Mining holds 100% interest in the Mulgul Project, consisting of Mining Lease M52/0776, Exploration Licence E52/1455, General Purpose Leases G52/292 and G52/286 and Miscellaneous Licence L52/021. A 3.0% Net Smelter Royalty exists over leases M52/0776 and E52/1455. Within the adjoining Jillawarra Project Abra Mining holds 100% of E52/1413, E52/3630 and E52/3575. • All tenements are in good standing and have existing Aboriginal Heritage Access Agreements in place. No mining agreement has been negotiated.
Exploration done by other parties	• *Acknowledgment and appraisal of exploration by other parties.*	• Initial exploration around the Abra deposit by Amoco Minerals Australia Company (Amoco)in 1974 but they failed to discover the Abra deposit when testing the significant magnetic anomaly associated with the mineralisation. Geopeko Limited entered into a JV with Amoco in 1980 and drilled the discovery hole in 1981. In total they drilled 8 diamond core holes (AB1-11) before being taken over by North Limited (North) which did not complete any exploration. In 1995 Renison Goldfields Corporation (RGC) Exploration joint ventured in and drilled another deep diamond core hole (AB22A) with a daughter hole wedged from it (AB22B). Both North and RGC were subject to takeovers and the tenement was relinquished in 1999. Old City Nominees Pty Ltd, a private company, the acquired the ground and subsequently vended the project into Abra Mining Limited (AML). • AML resumed drilling in 2005 and has completed all holes between and including AB23-59. Abra Mining drilled out the main extents of the deposit and completed various drilling programs focussing on establishing a high tonnage, low grade lead resource that would be amenable to bulk underground mining. Preliminary mining, geotechnical and metallurgical studies were completed. • ABL was subsequently taken over in 2011 by Chinese company Hunan Nonferrous Metals' Australian subsidiary, HNC Resources Pty Ltd (HNC), following a lengthy acquisition process. Two diamond holes were drilled in 2012 (AB60A and AB61) HNC divested the

		project in 2016. Galena Mining acquired the project in 2017 and floated on the ASX. • The historic exploration work on the project is of a very high standard and the data sets generated are appropriate for use in the mineral 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 metal replacement-style deposit hosted by sediments. The primary economic metal is lead (Pb). Silver (Ag), copper (Cu), zinc (Zn) and gold (Au) are also present but are of much lower tenor. • The deposit can be divided into two main parts. The upper "**Apron**" zone comprises stratiform massive and disseminated lead- sulphides (galena) and minor copper sulphides (chalcopyrite) within a highly altered sequence of clastic and dolomitic sediments. Alteration products include jaspilitic rich sediments (the "Red Zone") and a distinctive stratiform zone of hematite-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 form a feeder style flower shaped geometry in cross section. Hydrothermal veining dips moderately south on the northern flank, sub-vertically in the central parts and gently to the north on the southern margins. 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 a semi-coherent body at the base of Core. The Core zone extends from 300 to 750m below surface 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 understanding of the report, the Competent Person should clearly explain why this is the case.*	• The Abra resource estimate is primarily based upon geological and assay data from diamond drilling programs completed at Abra from 1981 until 2018. The database used for the estimate contains 102 holes for 59,751m of drilling. The database includes several RC pre-collars that were never tailed and several core holes that were abandoned before mineralisation was encountered due to hole deviation or drilling issues. The Mineral Resource estimate dataset used 88 holes for 57,777m (18,751 samples). • A complete listing of all drill hole details and drillhole intercepts used in the estimate is not appropriate for this report. All drill hole information has been previously reported and its exclusion does not detract from the understanding 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 exploration results are reported in this report • Non-aggregated exploration data is reported here • No metal equivalents are reported here

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').*	• No exploration results are reported here. • The upper strata-bound mineralisation is gently dipping and drilling intercepts are typically close to true width. • The lower vein-hosted mineralisation is generally steeply dipping and drilling intercepts are greater than the true width of the mineralisation
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 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.*	• Galena and its predecessors have collected a substantial amount of bulk density readings from drill core using standard water immersion techniques (over 7,800 readings). This data was used to appropriately assign density values in the Mineral Resource estimate. • Galena has commenced various studies as part of its PFS and FS study program, including geotechnical, metallurgical and environmental studies. To date no major issues have been identified, • Groundwater studies and test work has identified water sources suitable for processing water supplies

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 Mineral Resource estimate documented in this report will form the basis of Pre-feasibility level studies (PFS) and Feasibility studies (FS). These studies will examine such aspects as:
		  • Mining methods
		  • Geotechnical
		  • 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 to higher confidence categories (i.e. from Inferred Mineral Resource to Indicated Mineral Resource, and from Indicated Mineral Resource to Measured Mineral Resource to aid in future Ore Reserve estimates.

