13 NOVEMBER 2018 **ASX/MEDIA RELEASE**

2.6Moz CONSOLIDATED JORC RESOURCE FOR BARDOC GOLD PROJECT SETS STRONG FOUNDATION FOR NEW AUSTRALIAN GOLD DEVELOPMENT

Spitfire delivers 24% increase in Aphrodite Resource with additional strong contributions from Zoroastrian Underground and Mulwarrie

Key Points:

- **Total group Mineral Resource Estimate (MRE) for the newly-consolidated Bardoc Gold Project of 38.6Mt @ 2.1g/t gold for 2,582,000 ounces of contained gold.**
- **Includes a 24% increase in the Measured, Indicated and Inferred Mineral Resource for Aphrodite, which now totals 20.2Mt @ 2.4 g/t gold for 1,563,000 ounces of contained gold.**
- **This update represents an overall increase in the MRE at Aphrodite of 302,000oz, the majority of which has resulted from the conversion of 219,000oz from Inferred to Indicated category.**
- **Maiden 79,000oz Mineral Resource Estimate (881,000t at 2.8 g/t Au) completed for the satellite Mulwarrie deposit.**
- **Significant increase in the Underground Resource at Zoroastrian, providing new targets for a resource extension drilling program which is planned to start shortly.**
- **Consolidated Mineral Resource Estimate provides a strong foundation for ongoing feasibility and technical studies aimed at establishing the Bardoc Gold Project as a significant new mid-tier gold development project in the North Kalgoorlie district of WA.**

Spitfire Materials Limited (ASX: SPI) is pleased to announce a group JORC Mineral Resource Estimate (MRE) totaling 2.6 million ounces for its newly-consolidated 100%-owned Bardoc Gold Project, located in the North Kalgoorlie district of Western Australia.

The consolidated MRE follows the successful merger between Spitfire and Excelsior Gold Ltd (ASX: EXG) and incorporates an updated 1.56Moz 2012 JORC Mineral Resource for the Aphrodite deposit that was completed as part of exploration and technical studies undertaken during 2018. Since January 2018, an additional 12,319m of drilling has been completed over both the Alpha and Phi deposits that make up the Aphrodite Resource.

The new MRE also includes a maiden JORC 2012 Mineral Resource for the satellite Mulwarrie deposit and an increased underground Resource for the Zoroastrian deposit (previously part of Excelsior Gold).

This new 2.6Moz consolidated Mineral Resource Estimate will form part the of the Company's ongoing technical studies and potential future Definitive Feasibility Studies on the combined Bardoc Gold Project.

Spitfire Materials' Managing Director, John Young, said "the completion of a consolidated JORC Mineral Resource statement for the Bardoc Project represented a major step towards its objective of becoming a substantial new participant in the mid-tier Australian gold sector."

"This is a fantastic result for our shareholders. This is now one of the largest consolidated gold Resource inventories in the Eastern Goldfields, and it gives us the critical mass to move forward on our planned growth path – which is based on developing an integrated processing hub at Bardoc," he said.

"Our vision is to build a new processing centre capable of processing a wide range of ore types. We see the opportunity to establish a sizeable production hub based on the three key deposits of Aphrodite, Zoroastrian and Mulwarrie – potentially fed by additional incremental growth opportunities in the region."

"Importantly, the work we have undertaken over the past few months has also clearly demonstrated significant organic growth potential at several of these deposits. There are immediate opportunities to grow the Zoroastrian Underground Resource, which we plan to test shortly. Longer term, there is still plenty of upside potential at Aphrodite."

"We have already made significant progress with initial technical studies and feasibility work on the combined project. This work will continue in the coming months, and will be supplemented by additional options studies that we expect will lay the foundations for a full Definitive Feasibility Study."

"At the same time, exploration will continue on a number of fronts to grow our gold inventory and we will pursue other potential acquisition and M&A strategies as part of our vision to build a substantial new mid-tier Australian gold company."

CONSOLIDATED MINERAL RESOURCE ESTIMATE – BARDOC GOLD PROJECT

All 2012 JORC compliant Mineral Resources for the combined companies are now reported using an RL division between potential open pit (OP) and underground resources (UG).

Updated OP resources have been estimated for Aphrodite. Updated UG resources have been estimated for Aphrodite and Zoroastrian. While the Excelsior, Zoroastrian and Bulletin OP resources have not changed, they are now reported above an RL for consistency and using 0.50g/t Au as a lower cut. UG resources are reported below the same RL using 2.50g/t Au as a lower cut.

A Mineral Resource Update for the Kalgoorlie North Gold Project (KNGP) was completed by Excelsior Gold Limited in May 2018. Spitfire confirms that there has been no material change to the Mineral Resource estimate on the balance of the Resources held by Excelsior. These were released by Excelsior on 22 May 2018 and are now being released by Spitfire for the first time.

Localised Uniform Conditioning (LUC) modelling was used for the portion of the Aphrodite, Excelsior, Zoroastrian and Bulletin South deposits above 200mbs (metres below surface). LUC is a non-linear estimation technique suitable for estimating into smaller blocks (SMU scale) using wider spaced resource drilling.

The maiden Inferred Resource for the Mulwarrie Gold Project was completed by Trepanier Pty Ltd. Grade estimation was completed using Ordinary Kriging.

Table 1: Global Resource – Bardoc Gold Project

BARDOC GOLD PROJECT RESOURCES			MEASURED			INDICATED			INFERRED			TOTAL RESOURCES			
Deposit	Type	Cut-Off (g/t Au)	Tonnes (,000t)	Grade (g/t Au)	Ounces (,000oz)	Tonnes (,000t)	Grade (g/t Au)	Ounces (,000oz)	Tonnes (,000t)	Grade (g/t Au)	Ounces (,000oz)	Tonnes (,000t)	Grade (g/t Au)	Ounces (,000oz)	Original ASX Report Date
Aphrodite	*OP*	*0.5*	-	-	-	*9,716*	*1.7*	*543*	*5,646*	*1.5*	*273*	*15,361*	*1.7*	*816*	
Aphrodite	*UG*	*2.5*	-	-	-	*2,895*	*4.5*	*417*	*1,920*	*5.4*	*330*	*4,815*	*4.8*	*747*	
Aphrodite	**TOTAL**		**-**	**-**	**-**	**12,611**	**2.4**	**960**	**7,566**	**2.5**	**603**	**20,176**	**2.4**	**1,563**	
Zoroastrian	*OP*	*0.5*	-	-	-	*3,702*	*1.9*	*228*	*1,730*	*1.6*	*87*	*5,432*	*1.8*	*315*	
Zoroastrian	*UG*	*2.5*	-	-	-	*336*	*4.1*	*273*	*476*	*4.5*	*68*	*812*	*4.3*	*113*	
Zoroastrian	**TOTAL**		**-**	**-**	**-**	**4,038**	**2.1**	**273**	**2,206**	**2.2**	**155**	**6,244**	**2.1**	**428**	
Excelsior	**OP**	**0.5**	**-**	**-**	**-**	**6,259**	**1.3**	**259**	**1,469**	**1.1**	**50**	**7,728**	**1.2**	**309**	
Mulwarrie	**OP**		**-**	**-**	**-**	**-**	**-**	**-**	**881**	**2.8**	**79**	**881**	**2.8**	**79**	
Bulletin South	**OP**	**0.5**	**152**	**2.2**	**11**	**546**	**2.1**	**36**	**150**	**2.1**	**10**	**849**	**2.1**	**57**	
Lochinvar	**OP**	**0.6**	**-**	**-**	**-**	**448**	**1.7**	**25**	**60**	**1.7**	**3**	**508**	**1.7**	**28**	19-Feb-14
Nerrin Nerrin	**OP**	**0.6**	**-**	**-**	**-**	**74**	**2.4**	**6**	**107**	**2.4**	**8**	**181**	**2.4**	**14**	15-Nov-13
Ophir	**OP**	**0.6**	**-**	**-**	**-**	**-**	**-**	**-**	**75**	**1.9**	**5**	**75**	**1.9**	**5**	11-Dec-13
Vettersburg South	**OP**	**0.6**	**-**	**-**	**-**	**-**	**-**	**-**	**552**	**1.5**	**26**	**552**	**1.5**	**26**	11-Dec-13
Eldorado	**OP**	**0.6**	**-**	**-**	**-**	**362**	**1.6**	**19**	**31**	**1.4**	**1**	**393**	**1.6**	**20**	11-Sep-13
Talbot North *	**OP**	**0.6**	**-**	**-**	**-**	**-**	**-**	**-**	**662**	**1.7**	**36**	**662**	**1.7**	**36**	31-Mar-10
Windanya	**OP**	**0.6**	**-**	**-**	**-**	**-**	**-**	**-**	**360**	**1.5**	**17**	**360**	**1.5**	**17**	11-Dec-13
TOTAL RESOURCES			**152**	**2.3**	**11**	**24,338**	**2.0**	**1,578**	**14,118**	**2.2**	**993**	**38,608**	**2.1**	**2,582**	

* This information was prepared and first disclosed under the JORC Code 2004. It has not been updated since to comply with the JORC Code 2012 on the basis that the information has not materially changed since it was last reported.

Note: Differences may occur due to rounding

The implied mining selectivity of LUC models at the SMU scale is unlikely to be achieved by underground mining methods. The LUC estimation method is therefore not suitable for underground mine planning so additional models were estimated using Ordinary Kriging (OK). Underground Resources at Aphrodite and Zoroastrian are reported from OK models, inclusive of Indicated and Inferred material below 200mbs.

The Resource estimates were classified in accordance with the Australasian Code for Reporting of Identified Mineral Resources and Ore Reserves (JORC Code 2012) and in accordance to ASX listing rule 5.8 the information below is in support of this revision.

APHRODITE RESOURCE UPDATE

This Mineral Resource Estimate (MRE) was based on new information from the diamond drilling program detailed below. Spitfire has completed the MRE using both independent consultancy group Trepanier Pty Ltd and Spitfire's in-house resource geologist. The previous estimate was by McDonald Speijers (MS) in May 2016 using the Recovered Fraction (RF) modelling method. This is a proprietary method developed by McDonald Speijers (see AQQ ASX Release dated 16th May 2016).

As per the previous estimate, it was considered practical to divide the known mineralisation by RL. Above 200mbs, the mineralisation has been classified as potentially economic to extract by open pit methods. Below 200mbs, the deposit will be amenable to extraction by underground methods.

Table 2: Aphrodite >=0.50g/t Au above 200mbs – OP resource

	Indicated		Inferred		Total		
Class	Tonnes	g/t	Tonnes	g/t	Tonnes	g/t	Ounces
Oxide	937,343	1.55	616,581	1.28	1,553,924	1.44	72,054
Transitional	1,643,223	1.48	1,731,870	1.24	3,375,093	1.36	147,125
Fresh	7,135,272	1.82	3,297,054	1.69	10,432,326	1.78	596,805
Total	**9,716,000**	**1.74**	**5,646,000**	**1.50**	**15,361,000**	**1.65**	**816,000**

Note: Appropriate rounding applied

Table 3: Aphrodite >=2.50g/t Au below 200mbs – UG resource

	Indicated		Inferred		Total		
Class	Tonnes	g/t	Tonnes	g/t	Tonnes	g/t	Ounces
Oxide							
Transitional							
Fresh	2,894,696	4.48	1,920,086	5.35	4,814,782	4.83	747,003
Total	**2,895,000**	**4.48**	**1,920,000**	**5.35**	**4,815,000**	**4.83**	**747,000**

Note: Appropriate rounding applied

Diamond Drilling 2018

Two phases of diamond drilling were completed during 2018, with a total of 24 diamond holes (HQ core) drilled for 12,319m. Seventeen holes were targeted on Indicated and Inferred portions of the existing resource model within Alpha and Phi Lodes.

Two holes were completed on the northern extension of the Alpha Lode. Eight holes were targeting the extension of the Phi Lode both north and south of the resource (see ASX releases dated for all details regarding drill hole information and assays; 29th May, 3rd July, 30th July and the 3rd September 2018).

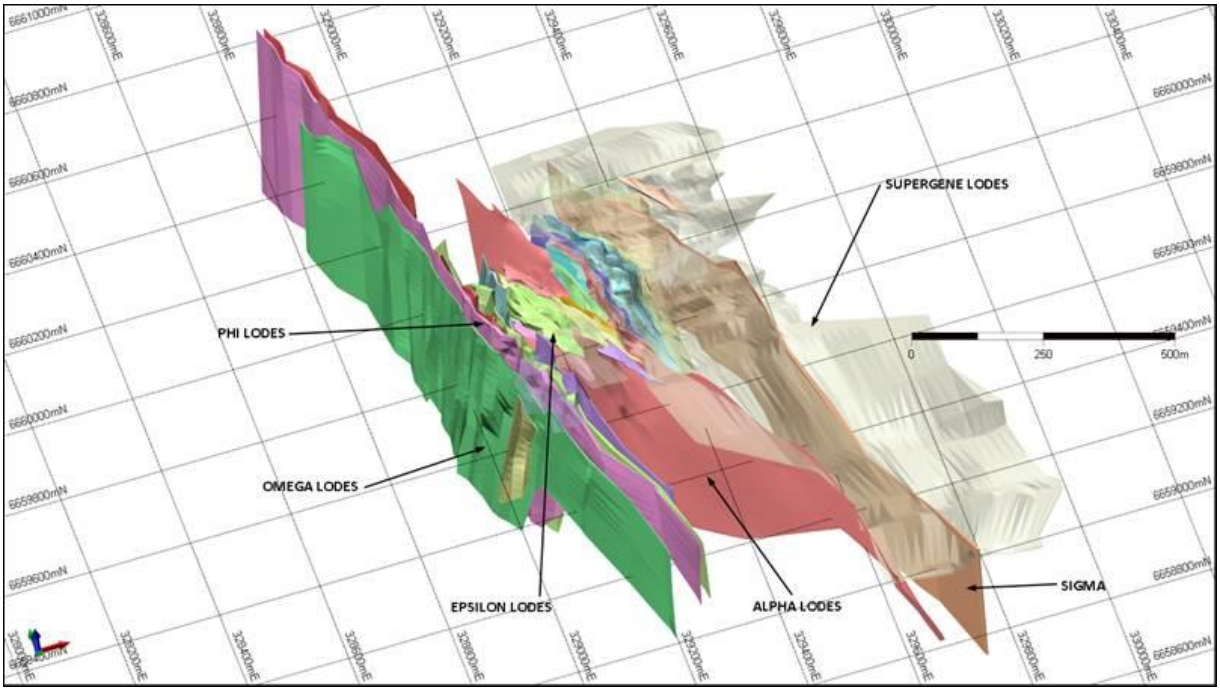

Figure 1: Isometric view (looking down towards the NE) of the Aphrodite lode system wireframe interpretation. Note supergene shown with transparency for clarity

KALGOORLIE NORTH GOLD PROJECT RESOURCE UPDATE

Excelsior

Excelsior deposit was re-interpreted and re-estimated using the LUC method by EXG during 2018. Excelsior deposit is formed where N-S shears with considerable strike extent (>5km) intersect favourable host lithologies. Mineralisation is steep dipping, often forming wide zones up to 50m wide.

Table 4: Excelsior Resource LUC Model >=0.50 g/t Au above 200mbs – OP resource

	Indicated		Inferred		Total		
Class	Tonnes	g/t	Tonnes	g/t	Tonnes	g/t	Ounces
Oxide	1,291,946	1.32	22,141	0.99	1,314,086	1.31	55,407
Transitional	1,453,069	1.38	33,770	1.08	1,486,838	1.37	65,451
Fresh	3,513,920	1.24	1,413,574	1.07	4,927,494	1.19	188,442
Total	**6,259,000**	**1.29**	**1,469,000**	**1.07**	**7,728,000**	**1.24**	**309,000**

Note: Appropriate rounding applied

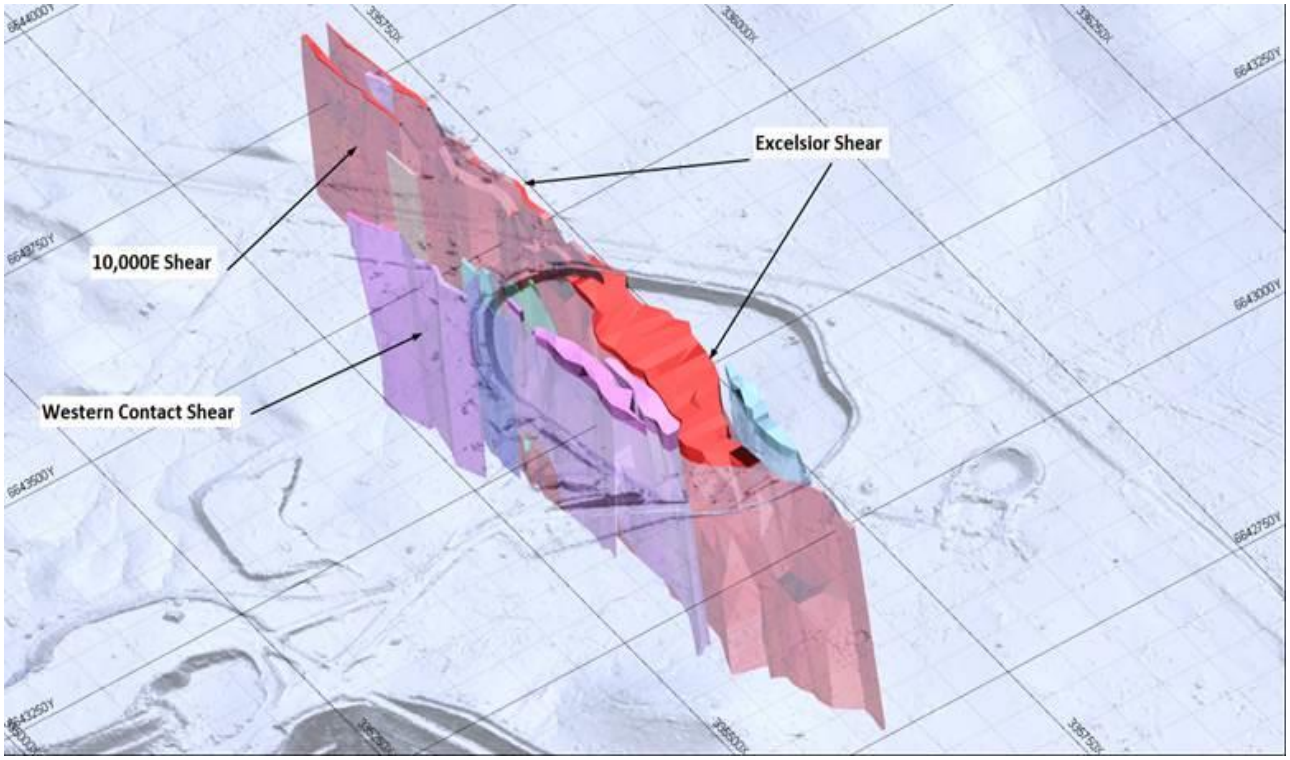

Figure 2: Isometric view of Excelsior deposit (looking down towards the NE) of wireframe interpretation of main lode systems

Zoroastrian

Zoroastrian open pit Mineral Resource was estimated using the LUC method as an earlier LUC MRE completed by Cube Consulting Pty Ltd in 2016 reconciled very favourably with actual mine production. Subsequent to completion of mining at Zoroastrian (Central Pit) EXG drilled 42 RC and DC holes for 7760m which were included in the LUC estimation. For reasons cited above, an underground resource was estimated using Ordinary Kriging. Recent successful drilling at Zoroastrian (See ASX 2018 October Quarterly), targeting high grade shoots at depth, is not yet included in the underground resource.

Table 5: Zoroastrian Resource LUC >=0.50 g/t Au above 200mbs – OP resource

		Indicated			Inferred		Total		
Class		Tonnes	g/t		Tonnes	g/t	Tonnes	g/t	Ounces
Oxide		407,585	1.47		49,200	1.27	456,785	1.45	21,250
Transitional		676,453	1.83		106,188	1.63	782,640	1.80	45,241
Fresh		2,618,080	2.00		1,574,370	1.57	4,192,450	1.84	248,214
Total		**3,702,000**	**1.91**		**1,730,000**	**1.57**	**5,432,000**	**1.80**	**315,000**

Note: Appropriate rounding applied

Table 6: Zoroastrian Resource OK Model >=2.50 g/t Au below 200mbs – UG resource

		Indicated		Inferred		Total		
Class		Tonnes	g/t	Tonnes	g/t	Tonnes	g/t	Ounces
Oxide								
Transitional								
Fresh		336,319	4.13	476,175	4.47	812,494	4.33	113,088
Total		**336,000**	**4.13**	**476,000**	**4.47**	**812,000**	**4.33**	**113,100**

Note: Appropriate rounding applied

Figure 3: Isometric view of Zoroastrian deposit (looking down towards the NE) of wireframe interpretation of main lode systems

Bulletin South

Bulletin South MRE was estimated by Cube Consulting PTY LTD using the LUC estimation method. Recent work by CSIRO in the area, including pit mapping at Bulletin South has highlighted the exploration potential of the deposit. Additional drilling is planned at Bulletin South with aim of increasing the resource.

Table 7: Bulletin South Resource >=0.50 g/t Au above 200mbs – OP resource

	Measured		Indicated		Inferred		Total		
Class	Tonnes	g/t	Tonnes	g/t	Tonnes	g/t	Tonnes	g/t	Ounces
Oxide	125,800	2.25	46,000	1.65	24,550	0.94	196,350	1.94	12,258
Transitional	26,675	1.76	187,938	1.75	11,408	0.89	226,020	1.71	12,393
Fresh			311,985	2.33	114,480	2.49	426,465	2.38	32,580
Total	**152,000**	**2.17**	**546,000**	**2.07**	**150,000**	**2.12**	**849,000**	**2.10**	**57,000**

Note: Appropriate rounding applied

MAIDEN MULWARRIE RESOURCE

The Mulwarrie Gold Project is located 150km north-west of Kalgoorlie in the Ularring District of the North Coolgardie Minerals Field. The project is secured by two contiguous tenements, M30/119 (68 Ha) and M30/145 (111.7), 10km north-west of the Davyhurst Mining Centre.

In the late 1980's, Callion Mining Pty Ltd mined the Mulwarrie Central West Pit extracting 24,344 tonnes @ 3.88g/t Au for 94.5 kg (3,037 ounces) of gold. The waste-to-ore stripping ratio was 5.25:1, with gold ore extracted to a maximum depth of 36 vertical metres over a strike length of 150m. Outside of this figure historical underground production in the Mulwarrie District, including the Mulwarrie Project area, has a recorded production of 26,344 ounces of gold from 19,728 tonnes for an average grade of 41.5g/t Au.

