ASX Announcement **19 October 2017**

SANDFIRE GROUP JORC MINERAL RESOURCE AND ORE RESERVE STATEMENT

Group Mineral Resource for all Australian projects plus the Black Butte Project, USA

Highlights

- **Group Mineral Resource: DeGrussa, Monty, Black Butte, Thaduna, Green Dragon and Temora Projects are estimated to contain 1.9Mt of copper, 2.7Moz of gold and 15.8Moz of silver.**

- **Group Ore Reserve: DeGrussa Copper-Gold Mine (100%-owned) and Monty Copper-Gold Project (70%-owned; under development):**
  - 6.8Mt at 5.0% Cu, 1.6g/t Au, 13g/t Ag for 337,000t of contained copper, 355,000oz of contained gold and 2,766,000oz of contained silver;
  - 2.8Mt at 1.2% Cu, 1.0g/t Au, 36g/t Ag for 35,000t of contained copper, 84,000oz of contained gold and 3,175,000oz of contained silver (oxide copper stockpile); and
  - Total 9.5Mt at 3.9% Cu, 1.4g/t Au, 19g/t Ag for 372,000t of contained copper, 439,000oz of contained gold and 5,941,000oz of contained silver.

- **Mineral Resource for Sandfire's 78.1%-owned Black Butte Copper Project in central Montana, USA (JORC reported):**
  - 18.0Mt at 3.3% Cu, 14g/t Ag, 0.10% Co for 597,000t of copper, 7,980,000oz of silver and 18,000t of cobalt.

- **Mineral Resource for the Thaduna and Green Dragon Copper Projects, located within the wider Doolgunna Project north-east of DeGrussa (Updated):**
  - 8.2Mt at 1.8% Cu, 3.7g/t Ag for 150,000t of copper and 963,000oz of silver.

- **Mineral Resource for the Temora Copper-Gold Project in the Lachlan Fold Belt, NSW (Updated):**
  - 240Mt at 0.30% Cu, 0.29g/t Au for 728,000t of copper and 2,207,000oz of gold.

Sandfire Resources NL (ASX: **SFR**, "Sandfire" or "the Company") is pleased to report its Group Mineral Resource and Ore Reserve (MROR) estimate[1]. The annual MROR estimates are reported on a Group-wide basis and include the Company's Australian copper-gold and base metal projects (both in the Doolgunna region, WA and at Temora, NSW), as well as its 78.1%-owned Black Butte Copper Project in the USA, which is held via its interest in Tintina Resources Inc (TSX-V: TAU) (Figure 1).

Sandfire's Managing Director, Mr Karl Simich, said the MROR reflected the substantial endowment across its key resource-level projects in Australia and the USA. "With a significant contained metal inventory approaching 2 million tonnes of contained copper, 2.8 million ounces of gold and nearly 16.0 million ounces of silver, the Group Mineral Resource and Ore Reserve estimates demonstrate the depth of Sandfire's emerging growth pipeline. This is underpinned by a high-quality Ore Reserve at our flagship DeGrussa Mine and the new satellite Monty Project, currently being developed, which is estimated to contain 372,000 tonnes of copper and 439,000oz of gold."

[1] Mineral Resource and Ore Reserve for the Monty Project is stated as at 31 March 2017. DeGrussa Mine and others stated as at 31 December 2016.

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"In addition, there is a significant Mineral Resource inventory both at DeGrussa and at other deposits within the surrounding Doolgunna Project such as Thaduna and Green Dragon which offer potential future upside. We currently have studies underway to determine potential economic development pathways for all of these growth opportunities.

"Meanwhile, the high-grade Mineral Resource reported for the Black Butte Copper Project in Montana is a key medium-term growth project outside of DeGrussa, and it has recently moved to the next key stage of permitting with the commencement of the Environmental Impact Study process.

"Against the backdrop of a stronger commodity price environment, we are focused on unlocking the full value of all of the resource-level projects within our portfolio, both in Western Australia and further afield on the East Coast and in the USA.

"And, of course we are continuing to explore aggressively for new VMS discoveries in the Doolgunna region, and for new base metal deposits within our East Coast portfolio in Australia. Success in any of these areas could result in further growth in our mineral resource inventory, and the creation of significant additional value for our shareholders."