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.*	• The Abra drilling database is stored in Datashed™ with data hosting services provided by the Mitchell River Group. • Approximately 25% of the assay data has been cross checked against the original assay results and logging sheets. Records of cross checks are stored in the database. • All data was visually validated on import. • From 2018 Log Chief™ was used for logging and sampling which has in built validation checks.
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 for the geological/assay data and geological interpretation is Mr Don Maclean: MSc (Geol), MAIG and RP Geo (Exploration and Mining), MSEG. Mr MacLean is a consultant to GML and spent extensive time at Abra in 2017 and 2018. • The Competent Person for the Mineral Resource Estimate is Mr Mark Drabble: B.App. Sci. (Geology), MAusIMM, MAIG. Mr Drabble is a Principal Consultant with Optiro Pty Ltd. Mr Drabble visited the Abra Project in August 2018 and carried out a review of key drill core intercepts, geology, logging, drillhole collar verification and sampling methodology, • The Competent Persons are of the opinion that this work has all been completed in line with industry best practice and to an appropriate standard for the 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 core for the Abra deposit. Structural data from orientated drill core and historic structural studies were important guides for the interpretation. • Geological modelling utilised Leapfrog Geo 3D™ software (Version 4.4.0). A 3D geological model was interpreted which encompassed the major litho-stratigraphic units, alteration zones, brecciation zones, hydrothermal vein zones, and faults. The deposit comprises the gently south dipping stratiform "Apron" zone and the feeder hydrothermal veins and breccias of the "Core" zone. • The 3D geological model was used to guide the mineralisation wireframe interpretation. Mineralisation was coded into domains consistent with the host lithology. Solid vein style wireframes were created for the "Apron" zone stratiform Pb-Ag mineralisation, the major hydrothermal veins and core high grade domains. Alteration domains were also created for back ground coding using a lower grade lead cut-off value (~0.5% Pb). • Mineralisation wireframes were interpreted for the "Core" hydrothermal vein zones (at ~ Pb%>1.5% cut-off) and the high grade domains within these zones (~ Pb>5% cut-off grade). • A copper-gold zone was modelled in the lower part of the deposit at a nominal 0.2% copper cut-off. This zone was found to correlate well with the boundary of the hydrothermal breccia zone, so the core hydrothermal breccia domain was used to constrain the copper and gold estimates. • The primary lode domains were interpreted using lead grades and then the geometry reviewed by looking at zinc, copper and silver. Silver weakly correlates with lead grade suggesting silver may be present in argentiferous galena. Zinc and copper are generally spatially associated with the lead domains but are not of sufficient tenor to warrant domaining separately. • Copper and gold mineralisation is spatially related and there is a copper-gold zone occurring at the base of the deposit.

		• The current interpretation is believed to be the best fit based on the current level of understanding of the deposit. Several scenarios were modelled in the Core zone to test continuity of structure and orientation, and to correlate mineralisation to the underlying geology. Of note is that the interpretation of the Core zone has changed from the interpretation used for the March 18 model which assumed the Core mineralisation was consistently steeply north dipping. Despite the difference in interpretation, mineralisation volumes are similar. • Variography modelling of the core mineralisation suggests that there may be a component of gently south dipping stratigraphy parallel continuity to the core. This is at odds with the steep to moderate dips of veining and mineralisation observed in drill core. This indicates there may be a secondary stratigraphic control to mineralisation or more than one mineralising event, with a low grade stratigraphic controlled event overprinted by higher grade brecciation and hydrothermal vein set(s). The background lead grade estimation in the Core zone was carried out using the stratigraphic orientation.
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 Mineral Resource estimate encompasses all of the Abra Lead Deposit which extends for 1000m along strike and 800m across strike. The 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 behind modelling of selective mining units.*	• The Abra resource block model was compiled using Datamine Studio RM™ software. Grade estimation was via ordinary kriging of top-cut two metre downhole composites. Grade estimation was constrained to stratiform mineralisation, vein and alteration domains developed from physical observation of core samples and on lead grade characteristics. The interpreted veins are based on logged features while the high-grade lead veins in the Core region are interpreted using a nominal 5% lead cut-off grade. All stratiform mineralisation and vein grades were estimated using a process that projected all data onto a plane based on the centreline of each vein/domain. • The Abra resource was previously estimated in March 2018 by GML using Micromine™ software and the inverse distance weighting (IDW) and ordinary kriged (OK) methods of grade estimation. The deposit is undeveloped and is being evaluated by exploration using diamond drilling.