RC drilling during 2017 outlined several mineralised zones over 1.2km south and east of the Mulwarrie Central West Pit. Spitfire has drilled 75 RC holes for 9,212m and 1 diamond hole for 99.6m. This Mineral Resource Estimate (MRE)was based on all new information and historical information. Spitfire has completed the MRE using independent consultancy group Trepanier Pty Ltd.

Following the three phases of Spitfire drilling, a maiden Mineral Resource Estimate has been completed for the Mulwarrie Gold Deposit. The Mineral Resource Estimate is **880,800t at 2.8g/t Au for 79,000oz,** as summarised by category in Table 8 below. Grade estimation was by Ordinary Kriging for Au using GEOVIA Surpac™ software.

The resource is classified as inferred only primarily due to a lack of oriented diamond core holes to assisting in supporting the structural model. In addition, very limited bulk density data is available to date. (See ASX releases dated for all details regarding drill hole information and assays; 16 May 2017, 3 July 2017, 27 September 2017 and the 30 January 2018).

Table 8: Mineral Resource Summary by Category: Mulwarrie Gold Deposit

Class	Tonnes (t)	Au (g/t)	Ounces
Measured	-	-	-
Indicated	-	-	-
Inferred	880,800	2.78	78,722
Total	**881,000**	**2.8**	**79,000**
Note: Appropriate rounding applied			

Gold mineralisation has been found in two distinct settings at Mulwarrie. Firstly, in narrow shear zones with only minor or no quartz veining, with limited calcsilicate alteration haloes and with variable, but occasionally high gold values. The zones of mineralisation may be up to 2 metres wide but are generally less than 50 cm. They are conformable to the stratigraphy and foliation. The second and most important type of gold mineralisation is associated with quite flat dipping often massive quartz reefs with strong diopside, biotite, epidote and carbonate alteration haloes.

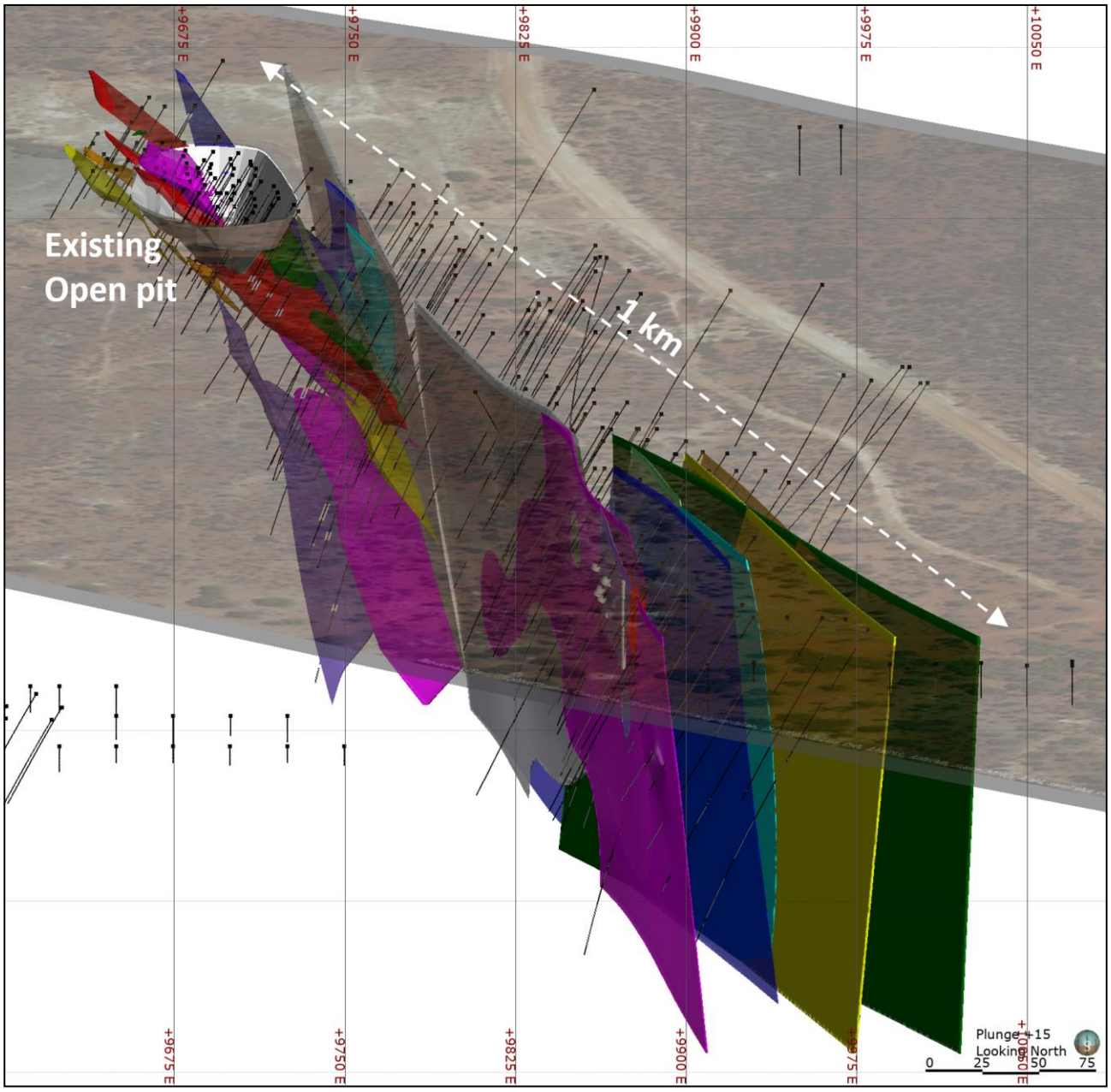

Figure 4: Mulwarrie 3-D vein model – oblique view looking down 15° to Local Grid North

MATERIAL INFORMATION FOR THE APHRODITE, EXCELSIOR, ZOROASTRIAN BULLETIN SOUTH AND MULWARRIE RESOURCE UPDATES

GEOLOGY AND GEOLOGICAL INTERPRETATION

Aphrodite

The local stratigraphy comprises of a package of mafics, epiclastic sediments of dominantly volcanic origin, intermediate to felsic intrusives, and ultramafics. The package strikes NNW. From west to east the lithologies broadly progress from a megacrystic dolerite through sediments intruded by intermediate porphyries and finally ultramafics in the east. The mixed epiclastic and volcaniclastic succession was intruded by felsic to intermediate porphyries that are all in turn intruded by dolerite sills and dykes. The Aphrodite deposit is a series of steep, WSW-dipping shear zones often located along lithological contacts. Hydrothermal alteration associated with the gold mineralisation is characterised by a quartz-albite-sericite ± biotite, chlorite assemblage which is pale-cream coloured, with an increased hardness.

The geological interpretation was completed by Geological Consultants Model Earth Pty Ltd and this geological understanding was utilised in the interpretation of the mineralisation.

Zoroastrian

The local stratigraphy comprises a package of sediments, mafics and ultramafics deformed and thinned between two granite domes resulting in a formation of a narrow syncline. The Zoroastrian deposit occurs within this syncline. A dolerite has intruded the greenstone rocks and is the host-rock of the Zoroastrian gold deposit. The gold mineralisation at Zoroastrian is associated with steep west dipping lodes, oriented approximately north-south, and shallow dipping lodes predominantly in the footwall to the steep lodes. The steep lodes occur within zones of shearing that present as foliation of varying intensity. The shallow lodes are extensional in nature and foliation is absent. The presence or absence of foliation has allowed the classification and interpretation of mineralised drill intercepts as either “steeps” or “flats”.
The interpretation of mineralised lodes for the open pit resource was completed at a 0.3g/t Au cut-off grade guided by presence and intensity of quartz veining. The 0.3g/t Au value is indicative of mineralisation on the periphery of a high grade zone and is typically characterised by pyrite and pyrrhotite sulphides as opposed to arsenopyrite in the high grade zones. Wireframes for the underground resource were at a 1g/t Au cut-off which represents the material in the material in core of the mineralised structures.

Excelsior

The local stratigraphy comprises of a package of sediments, mafics and ultramafics which strike consistently north-south with variable although steep dips. Excelsior mineralisation is hosted by a sequence of tuffaceous and pelitic sediments and minor intercalated volcanics and intrusives that mark a thin (150 metres) interflow horizon bounded by massive komatiitic flow rocks. Gold mineralisation at Excelsior is associated with three N-S striking, sub-vertical brittle-ductile shear zones within a variety of host lithologies. Shears are generally broad, up to 60m wide in the oxide zone, and characterised by pervasive strong foliation. Gold mineralisation is associated with intense carbonate, sericite/fuchsite and sulphide alteration. The resource model is for the most part interpreted to a 0.3g/t Au cut-off grade assisted by presence and intensity of quartz veining and alteration.

Bulletin South

The regionally significant gold bearing Black Flag Fault (BFF) structure is interpreted to be close to the southern end of the historical Bulletin South open pit and is thought to play a major part in the deposition of the gold mineralisation. Primary gold mineralisation is associated with a quartz stockwork system within or adjacent to a felsic porphyry unit and may represent gold mineralisation along splay structures emanating from the BFF. The stockwork mineralisation ranges from 10 to 30m wide in the porphyry and averages 15m true width.

Mulwarrie

The Mulwarrie Gold Project is located 150 km north west of Kalgoorlie in the Ularring District of the North Coolgardie Minerals Field. The project is secured by 2 contiguous tenements, M30/119 and M30/145, 10kms north west of the Davyhurst Mining centre. The two tenements lie within a 10km wide greenstone belt which forms the northwest extension of the Coolgardie Line. The structurally dominant north trending Mt. Ida fault lies approximately 4km east of the Mulwarrie Mining Centre. Most of the lithologies within this greenstone belt are steeply dipping and well foliated along a NNW/SSE trend.

Grades of metamorphism at Mulwarrie are generally higher than in the Kalgoorlie area with hornblende – biotite – plagioclase amphibolites common. Hornblende is diagnostic of the amphibolite facies and at Mulwarrie metamorphism has peaked at mid to upper amphibolite facies.

Gold mineralisation has been found in two distinct settings at Mulwarrie. Firstly, in narrow shear zones with only minor or no quartz veining, with limited calcsilicate alteration haloes and with erratic but occasionally high gold values. The zones of mineralisation may be up to 2 metres wide but are generally less than 50 cm. They are conformable to the stratigraphy and foliation. The second and most important type of gold mineralisation is associated with quite flat dipping often massive quartz reefs with strong diopside, biotite, epidote and carbonate alteration haloes. Pyrrhotite and pyrite development is also strong within and adjacent to the quartz reefs. Minor amounts of chalcopyrite, galena and sphalerite are also associated with gold mineralisation. Gold is found within quartz reefs, within biotite selvages to the quartz veins and also in the associated country rocks. In MWRC 628 at 9373N/9879E (local grid coordinate) an intersection of 15 metres @ 9.54 g/t Au from 72 – 87 metres drill depth occurs within quartz veins having abundant sulphide mineralisation combined with diopside, biotite and silica alteration. Mineralised shoots appear to plunge 30-45 degrees to the south (125°magnetic).

DRILLING TECHNIQUES

Aphrodite

Drilling completed by numerous operators using RC and Diamond drilling. Upper portions of the deposit are well drilled on a 20m x 20m grid with wider spaced drilling at depth and further along strike. Drilling was dominantly at -60^{o} towards the west or east. The majority of holes were downhole surveyed by various methods and collars located by contracted or mine surveyors.

All Spitfire drilling was HQ diamond, usually with a mud rotary or RC pre-collar and targeted deeper mineralisation. All Spitfire holes were downhole surveyed every 30m and collars located by contract surveyor.

Zoroastrian

The Zoroastrian deposit has been defined by an extensive drill database, including some historical and considerable drilling completed by Excelsior. Historic digital data has been verified against hardcopy records and ground truthed where possible. For EXG drilling, the RC drilling system employed the use of a face sampling hammer and a nominal 146mm diameter drill bit. The DC drilling is NQ2 size core (nominal 50.6mm core diameter) or HQ (nominal 63.5mm core diameter). All EXG drill core is orientated by the drilling contractor. Holes are down hole surveyed usually every 30m downhole and deeper holes are gyro surveyed by a contract surveyor. All collars are picked up by a mine or contract surveyor.

Excelsior

The Excelsior deposit has been defined by an extensive database of drilling completed by historic operators and Excelsior. Historic digital data has been verified against hardcopy records and ground truthed where possible. The majority of historic drilling (50%) was completed by Aberfoyle who completed 4-3/4" RC roller drilling with minor RC hammer drilling in heavily quartz veined or fresher lithologies. Aberfoyle drilled NQ2 diamond core. For EXG drilling, the RC drilling system employed the use of a face sampling hammer and a nominal 146mm diameter drill bit. The DC drilling is NQ2 size core (nominal 50.6mm core diameter) or HQ (nominal 63.5mm core diameter). All EXG drill core is orientated by the drilling contractor. Holes are down hole surveyed usually every 30m downhole and deeper holes are gyro surveyed by a contract surveyor. All collars are picked up by a mine or contract surveyor.

Bulletin South

Historic operators drilled RC and DC holes on a local grid oriented perpendicular to the strike of the ore body. Collars were surveyed and most holes were downhole surveyed. Drilling by Excelsior was RC and NQ2 diamond.

Mulwarrie

Drill sample data has been collected by various exploration companies between 1983 and 1996. Drilling programs included Rotary Air Blast (RAB), and RC drilling techniques, the current historical database includes 453 holes for a total of 14,321m. Spitfire conducted 3 phases of drilling, June 2017 (24 RC holes for 2,915m and 1 Diamond drill hole of 99.6m, August 2017 (24 RC holes for 2,780m) and finishing with November/December 2017 (27 RC holes for 3,517m).

The spacing of drill hole collars is variable. The gold mineralisation has generally been defined by drill holes on a cross-section line spacing, roughly perpendicular to the strike of the mineralised zones between 10m and 25m apart.

SAMPLING TECHNIQUES, SUB-SAMPLING TECHNIQUES, SAMPLE PREPARATION AND ANALYSIS

Aphrodite

RC sampling of a ~3kg split from the bulk sample was commonly done with assay by 40g or 50g Fire Assay. NQ2 or HQ core was sawn in half and one half sent for assay. Sampling of core was commonly to 1m intervals and occasionally to intervals of geological interest. Core drilled by Spitfire was sawn and one half sampled, usually to 1m intervals. Samples were sent to accredited laboratories for gold analysis by Fire Assay with ICP finish, and Peroxide Fusion Digest with ICP finish for As, S & Cu. Quality control data was included in all drill programs. A review of the QAQC data found analytical results to be satisfactory and suitable for inclusion in the resource estimation.

Zoroastrian

Details on sampling completed by all historic operators are not available, it is assumed that procedures were to the industry standard of the time. However, much of the historic drilling was completed by Aberfoyle, whose sampling procedures are detailed in the Excelsior section below. All Excelsior Gold RC drilling was sampled at one metre down hole intervals. The recovered samples were passed through a cone splitter and a representative 2.5kg – 3.5kg sample was taken to a Kalgoorlie contract laboratory for gold assay. The core samples were collected at nominated intervals by Excelsior staff from core that was cut in half at a Kalgoorlie based laboratory. All samples were oven dried, crushed to a nominal 10mm by a jaw crusher, reduced by riffle splitting to 3kg as required and pulverized in a single stage process to 85% passing 75 µm prior to being assayed for gold. Historic assay methods were not documented, however Aberfoyle used standard analysis methods from Genalysis, Analabs and Pilbara (Kalgoorlie) Laboratories. All EXG pulverised samples were prepared for standard fire assay techniques using a 50g charge. A review of the QAQC data found analytical results to be satisfactory and suitable for inclusion in the resource estimation.

Excelsior

Aberfoyle collected the entire RC sample in a large plastic bag sealed tight over the base of the cyclone to avoid dust loss. The full sample was then multiple riffled to provide two approximately 2kg splits, one for assay and the other for storage/metallurgical purposes. Wet samples were collected in a bucket after passing through a rotary disc wet splitter, flocculated, dried and split to give two 2kg samples. Diamond drilling was NQ diameter and where the material drilled was intensely oxidised drilling was performed using a triple tube. One half NQ core was submitted for assay. Core was sawn where hard enough, or cut with a knife when intensely oxidised. All Excelsior Gold RC drilling was sampled at one metre down hole intervals. The recovered samples were passed through a cone splitter and a representative 2.5kg – 3.5kg sample was taken to a Kalgoorlie contract laboratory for gold assay. The core samples were collected at nominated intervals by Excelsior staff from core that was cut in half at a Kalgoorlie based laboratory. All samples were oven dried, crushed to a nominal 10mm by a jaw crusher, reduced by riffle splitting to 3kg as required and pulverized in a single stage process to 85% passing 75 µm prior to being assayed for gold. Initial assaying by Aberfoyle (24 holes) was by Aqua Regia. Subsequent assaying was by 50g charge fire assay. All EXG pulverised samples were prepared for standard fire assay techniques using a 50g charge. A review of the QAQC data found analytical results to be satisfactory and suitable for inclusion in the resource estimation.

Bulletin South

All RC holes sampled on 1m intervals and split on-site to a smaller ~2kg sample for analysis. Goldfields analysed alternate samples and infill samples were subsequently tested once any anomalous zones were identified. Wet samples were scoop sampled. Some operators composited to 4m for initial analysis. 1m splits subsequently assayed if the composite interval was anomalous.

Assaying was generally by 50g Fire Assay utilising certified laboratories. Excelsior RC drilling was sampled and assayed every metre by 40g fire assay. NQ2 core sawn in half and one half sampled to zones of geological interest. Assays of core generally by 50g Fire Assay. A review of the QAQC data found analytical results to be satisfactory for inclusion in the resource estimation.

Mulwarrie

Sample information used in resource estimation was derived from both RC and diamond core drilling. The drill samples have been geologically logged and sampled for lab analysis. Minor sample recovery problems were noted in the historical reports when drilling encountered faulted/fractured ground. No sample recovery problems were encountered with the recent diamond & RC drilling. The Spitfire 2017 RC drilling was completed using a face sampling hammer with 5.75 inch bit. The recent diamond hole was drilled HQ to 70.7m & the remainder NQ2 to 99.6m. All core was orientated from 17MWDD001.

ESTIMATION METHODOLOGY

Aphrodite

Localised Uniform Conditioning (LUC) was used for the open pit resource model and Ordinary Kriging was used for the underground resource model. LUC is a non-linear technique suitable for estimating into smaller blocks (SMU scale) using wider spaced resource drilling. The LUC model implies a level of selectivity at the SMU scale that would not be achievable in an underground mining scenario so the ordinary kriged model was developed. Samples composited to 1m were used for both models. Top cuts were applied on a domain basis based on disintegration analysis of the probability curve and visual inspection of the histogram. Variography was used to determine directions of gold grade continuity, supported by geological evidence. Ellipsoidal search parameters were applied on a domain basis with distances between 100m to 120m. Minimum samples utilised was 8. Minimum sample and search distance parameters were relaxed for subsequent searches. The kriged block size and LUC panel size was 10mE x 20mN x 5mRL and the LUC SMU size was 2.5mE x 5mN x 2.5mRL. Bulk density values were applied from average density readings in different lithologies and weathering states.

Zoroastrian & Excelsior

Localised Uniform Conditioning (LUC) was used for both deposits where open pit mining is the likely extraction method. Composited samples were used for grade interpolation, 1m width at Zoroastrian and 1m & 2m widths at Excelsior. The 2m composite was used for broad domains at Excelsior. Composite grade top cutting was completed on a domain basis based on disintegration analysis of the probability curve and visual inspection of the histogram. Variography was used to determine directions of grade continuity, supported where possible by geological evidence. Ellipsoidal search parameters were applied on a domain basis with distances between 90m to 145m (Zoroastrian) and 70m to 80m (Excelsior). Minimum samples ranged between 2 and 8 for Zoroastrian and was 8 for Excelsior. Maximum samples employed for Zoroastrian was 32 and ranged between 28 and 32 for Excelsior. The LUC panel size for Zoroastrian was 8mE x 15mN x 10mRL and 8mE x 16mN x 10mRL for Excelsior. SMU block sizes were 2mE x 5mN x 12.5mRL and 4mE x 8mN x 2.5mRL for Excelsior. The SMU sizes were selected based on the geometry of the mineralisation and the likely degree to which selective mining could be achieved given the visual appearance of mineralisation. The underground resource at Zoroastrian was estimated using ordinary kriging as the LUC model is unsuitable for underground mine planning. The underground model used a block size of 4mE x 15mN x 8mRL, considered appropriate for the drill holes spacing and mining method. Estimation used four sectors with a maximum of 7 samples per sector and a minimum of 8 samples. Estimation search parameters including search distance and minimum number of samples were relaxed on subsequent runs.

Bulletin South

Localised Uniform Conditioning (LUC) was used for the open pit resource model. An SMU block size of 2mE x 5mN x 2.5mRL was chosen. This block size conforms to the proposed mining flitch height and is elongated in the same direction (north-south axis) as the trend of the lodes at Bulletin South. The LUC method is intended specifically for estimating the grade distribution of blocks much smaller than the average drill spacing. Variography was used to analyse the spatial continuity within the domains and to determine appropriate estimation inputs to the interpolation process. Estimation was completed with a single pass using a search distance of 80m and a minimum of 8 and maximum of 24 samples.

Mulwarrie

Grade estimation was by Ordinary Kriging for Au using GEOVIA Surpac™ software. The estimate was resolved into 1m (E) x 5m (N) x 5m (RL) parent cells that had been sub-celled at the domain boundaries for accurate domain volume representation. Estimation parameters were based on the variogram models, data geometry and kriging estimation statistics. Top-cuts were decided by completing an outlier analysis using a combination of methods including grade histograms, log probability plots and other statistical tools. Based on this statistical analysis of the data population, top-cuts were applied for gold to 17 of the 21 domains.

MINERAL RESOURCE CLASSIFICATION

Aphrodite

Mineral resource classification attempts to categorise confidence in the geological framework and estimation quality. Confidence is dominantly dependent on drill hole spacing. In well drilled (up to 40m x 40m) areas grade continuity is good and ore body geometry is predictable. These areas were classified as indicated. Less well drilled areas up to ~ 80m x 80m defined areas of inferred material.

Zoroastrian & Excelsior

The classification attempts to categorise areas of the block model to reflect confidence in the geological framework and estimation quality. The classification takes account of confidence in the geological interpretation and sample density. In order to avoid a mosaic style of classification, solid wireframes were constructed to encompass areas considered to adequately fulfil the requirement to be classified as either indicated or inferred:

Indicated - Areas with drill spacing up to approximately 35mE x 35mN (Zoroastrian) and 30mE x 30mN (Excelsior) and with good confidence in the geology.
Inferred – Areas with wider spaced drilling but reasonable confidence in geological continuity.