Group Mineral Resource

Group Mineral Resource at DeGrussa, Monty, Black Butte, Thaduna and Green Dragon and Temora is summarised in Tables 1, 3, 5, 7, 8 and 9.

Table 1: Total Mineral Resource as at 31 December 2016

	Tonnes	Grade				Contained Metal			
Project	Mt	Cu (%)	Au (g/t)	Ag (g/t)	Co (%)	Cu (kt)	Au (koz)	Ag (koz)	Co (kt)
DeGrussa	9.5	4.2	1.6	21	-	400	500	6,425	-
Monty[1]	0.7	9.4	1.6	17	-	69	39	400	-
Black Butte[2]	18.0	3.3	-	14	0.10	597	-	7,980	18
Thaduna and Green Dragon	8.2	1.8	-	4	-	150	-	963	-
Temora	240	0.3	0.3	-	-	728	2,207	-	-
Total						**1,944**	**2,748**	**15,766**	**18**

1. Monty refers to the Springfield Unincorporated Mining Joint Venture which comprises participating interests of Sandfire (70%) and Talisman Mining Limited (30%). Sandfire is the manager of the Joint Venture. The figures shown represent 70% of the Mineral Resource.
2. Black Butte is owned by North American-listed Company Tintina Resources (TSX-V: TAU) of which Sandfire Resources holds a 78.1% interest. The figures shown represent 100% of the Mineral Resource.
3. DeGrussa, Thaduna and Green Dragon, and Temora are 100% SFR owned.
4. The Measured, Indicated and Inferred Mineral Resource Categories are detailed in Tables 3, 5 and 7 to 9.
5. Data is rounded to reflect appropriate precision in the estimate and differences may occur due to rounding.
6. Mineral Resources are inclusive of Ore Reserves.

Group Ore Reserve

Group Ore Reserve are summarised in Tables 2, 4 and 6.

Table 2: Total Ore Reserve as at 31 December 2016

	Tonnes	Grade				Contained Metal			
Project	Mt	Cu (%)	Au (g/t)	Ag (g/t)	Co (%)	Cu (kt)	Au (koz)	Ag (koz)	Co (kt)
DeGrussa	8.9	3.6	1.4	20	-	316	410	5,622	-
Monty[1,2]	0.6	8.7	1.4	15	-	56	29	319	-
Total	**9.5**	**3.9**	**1.4**	**19**	**-**	**372**	**439**	**5,941**	**-**

1. Monty refers to the Springfield Unincorporated Mining Joint Venture which comprises participating interests of Sandfire (70%) and Talisman Mining Limited (30%). Sandfire is the manager of the Joint Venture. The figures shown represent 70% of the Ore Reserve.
2. Monty stated as at 31 March 2017 (currently under development).
3. The Proven and Probable Ore Reserves are detailed in Tables 4 and 6.
4. Data is rounded to reflect appropriate precision in the estimate and differences may occur due to rounding.
5. Ore Reserves include mining dilution and mining recovery.

DeGrussa Copper-Gold Mine

The DeGrussa Copper Mine is Sandfire's cornerstone asset and is located within the 100%-owned Doolgunna Project, a 400km^2 tenement package in WA's Bryah Basin mineral province, ~900km north-east of Perth.

Table 3: DeGrussa Copper-Gold Mine – Total Mineral Resource as at 31 December 2016

Project	Resource Category	Tonnes	Grade			Contained Metal		
		Mt	Cu (%)	Au (g/t)	Ag (g/t)	Cu (kt)	Au (koz)	Ag (koz)
DeGrussa	Measured	8.5	4.2	1.6	22	356	447	5,949
	Indicated	0.7	4.3	1.8	16	29	38	343
	Inferred	0.3	5.2	1.6	14	15	15	133
	Total	**9.5**	**4.2**	**1.6**	**21**	**400**	**500**	**6,425**

1. Includes 2.8mt of oxide material stockpiles at 1.2% Cu, 1.0g/t Au and 35.6g/t Ag.
2. Mineral Resource is based on a 1.0% Cu cut-off.
3. Data is rounded to reflect appropriate precision in the estimate and differences may occur due to rounding.