	• *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.*	• No assumptions are made regarding recovery of by-products. The model contains estimated values for lead, silver, copper, zinc and gold. No deleterious elements have been estimated. • A block size of 10 mE by 10 mN by 10 mRL was employed for grade estimation. Domain boundaries were represented using subcells of 2.5 mE by 2.5 mN by 2.5 mRL. Drill spacing is variable due to holes been orientated to dip to both the north and south. Nominal spacing is 50 m by 50 m in the centre of the deposit although the crossing of drillholes results in considerably closer spacing at some depths. At the periphery of the deposit, nominal spacing opens to 100 m by 100 m. • The sample search strategy varied by domain. The primary search was around 80 m in the Apron veins and 70 m in the Core veins in the plane of the vein. No more than three composites were allowed to contribute to a block grade estimate from any single drillhole. Multiple search passes were employed with increasing search radii applied for secondary and tertiary searches. The final search pass was designed to inform all blocks within the limits of the domains. • The extent of higher grade domains is controlled by the domain geometry. Apart from the subcell resolution applied at domain boundaries, no assumptions have been made regarding selective mining units. • A weak correlation exists between lead and silver and a very weak correlation exists between copper and gold. These correlations have not been directly utilised during grade estimation, however, the estimation search neighbourhoods applied during estimation remained fixed for all elements • The lithology interpretation was applied as a variable during bulk density assignment. The alteration and vein interpretations were used to constrain all grade estimation. Alteration and vein domain boundaries were treated as hard grade boundaries during grade estimation • Grade caps were applied based on identifying grade outliers using a population disintegration analysis. Only minor grade caps were applied to lead and silver for a limited number of domains. Copper, zinc and gold required caps in more domains than lead and silver.

		• Model grades were validated visually, by whole of domain grade comparison and using swath plots. • No mining has occurred at Abra.
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 underground mining.
Mining factors or assumptions	• *Assumptions made regarding possible mining methods, minimum mining dimensions and internal (or, if applicable, external) mining dilution. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider potential mining methods, but the assumptions made regarding mining methods and parameters when estimating Mineral Resources may not always be rigorous. Where this is the case, this should be reported with an explanation of the basis of the mining assumptions made.*	• No specific assumptions were made on mining method during the Mineral Resource estimate apart from the expectation that mining will be undertaken using conventional underground mining methods.
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.*	• In early 2018 GML has sent 130 half core samples (six composited zones) representing the major ore types at Abra for mineralogical and metallurgical test work. This work indicates that a high quality lead-silver concentrate with an average grade of 74% lead is achievable. No major deleterious elements were identified. • GML has sent an additional 10 composite samples from half drill core for mineralogical and metallurgical test work. Mineralogical assessment suggests recoveries will be very similar to the previous test work. Metallurgical test work is currently in process at the time of this report.