Bulletin South

Two sectional interpretations of confidence were digitised based on estimation quality parameters defining volumes within which estimated blocks could be considered as Measured, Indicated or Inferred. The Measured volume has been based on that material defined by close spaced grade control drilling, most of which has been mined. Estimation quality parameters used were number of composites, average distance to block centre and slope of regression. In less well drilled areas distance to block centre increased and slope of regression decreased indicative of a decrease in estimation quality, resulting in a lower classification. Inferred classification was applied to areas outside of the Indicated volume and within an optimised shell at a gold price of $2700/ounce.

Mulwarrie

The Mineral Resource has been classified on the basis of confidence in the geological model, continuity of mineralized zones, drilling density, confidence in the underlying database and the available bulk density information. The Mulwarrie Mineral Resource has been classified as Inferred according to JORC 2012 primarily due to a lack of oriented diamond core holes to assisting in supporting the structural model. In addition, very limited bulk density data is available to date.

CUT-OFF GRADES

Aphrodite

The cut-off grade for reporting is 0.5g/t, to reflect potential development by open pit mining. Open pit resources are reported above an RL representative of 200m below surface. A resource below 200m below surface is reported at a cut-off grade of 2.5g/t, which reflects the economics of possible underground mining.

Zoroastrian & Excelsior

The cut-off grade for reporting of both deposits is 0.5g/t, to reflect potential development by open pit mining. Open pit resources are reported above an RL representative of 200m below surface. At Zoroastrian a resource below 200m below surface is reported at a cut-off grade of 2.5g/t, which reflects the economics of possible underground mining.

Bulletin South

The cut-off grade for reporting is 0.5g/t, to reflect potential development by open pit mining with owner operator processing. The currently defined depth extent of mineralisation does not warrant reporting of resources with potential for extraction by underground mining.

Mulwarrie

Quartz vein boundaries typically coincide with anomalous Au which allows for geological continuity of the mineralised zones. All gold-bearing vein (and grade) contact models were built in Leapfrog™ Geo software and exported for use as domain boundaries for the block model.

METALLURGY

Aphrodite

Aphrodite ores have been subjected to metallurgical testwork and are not amenable to standard CIP/CIL processing. Metallurgical testwork has shown the ores to be amenable to fine grinding and atmospheric leaching using the Albion Process™. Recoveries of up to 93.5% have been achieved using this process (Refer ASX Release 22 October 2018).

Zoroastrian & Excelsior

Both deposits have been recently successfully previously mined. Metallurgical testwork and milling reconciliations confirm gold recoveries for both deposits exceeds 92% for primary ore.

Bulletin South

Bulletin South has been previously mined by standard CIL/CIP processing methods. Limited testwork on one sample of representative material indicated recovery of Au in a 24 hour period was 98.2% with 77% being recovered by gravity.

Mulwarrie

Metallurgical tests of selected RC samples including bottle roll cyanidation leach tests and rate of cyanidation tests were completed by Ammtec in 1986 and 1987 for Pancontinental. More recently bottle roll cyanidation leach tests prior to trial mining using a mobile gravity/CIL plant were also carried out by Goldfield Argonaut in 2015. Petrological examination of selected samples was also completed at the end of trial mining. In September 2107 2 composite samples were created by Nagrom from ore grade RC samples collected from East Lode intercepts.

One composite was created from sulphidic quartz lode ore (semi massive pyrite & pyrrhotite in quartz), the other composite was created from biotite altered & sheared basalt containing disseminated pyrite & pyrrhotite also derived from ore grade RC samples collected from East Lode intercepts.

A standard grind size was used of P80 (0.106mm). Initial test work has produced encouraging results and indicates that both the quartz lode & altered basalt ore is not refractory in nature. 24-hour bottle roll tests returned 96.6% recovery from the quartz lode composite and 91% recovery from the sulphide bearing altered basalt composite.

MODIFYING FACTORS

Aphrodite

No modifying factors were applied to the reported Mineral Resources. Parameters including geotechnical, mining dilution, ore loss and metallurgical recoveries will be considered during the mining evaluation of the project. The reported Mineral Resources have never been mined.

Zoroastrian & Excelsior

No modifying factors were applied to the reported Mineral Resources. Parameters including geotechnical, mining dilution, ore loss and metallurgical recoveries will be considered during the planned mining evaluation of the project. The reported Mineral Resources have been depleted to account for previous mining.

Bulletin South

Material classified as inferred was constrained within a pit optimisation based on assumed mining/processing costs, gold recoveries and a gold price of $2700/ounce. This pit shell has been used as the limiting basis for reasonable expectations of the estimated blocks being a viable open pit option at some time in the future. The resource is reported above an RL representative of 200mbs for consistency with other reported open pit resources. The reported Mineral Resources have been depleted to account for previous mining.

Mulwarrie

No modifying factors were applied to the reported Mineral Resources. Parameters including geotechnical, mining dilution, ore loss and metallurgical recoveries will be considered during the planned mining evaluation of the project. The reported Mineral Resources have been depleted to account for previous mining.

BARDOC GOLD PROJECT – BACKGROUND

The New Bardoc Gold Project was formed in October 2018 following completion of the merger of Excelsior Gold and Spitfire Materials, bringing together significant resources and excellent potential for growth (Refer Scheme Booklet dated 13 August 2018).

Located 30km north of Kalgoorlie on the Goldfields Highway, the New Bardoc Gold Project runs contiguously north for 50km in the Eastern Goldfields. There are four main deposits and a multitude of smaller projects within the 200km^2 land holding, providing a large resource base and excellent exploration potential within the prolific Norseman-Wiluna greenstone belt and junction of the Bardoc Tectonic Zone (BTZ) and the Blag Flag Fault (BFF).

These two deep-seated crustal structures host many multimillion-ounce deposits, including the world-renowned Golden Mile in Kalgoorlie.

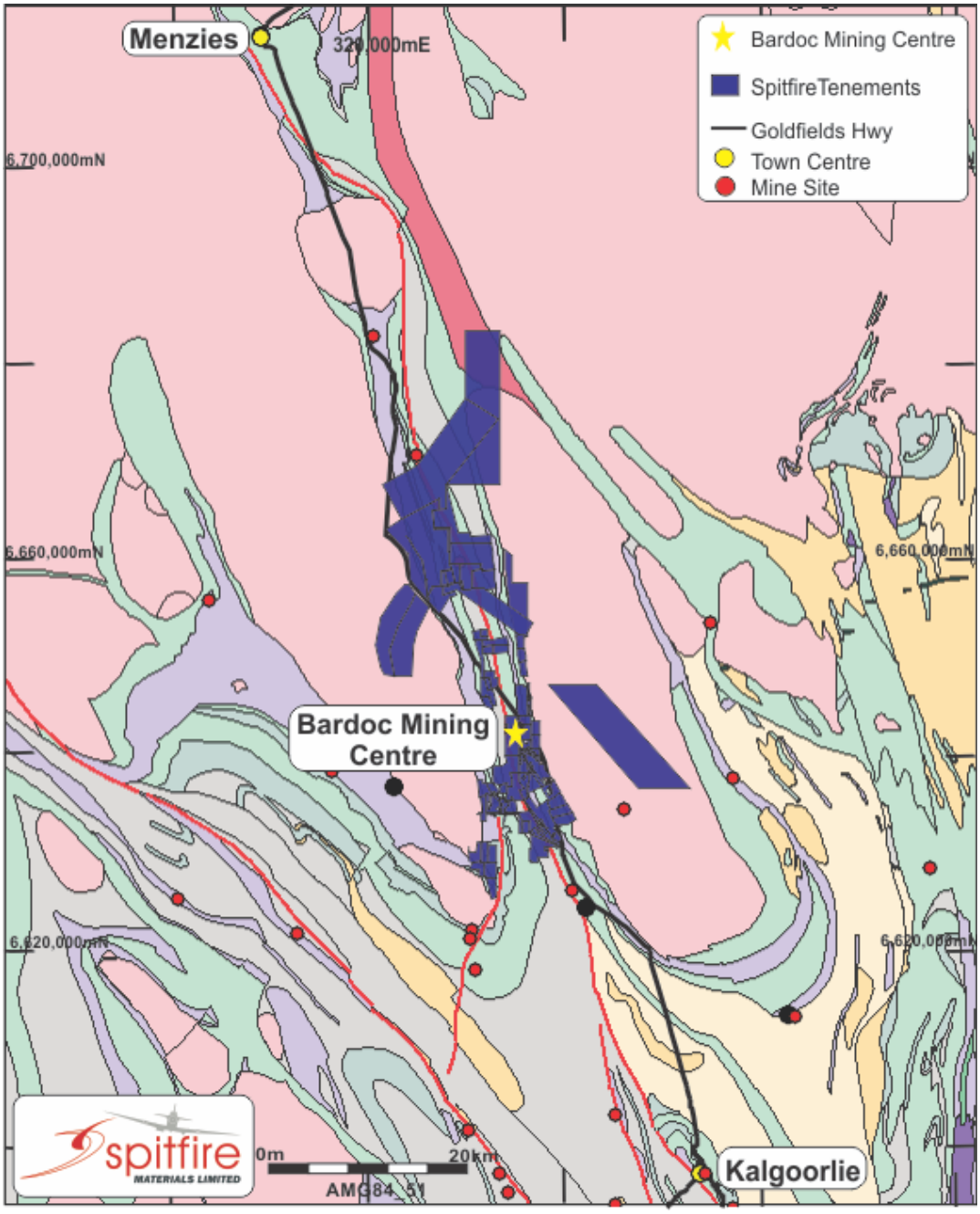

Figure 5: Bardoc Gold Project, Geology and Location Plan.

DISCLAIMERS AND FORWARD-LOOKING STATEMENTS

This announcement contains forward looking statements. Forward looking statements are often, but not always, identified by the use of words such as "seek", “target”, "anticipate", “forecast”, "believe", "plan", "estimate", "expect" and "intend" and statements that an event or result "may", "will", "should", "could" or "might" occur or be achieved and other similar expressions.

The forward-looking statements in this announcement are based on current expectations, estimates, forecasts and projections about Spitfire and the industry in which they operate. They do, however, relate to future matters and are subject to various inherent risks and uncertainties. Actual events or results may differ materially from the events or results expressed or implied by any forward-looking statements. The past performance of Spitfire is no guarantee of future performance.

None of Spitfire’s directors, officers, employees, agents or contractors makes any representation or warranty (either express or implied) as to the accuracy or likelihood of fulfilment of any forward-looking statement, or any events or results expressed or implied in any forward-looking statement, except to the extent required by law. You are cautioned not to place undue reliance on any forward-looking statement. The forward-looking statements in this announcement reflect views held only as at the date of this announcement.

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Competent Person Statement – Mineral Resource Estimates

The Information in this report that relates to Mineral Resources is based on information compiled by Mr Ross Whittle-Herbert, a Competent Person who is a Member of the Australian Institute of Geoscientists. Mr Whittle-Herbert is a full-time employee of Spitfire Materials Ltd. Mr Whittle-Herbert has sufficient experience that is relevant to the style of mineralisation and type of deposits under consideration and to the activity being undertaken to qualify as a Competent Person as defined in the 2012 Edition of the “Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves”. Mr Whittle-Herbert consents to the inclusion in the report of the matters based on his information in the form and context in which it appears.

Information in this announcement that relates to the Bulletin South Mineral Resource results is based on information compiled by Mr. Patrick Adams who is a Director of Cube Consulting Pty Ltd. Mr. Adams is a Fellow of the AusIMM (CP) and a Member of The Australian Institute of Geoscientists and has sufficient experience which is relevant to the style of mineralisation and type of deposit under consideration and to the activity that he is undertaking, to qualify as Competent Person as defined in the 2012 Edition of the “Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves”. Mr. Adams consents to the inclusion in the document of the information in the form and context in which it appears.

The information in this report that relates to Mineral Resources for the Mulwarrie Gold Deposit is based on and fairly represents information compiled by Mr John Young and Mr Lauritz Barnes. Mr Young is the Managing Director of Spitfire Materials Limited and Mr Barnes is a consultant to Spitfire. Mr Young and Mr Barnes are both members of the Australasian Institute of Mining and Metallurgy and have sufficient experience of relevance to the styles of mineralisation and types of deposits under consideration, and to the activities undertaken to qualify as Competent Persons as defined in the 2012 Edition of the Joint Ore Reserves Committee (JORC) Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves. Specifically, Mr Young is the Competent Person for the database, geological model and interpretation plus completed the site inspections. Mr Barnes is the Competent Person for the resource block model estimation. Mr Young and Mr Barnes consent to the inclusion in this report of the matters based on their information in the form and context in which they appear.

APPENDIX 1

JORC Code, 2012 Edition – Tables - Aphrodite

Section 1 Sampling Techniques and Data

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

Criteria	JORC Code explanation	Commentary
Sampling techniques	• *Nature and quality of sampling (eg cut channels, random chips, or specific specialised industry standard measurement tools appropriate to the minerals under investigation, such as down hole gamma sondes, or handheld XRF instruments, etc). These examples should not be taken as limiting the broad meaning of sampling.* • *Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.* • *Aspects of the determination of mineralisation that are Material to the Public Report.* • *In cases where 'industry standard' work has been done this would be relatively simple (eg 'reverse circulation drilling was used to obtain 1 m samples from which 3 kg was pulverised to produce a 30 g charge for fire assay'). In other cases more explanation may be required, such as where there is coarse gold that has inherent sampling problems. Unusual commodities or mineralisation types (eg submarine nodules) may warrant disclosure of detailed information.*	**Historic** • The Aphrodite Gold drill sample data has been collected by various exploration companies between 1992 and 2018 Drilling programs included Rotary Air Blast (RAB), and Reverse Circulation (RC) Diamond (DD) drilling techniques. All RC sampling to industry standard using rig mounted cone or riffle splitters to collect +2.5kg sample for assay be certified laboratories. Core samples generally half core, sawn and sampled at 1m intervals. Some sampling to intervals of geological interest. **Spitfire** • About 80% reverse circulation chips and 20% half or quarter core. • Chips over 1m rotary or riffle split on site to ~3kg and core was sawn on 1m intervals. • Continuous sampling below unmineralised overburden layer. • Chips crushed to 3mm then 2.5kg pulverized, core crushed and pulverized entirely. • Standard 50g fire assay (84%), AR digest on unknown (16%).
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).*	**Historic** • RC drilling 5.5" diameter. Diamond core predominantly NQ diameter, minor HQ diameter. **Spitfire** • Reverse circulation (80%) and HQ or NQ core (20%) • Aircore and rotary air blast holes excluded from resource estimation.
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.*	**Historic** • Chip recovery not documented for historic drilling. • Core recoveries recorded • **Spitfire** • All core measured in tray for recovery. • Generally high core recovery recorded. • RC chip recovery in recent drilling recorded by weight but not recorded in most historic drilling (prior to 2010). • No observed relationship between recovery and grade.
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.*	**Historic** • RC and Core logging completed to a level that supports Mineral Resource Estimation. • Logging both qualitative and quantitative • All core and RC chips logged • **Spitfire** • All core and chip intervals geologically logged. • Logging includes lithologies, alteration, mineralization, colour, oxidation, regolith, moisture, and percentage sulphide and veining. • Purpose drilled core holes for metallurgical and geotechnical data collection.
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*	**Historic** • Core was half sawn for original sampling and quarter sawn if duplicates were taken. • Sampling by riffle splitting or cone splitting directly off RC rig cyclone • Where composite samples were taken the individual riffle split samples were spear sampled to form the composite. • Wet samples (rare) were spear sampled • Sampling techniques are appropriate for the nature of the

Criteria	JORC Code explanation	Commentary
	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.*	deposit • RC field duplicate and core samples were analysed with original samples and precision results were adequate. • **Spitfire** • Core was half or quarter sawn depending on program. • Chips were rotary or riffle split depending on program but generally in accordance with standard industry methods at the time of the program. • Duplicate field samples taken from RC chips every 1 in 20 for recent drilling and well recorded. Duplicate sampling of sawn quarter core. • Duplicate analysis precision considered good. • Sample sizes are generally considered adequate for the material being sampled
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.*	**Historic** • Nearly all RC and DD assays by 40g or 50g fire assay which is a total technique. • Blind field duplicates submitted as well as reference standards although documentation not always well preserved in historic programs due to ownership changes. • Limited programs of Interlab checks undertaken and not always well recorded. **Spitfire** • All samples assayed by Fire Assay with ICP finish for Au, and Peroxide Fusion Digest with ICP finish for As, S & Cu. Gold fire assay considered a total technique. • Majority of samples prepared and assayed by industry standard techniques for gold deposits using well established and certified laboratory services. • Recent checking of fire assays by bulk Leachwell and screen fire methods to guard against the possible presence of coarse free gold grains and to investigate refractory character of mineralization. • Blind field duplicates submitted as well as reference standards and blanks. • Interlab checks undertaken since 2010
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.*	• Intersections of core have been observed by independent consultants, Model Earth Pty. Ltd. And numerous company personnel. • No specific twin hole program has been undertaken but there are numerous opportunistic twin holes that show reasonable grade correlation given the nature of the mineralization. • No adjustments have been 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.*	**Historic** • Collar locations generally surveyed but techniques sometimes not recorded. • Core holes surveyed by north seeking gyro at regular intervals • RC holes downhole surveyed by gyro, electronic mutlishot or reflex single shot. • One program RC drilling suffered from instrumental errors on dip measurements. Holes were generally short (<120m) and surrounding holes did not exhibit significant dip deviation. • All drilling utilized AMG84, Zone 51 grid system • **Spitfire** • Downhole surveys by gyro, multi shot or single shot, generally on nominal 30m intervals. • Collars located by RTK DGPS by independent surveyor • Grid system based on AMG84 Zone 51 • Surface topography wireframe constructed from LIDAR survey. • Some historic hole collars set at nominal elevations and required minor adjustment to the topo surface. Any errors in this process are considered small and are not critical to the resource estimation.
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*	• Data spacing is highly variable, particularly in deeper parts and lateral extremes of the mineralization where it may be sparse. • Well drilled areas are at a nominal 20m x 20m drill spacing, less well drilled areas are at 40m x 40m spacing. Grade and

Criteria	JORC Code explanation	Commentary
	applied. • *Whether sample compositing has been applied.*	geological continuity can be established at his drill spacing. At wider drill spacing, geological continuity is well established and grade continuity less well so. • Continuity is appropriate for Mineral Resource Estimation and confidence is reflected in choice of classification
Orientation of data in relation to geological structure	• *Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type.* • *If the relationship between the drilling orientation and the orientation of key mineralised structures is considered to have introduced a sampling bias, this should be assessed and reported if material.*	• Broad mineralizing structures are well recognized and sub-vertical to steep dipping. Mineralised sub-structures appear to be mostly parallel to broader zones. • Drill holes are generally oriented to be as perpendicular as possible to these structures, that is east or west orientation and inclined at approximately 60 degrees. • Some holes are oriented on north-south sections where an additional mineralised cross structure has been postulated.
Sample security	• *The measures taken to ensure sample security.*	**Historic** • Sample security procedures for historic operators unknown. **Spitfire** • Samples hand delivered in sealed bags to the sample preparation facility in Kalgoorlie and Perth. The laboratory then checks the physically received samples against a generated sample submission list and reports back any discrepancies.
Audits or reviews	• *The results of any audits or reviews of sampling techniques and data.*	• Sampling techniques for drilling by Aphrodite Gold (2010 to 2013) were reviewed by Tetratech Pty. Ltd in 2013. Procedures were to industry standard. • Internal audits of sampling techniques as well as data handling and validation was regularly conducted by Aphrodite Geologists prior to the merger, as part of due diligence and continuous improvement and review of procedures.

Section 2 Reporting of Exploration Results - Aphrodite

(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.*	• Aphrodite Gold is now a wholly-owned subsidiary of Spitfire Materials Ltd and has 100% ownership of 5 mining leases, 1 exploration licence and 2 prospecting licences that cover the project area. All are granted with the mining leases nearest expiry year being 2028. • There are no known environmental or heritage encumbrances in the immediate vicinity of the deposit which might impact on its exploitation.
Exploration done by other parties	• *Acknowledgment and appraisal of exploration by other parties.*	• Project has had many owners over more than 20 years and has been reviewed multiple times. Historic documents are not always available. • Drilling, geological, sampling and assay protocols and methods were to industry standard and adequate for inclusion in Mineral Resource Estimation.
Geology	• *Deposit type, geological setting and style of mineralisation.*	• Discontinuous shoots of low to moderate tenor gold mineralisation within two broader sub-parallel mineralised structural zones. Mineralisation is beneath a substantial thickness of leached overburden. Free milling in upper oxidized and partially oxidized zones but mostly refractory in the primary zone.

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.*
		• No exploration results are being reported in this release so there are no specific drill holes to report.

Criteria	JORC Code explanation	Commentary
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 drill data has been reported in this release, therefore there is no information regarding data aggregation. • Metal equivalents are not used
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').*	• Mineralisation at Aphrodite is interpreted to be hosted by shear zone and linking structures within the BTZ which trends about NNW. • Typically, the angular difference between the drillholes and mineralisation is about 35º, given the sub-vertical nature of the mineralised bodies. • Downhole exploration results are not reported in this release.
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.*	• See the body of the report for diagrams.
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.*	• The previous drilling was reported by Aphrodite Gold Limited (ASX: AQQ) prior to the merger with Spitfire. Individual drill hole results re not reported in this release.
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.*	• The previous exploration work completed on the deposit was done by previous owners and are too extensive to report in the context of this announcement. • Fresh rock samples are refractory in nature and in order to maximize gold recoveries, alternative processing methods to standard CIL/CIP are being investigated. • Arsenic and Sulphur are present in quantities that will require additional consideration of tailings disposal options.
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.*	• Spitfire is planning further diamond drill programs to infill and upgrade the Aphrodite JORC resource reported above.

Section 3 Estimation and Reporting of Mineral Resources - Aphrodite

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

Criteria	JORC Code explanation	Commentary
	• *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.*	• Various historic databases have been combined with recent drilling data (since 2010) to form a unified database held in a Datashed SQL database. Some metadata is missing for historic drilling programs.
	• *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.*	• Mr Ross Whittle-Herbert visited the site on two occasions during 2018 to view diamond drilling, core processing, geological logging and sampling procedures. All work was completed to industry standards.