Table 4: DeGrussa Copper-Gold Mine – Total Ore Reserve as at 31 December 2016

Project	Resource Category	Tonnes	Grade			Contained Metal		
		Mt	Cu (%)	Au (g/t)	Ag (g/t)	Cu (kt)	Au (koz)	Ag (koz)
DeGrussa	Proven	8.4	3.5	1.4	20	292	385	5,422
	Probable	0.5	4.6	1.5	12	24	25	201
	Total	**8.9**	**3.6**	**1.4**	**20**	**316**	**410**	**5,622**

1. Data is rounded to reflect appropriate precision in the estimate and differences may occur due to rounding.
2. Ore Reserves include mining dilution and mining recovery.

Monty Copper-Gold Mine – 100% Basis (SFR 70.0%)

The Monty VMS Copper-Gold Project is located 10km east of the DeGrussa Copper-Gold Mine and forms part of the Springfield Unincorporated Mining Joint Venture. Sandfire is the manager of the Joint Venture, which comprises participating interests of Sandfire (70%) and Talisman Mining Limited (30%).

Table 5: Monty Copper-Gold Mine – Total Mineral Resource as at 31 December 2016

Project	Resource Category	Tonnes	Grade			Contained Metal		
		Mt	Cu (%)	Au (g/t)	Ag (g/t)	Cu (kt)	Au (koz)	Ag (koz)
Monty	Measured	-	-	-	-	-	-	-
	Indicated	1.04	9.3	1.6	17	97	54	565
	Inferred	0.01	20.7	2.7	19	2	1	5
	Total	**1.05**	**9.4**	**1.6**	**17**	**99**	**55**	**571**

1. Mineral Resource is based on a 1.0% Cu cut-off.
2. Data is rounded to reflect appropriate precision in the estimate and differences may occur due to rounding.

Table 6: Monty Copper-Gold Mine – Total Ore Reserve as at 31 March 2017

Project	Resource Category	Tonnes	Grade			Contained Metal		
		Mt	Cu (%)	Au (g/t)	Ag (g/t)	Cu (kt)	Au (koz)	Ag (koz)
Monty	Proven	-	-	-	-	-	-	-
	Probable	0.92	8.7	1.4	15	80	42	455
	Total	**0.92**	**8.7**	**1.4**	**15**	**80**	**42**	**455**

1. Data is rounded to reflect appropriate precision in the estimate and differences may occur due to rounding.
2. Ore Reserves include mining dilution and mining recovery.

Black Butte Copper Project – 100% Basis (SFR 78.1%)

Sandfire holds a 78.1% interest, via North American-listed Company Tintina Resources (TSX-V: TAU), in the premier, high-grade Black Butte Copper Project, located in central Montana in the United States. The Black Butte Copper Project is a key part of Sandfire's longer term strategic growth pipeline.

Table 7: Black Butte Copper-Gold Project – Total Mineral Resource as at 31 December 2016

Project	Resource Category	Tonnes	Grade			Contained Metal		
		Mt	Cu (%)	Ag (g/t)	Co (%)	Cu (kt)	Ag (koz)	Co (kt)
Black Butte	Measured	2.7	3.0	16	0.12	79	1,393	3
	Indicated	13.0	3.5	13	0.10	454	5,584	13
	Inferred	2.3	2.8	14	0.09	63	1,003	2
	Total	**18.0**	**3.3**	**14**	**0.10**	**597**	**7,980**	**18**

1. Black Butte is owned by North American-listed Company Tintina Resources (TSX-V: TAU) of which Sandfire Resources holds a 78.1% interest. The figures shown represent 100% of the Mineral Resource.
2. Mineral Resource is based on a 1.6% Cu cut-off for Johnny Lee Upper Zone and Lowry, 1.5% Cu cut-off for Johnny Lee Lower Zone.
3. Data is rounded to reflect appropriate precision in the estimate and differences may occur due to rounding.

Thaduna and Green Dragon Project – SFR 100%

The Thaduna and Green Dragon Project is located in Western Australia on Ned's Creek Station between Wiluna and Meekatharra, ~160km north-west of Wiluna and 170km north of Meekatharra.

Thaduna represents the largest copper Mineral Resource in the Doolgunna-Bryah Basin Region outside of Sandfire's DeGrussa-Doolgunna Project. The Thaduna and Green Dragon Mineral Resource was updated following review of the project geology, re-logging of all existing holes drilled by Ventnor Resources Ltd and inclusion of additional drillholes completed by Sandfire over the Thaduna deposit during 2014-2015.