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 been identified to date. • The project will produce a lead sulphide concentrate that can easily trucked to Geraldton and shipped. The Golden Grove Mine has 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 7,800 bulk density measurements were taken from a suite of mineralised and un-mineralised drill core using conventional water immersion techniques. • Bulk densities were assigned to each domain based on the mean measured density from test work for each lithological type. Bulk densities applied range from 2.7 to 3.69 t/m^3 depending on the lithological unit. • Bulk density is noted to increase with lead grade (i.e. increasing amount of dense galena) but is complicated by the presence of dense gangue mineral barite, magnetite and hematite). Density correlates well against combined Fe% + Ba% + Pb% but there is incomplete coverage of all these elements in the assay data set (only 30% coverage). Bulk density assignment in the mineralisation was based on Pb grade. Values were assigned based on the mean bulk density measurements at different Pb% grade bins. For the Apron bulk densities assigned ranged from 3.44 to 3.98 t/m^3 with increasing lead grade, and for the core from 2.9 to 3.6 t/m^3.
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 deposit is classified as an Indicated Mineral Resource (IND) and Inferred Mineral Resource (INF). The bulk of the IND (90%) is contained within the central part of the Apron zone mineralisation, with 10% in the Core zone. The distribution of the INF material is on the margins and downdip areas of the Apron and comprises most of the Core zone. • The classification of the **Apron** IND resource is based on the demonstration of geological continuity of the host lithologies in the Apron (Red zone, Black zone). These are tabular and predictable, with the evolution of drilling programmes at Abra supporting the expected mineralisation locations and grades. The drilling density is variable and ranges from 50 x 25m out to 80m in places. A plunge line of higher grade mineralisation and thickness trending 150^0 (grid) was also used to guide a boundary string which was interpreted around consistent zones of geological and grade confidence. This boundary excluded the periphery of the deposit to the west, south and east, which due to lower geological confidence, broad spaced drilling and

		grade extrapolation was classified as INF. A zone of thinner, low grade mineralisation on the northern edge of the Apron was also categorised as INF. • The classification of IND in the **Core** zone is based on the assessment of continuity of the veins in the feeder zone. A section of the Core was deemed to have sufficient confidence in geological and grade continuity to meet the IND criteria of less than 50 x50 m (down to 50 x 25m) and high confidence in the geological continuity of the central part of the vein. Review of sample data, geological logging, structural data and core photos of drill intersection by GML indicate that this can be interpreted as a consistent broad steeply dipping zone Outside of this domain the mineralisation is complex and drill/sample spacing is variable. On this basis all other core vein domains have been classified as INF.
Audits or reviews	• *The results of any audits or reviews of Mineral Resource estimates.*	• No external audits or reviews have been completed on the December 2018 Abra MRE. The estimate has been reviewed internally by Optiro and Galena. The data, methodology and resulting estimate are believed to have been completed to appropriate industry standards and represent a fair reflection of the current understanding of the Abra deposit.
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.*	• The Mineral Resource is considered to be a global estimate of element grades. Due to the smoothing in the model the local grade estimates are considered to be less reliable and this is reflected in the categorisation of the Mineral Resource as Indicated and Inferred Mineral Resource classes. • The accuracy of the Indicated Mineral Resource is estimated to be accurate to a quarterly level of reporting on a feasibility study schedule.

Section 4 Estimation and Reporting of Ore Reserves

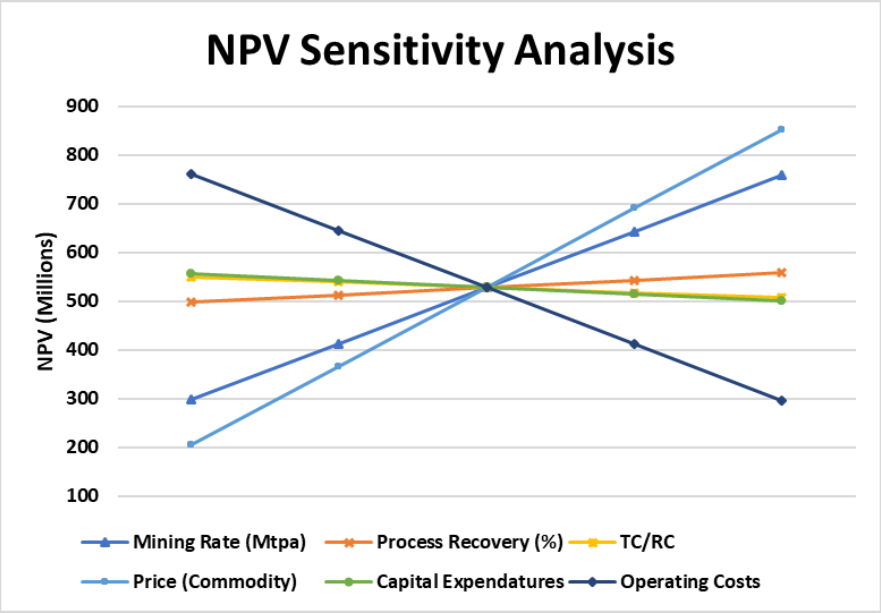
(Criteria listed in section 1, and where relevant in sections 2 and 3, also apply to this section.)