	• *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 geology of the system and the gold distribution is complex, however recent structural knowledge has elevated confidence in ore lode geometries. There is good continuity of mineralisation established by 20m x 20m close spaced drilling near surface and reasonable continuity from 40m x 40m drilling. Ore shoot geometries are predicted from structural evidence and confirmed from geostatistics • The use of historical drilling provides a level of uncertainty as the company cannot validate the collar location and downhole survey data. • The previous estimation (2017) was by recovered fraction modelling into very loosely interpreted wireframes. For this estimation it was considered appropriate to model the shears, given the recent increase in structural understanding. • The lithology units have been modelled using drilling data and consist of a north-south striking, sub-vertical sequence of sediments, volcaniclastics and porphyry. Mineralisation is oriented NNW within 2 major shear systems. Individual structures are evident within the shear systems and are associated with veining, alteration, foliation and gold. Geological information such as veining, alteration and structure, plus gold and Arsenic grades, were used to guide the interpretation. • Structural continuity of the shear systems is extensive. The grade continuity within the shears is less continuous.
	• *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.*	• Mineralisation within the 2 major shears extends for ~1.6km along strike and 500m in elevation. The shears are separated by ~120m. Locally, between the major shears are mineralised linking structures. An extensive supergene blanket extends for up to 400m east of the deposit. Depth below surface to the top of the resource is between 35 and 60m.

	• *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 (e.g. sulphur for acid mine drainage characterization).*
	• *In the case of block model interpolation, the block size in relation to the average sample spacing and the search employed.*
	• *Any assumptions behind modelling of selective mining units.*
	• *Any assumptions about correlation between variables.*
		• SPI has used 3DM wireframes to constrain the mineralised shear zones. All lodes have been interpreted on a sectional basis using the available exploration drilling data on variable spacing. The wireframes for the open pit model were interpreted to a 0.3g/t cut-off grade, the underground model wireframes were interpreted to 1g/t cut-off grade.
		• Raw assay samples were composited to 1m. Compositing started where each drill hole entered a mineralised wireframe and continued until exiting the wireframe. A minimum composite width of 0.7m was chosen and any residual composites were averaged with the previous sample.
		• Given the sometimes relatively wide drill spacing, it was decided to undertake grade estimation for the open pit model using the non-linear Localised Uniform Conditioning ("LUC") method. This method is suited to estimating grades into SMU scale blocks from widely spaced data. The LUC method is not suited to an underground mining scenario as it implies a selectivity which is unlikely to be achieved by the anticipated underground mining method. Hence for the underground model an ordinary kriged methos was adopted.
		• The following criteria were considered when choosing gold grade top cuts:
		  • The coherence and stability of the upper tail of the gold grade distribution;
		  • Visual inspection of the spatial location of outlier values;
		• The statistics show that in most cases there is only a small reduction in mean grade and variability following top cutting.
		• The LUC estimates were implemented using the Minestis™ software package before being transferred into a Micromine™ block model. Supervisor™ software used for geostatistics,

	• *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.*	variography and block model validation. The ordinary kriged model was implemented using Micromine™ software. • No consideration has been made to by-products. • Deleterious elements have not been estimated in this model but have been in the past. • The estimation panel size (for both the LUC and OK models) was 10mE x 20mE x 5mRL. For the LUC model an SMU block size of 2.5mE x 5mN x 2.5mRL was chosen (no rotation) for use in the localisation process. This SMU block size is considered appropriate for the deposit and predicted open pit mining fleet. While the data spacing in areas other than near surface would be considered too wide for such a small block size if conventional linear estimation methods were used, EXG has used the LUC method, which is suited to estimating the grade distribution of smaller blocks using wide spaced data. • Interpolation parameters – the search ellipse was aligned to the mineralised trend of each domain and oriented the same as the modelled rotations defined from the variography. A minimum of 8 samples and a maximum of 20 samples were used with a maximum of 6 samples per borehole. Three search passes were carried out, with the first having a maximum distance varying between 100 and 120m, depending on mineralised lode and defined by kriging neighbourhood analysis. For each successive run search distances increased and minimum samples decreased.Classification was used to mitigate risk associated with less well estimated blocks. • Validation was completed o visually, comparing block estimated grades to local drilling and; o Using swath plots on a N-S, E-W and depth and o Comparing estimated grades to composite grades on a domain by domain basis.
	• *Whether the tonnages are estimated on a dry basis or with natural moisture, and the method of determination of the moisture content.*	• Tonnages were based on a dry basis.
	• *The basis of the adopted cut-off grade(s) or quality parameters applied.*	• The selection of mineralised domains has used geological factors such a logged alteration, quartz and sulphides in conjunction with a ~0.3g/t Au cut off which represents the full extents of mineralised shear in all modelled domains. A 1g/t cut-off for the interpreted underground wireframes represents the high grade core of the domains • The open pit-able MRE has been reported from the LUC model above a 0.5g/t Au cut-off and above an RL which represents 200m below surface. The underground resource is reported from the kriged model above a 2.5g/t cut-off and below an RL which represents 200m below surface.
	• *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.*	• This LUC MRE has been undertaken on the assumption of open pit mining methods, the selection of SMU size was based on the scale of mining equipment likely to be used. The Kriged MRE has been undertaken assuming underground mining methods.

	• *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.*	• The Aphrodite deposit has never been mined. However SPI has conducted metallurgical test work on all ore types. The refractory nature of the fresh (and some transitional) ores has prompted investigations into pressure oxidation (POX) and Albion ore processing methods for these ores. The preferred processing method at this stage is to use the Albion method and recoveries and operating costs will be based on this. Work to date indicates recoveries of up to 93% are achievable with the Albion process.
	• *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.*	• At this time no issues are anticipated with waste and process residue handling that would be outside the regular operating conditions for mines of this type in the Eastern Goldfields.
	• *Whether assumed or determined. If assumed, the basis for the assumptions. If determined, the method used, whether wet or dry, the frequency of the measurements, the nature, size and representativeness of the samples.* • *The bulk density for bulk material must have been measured by methods that adequately account for void spaces (vugs, porosity, etc), moisture and differences between rock and alteration zones within the deposit.* • *Discuss assumptions for bulk density estimates used in the evaluation process of the different materials.*	• Dry bulk density estimates have been made for mineralisation according to position within the oxidation profile and mineralised domain. • Estimates are based on historic core measurements and gamma-gamma logging for underground extractable material and on recent core measurements alone for surface extractable material. • Where deemed appropriate, waxing of cores has been undertaken prior to measurement by water displacement.
	• *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 geological model and continuity of the mineralisation is currently reasonably well understood The LUC and Kriged MRE's are classified into indicated and inferred to reflect the confidence in the estimate of different areas of the MRE. The classification is based on drill hole spacing, geological continuity and estimation quality parameters. ○ Indicated – Areas with drill spacing up to approximately ~40mE x 40mN and with reasonable confidence in the geological interpretation. ○ Inferred – Areas with drill spacing up to ~80mE x 80mN. • There is a reasonable level of confidence in input data, geology and gold grades. At depth where drilling is more separated, confidence in geological and grade continuity is reduced and this is accounted for by having an inferred or unclassified classification. • The Mineral Resource estimate appropriately reflects the view of the Competent Person
	• *The results of any audits or reviews of Mineral Resource estimates.*	• The current resource estimate is not independently reviewed at this stage.

	• *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 relative accuracy of the Mineral Resource estimate is reflected in the reporting of the Mineral Resource in accordance with the guidelines of the 2012 JORC Code. • A number of measures were incorporated in the MRE's to provide confidence in the estimate: o The estimates used top-cuts to restrict the influence of high grade samples without having a detrimental effect on metal content. o Restricted search parameters o Adoption of the LUC estimation method provides an estimate of tonnages and grades at the SMU scale which can be achieved during open cut mining. • The LUC block model estimate is a local resource estimate which has block sizes chosen at the expected "SMU" selection size. The Kriged model estimate relates to global estimates of tonnes and grade. • Aphrodite is previously unmined, there are no production records with which to compare this estimate to.

1. JORC , 2012 Edition – Tables - Zoroastrian

1.1 Section 1 Sampling techniques and data

Criteria	JORC Code explanation	Commentary
Sampling techniques	• *Nature and quality of sampling (e.g. 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 mineralization was primarily sampled by Reverse Circulation (RC) and Diamond Core (DC) drilling on nominal 40m x 20m (N x E) grid spacing. The holes were generally drilled towards grid east at varying angles to optimally intersect the mineralized zones. • The drilling database consists of historic (pre 2009) and EXG drilling data. The historic data consists of 19 DD and 420 RC holes; EXG drilling consists of 12 DD, 22 Reverse Circulation with diamond tail (RCD), 579 RC and 1800 Reverse Circulation grade control (RCGC) holes. • Complete details are un-available for historic drilling. • Generally, EXG RC recovered chip samples were collected and passed through a cone splitter. • Limited numbers of field duplicates and screen fire assays have been undertaken to support sample representivity. • EXG DD core has been sampled by submission of cut half core. • All EXG RC drilling was sampled on one metre down hole intervals. The recovered samples were passed through a cone splitter and a nominal 2.5kg – 3.5kg sample was taken to a Kalgoorlie contract laboratory. Samples were oven dried, reduced by riffle splitting to 3kg as required and pulverized in a single stage process to 85% passing 75 µm. The sample is then prepared by standard fire assay techniques with a 40g charge. Approximately 200g of pulp material is returned to EXG for storage and potential assay at a later date. The EXG DC samples are collected at nominated intervals by EXG staff from core that has been cut in half and transported to a Kalgoorlie based laboratory. Samples were oven dried, crushed to a nominal 10mm by a jaw crusher, reduced by riffle splitting to 3kg as required and pulverized in a single stage process to 85% passing 75 µm. The sample is then prepared by standard fire assay techniques with a 40g charge. Approximately 200g of pulp material is returned to EXG for storage and potential assay at a later date.

		• Due to the presence of coarse gold and arsenopyrite some 150 samples were subjected to a 400g LeachWell® technique with a standard fire assay on the tail. This demonstrated that some of the gold is nuggetty in nature and that normal fire assay techniques may underestimate the grade. It also demonstrated that the mineralisation is non-refractory in nature.
Drilling techniques	• *Drill type (e.g. core, reverse circulation, open-hole hammer, rotary air blast, auger, Bangka, sonic, etc) and details (e.g. 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).*	• Prior to 2009 19 DC and 420 RC holes were drilled by previous owners over the area. These holes are without documentation of the rig type and capability, core size, sample selection and handling. • For (post 2009) EXG drilling, the RC drilling system employed the use of a face sampling hammer and a nominal 146mm diameter drill bit. The DC drilling is NQ2 size core (nominal 50.6mm core diameter) or HQ (nominal 63.5mm core diameter). • All EXG drill core is orientated by the drilling contractor with a down the hole Ace system. Core diameter is noted in the assay results table for DC assay results.
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 EXG RC 1m samples are logged for drilling recovery by a visual estimate and this information is recorded and stored in the drilling database. At least every 10th metre is collected in a plastic bag and these are weighed when they are utilized for the collection of field duplicate samples. All samples received by the laboratory are weighed with the data collected and stored in the database. • The EXG DC samples are orientated, length measured and compared to core blocks placed in the tray by the drillers, any core loss or other variance from that expected from the core blocks is logged and recorded in the database. Sample loss or gain is reviewed on an ongoing basis and feedback given to the drillers to enable the best representative sample to always be obtained. • EXG RC samples are visually logged for moisture content, sample recovery and contamination. This is information is stored in the database. The RC drill system utilizes a face sampling hammer which is industry best practice and the contractor aims to maximize recovery at all times. RC holes are drilled dry whenever practicable to maximize recovery of sample. • The DC drillers use a core barrel and wire line unit to recover the core, they aim to recover all core at all times and adjust their drilling methods and rates to minimise core loss, i.e. different techniques for broken ground to ensure as little core as possible is washed away with drill cuttings. • Study of sample recovery vs gold grade does not show any bias towards differing sample recoveries or gold grade. The drilling contractor uses standard industry drilling techniques to ensure minimal loss of any size fraction.
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 EXG RC samples are geologically logged directly into hand-held Geobank devices. • All EXG DC is logged for core loss, marked into metre intervals, orientated, structurally logged, geotechnically logged and logged with a hand lens with the following parameters recorded where observed: weathering, regolith, rock type, alteration, mineralization, shearing/foliation and any other features that are present • All EXG DC is photographed both wet and dry after logging but before cutting. • The entire lengths of EXG RC holes are logged on a 1m interval basis, i.e. 100% of the drilling is logged, and where no sample is returned due to voids (or potentially lost sample) it is logged and recorded as such. Drill core is logged over its entire length and any core loss or voids intersected are recorded.
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.*	• EXG Exploration results reported for drill core are half core taken from the right hand side of the core looking down hole. Core is cut with an on-site diamond core saw. • All EXG RC samples are put through a cone splitter and the sample is collected in a unique pre-numbered calico sample bag. The moisture content of each sample is recorded in the database. • The EXG RC samples are sorted, oven dried, the entire sample is pulverized in a one stage process to 85% passing 75 µm. The bulk pulverized sample is then bagged and approximately 200g extracted by spatula to a numbered paper bag that is used for the 50g fire assay charge. • The EXG DC samples are oven dried, jaw crushed to nominal <10mm, 3.5kg is obtained by riffle splitting and the remainder of the coarse reject is bagged while the 3.5kg is pulverized in a one stage process to 85% passing 75 µm. The bulk pulverized sample is then bagged and approximately 200g extracted by spatula to a numbered paper bag that is used for the 40g fire assay charge. • EXG RC and DC samples submitted to the laboratory are sorted and reconciled against the submission documents. EXG inserts blanks and

		standards with blanks submitted in sample number sequence at 1 in 50 and standards submitted in sample number sequence at 1 in 20. The laboratory uses their own internal standards of 2 duplicates, 2 replicates, 2 standards, and 1 blank per 50 fire assays. The laboratory also uses barren flushes on the pulveriser. • In the field every 10th metre from the bulk sample port on the cone splitter is bagged and placed in order on the ground with other samples. This sample is then used for collection of field duplicates via riffle splitting. RC field duplicate samples are collected after results are received from the original sample assay. Generally, field duplicates are only collected where the original assay result is equal to or greater than 0.1g/t Au. The field duplicates are submitted to the laboratory for the standard assay process. The laboratory is blind to the original sample number. • For DC, no core duplicates (i.e. half core) have been collected or submitted. • The sample sizes are considered to be appropriate for the type, style, thickness and consistency of mineralization located at this project. The sample size is also appropriate for the sampling methodology employed and the gold grade ranges returned.
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 (e.g. standards, blanks, duplicates, external laboratory checks) and whether acceptable levels of accuracy (i.e. lack of bias) and precision have been established.*	• EXG has routinely used local Kalgoorlie Certified Laboratories for all sample preparation and analysis. The most commonly used laboratories have been SGS Australia and Bureau Veritas Australia which has two facilities in Kalgoorlie. No complete details of the sample preparation, analysis or security are available for either the historic AC, DD or RC drilling results in the database. • The assay method is designed to measure total gold in the sample. The laboratory procedures are appropriate for the testing of gold at this project given its mineralization style. The technique involves using a 40g sample charge with a lead flux which is decomposed in a furnace with the prill being totally digested by 2 acids (HCl and HNO3) before measurement of the gold content by an AA machine. • The QC procedures are industry best practice. The laboratory is accredited and uses its own certified reference material. The laboratory has 2 duplicates, 2 replicates, 1 standard and 1 blank per 50 fire assays. • EXG submits blanks at the rate of 1 in 50 samples and certified reference material standards at the rate of 1 in 20 samples in the normal run of sample submission numbers. As part of normal procedures EXG examines all standards and blanks to ensure that they are within tolerances. Additionally, sample size, grind size and field duplicates are examined to ensure no bias to gold grade exists.
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.*	• Consultant geologist, Rick Adams from Cube Consulting, John Harris of Geological Services and independent geologist Matt Ridgway, have inspected drill core and RC chips in the field to verify the correlation of mineralized zones between assay results and lithology/alteration/mineralization. Recent drilling has been inspected by EXG site geologists. • A number of diamond core holes were drilled throughout the deposit to twin RC holes. These twinned holes returned results comparable to the original holes and were also used to collect geological information and material for metallurgical assessment. A number of RC holes have also been drilled that confirmed results obtained from historical drillholes. • Primary data is sent digitally every 2-3 days from the field to EXG's Database Administrator (DBA). The DBA imports the data into the commercially available and industry accepted DataShed database software. Assay results are merged when received electronically from the laboratory. The responsible geologist reviews the data in the database to ensure that it is correct and has merged properly and that all data has been received and entered. Any variations that are required are recorded permanently in the database. • No adjustments or calibrations were made to any assay data used in this report.
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 holes have their collar location recorded from a hand held GPS unit. Subsequent to drilling holes were picked up using RTKGPS by the mine surveyor or by contracted surveyors. Downhole surveys are completed every 30m downhole. No detailed down hole surveying information is available for the historic RC or DD drilling. • EXG routinely contracted down hole surveys during the programmes of exploration drilling for each RC and DC drill hole completed using either

		digital electronic multi-shot tool or north seeking gyro, both of which are maintained by Contractors to manufacturer specifications. • All drill holes and resource estimation use the MGA94, Zone 51 grid system. • The topographic data used was obtained from consultant surveyors and is based on a LiDAR survey flown in 2012. It is adequate for the reporting of Exploration Results and subsequent Mineral Resource estimates.
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 nominal exploration drill spacing is 40m x 40m with many E-W cross-sections in-filled to 20m across strike. This has been infilled with variable spacing for Resource estimate purposes to 20 x 20m and with Grade control to 7.5 x 5m (N x E) spacing. • This report is for the reporting of recent explorations drilling. The drill spacing, spatial distribution and quality of assay results is sufficient to support the JORC classification of material reported previously and is appropriate for the nature and style of mineralisation being reported. • The majority of holes were sampled at 1m, but when this isn't the case, sample compositing to 4m 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 mineralised structures is considered to have introduced a sampling bias, this should be assessed and reported if material.*	• The majority of drilling is to grid east. The bulk of the mineralized zones are perpendicular to the drilling direction. Structural logging of orientated drill core supports the drilling direction and sampling method. • No drilling orientation and sampling bias has been recognized at this time.
Sample security	• *The measures taken to ensure sample security.*	• RC samples are delivered directly from the field to the Kalgoorlie laboratory by EXG personnel on a daily basis with no detours, the laboratory then checks the physically received samples against an EXG generated sample submission list and reports back any discrepancies • Drill core is transported daily directly from the drill site to EXG's secure core processing facility by EXG personnel with no detours. The core is then placed on racks within a secure shed and processed until it requires cutting. Core is then transported directly by EXG's staff to the Kalgoorlie laboratory where it is cut in half by laboratory staff and then sampled by EXG staff. The core is then prepared for assay in Kalgoorlie to the pulverizing stage whereupon the laboratory transports it using a contractor directly to their Perth based assay facility.
Audits or reviews	*The results of any audits or reviews of sampling techniques and data.*	• An internal review of sampling techniques and procedures was completed in March 2013. No external or third party audits or reviews have been completed.

1.2 Section 2 Reporting of Exploration Results - Zoroastrian

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

<table>
<tr><th>Criteria</th><th>JORC Code explanation</th><th>Commentary</th></tr>
<tr><td>Mineral tenement and land tenure status</td><td>• 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.</td><td>• The results reported in this Announcement are on granted Mining tenements held by GPM Resources Pty Ltd, a wholly owned subsidiary of Excelsior Gold Limited.
<table>
<tr><th>Tenement</th><th>Holder</th><th>Area (Ha)</th><th>Expiry Date</th></tr>
<tr><td>M24/11</td><td>GPM Resources</td><td>1.80</td><td>23/03/2025</td></tr>
<tr><td>M24/43</td><td>GPM Resources</td><td>9.28</td><td>15/10/2026</td></tr>
<tr><td>M24/99</td><td>GPM Resources</td><td>190.75</td><td>02/12/2028</td></tr>
<tr><td>M24/121</td><td>GPM Resources</td><td>36.95</td><td>02/11/2029</td></tr>
<tr><td>M24/135</td><td>GPM Resources</td><td>17.75</td><td>10/06/2029</td></tr>
<tr><td>M24/869</td><td>GPM Resources</td><td>7.16</td><td>21/10/2024</td></tr>
<tr><td>M24/870</td><td>GPM Resources</td><td>7.04</td><td>21/10/2024</td></tr>
<tr><td>M24/871</td><td>GPM Resources</td><td>9.72</td><td>21/10/2024</td></tr>
<tr><td>M24/951</td><td>GPM Resources</td><td>190.03</td><td>16/04/2036</td></tr>
</table>
• At this time the tenements are in good standing. There are no existing royalties, duties or other fees impacting on the EXG Kalgoorlie North Project.</td></tr>
<tr><td>Exploration done by other parties</td><td>• Acknowledgment and appraisal of exploration by other parties.</td><td>• Exploration by other parties has been reviewed and is used as a guide to EXG's exploration activities. This includes work by AMAX, Hill Minerals, Aberfoyle and Halycon Group. Previous parties have completed both open</td></tr>
</table>

		pit and underground mining, geophysical data collection and interpretation, soil sampling and drilling.
Geology	• *Deposit type, geological setting and style of mineralisation.*	• The deposit occurs on the eastern limb of a narrow NNW trending structure, the Bardoc-Broad Arrow syncline within the Bardoc Tectonic Zone. In this zone the sequence comprises highly deformed fault slice lenses of intercalated Archaean mafic and ultramafic volcanics and metasediments. • The mineralisation in the Zoroastrian area is predominately associated with a complex array of multiple dimensional and variable orientated quartz veins and stock works within the differentiated Zoroastrian Dolerite. In places a surficial 1-2m thick calcrete/lateritic gold bearing horizon and small near surface supergene pods exist. • The Zoroastrian dolerite is thought to be the stratigraphic equivalent of the Paddington dolerite which hosted the 1m+oz mine at Paddington itself with both deposits bounded to the west by the Black Flag sediments and to the east by the Mount Corlac ultramafics. Shear zones up to 10m wide containing gold bearing laminated quartz veining (5cm to 1m wide) occur on both contacts. • At Zoroastrian slivers of the intruded sequence occur apparently internal to the dolerite throughout the area suggesting a more complex thrust/folding structural system than is readily apparent. Geological and structural interpretation at Zoroastrian is further complicated by contradicting and conflicting mapping and logging of the different units particularly between basalt and dolerite

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.*
		• See Table 4 of this announcement
		• No results from previous un-reported exploration are the subject of this announcement.
		• Dip is the inclination of the hole from the horizontal (i.e. a vertically down drilled hole from the surface is -90°). Azimuth is reported in magnetic degrees as the direction toward which the hole is drilled. MGA94 and magnetic degrees vary by approximately 1° in this project area
		• Down hole length of the hole is the distance from the surface to the end of the hole, as measured along the drill trace. Interception depth is the distance down the hole as measured along the drill trace. Intersection width is the downhole distance of an intersection as measured along the drill trace.
		• Hole length is the distance from the surface to the end of the hole, as measured along the drill trace.