Table 8: Thaduna and Green Dragon Project – Total Mineral Resource as at 31 December 2016

Project	Resource Category	Tonnes	Grade		Contained Metal	
		Mt	Cu (%)	Ag (g/t)	Cu (kt)	Ag (koz)
Thaduna	Measured	-	-	-	-	-
	Indicated	2.7	2.2	4.0	59	349
	Inferred	2.8	2.1	5.4	60	480
	Total	**5.5**	**2.2**	**4.7**	**119**	**829**
Green Dragon	Measured	-	-	-	-	-
	Indicated	1.8	1.3	1.8	23	102
	Inferred	0.8	1.0	1.2	8	31
	Total	**2.6**	**1.2**	**1.6**	**32**	**134**
Total	Measured	-	-	-	-	-
	Indicated	4.5	1.8	3.1	82	451
	Inferred	3.6	1.9	4.4	68	512
	Total	**8.2**	**1.8**	**3.7**	**150**	**963**

1. Mineral Resources for both Thaduna and Green Dragon are based on a 0.5% Cu cut-off.
2. Data is rounded to reflect appropriate precision in the estimate and differences may occur due to rounding.

Temora Project – SFR 100%

The Temora Project, which was acquired from Aeris Resources (formerly Straits Resources) in 2016, is located in the Lachlan Fold Belt of central-southern New South Wales, Australia, ~360km WSW of Sydney. The Mineral Resource has been reviewed and updated.

Table 9: Temora Project – Total Mineral Resource as at 31 December 2016

Project	Resource Category	Tonnes	Grade		Contained Metal	
		Mt	Cu (%)	Au (g/t)	Cu (kt)	Au (koz)
Dam	Measured	-	-	-	-	-
	Indicated	25	0.34	0.48	83	381
	Inferred	16	0.24	0.30	37	151
	Total	**40**	**0.30**	**0.41**	**121**	**532**
Cullingerai	Measured	-	-	-	-	-
	Indicated	-	-	-	-	-
	Inferred	24	0.30	0.31	72	237
	Total	**24**	**0.30**	**0.31**	**72**	**237**
Estoril	Measured	-	-	-	-	-
	Indicated	-	-	-	-	-
	Inferred	14	0.21	0.35	30	160
	Total	**14**	**0.21**	**0.35**	**30**	**160**
Mandamah	Measured	-	-	-	-	-
	Indicated	-	-	-	-	-
	Inferred	26	0.34	0.38	89	314
	Total	**26**	**0.34**	**0.38**	**89**	**314**
Yiddah	Measured	-	-	-	-	-
	Indicated	-	-	-	-	-
	Inferred	127	0.32	0.14	410	574
	Total	**127**	**0.32**	**0.14**	**410**	**574**
Gidginbung	Measured	-	-	-	-	-
	Indicated	-	-	-	-	-
	Inferred	8.0	0.09	1.5	7	391
	Total	**8.0**	**0.09**	**1.5**	**7**	**391**
Total	Measured	-	-	-	-	-
	Indicated	25	0.34	0.48	83	381
	Inferred	215	0.30	0.26	645	1827
	Total	**240**	**0.30**	**0.29**	**728**	**2,207**

1. Mineral Resources for Dam, Cullingerai, Estoril, Mandamah, Yiddah are based on a 0.3% CuEq cut-off which is calculated as CuEq = Cu % + Au g/t ((PAu * RecAu)/ (PCu * RecCu)) where Cu price = 3.53 AUD$/lb, Au price = 1,600 AUD$/oz, Cu recovery = 90% and Au recovery = 75%.
2. Mineral Resource for Gidginbung is based on a 1g/t Au cut-off.
3. Data is rounded to reflect appropriate precision in the estimate and differences may occur due to rounding.

Figure 1: Sandfire's Australian and USA projects

JORC Code Compliance Statement

JORC Code Table 1 Parameters relating to each of the estimates for the Annual Mineral Resources and Ore Reserves Statement – 31 December 2016 and 31 March 2017, as applicable, are contained in Appendix 1 of this release.