Criteria	JORC Code explanation	Commentary
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.* • *Clear statement as to whether the Mineral Resources are reported additional to, or inclusive of, the Ore Reserves.*	• JORC 2012 Resource Estimate, where the Mineral resource is based on ordinary kriging estimation method. • The Mineral Resources are inclusive of the Ore Reserves.
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 has visited the Abra project and numerous site visits have been undertaken by the JORC Resource Competent Person.
Study status	• *The type and level of study undertaken to enable Mineral Resources to be converted to Ore Reserves.* • *The Code requires that a study to at least Pre-Feasibility 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 considered.*	• A Pre Feasibility Study has been completed to enable Mineral Resources to be converted to Reserves at +/- 20% accuracy on capital estimates and +/- 15% accuracy on operating costs. • Underground Mining Contractor rates have been applied. Capex & Processing costs by GR Engineering for the Abra Project have been applied.
Cut-off parameters	• *The basis of the cut-off grade(s) or quality parameters applied.*	• Cut-off grades are based on comparable WA UG mining costs & a long term lead price of US$0.95/lb.
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 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*	• A Pre-Feasibility level study was performed on Abra to determine the viability of the deposit • No Inferred resource was used in the calculation of the Reserves. • The UG mining method and assumptions are based on a detailed mine design. • Sub Level Open Stoping (SLOS) and Room & Pillar (R&P) underground

Criteria	JORC Code explanation	Commentary
	issues such as pre-strip, access, etc. • *The assumptions made regarding geotechnical parameters (eg pit slopes, stope sizes, etc), grade control and pre-production drilling.* • *The major assumptions made and Mineral Resource model used for pit and stope optimisation (if appropriate).* • *The mining dilution factors used.* • *The mining recovery factors used.* • *Any minimum mining widths used.* • *The manner in which Inferred Mineral Resources are utilised in mining studies and the sensitivity of the outcome to their inclusion.* • *The infrastructure requirements of the selected mining methods.*	mining methods are commonly applied in WA, which are applied to the Abra deposit. • Standard geotechnical conditions for a shallow UG mine in WA are applied to Abra; a HR of 6 has been applied. • Slope optimization modelling does not apply to the Abra UG mine. • Mining dilution = 6% • Mining recovery = 85% • Minimum mining width = 5m • Approximately 32% of the applied resource is inferred, this is scheduled at the end of the mine's life and has minimal impact on the Project's NPV give a discount rate of 8% is applied. • A decline and associated ventilation and dewatering infrastructure is required before the UG level accesses can be constructed, which are required for SLOS and R&P mining methods.
Metallurgical factors or assumptions	• *The metallurgical process proposed and the appropriateness of that process to the style of mineralisation.* • *Whether the metallurgical process 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 metallurgical recovery factors applied.* • *Any assumptions or allowances made for deleterious elements.* • *The existence of any bulk sample or pilot scale test work and the degree to which such samples are considered representative of the orebody as a whole.* • *For minerals that are defined by a specification, has the ore reserve*	• Crush, grind & flotation is the proposed metallurgical process, this is the appropriate process for a base metals project. • The process has been successfully applied for many decades across Australia • The metallurgical test work is representative for the part of the Abra ore body (Apron & Core) that is covered in this mining study. • No problematic deleterious have been identified • N/A • Yes