Data aggregation methods	• *In reporting Exploration Results, weighting averaging techniques, maximum and/or minimum grade truncations (e.g. 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 high grade cuts have been applied to assay results. RC assay results are distance weighted using 1m for each assay. • Intersections are reported if the interval is at least 1m wide at 0.6g/t Au grade. Intersections greater than 1m in downhole distance can contain up to 2m of low grade or barren material. • No metal equivalent reporting is used or applied.
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 (e.g. 'down hole length, true width not known').*	• The intersection width is measured down the hole trace, it is not usually the true width. Cross sections in this announcement allows the relationship between true and down hole width to be viewed. • Data collected historical workings and shafts exist within the area and structural measurements from orientated diamond core drilling show the primary ore zones to be sub-vertical in nature with a general northerly strike. • All drill results within this announcement are downhole intervals only and due to variable mineralisation and style true widths are not able to be calculated until modelling of the mineralisation.
Diagrams	• *Appropriate maps and sections (with scales) and tabulations of intercepts should be*	• Plan and cross sectional views are contained within this announcement.

	included for any significant discovery being reported These should include, but not be limited to a plan view of drill hole collar locations and appropriate sectional views.	
Balanced reporting	• *Where comprehensive reporting of all Exploration Results is not practicable, representative reporting of both low and high grades and/or widths should be practiced to avoid misleading reporting of Exploration Results.*	• All results >= 0.6g/t Au are reported. The results are length weighted composites based on the Au grade and down hole length, a maximum of 2m of internal dilution is included.
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.*	• No other exploration data is considered meaningful and material to this announcement.
Further work	• *The nature and scale of planned further work (e.g. 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.*	• Exploration work is ongoing at this time and may involve the drilling of more drill holes, both DC and RC, to further extend the mineralised zones and to collect additional detailed data on known mineralized zones. • No additional information can be made available at this time as it is conceptual in nature and commercially sensitive.

1.3 Section 3 Estimation and Reporting of Mineral Resources - Zoroastrian

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

Criteria	JORC Code explanation	Commentary
Database integrity	• *Measures taken to ensure that data has not been corrupted by, for example, transcription or keying errors, between its initial collection and its use for Mineral Resource estimation purposes.* • *Data validation procedures used.*	• Data is logged in the field directly into the Geobank mobile device. Lab submission sheets are digitally recorded in the same way. Assay data are received from the laboratories in an electronic format and are imported directly into a standard DataShed system. All data have been validated by the EXG Database Administrator and geological management prior to inclusion in the resource estimate. • Any errors recorded from the various validation processes are manually checked and correlated back to the original collection of data. If necessary, field checks are made to confirm validation issues.
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.*	• Mr Ross Whittle-Herbert visited the site on numerous occasions to view ore geometries in the open pit and review RC chips and diamond core.
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 geology of the system and the gold distribution is complex, however a greater understanding of the geology has been gained from the mining of Central open pit. The continuity of mineralisation and volume controls are well established where drilling is at a nominal 30 x 30 m hole spacing. • The use of historical drilling provides a level of uncertainty as the company cannot validate the QAQC data and downhole survey data. As such throughout the deposit the company has twinned historical holes to confirm results and location. • The close spaced RC grade control drilling and mining pit floor exposure has allowed a detailed re-evaluation of the geological controls on mineralisation by EXG. In addition, subsequent re-logging of diamond core and RC chips has enabled the identification and distinction between mineralised steep and flat structures. The new interpretation of these controls materially impacts the estimation of the Mineral Resources and has triggered the need for the re-estimation.

		• The result of this revision is that the majority of the mineralisation outside of Central open pit is associated with the steep shear hosted (60-degree west dipping) structures as opposed to the flatter (35-45-degree west dipping) ladder veins. The bulk of mineralisation near surface in Central open pit was associated with the flat structures. However as the pit deepened, almost all the mineralisation was associated with the steep west dipping structure. • The selection of mineralised domains has used geological factors such a logged quartz and sulphides in conjunction with a ~0.3g/t (open pit) Au cut off which represents the mineralised shear in all modelled domains. For the underground model a 1g/t cut-off was utilised. The 1g/t threshold was chosen based on an observation from recent diamond drilling that there is frequently a very sharp grade contact on the hanging wall of the steep lodes. Gold values transition from background to ore grades over a very short distance. The hanging wall contact is the one likely to be followed in ore drives. The footwall contact was also interpreted to a 1g/t cut-off, although grades can be more diffuse, transitioning to background values over a longer distance.
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.*	• Mineralisation extends 1300m north/south, 250m east/west and 300m in elevation. Mineralised structures are present at surface for some lodes. There is a depletion zone that extends to about 30m below surface. Lodes are also present on historic pit floor and walls in previous mining activities.

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 (e.g. sulphur for acid mine drainage characterization).*
	
	• *In the case of block model interpolation, the block size in relation to the average sample spacing and the search employed.*
	
	• *Any assumptions behind modelling of selective mining units.*
	
	• *Any assumptions about correlation between variables.*
	
	• *Description of how the geological interpretation was used to control the resource estimates.*
	
	• *Discussion of basis for using or not using grade cutting or capping.*
		• EXG has used 3DM wireframes to constrain the mineralised shear zones, with the most significant shear interpretation within Central open pit being completed by EXG site geologists and based on pit floor mapping, and observation, ore mark-outs and the close spaced RCGC drilling at spacing's of 7.5m N x 5m E-W. All other lodes have been interpreted on a sectional basis using the available exploration and RCGC drilling data on variable spacing ranging from 7.5 x 5m to 20 x 20m to 40 x 40m (N x E-W).
		
		• On the basis of sample size, open pit selectivity assumption (2 EW x 5 NS x 2.5mRL) and selected estimation methodology, a 1m down hole composite was selected for the open pit estimation. 1m compositing was also appropriate for the underground estimation given the sometimes narrow nature of the steep lodes.1m composite intervals falling within the wire framed estimation domains were coded in the database.
		• It was evident that some of the estimation domains contained extreme outlier gold values. The highly positively skewed gold distributions mean that conventional linear estimation methods, such as Ordinary Kriging ("OK") are likely to produce over-smoothed block grade estimates. For this reason, it was decided to undertake open pit grade estimation using the non-linear Localised Uniform Conditioning ("LUC") method. The LUC method however implies a level of selectivity that is unlikely to be attained by underground mining so an Ordinary Kriged estimation was used for the underground model.
		
		• The following criteria were considered when choosing gold grade top cuts:
		  • The coherence and stability of the upper tail of the gold grade distribution;
		  • Visual inspection of the spatial location of outlier values;
		• The statistics show that in some cases there is a large reduction in mean grade and variability following top cutting. This is due to the elimination of the disproportionate effect of extreme outlier gold grade values. It should be noted that the difficulties posed by these extreme outliers significantly increases the inherent risk in the gold grade estimates.
		
		• The LUC estimates were implemented using the Minestis™ software package before being transferred into a Micromine™ block model. The Kriged underground model was implemented in Micromine ™.
		• No consideration has been made to by-products.
		
		• One check estimate has been undertaken by EXG as a validation step for the open pit model. This is a comparison of an OK grade control model, based only on the tight 5mE x 7.5mN grade control drilling, to an LUC model undertaken using only the resource drill data. Results indicate that the LUC model based on exploration data reconciles to within 9% of contained metal

	• *The process of validation, the checking process used, the comparison of model data to drill hole data, and use of reconciliation data if available.*	at a 0.6g/t Au cut-off. Both resource models were validated by comparison of composite grades to estimated grades on a domain basis, swath plots and visual checks • The LUC estimation panel size used was 8mE x 15mE x 10mRL. An SMU block size of 2mE x 5mN x 2.5mRL was chosen (no rotation) for use in the localisation process. This SMU block size corresponds exactly to the current block size for grade control modelling, conforms to the mining flitch height and is elongated in the same direction (north-south axis) as the trend of the lodes at Zoroastrian Central. While the data spacing in areas other than the grade control drilled volume would be considered too wide for such a small block size if conventional linear estimation methods were used, EXG has used the LUC method, which is intended specifically for estimating the grade distribution of smaller blocks. The underground model used a block size of 4mE x 15mN x 8mRL, considered appropriate for the drill hole spacing and mining method • Whilst the ore is associated with arsenopyrite, assay data and metallurgical test work indicate this does not affect recoveries. No other deleterious elements have been identified.
Moisture	• *Whether the tonnages are estimated on a dry basis or with natural moisture, and the method of determination of the moisture content.*	• Tonnages were based on a dry basis.
Cut-off parameters	• *The basis of the adopted cut-off grade(s) or quality parameters applied.*	• The open pit Mineral Resource has been reported above a 0.5g/t Au cut-off above 240mRL (200m depth) and above 2.5g/t below 240mRL.
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.*	• This MRE has been undertaken on the assumption of open pit mining methods, the selection of SMU size was based on the scale of mining equipment used in previous mining at Zoroastrian. • A cut-off of 2.5g/t was chosen for material below 240mRL to highlight the potential for underground extraction. Further work, including additional drilling, will determine the optimal mining method for this material.
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.*	• The Zoroastrian deposit has been mined successfully with no metallurgical issues. Gold recoveries in excess of 90% were achieved during mining of Central open pit.
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*	• There are no environmental issues concerning the extraction or disposal of waste or tailing material.

	an explanation of the environmental assumptions made.	
Bulk density	• *Whether assumed or determined. If assumed, the basis for the assumptions. If determined, the method used, whether wet or dry, the frequency of the measurements, the nature, size and representativeness of the samples.* • *The bulk density for bulk material must have been measured by methods that adequately account for void spaces (vugs, porosity, etc), moisture and differences between rock and alteration zones within the deposit.* • *Discuss assumptions for bulk density estimates used in the evaluation process of the different materials.*	• There are three sources of experimental bulk density data. The first are the results of systematically collected DD core measurements and the second were downhole caliper SG readings every 0.1m for selected holes. The third source was bulk in-pit density determinations gathered by the mining staff. The DD core results provide a source of competent rock bulk density data however the data lacks any representative data for less competent oxide and transitional weathered rock. The in-pit data represents an attempt to measure the densities of the less competent material. • A total of 103 determinations have been made from 13 EXD DD holes. Determinations were made using two methods – for 5 holes the densities were determined using a down hole probe, the Auslog A659 Caliper Tool, the balance were selected core sent to the Genalysis Laboratory in Kalgoorlie where specific gravity was determined by gravimetric technique. The majority of these data were taken on fresh dolerite core, with a small number of oxidised and transitional dolerite core results. The average depth of these determinations is 104m downhole. • A total of 190 in-pit determinations have been made between the 430m, and 400m pit floor RLs, at surveyed locations within 29 high and low grade ore mark-out blocks. The RLs of these determinations places them within the oxide and transitional weathering profile. • On balance EXG believe that there are sufficient data to allow the assignment of average values to the MRE block model but not enough to allow a spatially representative estimation of bulk density. EXG have used assumed bulk density values for ore and waste based on the interpreted weathering surfaces.
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 geological model and continuity of the mineralisation is currently well understood due to the RCGC drilling, mining exposure of the mineralised lodes on the pit floor and distinction between steep and flat structures gained primarily from a re-log of RC chips. • The MRE is classified into measured, indicated and inferred to reflect the confidence in the estimate of different areas of the MRE. • The MRE has been validated by "ground truth" methods whereby estimates using only resource exploration drilling on a 20x20m collar spacing has been compared to a volume estimated by close spaced RCGC drilling. The results of this comparison confirm that the deeper MR areas estimated outside the grade control volumes can be expected to be representative of what will be defined for mining by the RCGC data to within 10% contained metal. • The Mineral Resource estimate appropriately reflects the view of the Competent Person
Audits or reviews	• *The results of any audits or reviews of Mineral Resource estimates.*	• A review of the 2018 LUC estimated MRE has been undertaken by Cube Consulting PTY LTD. The Ordinary Kriged underground MRE has not been reviewed.

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 relative accuracy of the Mineral Resource Estimates is reflected in the reporting of the Mineral Resource in accordance with the guidelines of the 2012 JORC Code. • The significant amount of production (>700kt) and geological information available from historical mining production data allows for a high degree of confidence in geological, mining and milling parameters. Grade and geological continuity can be estimated to a degree of accuracy high enough to allow for a proportion of the resource to be classified as Measured, Indicated or Inferred where appropriate. • The LUC block model estimate is a local resource estimate which has block sizes chosen at the expected "SMU" selection size. The Kriged MRE statement relates to global estimates of tonnages and grade. • Reconciliation between EXG mining production and the depleted resource within the August 1 2017 Central final pit demonstrates a close (less than +-10%) correlation in contained ounces.

2. JORC code, 2012 Edition – tables - Excelsior

2.1 Section 1 Sampling Techniques and Data

Criteria	JORC Code explanation	Commentary
Sampling techniques	• *Nature and quality of sampling (e.g. 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 drilling database consists of historic (pre 2009) and EXG drilling data. The historic data consists of drilling by: o Hill Minerals – 75 RC Holes o Aberfoyle - 157 RC Holes, 6 DD holes o Halcyon – 5 RC holes , 2 DD Holes • Hill Minerals – Wet and dry sampling utilised rotary cone splitter (of Hill minerals design). 4m composite and 1m RC samples assayed by Genalysis Laboratory Services using Aqua Regia. • Aberfoyle – When dry sampling, the entire 1.0 metre sample was collected in a large plastic bag sealed tight over the base of the cyclone to avoid dust loss. The full sample was then multiple riffled to provide two approximately 2kg splits, one for assay and the other for storage/metallurgical purposes. Initial samples assayed by Pilbara labs (Aqua Regia). Subsequent assaying by Classic Labs (50g Fire Assay) • Halcyon – Sample collection systems unknown. Samples assayed by ALS Lab using either 30g or 50g charge for RC and only 50g charge for DD samples. • Generally, EXG RC recovered chip samples were collected and passed through a cone splitter. • Limited numbers of field duplicates and screen fire assays have been undertaken to support simple representivity. • EXG DD core has been sampled by submission of cut half core. • All EXG RC drilling was sampled on one metre down hole intervals. The recovered samples were passed through a cone splitter and a nominal 2.5kg – 3.5kg sample was taken to a Kalgoorlie contract laboratory. Samples were

		oven dried, reduced by riffle splitting to 3kg as required and pulverized in a single stage process to 85% passing 75 µm. The sample is then prepared by standard fire assay techniques with a 50g charge. Approximately 200g of pulp material is returned to EXG for storage and potential assay at a later date. The EXG DC samples are collected at nominated intervals by EXG staff from core that has been cut in half and transported to a Kalgoorlie based laboratory. Samples were oven dried, crushed to a nominal 10mm by a jaw crusher, reduced by riffle splitting to 3kg as required and pulverized in a single stage process to 85% passing 75 µm. The sample is then prepared by standard fire assay techniques with a 50g charge. Approximately 200g of pulp material is returned to EXG for storage and potential assay at a later date.
Drilling techniques	• *Drill type (e.g. core, reverse circulation, open-hole hammer, rotary air blast, auger, Bangka, sonic, etc) and details (e.g. 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).*	• Hill Minerals – Reverse Circulation blade, or roller with minor hammer. Drill diameter unknown. • Aberfoyle - Most of the Aberfoyle drilling was 4-3/4" reverse circulation roller drilling with minor R.C. hammer drilling in heavily quartz veined or fresher lithologies. Diamond drilling was NQ diameter and where the material drilled was intensely oxidised drilling was performed using a triple tube • Halcyon – Drilling techniques unknown • For (post 2009) EXG drilling, the RC drilling system employed the use of a face sampling hammer and a nominal 146mm diameter drill bit. The DC drilling is NQ2 size core (nominal 50.6mm core diameter) or HQ (nominal 63.5mm core diameter). • All EXG drill core is orientated by the drilling contractor with a down the hole Ace system. Core diameter is noted in the assay results table for DC assay results.
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.*	• Hill Minerals – sample recovery unknown. • Aberfoyle - Dust loss in heavily oxidised material was minimal. In harder rock, minor dust loss occurred through the "smoke stack" of the cyclone. Very little wet sampling (through water injection), was done as it was preferable to keep the drill hole dry and continue with dry sampling where possible. This was achieved by periodically sealing the R.C. system and blowing the hole dry via the outside of the rods and then recommencing drilling/sampling through the inner tube when the hole had dried. Where water injection was necessary, samples were collected in a bucket after passing through a rotary disc wet splitter, flocculated, dried and split to give two 2kg samples. Core recovery was excellent in fresher rock and good in oxidised rock except where abundant quartz veining caused core loss due to competency contrast. • All EXG RC 1m samples are logged for drilling recovery by a visual estimate and this information is recorded and stored in the drilling database. At least every 10th metre is collected in a plastic bag and these are weighed when they are utilized for the collection of field duplicate samples. All samples received by the laboratory are weighed with the data collected and stored in the database. • The EXG DC samples are orientated, length measured and compared to core blocks placed in the tray by the drillers, any core loss or other variance from that expected from the core blocks is logged and recorded in the database. Sample loss or gain is reviewed on an ongoing basis and feedback given to the drillers to enable the best representative sample to always be obtained. • EXG RC samples are visually logged for moisture content, sample recovery and contamination. This is information is stored in the database. The RC drill system utilizes a face sampling hammer which is industry best practice and the contractor aims to maximize recovery at all times. RC holes are drilled dry whenever practicable to maximize recovery of sample. • The DC drillers use a core barrel and wire line unit to recover the core, they aim to recover all core at all times and adjust their drilling methods and

		rates to minimise core loss, i.e. different techniques for broken ground to ensure as little core as possible is washed away with drill cuttings. • Study of sample recovery vs gold grade does not show any bias towards differing sample recoveries or gold grade. The drilling contractor uses standard industry drilling techniques to ensure minimal loss of any size fraction.
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.*	• Hill Minerals – All holes geologically logged. • Aberfoyle – RC holes geologically logged, noting lithology, colour, weathering, alteration, veining and mineralisation (sulphides) • Halcyon – RC holes geologically logged, noting lithology, colour, weathering, alteration, veining and mineralisation (sulphides) • All EXG RC samples are geologically logged directly into hand-held Geobank devices. • All EXG DC is logged for core loss, marked into metre intervals, orientated, structurally logged, geotechnically logged and logged with a hand lens with the following parameters recorded where observed: weathering, regolith, rock type, alteration, mineralization, shearing/foliation and any other features that are present • All EXG DC is photographed both wet and dry after logging but before cutting. • The entire lengths of EXG RC holes are logged on a 1m interval basis, i.e. 100% of the drilling is logged, and where no sample is returned due to voids (or potentially lost sample) it is logged and recorded as such. Drill core is logged over its entire length and any core loss or voids intersected are recorded.
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.*	• Hill Minerals – RC samples split using rotary cone splitter. • Aberfoyle - When dry sampling, the entire 1.0 metre sample was collected in a large plastic bag sealed tight over the base of the cyclone to avoid dust loss. The full sample was then multiple riffled to provide two approximately 2kg splits, one for assay and the other for storage/metallurgical purposes. Wet samples were collected in a bucket after passing through a rotary disc wet splitter, flocculated, dried and split to give two 2kg samples. Diamond core was sawn where hard enough, or cut with a knife when intensely oxidised. One half core submitted for assay. • Halcyon – Sub sampling techniques unknown • EXG Exploration results reported for drill core are half core taken from the right hand side of the core looking down hole. Core is cut with an on-site diamond core saw. • All EXG RC samples are put through a cone splitter and the sample is collected in a unique pre-numbered calico sample bag. The moisture content of each sample is recorded in the database. • The EXG RC samples are sorted, oven dried, the entire sample is pulverized in a one stage process to 85% passing 75 µm. The bulk pulverized sample is then bagged and approximately 200g extracted by spatula to a numbered paper bag that is used for the 50g fire assay charge. • The EXG DC samples are oven dried, jaw crushed to nominal <10mm, 3.5kg is obtained by riffle splitting and the remainder of the coarse reject is bagged while the 3.5kg is pulverized in a one stage process to 85% passing 75 µm. The bulk pulverized sample is then bagged and approximately 200g extracted by spatula to a numbered paper bag that is used for the 50g fire assay charge. • EXG RC and DC samples submitted to the laboratory are sorted and reconciled against the submission documents. EXG inserts blanks and standards with blanks submitted in sample number sequence at 1 in 50 and standards submitted in sample number sequence at 1 in 20. The laboratory

		uses their own internal standards of 2 duplicates, 2 replicates, 2 standards, and 1 blank per 50 fire assays. The laboratory also uses barren flushes on the pulveriser. • In the field every 10th metre from the bulk sample port on the cone splitter is bagged and placed in order on the ground with other samples. This sample is then used for collection of field duplicates via riffle splitting. RC field duplicate samples are collected after results are received from the original sample assay. Generally, field duplicates are only collected where the original assay result is equal to or greater than 0.1g/t Au. The field duplicates are submitted to the laboratory for the standard assay process. The laboratory is blind to the original sample number. • For DC, no core duplicates (i.e. half core) have been collected or submitted. • The sample sizes are considered to be appropriate for the type, style, thickness and consistency of mineralization located at this project. The sample size is also appropriate for the sampling methodology employed and the gold grade ranges returned.
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 (e.g. standards, blanks, duplicates, external laboratory checks) and whether acceptable levels of accuracy (i.e. lack of bias) and precision have been established.*	• Hill Minerals – Aqua Regia (partial) analysis by Genalysis Laboratory. Technique considered appropriate for the style of mineralisation. • Aberfoyle – initially Aqua Regia by Pilbara labs. A review of check assaying suggested doubts as to the reliability and integrity of Pilbara Labs, and it was decided to submit all future Excelsior samples to Classic Laboratories, Perth, for 50g charge gravimetric fire assay. Fire Assay considered a total technique. Conducted numerous checks to determine suitable levels of precision including inter laboratory checks. No data available to determine levels of assay accuracy. • Halcyon – Fire Assay (Total) by ALS Laboratory. QAQC procedures unknown. • EXG has routinely used local Kalgoorlie Certified Laboratories for all sample preparation and analysis. The most commonly used laboratories have been SGS Australia and Bureau Veritas Australia which has two facilities in Kalgoorlie. The fire assay method is designed to measure total gold in the sample. The laboratory procedures are appropriate for the testing of gold at this project given its mineralization style. The technique involves using a 50g sample charge with a lead flux which is decomposed in a furnace with the prill being totally digested by 2 acids (HCl and HNO3) before measurement of the gold content by an AA machine. • The QC procedures are industry best practice. The laboratory is accredited and uses its own certified reference material. The laboratory has 2 duplicates, 2 replicates, 1 standard and 1 blank per 50 fire assays. • EXG submits blanks at the rate of 1 in 50 samples and certified reference material standards at the rate of 1 in 20 samples in the normal run of sample submission numbers. As part of normal procedures EXG examines all standards and blanks to ensure that they are within tolerances. Additionally, sample size, grind size and field duplicates are examined to ensure no bias to gold grade exists.
Verification of sampling and assaying	• *The verification of significant intersections by either independent or alternative company personnel.* • *The use of twinned holes.* • *Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.* • *Discuss any adjustment to assay data.*	• The competent person has inspected selected drill core and RC chips on site to verify the correlation of mineralized zones between assay results and lithology/alteration/mineralization. • Holes were not specifically designed to twin pre-existing holes. • Primary data is sent digitally every 2-3 days from the field to EXG's Database Administrator (DBA). The DBA imports the data into the commercially available and industry accepted DataShed database software. Assay results are merged when received electronically from the laboratory. The responsible geologist reviews the data in the database to ensure that it is correct and has merged properly and that all data has been received and entered. Any variations that are required are recorded permanently in the database.