ENDS

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Forward-Looking Statements

Certain statements made during or in connection with this statement contain or comprise certain forward-looking statements regarding Sandfire's Group Mineral Resource and Ore Reserve, exploration operations, project development operations, production rates, life of mine, projected cash flow, capital expenditure, operating costs and other economic performance and financial condition as well as general SANDFIRE RESOURCES NL Page 5 market outlook. Although Sandfire believes that the expectations reflected in such forward-looking statements are reasonable, such expectations are only predictions and are subject to inherent risks and uncertainties which could cause actual values, results, performance or achievements to differ materially from those expressed, implied or projected in any forward looking statements and no assurance can be given that such expectations will prove to have been correct. Accordingly, results could differ materially from those set out in the forward-looking statements as a result of, among other factors, changes in economic and market conditions, delays or changes in project development, success of business and operating initiatives, changes in the regulatory environment and other government actions, fluctuations in metals prices and exchange rates and business and operational risk management. Except for statutory liability which cannot be excluded, each of Sandfire, its officers, employees and advisors expressly disclaim any responsibility for the accuracy or completeness of the material contained in this statement and excludes all liability whatsoever (including in negligence) for any loss or damage which may be suffered by any person as a consequence of any information in this statement or any error or omission. Sandfire undertakes no obligation to update publicly or release any revisions to these forward-looking statements to reflect events or circumstances after today's date or to reflect the occurrence of unanticipated events other than required by the Corporations Act and ASX Listing Rules. Accordingly you should not place undue reliance on any forward looking statement.

DeGrussa and Monty Mineral Resource and Ore Reserve

The information in this report that relates to the DeGrussa and Monty Mineral Resource is based on information compiled by Mr Ekow Taylor who is a Member of The Australasian Institute of Mining and Metallurgy. Mr Taylor was a permanent employee of Sandfire Resources NL at the time of Mineral Resource compilation and has sufficient experience that is relevant to the style of mineralisation and type of deposit under consideration and to the activity which he is undertaking to qualify as Competent Person as defined in the 2012 Edition of the Australasian Code for Reporting of Exploration Results, Mineral Resource and Ore Reserve. Mr Taylor consents to the inclusion in the report of the matters based on his information in the form and context in which it appears.

The information in this report that relates to the DeGrussa and Monty Ore Reserve is based on information compiled by Mr Neil Hastings who is a Member of The Australasian Institute of Mining and Metallurgy. Mr Hastings is a permanent employee of Sandfire Resources NL and has sufficient experience that is relevant to the style of mineralisation and type of deposit under consideration and to the activity which 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 Hastings consents to the inclusion in the report of the matters based on his information in the form and context in which it appears.

Black Butte Mineral Resource

The information in this report that relates to Black Butte Mineral Resource is based on information compiled by Mr. Michael J. Lechner who is a Registered Member of SME, a CPG with AIPG, a RPG in Arizona, and a P. Geo. In British Columbia. Mr. Lechner is an independent consultant and has sufficient experience that is relevant to the style of mineralisation and type of deposit under consideration and to the activity which 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 Lechner consents to the inclusion in the report of the matters based on his information in the form and context in which it appears.

Thaduna and Green Dragon Mineral Resource

The information in this report that relates to the Thaduna and Green Dragon Mineral Resource is based on information compiled by Mr Ekow Taylor who is a Member of The Australasian Institute of Mining and Metallurgy. Mr Taylor was a permanent employee of Sandfire Resources NL at the time of Mineral Resource compilation and has sufficient experience that is relevant to the style of mineralisation and type of deposit under consideration and to the activity which 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 Taylor consents to the inclusion in the report of the matters based on his information in the form and context in which it appears.

Temora Project Mineral Resource

The information in this report that relates to the Dam, Cullingerai, Estoril, Mandamah, Yiddah and Gidginbung Mineral Resources is based on information compiled by Mr Ross Corben who is a Fellow of The Australasian Institute of Mining and Metallurgy. Mr Corben is an Independent Consultant and has sufficient experience that is relevant to the style of mineralisation and type of deposit under consideration and to the activity which 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 Corben consents to the inclusion in the report of the matters based on his information in the form and context in which it appears.