Criteria	JORC Code explanation	Commentary
	estimation been based on the appropriate mineralogy to meet the specifications?	
Environmen-tal	• *The status of studies of potential environmental impacts of the mining and processing operation. Details of waste rock characterisation and the consideration of potential sites, status of design options considered and, where applicable, the status of approvals for process residue storage and waste dumps should be reported.*	• Environmental base line studies performed on Abra have not identified any hinderances to permitting of the project. • Waste rock characterization studies are currently in progress, waste material has been classified as Non Acid Forming (NAF)
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.*	• Infrastructure to suit a 1.2 Mtpa operation is planned to be installed over GP52/292. Existing roads that run within 0.5 km of this GP will be used for transporting the final concentrate to the Port of Geraldton.
Costs	• *The derivation of, or assumptions made, regarding projected capital costs in the study.* • *The methodology used to estimate operating costs.* • *Allowances made for the content of deleterious elements.* • *The source of exchange rates used in the study.* • *Derivation of transportation charges.* • *The basis for forecasting or source of treatment and refining charges, penalties for failure to meet specification, etc.* • *The allowances made for royalties payable, both Government and private.*	• Capital costs are based on detailed studies on Abra by leading EPCM and Mining Consultancies. • Operating costs are based on detailed design work by above consultancies. • No problematic deleterious have been identified • The long term average of US$:AU$ of $0.73 has been applied • Transport charges are based on quotes from trucking & ship broking companies • Treatment & Refining charges are based on current data publicly available for lead concentrate • Allowances have been made for government (5% for Pb & 2.5% for Ag) & private (3.27%) royalties.
Revenue factors	• *The derivation of, or assumptions made regarding revenue factors including head grade, metal or commodity price(s) exchange rates,*	• A head grade of 8.2% for lead & silver grade of 22 g/t have been applied based on the Abra JORC Resource and Reserve.

Criteria	JORC Code explanation	Commentary
	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.*	• A long-term lead price of US$ 0.95/lb & US$14.50/oz for silver have been applied.
Market assessment	• *The demand, supply 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.* • *For industrial minerals the customer specification, testing and acceptance requirements prior to a supply contract.*	• Recent London Metals Exchange (LME) stockpiles indicate that there is an under supplied lead market, which is expected to remain in place for reasonable period of time. • LME for lead is a transparent and deep market, lead production from the Abra project (will account for ~5% of the lead market) is not expected to over supply the market. • Abra's lead concentrate is extremely high grade and clean, which exceeds all published lead customer specifications
Economic	• *The inputs to the economic analysis to produce the net present value (NPV) in the study, the source and confidence of these economic inputs including estimated inflation, discount rate, etc.* • *NPV ranges and sensitivity to variations in the significant assumptions and inputs.*	• The following information applies to the PFS schedule performed as stated in the Abra PFS ASX release on the 25 September 2018, as the latest UG mine designs are yet to be scheduled. • NPV = $ 528M as the base case, which has a discount rate of 8% applied, lead price of US$ 95/lb & silver price US$ 14.50/oz, no inflation • Accuracy is at +/-20% on capex and +/-15% on ope; Capex = $154M & Opex (C1 cost payable) = US$ 0.47/lb • NPV ranges are displayed in the below graph

Criteria	JORC Code explanation	Commentary
		
Social	• *The status of agreements with key stakeholders and matters leading to social licence to operate.*	• The Abra project is on a Mining lease with an existing native title agreement in place.
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 occurring risks.* • *The status of material legal agreements and marketing arrangements.* • *The status of governmental agreements and approvals critical to the viability of the project, such as mineral tenement status, and*	• No material risks have been identified for the Abra Project. • The Abra Project has a native title agreement in place, no marketing arrangements have been agreed.

Criteria	JORC Code explanation	Commentary
	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.	• The Abra Project is on a granted Mining Lease (M52/776), a General Purpose lease for site infrastructure has been granted (G52/292). This is immediately adjacent to ML52/776. • There are no material unresolved matters with any parties.
Classification	• *The basis for the classification of the Ore Reserves into varying confidence categories.* • *Whether the result appropriately reflects the Competent Person's view of the deposit.* • *The proportion of Probable Ore Reserves that have been derived from Measured Mineral Resources (if any).*	• The reported Ore Reserves are classified as Probable. • The Probable Ore Reserves are consistent with the CP's view of the deposit at this stage of the studies completed • There are no Probable Ore Reserves derived from Measured Resources.
Audits or reviews	• *The results of any audits or reviews of Ore Reserve estimates.*	• Internal reviews have been conducted with no issues being identified

Criteria	JORC Code explanation	Commentary
Discussion of relative accuracy/ confidence	• *Where appropriate a statement of the relative accuracy and confidence level in the Ore Reserve 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 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 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.*	• Confidence in the Reserve is high due to the conventional underground mining methods and processing technique being applied. • The location of the Abra deposit is within easy road access and is on an existing Mining Lease. • No modifying factors are expected to be significantly changed prior to mining.