		• No adjustments or calibrations were made to any assay data used in this report.
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.*	• Hill Minerals – All Collars located on Local Grid by unknown method. Local Grid to GDA95_51 transformation parameters known. Holes generally not downhole surveyed but considered low risk as most holes were < 60m in length. • Aberfoyle – All Collars located on Local Grid by unknown method. Local Grid to GDA95_51 transformation parameters known. Holes routinely downhole surveyed usually every 30m by unknown method. • Halcyon – Drill Collars surveyed by Datum Surveys using DGPS. AGD84_51 Grid system. Holes downhole gyro surveyed every 10m. • EXG - All drill holes have their collar location recorded from a hand held GPS unit. Subsequent to drilling holes were picked up using RTKGPS by contracted surveyors. Downhole surveys are completed every 30m downhole by drill rig personnel. • EXG routinely contracted down hole surveys during the programmes of exploration drilling for each RC and DC drill hole completed using either digital electronic multi-shot tool or north seeking gyro, both of which are maintained by Contractors to manufacturer specifications. • All drill holes and resource estimation use the MGA94, Zone 51 grid system. • The topographic data used was obtained from consultant surveyors and is based on a LiDAR survey flown in 2012. It is adequate for the reporting of Exploration Results and subsequent Mineral Resource estimates.
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 nominal exploration drill spacing is 15m x 15m to a depth of ~60m. Deeper drilling is usually at a nominal 30m x 30m drill spacing. • This report is for the reporting of the Mineral Resource Estimate. The drill spacing, spatial distribution and grade continuity is sufficient to support the JORC classification of material reported within this report and is appropriate for the nature and style of mineralisation being reported. • Sample compositing to 2m and 1m was applied to the resource estimation only.
Orientation of data in relation to geological structure	• *Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type.* • *If the relationship between the drilling orientation and the orientation of key mineralised structures is considered to have introduced a sampling bias, this should be assessed and reported if material.*	• The majority of drilling is to MGA grid east which is coincident with Local Grid east. The mineralized zones are North-South striking and sub-vertical so are perpendicular to the drilling direction. Drilling towards the east or west is equally effective. Structural logging of orientated drill core supports the drilling direction and sampling method. • No drilling orientation and sampling bias has been recognized at this time.
Sample security	• *The measures taken to ensure sample security.*	• Hill Minerals – Sample security protocols unknown. • Aberfoyle – Sample security protocols unknown. • Halcyon – Sample security protocols unknown. • EXG - RC samples are delivered directly from the field to the Kalgoorlie laboratory by EXG personnel, the laboratory then checks the physically received samples against an EXG generated sample submission list and reports back any discrepancies. • Drill core is transported daily directly from the drill site to EXG's secure core processing facility by EXG personnel with no detours. The core is then placed on racks within a secure shed and processed until it requires cutting. Core is then transported directly by EXG's staff to the Kalgoorlie laboratory where

		it is cut in half by laboratory staff and then sampled by EXG staff. The core is then prepared for assay in Kalgoorlie to the pulverizing stage whereupon the laboratory transports it using a contractor directly to their Perth based assay facility.
Audits or reviews	*The results of any audits or reviews of sampling techniques and data.*	• An internal review of sampling techniques and procedures was completed in March 2013. No external or third party audits or reviews have been completed.

2.2 Section 2 Reporting of Exploration Results - Excelsior

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

<table>
<tr><th>Criteria</th><th>JORC Code explanation</th><th>Commentary</th></tr>
<tr><td>Mineral tenement and land tenure status</td><td>• 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.</td><td>• The results reported in this Announcement are on granted Mining tenements held by GPM Resources Pty Ltd, a wholly owned subsidiary of Excelsior Gold Limited.
<table>
<tr><th>Tenement</th><th>Holder</th><th>Area (Ha)</th><th>Expiry Date</th></tr>
<tr><td>M24/083</td><td>GPM Resources</td><td>110.65</td><td>02/04/2024</td></tr>
<tr><td>M24/854</td><td>GPM Resources</td><td>2.61</td><td>03/04/2022</td></tr>
<tr><td>M24/886</td><td>GPM Resources</td><td>8.25</td><td>22/04/2025</td></tr>
<tr><td>M24/888</td><td>GPM Resources</td><td>1.23</td><td>22/04/2025</td></tr>
<tr><td>M24/121</td><td>GPM Resources</td><td>36.95</td><td>22/04/2025</td></tr>
</table>
• At this time the tenements are in good standing. There are no existing royalties, duties or other fees impacting on the EXG Kalgoorlie North Project.</td></tr>
<tr><td>Exploration done by other parties</td><td>• Acknowledgment and appraisal of exploration by other parties.</td><td>• Exploration by other parties has been reviewed and is used as a guide to EXG's exploration activities. This includes work by Hill Minerals, Aberfoyle and Halycon Group. Previous parties have completed both open pit and underground mining, geophysical data collection and interpretation, soil sampling and drilling.</td></tr>
<tr><td>Geology</td><td>• Deposit type, geological setting and style of mineralisation.</td><td>• The deposit occurs on the eastern limb of a narrow NNW trending structure, the Bardoc-Broad Arrow syncline within the Bardoc Tectonic Zone. In this zone the sequence comprises highly deformed fault slice lenses of intercalated Archaean mafic and ultramafic volcanics and metasediments. At the deposit scale, lithologies include ultramafics, basalts, schists, dolerites and porphyrys.
• All lithologies have been affected by pervasive foliation development but major shearing occurs in three zones; the Western Contact Shear, the 10,000E Shear and along the eastern sediment contact, the Excelsior Shear. In these areas, shearing and/or attendant alteration have resulted in deep troughs in the base of oxidation, particularly associated within the 10,000E Shear, where intense oxidation occurs to depths greater than 100 metres and up to 30 metres wide. Shear related troughs in oxidation are all steeply dipping and parallel to lithological contacts and foliation in both strike and dip.
• A 1-5 metre thick white quartz vein fills the interpreted position of the Excelsior Shear for a strike of a least 300 metres, and a prominent line of surface pitting traces the northern and southern extensions of the Excelsior Shear for several kilometres.Cross faulting has been observed at outcrop scale with minor probable displacement. Air photo interpretation by Aberfoyle suggested a strong ENE trending cross-fracture set that may have produced offsets in the stratigraphy. Correlation of lithology and mineralised zones along strike suggested that any movement along these structures is minimal

• Two major styles of mineralisation are evident:

Schist hosted mineralisation
The majority of gold mineralisation at Excelsior is hosted by schist within the 10,000E Shear. A steep sided trough in oxidation associated with intense shearing and alteration is a feature of this zone. Petrological descriptions note a fabric resembling a sheared veinlet stockwork, with quartz and quartz-carbonate</td></tr>
</table>

		veins rotated into alignment with foliation. Logging of both percussion chips and diamond core indicates little obvious vein quartz, although conformable quartz lenses occasionally give the rock a felsic appearance. Alteration within the schists is broadly very similar to that in more obvious vein stockworked material ie. quartz- magnesian carbonate (dolomite?) + fuchsite + sulphides. Fucshite is much more common in the schists and appears indicative of shearing. Gold is intimately associated with sulphides, most commonly pyrite and arsenopyrite. Sulphide grains are of several apparent ages, varying in texture from irregular spongy masses to large (up to 5mm) euhedral grains. Gold occurs predominantly either on grain boundaries, or in cracks in pyrite and arsenopyrite. Other gold has been described within quartz and calcite veins, and as lamellae interlayered with chlorite. Grain sizes of gold vary from submicron size to greater than 1mm, with most in the range 10-50 microns. In the sulphide zone, gold grain shapes are commonly octahedral, whilst in the oxide zone ovoids and composite grains in limonite are common, often with spongy or colloform textures and orange colouration typical of supergene gold. **Quartz vein "Stockwork" style** Much of the mineralisation at Excelsior is obviously quartz vein related. Exposures in open stopes and pits in the southern part of the deposit, and along the eastern and western shear contacts show abundant vein quartz, either as sheeted sets or ladder vein networks. Historical mining was concentrated on major strike parallel (conformable) quartz veins. Underground mapping by Aberfoyle showed common stockworking, particularly within doleritic or felsic intrusive rocks, around the major stoped veins. Mineralisation consists of quartz (carbonate) veinlets (1mm to > 1 metre), generally crudely conformable with foliation (although cross-cutting vein sets have been observed) surrounded by narrow bleached carbonate-sericite (fuchsite) alteration haloes with prominent sulphides (or iron-oxide pseudomorphs where oxidised). The sulphide assemblage appears to vary with host rock composition, but pyrite and arsenopyrite dominate. There is a positive correlation between logged quartz content and gold assay data in reverse circulation drill samples, although the presence of several generations of veining, some unmineralised, makes direct correlation tenuous. Selective sampling at surface and underground, and core logging shows low grade gold values (0.2 to 0.5g/t) and 'weak alteration away from quartz veins, and most gold either within veins, or associated with carbonate-sulphide adjacent to veins.
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:* o *easting and northing of the drill hole collar* o *elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar* o *dip and azimuth of the hole* o *down hole length and interception depth* o *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.*	• No exploration is being reported in this release therefore there are no specific drillholes to report.
Data aggregation methods	• *In reporting Exploration Results, weighting averaging techniques, maximum and/or minimum grade truncations (e.g. cutting of high grades) and cut-off grades are usually Material and should be stated.*	• No exploration drill data has been reported in this release, therefore there is no information regarding data aggregation. • Metal equivalents are not used

	• *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.*	
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 (e.g. 'down hole length, true width not known').*	• Mineralised lodes are sub-vertical and N-S striking. Most drilling is oriented to the east, dipping -60°. • Any intercepts reported are down hole lengths
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.*	• See diagrams in the body of this announcement
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 data has been reported in this release. Prior drilling by EXG has been reported to the ASX.
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.*	• Pit mapping was used to identify and locate mineralised structures. • Drill core observed • Metallurgical and Geotechnical test work completed
Further work	• *The nature and scale of planned further work (e.g. 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.*	• Application of metallurgical, geotechnical and cost parameters to establish an ore reserve for Excelsior deposit.

2.3 Section 3 Estimation and Reporting of Mineral Resources - Excelsior

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

Criteria	JORC Code explanation	Commentary
Database integrity	• *Measures taken to ensure that data has not been corrupted by, for example, transcription or keying errors, between its initial collection and its use for Mineral Resource estimation purposes.* • *Data validation procedures used.*	• Digital data from historic drilling is compared to hard copy reports to verify data integrity. • Data is logged in the field directly into the Geobank mobile device. Lab submission sheets are digitally recorded in the same way. Assay data are received from the laboratories in an electronic format and are imported directly into a standard DataShed system. All data have been validated by the EXG Database Administrator and geological management prior to inclusion in the resource estimate. • Any errors recorded from the various validation processes are manually checked and correlated back to the original collection of data. If necessary, field checks are made to confirm validation issues.
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.*	• Mr Ross Whittle-Herbert visited the site on numerous occasions to view ore geometries in the open pit and review RC chips and diamond core.
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 geology of the system and the gold distribution is complex, however there is good continuity of mineralisation established by 15m x 15m close spaced drilling near surface and 30m x 30m drilling at depth. The ore body is broad (up to 30m wide) and extends for 800m along strike. • The use of historical drilling provides a level of uncertainty as the company cannot validate the collar location and downhole survey data. Although holes were not deliberately twinned, ore grade intercepts in recent (EXG) drilling were intersected at similar depths and similar grades to nearby historic holes. • The lithology units have been modelled using drilling data and consist of a north-south striking, sub-vertical sequence of tuffaceous and pelitic sediments and minor intercalated volcanics and intrusives bounded by massive komatiitic flow rocks. Mineralisation is oriented N-S within 3 shear systems. The extensive shearing (foliation and alteration makes identification of protoliths and grade correlations difficult. • Structural continuity of the shear systems is extensive. The grade continuity within the shears is less continuous and likely affected by changes in host lithology.
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.*	• Mineralisation extends 800m north/south, 100m east/west and 240m in elevation.
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.*	• EXG has used 3DM wireframes to constrain the mineralised shear zones. All other lodes have been interpreted on a sectional basis using the available exploration drilling data on variable spacing. • Raw assay samples were uniquely coded to the mineralisation domain they fall within. A numerical code representing the domain number was assigned to each sample interval in a "Domain" field. On the basis of the generally broad nature of mineralisation, proposed mining on 2.5m flitches, and high grade variability, a 2m down hole composite was selected for this estimation. For narrower lodes a 1m composite was chosen. Composites were coded with the wireframe code they fall within. A minimum composite length of 0.75x composite length was adopted so that for a 2m composite the minimum composite length is 1.5m. Residual composites were discarded and not used in the estimation. • It was evident that some of the estimation domains contained extreme outlier gold values. The moderately positively skewed gold distributions

	• *Estimation of deleterious elements or other non-grade variables of economic significance (e.g. sulphur for acid mine drainage characterization).*
	• *In the case of block model interpolation, the block size in relation to the average sample spacing and the search employed.*
	• *Any assumptions behind modelling of selective mining units.*
	• *Any assumptions about correlation between variables.*
	• *Description of how the geological interpretation was used to control the resource estimates.*
	• *Discussion of basis for using or not using grade cutting or capping.*
	• *The process of validation, the checking process used, the comparison of model data to drill hole data, and use of reconciliation data if available.*
		mean that conventional linear estimation methods, such as Ordinary Kriging ("OK") are very likely to produce over-smoothed block grade estimates. For this reason, it was decided to undertake grade estimation using the non-linear Localised Uniform Conditioning ("LUC") method.
		• The following criteria were considered when choosing gold grade top cuts:
		  ◦ The coherence and stability of the upper tail of the gold grade distribution;
		  ◦ Visual inspection of the spatial location of outlier values;
		• The statistics show that in most cases there is only a small reduction in mean grade and variability following top cutting.
		• The LUC estimates were implemented using the Minestis® software package before being transferred into a Micromine™ block model. Supervisor software was used for geostatistics, variography and block model validation.
		• No consideration has been made to by-products.
		• The estimation panel size used was 8mE x 16mE x 10mRL. An SMU block size of 4mE x 8mN x 2.5mRL was chosen (no rotation) for use in the localisation process. This SMU block size is considered appropriate for the generally broad nature of mineralisation where a highly selective mining method (dictated by an even smaller SMU size) is considered unlikely. While the data spacing in areas other than near surface would be considered too wide for such a small block size if conventional linear estimation methods were used, EXG has used the LUC method, which is suited to estimating the grade distribution of smaller blocks using wide spaced data.
		• Interpolation parameters – the search ellipse was aligned to the mineralised trend of each domain and oriented the same as the modelled rotations defined from the variography. A minimum of 8 samples and a maximum of 32 samples were used with a maximum of 4 samples per borehole. Two search passes were carried out, with the first having a maximum distance of 80m and the second up to 320m. Classification was used to reduce confidence in less well estimated blocks.
		• Validation was completed
		  ◦ visually, comparing block estimated grades to local drilling and;
		  ◦ Using swath plots on a N-S, E-W and depth and
		  ◦ Comparing estimated grades to composite grades on a domain by domain basis.

Moisture	• *Whether the tonnages are estimated on a dry basis or with natural moisture, and the method of determination of the moisture content.*	• Tonnages were based on a dry basis.
Cut-off parameters	• *The basis of the adopted cut-off grade(s) or quality parameters applied.*	• The selection of mineralised domains has used geological factors such a logged quartz and sulphides in conjunction with a ~0.3g/t Au cut off which represents the mineralised shear in all modelled domains. • The MRE has been reported above a 0.6g/t Au cut-off above a optimised pit shell at $2700

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.*	• This MRE has been undertaken on the assumption of open pit mining methods, the selection of SMU size was based on the scale of mining equipment likely to be used
		• The sensitivity of the Mineral Resource to variations in gold price was assessed by using the Micromine Pit Optimiser software to conduct various optimisations and/or sensitivity analysis at a wide range of gold prices. The optimisations assumed the following inputs:
		  ◦ Conventional open pit mining practises with cost assumptions established from recent open pit mining by EXG at the nearby Zoroastrian deposit;
		  ◦ Carbon-in-Pulp processing at a rate of 1.0Mtpa with costs from recent (April 2018) estimates from Mintrex PTY. LTD;
		  ◦ Metallurgical recovery of 92% (Fresh) and 94% (Oxide/Transition) based on EXG testwork;

		○ Dilution of 0% as the LUC model is considered diluted ○ Ore loss of 5%; ○ Generalised pit wall slopes of 32° to 42° for oxide, and 39° to 46° in transition and 42° to 49° in fresh rock, and; ○ WA Government royalty of 2.5%.
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.*	• The Excelsior deposit has been mined successfully between 1985 and 1992 with no metallurgical issues. EXG has conducted metallurgical testwork on all ore types with recoveries in excess of 90% for all rock types.
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 currently mined open pit is filled with tailings which will be mined and encapsulated in the waste landform to minimise environmental disturbance..
Bulk density	• *Whether assumed or determined. If assumed, the basis for the assumptions. If determined, the method used, whether wet or dry, the frequency of the measurements, the nature, size and representativeness of the samples.* • *The bulk density for bulk material must have been measured by methods that adequately account for void spaces (vugs, porosity, etc), moisture and differences between rock and alteration zones within the deposit.* • *Discuss assumptions for bulk density estimates used in the evaluation process of the different materials.*	• A total of 188 SG determinations have been made from core and rock samples by both Aberfoyle and EXG (55 oxide, 35 transitional, 170 fresh). Aberfoyle used certified laboratories for SG determination. EXG used laboratory and in-house methods (weight in air and weight in water). • On balance EXG believe that there are sufficient data to allow the assignment of average values to the MRE block model but not enough to allow a spatially representative estimation of bulk density. EXG have used assumed bulk density values for ore and waste based on the interpreted weathering surfaces.
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 geological model and continuity of the mineralisation is currently reasonably well understood The MRE is classified into indicated and inferred to reflect the confidence in the estimate of different areas of the MRE. The classification is based on drill hole spacing, geological continuity and estimation quality parameters. ○ Indicated – Areas with drill spacing up to approximately 30mE x 30mN and with reasonable confidence in the geological interpretation. ○ Inferred – Areas with drill spacing in excess of 30mE x 30mN. • There is a high level of confidence in input data, geology and gold grades. At depth where drilling is more separated, confidence in geological and grade continuity is reduced and this is accounted for by having an inferred classification. • The Mineral Resource estimate appropriately reflects the view of the Competent Person
Audits or reviews	• *The results of any audits or reviews of Mineral Resource estimates.*	• A review of the April 2017 MRE has been undertaken by Cube Consulting PTY LTD.

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 relative accuracy of the Mineral Resource estimate is reflected in the reporting of the Mineral Resource in accordance with the guidelines of the 2012 JORC Code. • A number of measures were incorporated in the MRE to provide confidence in the estimate: o A conservative domain interpretation that limits volume and therefore tonnages in areas of sparse drilling o The estimate has used top-cuts to restrict the influence of high grade samples without having a detrimental effect on metal content. o Restricted search parameters o Adoption of the LUC estimation method provides an estimate of tonnages and grades at the SMU scale which can be achieved during mining • The block model estimate is a local resource estimate which has block sizes chosen at the expected “SMU” selection size. • Although previously mined, there are no coherent production records available with which to compare this estimate to.