Appendix 1 - JORC 2012 TABLE 1 MINERAL RESOURCE AND ORE RESERVE PARAMETERS – DEGRUSSA COPPER MINE

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.*	The deposit is sampled by a combination of surface and underground (UG) diamond drill (DD) and surface reverse circulation (RC) holes. DD sampling include both half-core and quarter-core samples of NQ2 core size and RC samples are collected by a cone or riffle splitter using a face sampling hammer with a nominal 140mm hole.
	Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.	Sampling is guided by Sandfire DeGrussa protocols and Quality Control (QC) procedures as per industry standard.
	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 determination of mineralisation is based on observed amount of sulphides and lithological differences. DD sample is first crushed through a Jaques jaw crusher to -10mm, then Boyd crushed to -4mm and pulverised via LM2 to nominal 90% passing -75µm. RC samples are only Boyd crushed to 4mm and pulverised to 90% passing -75µm. A 0.4g assay charge is combined and fused into a glass bead with 9.0g flux for XRF analysis. A 40g charge is used for Fire Assay.
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).*	The deposit has been sampled by a combination of DD and RC holes. Only DD drilling samples totalling 405,516m to date have been used to update the Mineral Resource of Conductor 1, DeGrussa, Conductor 4 and Conductor 5 lodes comprising of: • 202,566m of UG NQ2 DD Grade Control drilling; • 28,874m of UG Resource Definition and Extensional (ResDef) drilling; • 166,756m of Surface Exploration and ResDef drilling; and • 7,319m of UG Geotech drilling. All surface drill collars are surveyed using RTK GPS with downhole surveying by gyroscopic methods except shallow RC holes. All underground drill collars are surveyed using Trimble S6 electronic theodolite. Downhole survey is completed by gyroscopic downhole survey. Drill holes are inclined at varying angles for optimal ore zone intersection. All core where possible is oriented using a Reflex ACT II RD orientation tool with stated accuracy of +/-1% in the range 0 to 88°.
Drill sample recovery	*Method of recording and assessing core and chip sample recoveries and results assessed.*	Diamond core recovery is logged and captured into the database with weighted average core recoveries greater than 98%. Surface RC sampling is good with almost no wet sampling in the mine area.
	Measures taken to maximise sample recovery and ensure representative nature of the samples.	Core is meter marked and orientated to check against the driller's blocks, ensuring that all core loss is taken into account. At the RC rig, sampling systems are routinely cleaned to minimise the opportunity for contamination and drilling methods are focused on sample quality. Samples are routinely weighed and captured into the central database.

Criteria	JORC Code Explanation	Commentary
	Whether a relationship exists between sample recovery and grade and whether sample bias may have occurred due to preferential loss/gain of fine/coarse material.	No sample recovery issues have impacted on potential sample bias.
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.*	Geological logging is completed for all holes and is representative across the ore body. The lithology, alteration, and structural characteristics of core are logged directly to a digital format following standard procedures and using Sandfire DeGrussa geological codes. Data is imported onto the central database after validation in LogChief™.
	Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc) photography.	Logging is both qualitative and quantitative depending on the field being logged. All cores are photographed.
	The total length and percentage of the relevant intersections logged.	All DD and RC drill holes are fully logged.
Sub-sampling techniques and sample preparation	*If core, whether cut or sawn and whether quarter, half or all core taken.*	Core orientation is completed where possible and all are marked prior to sampling. Longitudinally cut half core samples are produced using Almonte Core Saw. Samples are weighed and recorded. Some quarter core samples have been used and statistical test work has shown them to be representative.
	If non-core, whether riffled, tube sampled, rotary split, etc and whether sampled wet or dry.	RC samples are split using a cone or riffle splitter. A majority of RC samples are dry. On the occasion that wet samples are encountered, they are dried prior to splitting with a riffle splitter.
	For all sample types, the nature, quality and appropriateness of the sample preparation technique.	Sample preparation at the onsite laboratory involves weighing and drying the original sample at 80° for up to 24 hours. All DD Samples are crushed through Jaques crusher to nominal -10mm followed by a second stage crushing through Boyd crusher to nominal -4mm. RC samples are only Boyd crushed to -4mm. Sample is split to less than 2kg through a linear splitter and excess retained for metallurgical work. Sample splits are weighed at a frequency of 1:20 and entered into the job results file. Pulverising is completed using LM2 mill to 90% passing 75%µm. Pulp fines test is completed at a minimum of 1:20. A 1.5kg of rock quartz is pulverised at rate of 1:20 samples. Two lots of packets are retained for the onsite laboratory services whilst the pulverised residue is shipped externally to Bureau Veritas laboratory in Perth for further analysis. Sample preparation at the Bureau Veritas laboratory in Perth involves weighing and drying the original sample at 80° for up to 24 hours. DD samples are first crushed through a Jaques crusher to nominal -10mm. Second stage crushing is through Boyd crusher to a nominal -4mm. All RC samples are only Boyd crushed to -4mm. Sample is then split to less than 2kg through linear splitter and excess retained. Sample splits are weighed at a frequency of 1:20 and entered into the job. Pulverising is completed using LM5 mill to 90% passing 75%µm. Grind size checks are completed at a minimum of 1 per batch. 1.5kg of rock quartz is pulverised at every 1:10 sample.
	Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.	Sandfire DeGrussa has protocols that cover auditing of sample preparation at the laboratories and the collection and assessment of data to ensure accurate steps in producing representative samples for the analytical process. Key performance indices include contamination index of 90% (that is 90% blanks pass); Crush Size index of P95-10mm; Grind Size index of P90-75µm and Check Samples returning at worse 20% precision at 95% confidence interval and bias of 5% or better. Weekly onsite laboratory audits are completed to ensure the laboratory conforms to standards. Additional grind size checks are completed via Umpire Checks.
	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.	Duplicate analysis has been completed and identified no issues with sampling representatively. Test work on half-core versus quarter-core has been completed with results confirming that sampling at either core size is representative of the in-situ material.
	Whether sample sizes are appropriate to the grain size of the material being sampled	The sample size is considered appropriate for the Massive Sulphide mineralisation style.