JORC Code, 2012 Edition – Table 1 – BULLETIN SOUTH

Section 1 Sampling Techniques and Data

Criteria	JORC Code explanation	Commentary
	• *Nature and quality of sampling (e.g. 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 Bulletin South open pit was mined up to April 1994. The drill hole database consists of historic (pre-2003) and EXG drilling data. The historical data is concentrated mostly within the part that has been mined, whilst the EXG drill holes extend below the pit. • Historical holes consist of 562 grade control RB (possibly some form of RC), 70 RC holes and 9 grade control RC holes (RCGC). The grade control holes were drilled at an average spacing of 3m x 5m (N x E) and in general 1m samples were collected. • Complete details are un-available for historic drilling. • EXG holes, 2 diamond drill holes and 34 RC holes were drilled at variable azimuths at dips of -60° to -50° to optimally test for potential mineralized zones, at a nominal spacing of 40m x 20m (N x E). There are in total 677 drill holes used in the resource estimate. • All RC recovered samples were collected and passed through a cone splitter. Prior to drilling, the drill hole locations were pegged using either contract surveyors or hand held GPS units. After drilling, all drill hole locations are picked up by surveyors using a RTK system. All drill holes greater than 80m drilled by EXG are down hole surveyed by contractors using industry standard digital tools. • All RC drilling was sampled on one metre down hole intervals. The recovered samples were passed through a cone splitter and a nominal 2.5kg -3.5kg sample was collected. Where the original 1m samples were not collected, nominal 4m composite samples were collected by spear sampling individual 1m composite intervals. • Industry standard work undertaken by EXG has in most instances supported the grades and widths indicated by historic drilling – there is a risk inherent in this MRE that the historic drilling data is to some unknown extent biased or not representative as this cannot be demonstrated due to lack of QA/QC information.
	• *Drill type (e.g. core, reverse circulation, open-hole hammer, rotary air blast, auger, Bangka, sonic, etc) and details (e.g. 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).*	• Little information is available on the drilling techniques for the historical holes. However, holes have been drilled by Caris Corporation during 1984; by Getty Oil in 1984 and 1985 (using a Schramm T66H RC rig); by Aberfoyle during 1986, 1987; by MMC Management during 1993; by Goldfields during 1996 and 1998 (using a Schramm660 RC rig drilling 5.5" holes) and by Halycon during 2003 and 2004. • For (post 2011) EXG drilling, the RC drilling (Redmond Drilling – Schramm RC with cyclone attached) system employed the use of a face sampling hammer and a nominal 146mm diameter drill bit. The DC drilling is NQ2 size core (nominal 50.6mm core diameter) or HQ (nominal 63.5mm core diameter). • All EXG drill core is orientated by the drilling contractor with a down the hole Ace system. Core diameter is noted in the assay results table for DC assay results.
	• *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*	• Historical holes were generally sampled at 1m intervals which were split on site and reduced to samples of between 1-1.5kg in weight. A four metre composite was taken at the same time which was assayed for Au and As by Kalgoorlie Assay Laboratory. Intervals containing anomalous gold were re-assayed using the 1m samples. The Goldfield holes were sampled on 1m intervals, with samples being placed on the ground. All dry samples were riffle split to 4kg and all wet samples were scoop sampled. Alternate samples were submitted for analysis, and infill samples were subsequently tested once any anomalous zones were identified. All alternate 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.*	were analysed by either ALS or Analabs for gold by Fire Assay to 0.01ppm using a 50g charge • All EXG RC 1m samples are logged for drilling recovery by a visual estimate and this information is recorded and stored in the drilling database. At least every 10th metre is collected in a plastic bag and these are weighed when they are utilized for the collection of field duplicate samples. All samples received by the laboratory are weighed with the data collected and stored in the database. • The EXG DC samples are orientated, length measured and compared to core blocks placed in the tray by the drillers, any core loss or other variance from that expected from the core blocks is logged and recorded in the database. Sample loss or gain is reviewed on an ongoing basis and feedback given to the drillers to enable the best representative sample to always be obtained. • EXG RC samples are visually logged for moisture content, sample recovery and contamination. This is information is stored in the database. The RC drill system utilizes a face sampling hammer which is industry best practice and the contractor aims to maximize recovery at all times. RC holes are drilled dry whenever practicable to maximize recovery of sample. • The DC drillers use a core barrel and wire line unit to recover the core, they aim to recover all core at all times and adjust their drilling methods and rates to minimise core loss, i.e. different techniques for broken ground to ensure as little core as possible is washed away with drill cuttings. • Study of sample recovery vs gold grade does not show any bias towards differing sample recoveries or gold grade. The drilling contractor uses standard industry drilling techniques to ensure minimal loss of any size fraction.
	• *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 EXG RC samples are geologically logged directly into hand-held Geobank devices. • All EXG DC is logged for core loss, marked into metre intervals, orientated, structurally logged, geotechnically logged and logged with a hand lens with the following parameters recorded where observed: weathering, regolith, rock type, alteration, mineralization, shearing/foliation and any other features that are present • All EXG DC is photographed both wet and dry after logging but before cutting. • The entire lengths of EXG RC holes are logged on a 1m interval basis, i.e. 100% of the drilling is logged, and where no sample is returned due to voids (or potentially lost sample) it is logged and recorded as such. Drill core is logged over its entire length and any core loss or voids intersected are recorded.
	• *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.*	• EXG Exploration results reported for drill core are half core taken from the right hand side of the core looking down hole. Core is cut by contractors with a diamond core saw and all sampling is conducted by Excelsior geologists. • All EXG RC samples are put through a cone splitter and the sample is collected in a unique pre-numbered calico sample bag. The moisture content of each sample is recorded in the database. • The EXG RC samples are sorted, oven dried, the entire sample is pulverized in a one stage process to 85% passing 75 µm. The bulk pulverized sample is then bagged and approximately 200g extracted by spatula to a numbered paper bag that is used for the 50g fire assay charge. • The EXG DC samples are oven dried, jaw crushed to nominal <10mm, 3.5kg is obtained by riffle splitting and the remainder of the coarse reject is bagged while the 3.5kg is pulverized in a one stage process to 85% passing 75 µm. The bulk pulverized sample is then bagged and approximately 200g extracted by spatula to a numbered paper bag that is used for the 50g fire assay charge.

	• *Whether sample sizes are appropriate to the grain size of the material being sampled.*	• EXG RC and DC samples submitted to the laboratory are sorted and reconciled against the submission documents. EXG inserts blanks and standards with blanks submitted in sample number sequence at 1 in 50 and standards submitted in sample number sequence at 1 in 20. The laboratory uses their own internal standards of 2 duplicates, 2 replicates, 2 standards, and 1 blank per 50 fire assays. The laboratory also uses barren flushes on the pulveriser. • In the field every 10th metre from the bulk sample port on the cone splitter is bagged and placed in order on the ground with other samples. This sample is then used for collection of field duplicates via riffle splitting. RC field duplicate samples are collected after results are received from the original sample assay. Generally, field duplicates are only collected where the original assay result is equal to or greater than 0.1g/t Au. The field duplicates are submitted to the laboratory for the standard assay process. The laboratory is blind to the original sample number. • The results of this field duplicate process are within acceptable limits, indicating that the RC sample results are repeatable. • For DC, no core duplicates (i.e. half core) have been collected or submitted. • The sample sizes are considered to be appropriate for the type, style, thickness and consistency of mineralization located at this project. The sample size is also appropriate for the sampling methodology employed and the gold grade ranges returned.
	• *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 (e.g. standards, blanks, duplicates, external laboratory checks) and whether acceptable levels of accuracy (i.e. lack of bias) and precision have been established.*	• EXG has routinely used local Kalgoorlie Certified Laboratories for all sample preparation and analysis. The most commonly used laboratories have been SGS Australia and Bureau Veritas Australia which has two facilities in Kalgoorlie. No complete details of the sample preparation, analysis or security are available for either the historic AC, DD or RC drilling results in the database. • The assay method is designed to measure total gold in the sample. The laboratory procedures are appropriate for the testing of gold at this project given its mineralization style. The technique involves using a 40g sample charge with a lead flux which is decomposed in a furnace with the prill being totally digested by 2 acids (HCl and HNO3) before measurement of the gold content by an AA machine. • The QC procedures are industry best practice. The laboratory is accredited and uses its own certified reference material. The laboratory has 2 duplicates, 2 replicates, 1 standard and 1 blank per 50 fire assays. • EXG submits blanks at the rate of 1 in 50 samples and certified reference material standards at the rate of 1 in 20 samples in the normal run of sample submission numbers. As part of normal procedures EXG examines all standards and blanks to ensure that they are within tolerances. Additionally, sample size, grind size and field duplicates are examined to ensure no bias to gold grade exists.
	• *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.*	• No independent verification of significant intersections has been undertaken. • A number of RC holes have been drilled throughout the deposit to twin historical RC holes. These twinned holes returned results comparable to the original holes and were also used to collect geological information and material for metallurgical assessment. Both historical and new diamond drilling has been drilled to confirm geological interpretation and results obtained from RC drill holes. • Primary data is sent digitally every 2-3 days from the field to EXG's Database Administrator (DBA). The DBA imports the data into the commercially available and industry accepted DataShed database software. Assay results are merged when received electronically from the laboratory. The responsible geologist reviews the data in the database to ensure that it is correct and has merged properly and that all data has been received and entered. Any variations that are required are recorded permanently in the database. • No adjustments or calibrations were made to any assay data used in this report.

	• *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 holes have their collar location recorded from a hand held GPS unit. Downhole surveys are completed every 30m downhole. No detailed down hole surveying information is available for the historic RC or DD drilling. • EXG routinely contracted down hole surveys during the programmes of exploration drilling for each RC and DC drill hole completed using either digital electronic multi-shot tool or north seeking gyro, both of which are maintained by Contractors to manufacturer specifications. • All drill holes and resource estimation use the MGA94, Zone 51 grid system. • The topographic data used was obtained from consultant surveyors and is based on a LiDAR survey flown in 2012. It is adequate for the reporting of Exploration Results and subsequent Mineral Resource estimates. The original final pit survey has been used to deplete the resource model.
	• *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 nominal exploration drill spacing is 40m x 20m with some cross sections filled to 10m. This spacing includes data that has been verified from previous exploration activities on the project • This report is for the reporting of the Mineral Resource Estimate. The drill spacing, spatial distribution and quality of assay results is sufficient to support the JORC classification of material reported within this report and is appropriate for the nature and style of mineralisation being reported. • The majority of holes were sampled at 1m, but when this isn't the case, sample compositing to 1m has been applied.
	• *Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type.* • *If the relationship between the drilling orientation and the orientation of key mineralised structures is considered to have introduced a sampling bias, this should be assessed and reported if material.*	• The majority of drilling is to grid east or west. The bulk of the mineralized zones are perpendicular to the drilling direction. Field mapping and geophysical interpretations supports the drilling direction and sampling method. • No drilling orientation and sampling bias has been recognized at this time.
	• *The measures taken to ensure sample security.*	• RC samples are delivered directly from the field to the Kalgoorlie laboratory by EXG personnel on a daily basis with no detours, the laboratory then checks the physically received samples against an EXG generated sample submission list and reports back any discrepancies
	The results of any audits or reviews of sampling techniques and data.	• An internal review of sampling techniques and procedures was completed in March 2014. No external or third party audits or reviews have been completed.

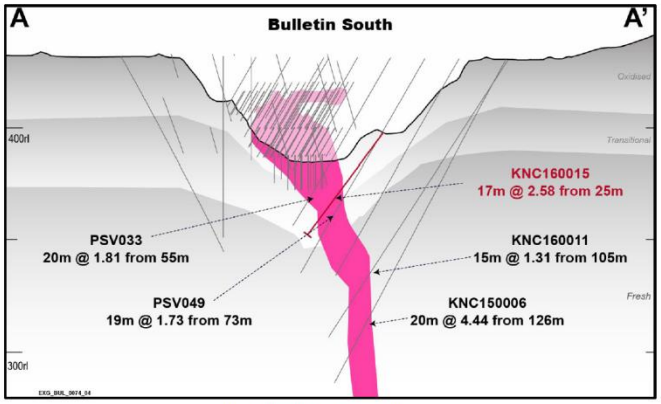
Section 2 Reporting of Exploration Results (Bulletin South)

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

Criteria	JORC Code explanation	Commentary
	• *Type, reference name/number, location and ownership including agreements or material issues with third parties such as joint ventures, partnerships, overriding royalties, native title interests, historical sites, wilderness or national park and environmental settings.* • *The security of the tenure held at the time of reporting along with any known impediments to obtaining a licence to operate in the area.*	• The results reported in this Announcement are on granted Mining tenements held by GPM Resources Pty Ltd, a wholly owned subsidiary of Excelsior Gold Limited. • At this time the tenements are believed to be in good standing. There is a royalty of $2 per tonnes of ore removed payable to third parties.
	• *Acknowledgment and appraisal of exploration by other parties.*	• Exploration by other parties has been reviewed and is used as a guide to EXG's exploration activities. Previous parties have completed both open pit and underground mining, geophysical data collection and interpretation, soil sampling and drilling. This report only comments on exploration results collected by EXG.

	• *Deposit type, geological setting and style of mineralisation.*	• The primary gold mineralisation at Bulletin South is predominantly associated with a quartz rich dolerite unit with a strongly porphyritic texture and associated second order structures. The gold mineralisation is associated with quartz, carbonate, sulphide alteration. • Whilst structure and primary gold mineralisation can be traced to the surface, depletion has occurred in the top 10-20m • Historical working and shafts exist within the area, detailed mapping and sampling of these workings and structural measurements from orientated diamond core drilling assists with the geological interpretation.
	• *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:* o *easting and northing of the drill hole collar* o *elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar* o *dip and azimuth of the hole* o *down hole length and interception depth* o *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 table below summarise the recent exploration results carried out on Bulletin South during 2016. • No results from previous unreported exploration are the subject of this announcement
	• *In reporting Exploration Results, weighting averaging techniques, maximum and/or minimum grade truncations (e.g. 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 high grade cuts have been applied to assay results. RC assay results are distance weighted using 1m for each assay. • Intersections are reported if the interval is at least 1m wide at 1.0g/t Au grade or for composite samples greater than 1.0 g/t Au. Intersections greater than 1m in downhole distance can contain up to 2m of ow grade of barren material. • No metal equivalent reporting is used or applied.
	• *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 (e.g. 'down hole length, true width not known').*	• The intersection width is measured down the hole trace and does not correspond to the true width. The cross section below demonstrates the relationship between true width and downhole width to be viewed.

HOLE NUMBER	EAST (MGA94 Z51)	NORTH (MGA94 Z51)	AHD RL (m)	FINAL DEPTH (m)	COLLAR DIP	COLLAR AZIM (Magnetic)	FROM (m)	TO (m)	LENGTH (m)	GRADE (Au g/t)
KNC160012	334047.18	6634838.27	389.55	45	-75	79	**5**	**14**	**9**	**2.45**
							19	20	1	1.11
							33	36	3	2.8
KNC160013	334062.19	6634820.57	391.96	45	-65	240	**17**	**30**	**13**	**1.63**
							34	36	2	1.32
							42	45	3	0.99
KNC160014	334077.09	6634806.77	393.84	50	-55	240	**8**	**23**	**12**	**1.74**
							27	**36**	**9**	**1.33**
							39	41	2	2.82
KNC160015	334083.1	6634786.64	393.55	55	-53	240	**25**	**42**	**17**	**2.58**
KNC160016	334082.46	6634765.56	398.08	54	-60	240	**23**	**34**	**11**	**3.64**
KNC160017	334080.42	6634747.74	400.73	60	-61	227	28	33	5	1.23
							36	**44**	**8**	**1.51**
KNC160018	334058.25	6634725.34	403.56	45	-70	240	29	31	2	1.65
							35	36	1	1.13
							38	39	1	3.72
KNC160019	334045.7	6634874.32	425.57	45	-50	255	21	22	1	1.46
							29	35	6	1.52
KNC160020	334010.48	6634842.52	419.66	60	-55	63	**4**	**11**	**7**	**1.56**
							10	11	1	6.32
							34	35	1	1.13
							41	46	5	1.8
							50	51	1	1.5

		 Figure 2 Bulletin South Cross Section • Data collected from historical workings and existing shafts as well as structural measurements from orientated diamond drill core show the primary ore zones to be sub-vertical in nature with a general NW strike.
	• *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.*	• Refer to EXG ASX announcement on Operation Update dated 22 December 2016
	• *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.*	• Refer to EXG ASX announcement on Operation Update dated 22 December 2016
	• *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.*	• No other exploration data is considered meaningful and material to this announcement
	• *The nature and scale of planned further work (e.g. 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.*	• Future exploration has not been planned and may involve the drilling of more drill holes, both DC and RC, to further extend the mineralised zones and collect additional detailed data on known mineralised zones. • Further future drilling areas are not highlighter as they are not yet planned.

Section 3 Estimation and Reporting of Mineral Resources (Bulletin South)

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

Criteria	JORC Code explanation	Commentary
	• *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.*	• EXG data is logged in the field directly into the Geobank mobile device. Lab submission sheets are digitally recorded in the same way. Assay data are received from the laboratories in an electronic format and are imported directly into a standard DataShed system. All data have been validated by the EXG Database Administrator and geological management prior to transmission to Cube. • Any errors recorded from the various validation processes are manually checked and correlated back to the original collection of data. If necessary, field checks are made to confirm validation issues.

	• *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.*	• Mr Rick Adams and Mr Mike Millad visited the property from the 4th May 2016 to 5th May 2016 to review the geology and historic mining activities.
	• *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 geology of the mineralised system appears to be relatively simple however the gold distribution is more complex. Cube believes that the continuity of mineralisation and volume controls are well established where drilling is at a nominal 40 x 20 m hole spacing. • The use of historical drilling provides a level of uncertainty as the company cannot validate the QAQC data and downhole survey data. As such at several locations through the deposit the company has twinned historical holes to confirm results and location. • The close spaced (possibly RC) grade control drilling and mining pit floor exposure has allowed a detailed re-evaluation of the geological controls on mineralisation by EXG. The new interpretation of these controls impacts the estimation of the Mineral Resources and has triggered the need for the re-estimation. • The result of this revision is that the majority of the mineralisation of economic interest is associated with the (45-50-degree east dipping) ladder veins rather than the previous interpretation of a steeper shear hosted (80 to 90-degree dipping) discontinuous mineralisation.
	• *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 main body of mineralisation extends approximately 300m along strike (NNW-SSE- Azi 335 degrees), an average of 40m across strike (ENE-WSW) and 150m in elevation. Mineralisation is present at surface and is exposed on the historic pit floor and walls from previous mining activities.
	• *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 (e.g. sulphur for acid mine drainage characterization).* • *In the case of block model interpolation, the block size in relation to the average sample spacing and the search employed.* • *Any assumptions behind modelling of selective mining units.* • *Any assumptions about correlation between variables.*	• Cube has used 3DM wireframes to constrain the mineralised zone, based on exploration (40m x 20m) and GC (3m x 5m) drill hole data. The wireframes were constructed on a sectional basis using the Surpac software package. • A low grade "waste" domain was also modelled around the main mineralisation domain to the extents of the available drill data. • Drill intervals falling within the wireframed estimation domains were coded in the database. Composites of gold assay values were then generated using the Surpac™ "best-fit" method. On the basis of sample size, selectivity assumption (2mE-W x 5mN-S x 2.5mRL) and selected estimation methodology, Cube chose to use 1m downhole composites for this estimation. • It was evident that the estimation domains contained a limited number of outlier gold values, necessitating the use of gold grade top cuts to mitigate estimation risk. The highly positively skewed gold distributions mean that conventional linear estimation methods, such as Ordinary Kriging ("OK") are very likely to produce over-smoothed block grade estimates. For this reason, it was decided to undertake grade estimation using the non-linear Localised Uniform Conditioning ("LUC") method. • The following criteria were considered when choosing gold grade top cuts: o The coherence and stability of the upper tail of the gold grade distribution; o Visual inspection of the spatial location of outlier values; o Sensitivity tests to gauge the effect of various top cuts on mean gold grade; • The statistics show that there is not a large reduction in mean grade (approx. -7%) following top cutting of the main mineralisation domain (100). Cube therefore does not consider the use of top cutting to be a material risk with respect to the estimation. • The LUC estimates were implemented using the Isatis® software package before being transferred into a Surpac™ block model. • No consideration has been made of by-products.

	• *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.*	• A number of check estimates have been undertaken by Cube as part of the validation steps. Firstly, a comparison of an OK grade control model, based only on the tight 3m x 5m grade control drilling, to an LUC model undertaken using only the exploration drill data was undertaken within the volume covered by GC drilling (now mostly mined out). Results indicate that the LUC model based on only exploration data reconciles to the OK GC model to within 9% of contained metal at 0.6g/t and 0.9g/t Au cut-offs. This comparison gives some indication as to how the LUC method might perform in the remaining in-situ ground, which is largely informed by exploration data only. The final reported LUC model, however, is based on all available data (ie. both exploration and GC drill data). • Inverse Distance Squared (ID^2) check estimates were undertaken for comparison to both the LUC model based on only the resource data, and also for the reported LUC model based on resource and GC data. This comparison demonstrated a good level of agreement between global mean ID^2 and LUC grades. • The LUC model was also validated by comparison of the block estimates to the informing composite data: o Global mean undeclustered and declustered composite grades were compared to the block estimates. Agreement was good. o Semi-local comparison of undeclustered and declustered composite grades to block estimates was undertaken using swath plots by northing and RL slices. Observed agreement was good. o Visual 3D comparison of raw assay grades to LUC block estimates revealed good spatial correspondence. • Block size for gold grade estimation was chosen in consultation with EXG and with due regard to data spacing, orebody geometry, and practical mining considerations. The estimation panel size used was 6mE-W x 10mN-S x 5mRL. An SMU block size of 2mE-W x 5mN-S x 2.5mRL was chosen (no rotation) for use in the localisation process. This SMU block size corresponds exactly to the current block size for grade control modelling and mining selection at the nearby and currently active Zoroastrian Central pit, conforms to the mining flitch height and is elongated in the approximately the same direction (north-south axis) as the trend of the mineralised envelope at Bulletin South. While the data spacing in areas other than the grade control drilled volume would be considered too wide for such a small block size if conventional linear estimation methods were used, Cube has used the LUC method, which is intended specifically for estimating the grade distribution of smaller blocks.
	• *Whether the tonnages are estimated on a dry basis or with natural moisture, and the method of determination of the moisture content.*	• Tonnages were estimated on a dry basis.
	• *The basis of the adopted cut-off grade(s) or quality parameters applied.*	• The selection of mineralised domains has used geological factors such a logged quartz and sulphides in conjunction with a 0.2 to 0.3g/t Au cut off which represents the mineralised shear modelled domains. • The MR has been reported above a 0.6g/t Au cut-off. This has been chosen to allow the application of modifying factors for the estimation of Mineral Reserves which indicate an economic cut-off of 0.9 to 1g/t Au.
	• *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.*	• This MRE has been undertaken on the assumption of open pit mining methods, the selection of SMU size was based on the scale of mining equipment currently in use at Zoroastrian Central.

	• *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.*	• Metallurgical testwork was conducted by ALS Global, on one sample of representative material, in their Perth laboratory. Overall cyanide leaching of Au in a 24 hour period was 98.2% with 77% being recovered by gravity.
	• *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.*	• There are no existing environmental issues concerning the extraction or disposal of waste or tailing material known to Cube.
	• *Whether assumed or determined. If assumed, the basis for the assumptions. If determined, the method used, whether wet or dry, the frequency of the measurements, the nature, size and representativeness of the samples.* • *The bulk density for bulk material must have been measured by methods that adequately account for void spaces (vugs, porosity, etc), moisture and differences between rock and alteration zones within the deposit.* • *Discuss assumptions for bulk density estimates used in the evaluation process of the different materials.*	• There are limited sources of relevant experimental bulk density data consisting of 14 determinations from 2015 EXG DD. • These determinations are all on competent rock both within the mineralised porphyry and surrounding waste mafic rocks. • On balance Cube believe that there are sufficient data to allow the assignment of average values to the MRE block model but not enough to allow a spatially representative estimation of bulk density. Cube have used assumed bulk density values based on the interpreted weathering surfaces.
	• *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 geological model and continuity of the mineralised domain is currently well understood due to the GC drilling and mining exposure of the mineralised lodes. The MRE has been validated by "ground truth" methods whereby an estimate using only resource exploration drilling on a 40x20m collar spacing has been compared to a volume estimated by close spaced GC drilling. The results of this comparison confirm that the deeper MR areas estimated outside the grade control volumes can be expected to be representative of what will be defined for mining by the GC data to within +-10% contained metal. • The MRE has been classified as Measured, Indicated and Inferred based on the assessment of geological continuity, sample representivity and spacing and geostatistical summary parameters derived from the variogram models. • Mineralisation classified as Measured is within the primary porphyry domain with an average distance to sample data of 7-10m and an average slope of regression parameter of 0.72. • Mineralisation classified as Indicated is within the primary porphyry domain with an average distance to sample data of 12m and an average slope of regression parameter of 0.44. • Mineralisation classified as Inferred is within the primary porphyry domain or as isolated veins within the waste domain with an average distance to sample data of 18m and an average slope of regression parameter of 0.26. • Inferred material has been included in the waste domain to ensure that during potential mining these smaller occurrences are grade control checked for mineable volumes. • The Mineral Resource estimate appropriately reflects the view of the Competent Person

	• *The results of any audits or reviews of Mineral Resource estimates.*	• No independent audits or reviews have been undertaken on the Dec 2016 MRE
	• *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 conditional simulation methodology of gold grade has been used to quantify potential variations in the grade, tonnes and metal for portions of the estimate. The simulated outcomes at a 0.5g/t Au cut-off demonstrate that probable variations in grade (+-14.3%), tonnes (+-5.0%) and metal (+-15.2%) are within reasonable expectations for moderate-to-high confidence. This relative accuracy summarised relates to a global mineral resource estimate of in-situ grade and tonnes within the potential pit design. Note that the conditional simulation cannot account for additional uncertainty due to sampling bias, volume or density estimation. • The relative accuracy of the Mineral Resource estimate is reflected in the reporting of the Mineral Resource in accordance with the guidelines of the 2012 JORC Code. • The block model estimate is a local resource estimate which has block sizes chosen at the expected "SMU" selection size.

JORC Code, 2012 Edition – Table 1 Mulwarrie

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 (e.g. 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 30g 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 Mulwarrie Gold drill sample data has been collected by various exploration companies between 1983 and 1996 Drilling programs included Rotary Air Blast (RAB), and Reverse Circulation (RC) drilling techniques, the current historical database includes 453 holes for a total of 14,321m drilling and 7010 assay samples. • Collar details and mineralized drill intercepts are in the process of being verified. • The historical drilling programs were completed by Pancontinental between 1983 and 1988. • Several small subsequent drilling campaigns were undertaken by between 1989 and 1996. • The spacing of drill hole collars is variable. The gold mineralisation has generally been defined by drill holes on a cross- section line spacing, roughly perpendicular to the strike of the mineralised zones between 10 m and 25 m apart. • The June 2017 drill program completed by Spitfire Materials Limited(SPI) totaled 24 RC holes for 2915m and 1 Diamond drill hole of 99.6m. • The August 2017 drilling program by SPI totaled 24 RC holes for 2780m • The November- December 2017 drilling program by SPI totaled 27 RC holes for 3517m • Drill holes were oriented to return the best intersections of the mineralization, on a local grid northing of 323 degrees. Most of the drill holes were oriented roughly perpendicular to strike. • The Reverse Circulation (RC) percussion drilling was generally carried out by a T64 Schramm which used a nominal 5.25 inch RC bit

Criteria	JORC Code explanation	Commentary
		diameter. • The recent RC drilling program was completed using a 685 Schramm with additional auxiliary & booster compressors using a 5.75 inch face sampling hammer. • The recent diamond hole was completed using a McCulloch DR800. • RAB drilling was carried out, but there are no details of the type of rig or bit size used.
Sub-sampling techniques and sample preparation	• *Drill type (e.g. core, reverse circulation, open-hole hammer, rotary air blast, auger, Bangka, sonic, etc.) and details (e.g. 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.).*	• Drilling programs at Mulwarrie included Rotary Air Blast (RAB), and Reverse Circulation (RC) drilling techniques. • Hole depths range from 3m to 205m. • RAB drilling makes up 50.7% and RC drilling makes up 49.3% of the historical exploration drilling completed at Mulwarrie. • Several campaigns of drilling were undertaken by the historical companies, between 1983 and 1996. • Company drilling rigs and professional drilling contractors were used by the historical exploration companies. • The recent diamond hole was drilled HQ to 70.7m & the remainder NQ2 to 99.6m. All core was orientated from 17MWDD001. • The June and August 2017 RC drilling was completed using a face sampling hammer with 5.75 inch bit.
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.*	• For RAB and RC drilling, the overall recoveries are assumed to be adequate. • Minor sample recovery problems were noted in the historical reports when drilling encountered faulted/fractured ground. No sample recovery problems were encountered with the recent diamond & RC drilling. • The results discussed herein are exploration results only, and no allowance is made for recovery losses that may impact future mining.
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.*	• The geological logging was appropriate for the style of drilling and the lithology's encountered. • Geological logs are available for most holes. However, logging was often rudimentary and some logs were not recorded or not included in the reports. Detailed logs were recorded for the recent diamond & RC drilling. • Logging is qualitative, with the exception of some quantitative logging of sulphide, quartz veining and alteration content. Percent sulphide & quartz veining was recorded for the recent drilling. • Drill hole logging data was entered into the Mulwarrie database directly from historical drilling reports and assay reports. Hard copy logs were entered by hand for the recent drilling. • No geotechnical logs are available for the historical drilling. Geotechnical logging was completed on diamond hole 17MWDD001.
Subsampling 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 one-metre intervals are collected via a cone splitter directly attached to the cyclone when dry. All samples were dry. Individual samples were approximate 3.5kg. The bulk residue was collected via plastic drums and laid out in order on the drill pad. • Individual meter samples were submitted to the laboratory. Four meter composites were collected for the remainder of the drill holes and also submitted. • The sample collection, splitting and sampling for this style of drilling is standard industry practise and fit for purpose. • Core was cut with quarter and half core sampled with a maximum sample length being 100cm and a minimum length being 30cm. From the core drilling, only zones considered prospective for gold have been sampled.
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*	• All samples for Spitfire's drill programs were assayed by Fire Assay with AAS finish for Au.

Criteria	JORC Code explanation	Commentary
	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.*	• The majority of the samples have been prepared and assayed by industry standard techniques for gold deposits using well established laboratory services (NAGROM). • Recent checking of fire assays by bulk Leachwell and screen fire methods to guard against the possible presence of coarse free gold grains and to investigate refractory character of mineralization. • No geophysical tools, spectrometers or handheld XRF's were used. • Field duplicates were submitted every 20th sample, as well as blind reference standards for Spitfire's drilling
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.*	• One diamond hole 17MWDD001 has recently been completed to twin historical RC hole MWRC628 to verify sampling and assaying. Historical RC holes MWRC604 & MWRC630 have also been twinned in the recent RC drilling program. • The CP for Spitfire has visited the Mulwarrie Gold Project in the field and confirmed the location of most drill collars and areas of historical gold mining with a DGPS. • The drill sample assay data has been captured by Spitfire and entered into a new Microsoft Access database.
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.*	• Downhole survey measurements were collected for some of the historical RC holes using a single shot downhole survey tool. For many of the shallow holes, only one top of hole survey was completed at the collar position, noting the azimuth and dip at the start of the hole. North seeking gyro down hole surveys were completed for the recent RC drilling. • The Mulwarrie Gold project drill holes were drilled on a local grid, sub-parallel to strike (orientated at 323 degrees magnetic). Most drill hole collars were surveyed using a standard GPS and later checked with a differential GPS. • The co-ordinate system is zone 51, GDA94 datum. Drill collars are believed to be accurate. • All available drill collar locations were checked in the field with a DGPS, and found to be within 0.2m for existing easting and northing MGA94 coordinates.
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 spacing of the drill hole collars is variable. The gold mineralisation at the Mulwarrie Gold Project has generally been defined by drill holes on a cross section line spacing, roughly perpendicular to the strike of the mineralised zones at 15m,20m, 25m and 50m, with an average on-section spacing of 10m to 15m. • RC sampling, in general, was collected on 1m intervals down hole in mineralised zones including the recent program. Some alternate 1m samples were collected in non mineralised footwall and hanging wall lithologies in historical holes. 3m composites were collected in non mineralised lithologies in the recent RC drilling. • RAB sampling was collected on a combination of 1m, 2m, 3m and 4m composites in mineralised zones. Some alternate 2m, 3m and 4m compositing was carries out in non mineralised footwall and hanging wall lithologies. • The drill density is sufficient to estimate a Mineral Resource.
Orientation of data in relation to geological structure	• *Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type.* • *If the relationship between the drilling orientation and the orientation of key mineralised structures is considered to have*	• Exploration drilling is generally perpendicular to mineralized bodies or shear zone. • No orientation based sampling bias has been identified in the data at this point.

Criteria	JORC Code explanation	Commentary
	introduced a sampling bias, this should be assessed and reported if material.	
Sample security	• *The measures taken to ensure sample security.*	• No chain of custody was documented by the historical companies. • The chain of custody is assumed to be as per industry best practice for the time.
Audits or reviews	• *The results of any audits or reviews of sampling techniques and data.*	• A review of the historical sampling techniques is not possible. • There has been no external audit or review of the database compiled by Goldfield Argonaut or processes to estimate the Exploration Target.

Section 2 Reporting of Exploration Results Mulwarrie

(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.*	• The Mulwarrie Gold Project is secured by 2 granted mining tenements M30/119 and M30/145 (totaling 180 Ha). • All tenements are in good standing
Exploration done by other parties	• *Acknowledgment and appraisal of exploration by other parties.*	• A summary of previous exploration at Mulwarrie Gold Project is included below; • The Mulwarrie District, including the Mulwarrie Project area has a recorded production of 26,344 ounces of gold from 19,728 tonnes for an average grade of 41.53 g/t Au (1903-1910). • 1983 -1988 – Pancontinental Mining Limited completed gridding, geological mapping, aeromagnetic and ground surveys, IP surveys, regional soil sampling, costeaning, RAB and RC drilling. • Callion, a subsidiary of the German based corporation, Thyssen Schachtbau GMBH (TSG) commenced mining at Mulwarrie Central West in November 1989, with New Holland Mining N.L. (20% interest) and H.F. Reif (6.25% interest). A total of 24,344 tonnes @ 3.88 g/t for 94.5 kg (3,037 ounces) of gold was recovered. • In 1995 Consolidated Minerals had secured the tenements and in 1996 completed 34 RC holes (MWRC 601-634) for a total of 2,977 metres and to a maximum depth of 126 metres. • Post 1997 and up to the date that Ethan Minerals Ltd signed option agreements with Reif and Hoppmann the latter parties carried out their own exploration programs within the Mulwarrie tenements. This work consisted of RC drilling, reconnaissance prospecting and loam sampling. • In 1998 Reif and Hoppmann carried out an RC drilling program of 8 drill holes. MWRC 635 – MWRC 642 which was focused directly south of the Central Pit between 9590 North and 9620 North. The individual assay results from this program cannot be located in available reports.
Geology	• *Deposit type, geological setting and style of mineralisation.*	• The Mulwarrie Gold Project lies within a 10km wide greenstone belt which forms the northwest extension of the Coolgardie Line. The structurally dominant north trending Mt. Ida fault lies approximately 4km east of the Mulwarrie Mining Centre. Most of the lithologies within this greenstone belt are steeply dipping and well foliated along a NNW/SSE trend. • Gold mineralisation at Mulwarrie is associated with flat to steep dipping quartz reefs with strong diopside, biotite, epidote and carbonate alteration haloes. Pyrrhotite and pyrite development is also strong within and adjacent to the quartz reefs. Minor amounts of chalcopyrite, galena and sphalerite are also associated with gold mineralisation. Gold is found within quartz reefs, within biotite selvages to the quartz veins and also in sheared & altered country rocks. • Benson (1996) interpreted the mineralised zones as being lens shaped pods and as being structurally and stratigraphically controlled with the zones commonly occurring at felsic/mafic contacts, within shear zones and at metabasalt - metadolerite contacts.

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*
		• The **Mulwarrie** drilling sample data has been collected by historical exploration companies between 1983 and 1998 Drilling programs included Rotary Air Blast (RAB), and Reverse Circulation (RC) drilling techniques, the current database includes 453 holes for a total of 14,321 m drilling and 7010 assay samples.
		• Collar details and mineralized drill intercepts are in the process of being verified, additional twinning of historical holes is required. Historical drill intercepts have been included in the appendix.
		• One HQ/NQ2 diamond hole 17MWDD001 was recently completed for 99.6m. 35

Criteria	JORC Code explanation	Commentary
	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.*	samples were collected for assay. • In June 2017 24 RC holes 17MWRC001-026 were recently completed for 2,915m. 2,406 1m & 3m composite samples were collected for assay. • In August 2017 24 RC holes 17MWRC027-101 were recently completed for 2,780m. 2359 1m & 3m composite samples were collected for assay (including duplicates, blanks and standards)
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.*	• The mineralized drill intersections will be reported as down hole intervals and were not converted to true widths. True widths may be up to 50% less than drill intersections pending confirmation of lode geometry. Where gold intersections are amalgamated, a weighted average is calculated & repeats were recorded, the average of all the samples was used. • Metal equivalent values are not reported in this report.
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').*	• The drilling was planned on local grid lines oriented perpendicular to the strike of the main shear zone. • Drill holes were oriented to return the best intersections of the mineralization, and drilled in a perpendicular manner. Most of the drill holes were oriented roughly perpendicular to strike (strike = 323 degrees), angled 50 to 70 degrees dip towards 233 degrees, in order to intersect the steeply NE dipping ore zones at a high angle.
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.*	• See diagrams in body of report.
Balanced reporting	• *Where comprehensive reporting of all Exploration Results is not practicable,*	• Due to the age of the historical drilling, drill sampling and assaying (1983 to 1996), the Consultant Geologist does not believe any of the previously reported resource estimates can be reported as Mineral Resources under the current 2012 JORC Code.

Criteria	JORC Code explanation	Commentary
	representative reporting of both low and high grades and/or widths should be practiced to avoid misleading reporting of Exploration Results.	• Additional drill coverage at Mulwarrie will ultimately lead to the reporting of a Mineral Resource, in accordance with the requirements of the JORC 2012 Code.
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.*	• The Mulwarrie Gold Project includes a wide range of additional historical exploration data including soil geochemistry, rock chip data, geological mapping data, historical mapping of underground workings, aeromagnetic and gravity data, aerial photography and costean data. Some of this data has been captured by Goldfields Argonaut and Spitfire Materials Ltd into a new Mulwarrie GIS database. The interpretation of this data is on-going. • No density measurements were reported by the historical exploration companies. • Metallurgical tests of selected RC samples including bottle roll cyanidation leach tests and rate of cyanidation tests were completed by Ammtec in 1986 and 1987 for Pancontinental. More recently bottle roll cyanidation leach tests prior to trial mining using a mobile gravity/CIL plant were also carried out by Goldfield Argonaut in 2015. Petrological examination of selected samples was also completed at the end of trial mining. Further metallurgical work is planned given the recent encouraging drill intercepts.
Further work	• *The nature and scale of planned further work (e.g. 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.*	• Spitfire Materials plans to conduct further exploration work including additional drilling to: 1) explore for lateral and down dip continuance of the known Mulwarrie mineralization zones; 2) explore other exploration targets within the tenement area. • Further metallurgical work is also planned.

Section 3 Estimation and Reporting of Mineral Resources Mulwarrie

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

Criteria	JORC Code explanation	Commentary
Database integrity	• *Measures taken to ensure that data has not been corrupted by, for example, transcription or keying errors, between its initial collection and its use for Mineral Resource estimation purposes.*	• The historical database was compiled and supplied to Spitfire as a Microsoft Access database. • The data have then been imported into a relational SQL Server database using DataShed™ (industry standard drill hole database management software). • Subsequent drilling data has been supplied in Excel templates, using drop down lists to verify codes before it is imported to the SQL database. • The data are constantly audited and any discrepancies checked by Spitfire personnel and its consultants before being updated in the database.
	• *Data validation procedures used.*	• Normal data validation checks were completed on import to the SQL database. • Historical data have not been checked back to hard copy results, but have been checked against previous databases supplied and results compared against new Spitefire infill drilling. • All logs are supplied as Excel spreadsheets files and any discrepancies checked and corrected by field personnel.
Site visits	• *Comment on any site visits undertaken by the Competent Person and the outcome of those visits.*	• John Young (director of Spitfire and a Competent Person) has been actively involved in the exploration programs with multiple site visits undertaken.
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 confidence in the geological interpretation is considered reasonable. Gold is found within quartz reefs, within biotite selvages to the quartz veins and also in sheared & altered country rocks. These quartz veins and shears have been modelled in 3-D using Leapfrog™ and Surpac™ software. • The geological interpretation is supported by drill hole logging, assays and mineralogical studies completed historically and infilled/extended by Spitfire in 2017. Pit mapping and investigation of historical workings also support the model. • No alternative interpretations have been considered at this stage. • Grade wireframes correlate well with the logged quartz veins. • The key factor affecting continuity is the presence of quartz and shear fabrics.
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 main modelled mineralized domains have a total dimension of 1,000m (north-south), ranging between less than a metre to multiple metres over up to 150m (east-west) in multiple veins and ranging between 300m and 500m RL (AMSL).
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.*	• Grade estimation using Ordinary Kriging (OK) was completed using Geovia Surpac™ software for Au. • Drill spacing typically ranges from 10-15m to 50m with some limited zones to 100m. • Drill hole samples were flagged with wire framed domain codes. Sample data was composited Au to 1m using a best fit method. Since all holes were typically sampled on 1m intervals, there were only a very small number of residuals in the diamond core holes that were sampled to geological contacts. • Influences of extreme sample distribution outliers were reduced by top-cutting on a domain basis. Top-cuts were decided by using a combination of methods including grade histograms, log probability plots and statistical tools. Based on this statistical analysis of the data population, top-cuts were applied for Au to 17 of the 21 domains. Some domains did not require top-cutting.

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	• *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 (e.g. sulphur for acid mine drainage characterisation).* • *In the case of block model interpolation, the block size in relation to the average sample spacing and the search employed.* • *Any assumptions behind modelling of selective mining units.* • *Any assumptions about correlation between variables.* • *Description of how the geological interpretation was used to control the resource estimates.* • *Discussion of basis for using or not using grade cutting or capping.* • *The process of validation, the checking process used, the comparison of model data to drill hole data, and use of reconciliation data if available.*	• Directional variograms were modelled by domain using traditional variograms. Nugget values are moderate to high (between 40% and 50%) and structure ranges up to 150-200m. Domains with more limited samples used variography of geologically similar, adjacent domains. • Block model was constructed with parent blocks of 1m (E) by 5m (N) by 5m (RL) and sub-blocked to 0.25m (E) by 1.25m (N) by 1.25m (RL). All estimation was completed to the parent cell size. • Three estimation passes were used. The first pass had a limit of 15m, the second pass 30m and the third pass searching a large distance to fill the blocks within the wire framed zones. Each pass used a maximum of 10 samples, a minimum of 5 samples and maximum per hole of 3 samples. • Search ellipse sizes were based primarily on a combination of the variography and the trends of the wire framed mineralized zones. Hard boundaries were applied between all estimation domains. • Validation of the block model included a volumetric comparison of the resource wireframes to the block model volumes. Validation of the grade estimate included comparison of block model grades to the declustered input composite grades plus swath plot comparison by easting, northing and elevation. Visual comparisons of input composite grades vs. block model grades were also completed.
Moisture	• *Whether the tonnages are estimated on a dry basis or with natural moisture, and the method of determination of the moisture content.*	• Tonnes have been estimated on a dry basis.
Cut-off parameters	• *The basis of the adopted cut-off grade(s) or quality parameters applied.*	• Quartz veins typically coincide with anomalous Au which allows for geological continuity of the mineralised zones. The quartz vein (and grade) contact models were built in Leapfrog™ Geo software and exported for use as domain boundaries for the block model.
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*	• Based on the orientations, thicknesses and depths to which the gold-bearing veins have been modelled, plus their estimated grades, the potential mining method is considered to be open pit mining with the possibility of selective underground mining on higher-grade veins.

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	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.	
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.*	• Metallurgical tests of selected RC samples including bottle roll cyanidation leach tests and rate of cyanidation tests were completed by Ammtec in 1986 and 1987 for Pancontinental. More recently bottle roll cyanidation leach tests prior to trial mining using a mobile gravity/CIL plant were also carried out by Goldfield Argonaut in 2015. Petrological examination of selected samples was also completed at the end of trial mining. • One composite was created from sulphidic quartz lode ore (semi massive pyrite & pyrrhotite in quartz), the other composite was created from biotite altered & sheared basalt containing disseminated pyrite & pyrrhotite also derived from ore grade RC samples collected from East Lode intercepts. Labelled sulphide composite in the Nagrom report. A standard grind size was used of P80 (0.106mm). Initial test work has produced encouraging results and indicates that both the quartz lode & altered basalt ore is not refractory in nature. 24-hour bottle roll tests returned 96.6% recovery from the quartz lode composite and 91% recovery from the sulphide bearing altered basalt composite.
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.*	• Appropriate environmental studies and sterilisation drilling will be planned as part of any future feasibility study programs.
Bulk density	• *Whether assumed or determined. If assumed, the basis for the assumptions. If determined, the method used, whether wet or dry, the frequency of the measurements, the nature, size and representativeness of the samples.* • *The bulk density for bulk material must have been measured by methods that adequately account for void spaces (vugs, porosity,*	• No density measurements were reported by the historical exploration companies. • Spitfire had a selection of 7 core samples from the only core hole (17MWDD001) analysed by hydrostatic weighing on uncoated HQ core samples to determine bulk density factors. Of these, two were quartz lode samples with associated sulphide minerals and had results of 2.87 and 3.12. • Spitfire has chosen to use 2.8 for the bulk density to account for the increased sulphide content of the vein hosting the gold (compared to quartz of 2.65) but more conservative that the abovementioned limited core analysis results.

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	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.*	
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 Mineral Resource has been classified on the basis of confidence in the geological model, continuity of mineralized zones, drilling density and pit mapping information, confidence in the underlying database. In particular, the lack of oriented and structurally logged diamond core holes and bulk density information is noted. • All factors considered, the resource estimate has been assigned to the Inferred category until further diamond core drilling and structural analysis confirms the geological/structural model constructed for the resource. • In addition, considering the already close spacing of the RC drilling, alongside additional diamond core holes, further bulk density data would support potential future re-classification to Indicated and possibly Measured Resources.
Audits or reviews	• *The results of any audits or reviews of Mineral Resource estimates.*	• No audits/reviews have been completed to date.
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 relative accuracy of the Mineral Resource estimate is reflected in the reporting of the Mineral Resource as per the guidelines of the 2012 JORC Code. • The statement relates to global estimates of tonnes and grade.