Criteria	JORC Code Explanation	Commentary
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.*	At the onsite laboratory, a 0.4g sub-sample with 9.0g flux is fused into a glass bead. XRF method is used to analyse for a suite of elements (including Cu, Fe, SiO2, Al, Ca, MgO, P, Ti, Mn, Co, Ni, Zn, As, and Pb). Pulps are dispatched to Bureau Veritas laboratory in Perth for ICPOES or ICPMS for extended elements (including Cu, Fe, As, Pb, S, Zn, Fe, Ag, Sb, Bi, Cd, Cl, F, and Hg). Samples submitted to Bureau Veritas laboratory in Perth are assayed using Mixed 4 Acid Digest (MAD) 0.3g charge and MAD Hotbox 0.15g charge methods with ICPOES or ICPMS. The samples are digested and refluxed with a mixture of acids including Hydrofluoric, Nitric, Hydrochloric and Perchloric acids and conducted for multi elements including Cu, Pb, Zn, Ag, As, Fe, S, Sb, Bi, Mo, Re, Mn, Co, Cd, Cr, Ni, Se, Te, Ti, Zr, V, Sn, W and Ba. The MAD Hotbox method is an extended digest method that approaches a total digest for many elements however some refractory minerals are not completely attacked. The elements S, Cu, Zn, Co, Fe, Ca, Mg, Mn, Ni, Cr, Ti, K, Na, V are determined by ICPOES, and Ag, Pb, As, Sb, Bi, Cd, Se, Te, Mo, Re, Zr, Ba, Sn, W are determined by ICPMS. Samples are analysed for Au, Pd and Pt by firing a 40g portion of the sample. Au, Pd and Pt are determined by ICPOES. Lower sample weights are employed where samples have very high S contents. These analytical methods are considered appropriate for the mineralisation style.
	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.	Handheld XRF units are used as grade control tools to delineate ore boundaries and grades in the field and for exploration for alteration minerals. These units are fit for this purpose. Handheld XRF results are not used in the Mineral Resource estimation.
	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.	Sandfire DeGrussa Quality Control (QC) protocol is considered industry standard with standard reference material (SRM) submitted on regular basis with routine samples. SRMs and blanks are inserted at a minimum of 5% frequency rate. A minimum of 2% of assays are routinely re-submitted as Check Assays and Check Samples through blind submittals to external and the onsite primary laboratories respectively. Additionally, Umpire Checks are completed on quarterly basis. QC data returned is automatically checked against set pass/fail limits within the SQL database and are either passed or failed on import. On import a first pass automatic QC report is generated and sent to QAQC Geologists for a recommended action. Results of all QC samples for every laboratory batch received are analysed to determine assay accuracy and repeatability. Only data that demonstrates sufficient accuracy and precision of assays are used for Mineral Resource updates.
Verification of sampling and assaying	*The verification of significant intersections by either independent or alternative company personnel.*	Significant intersections have been verified by alternative company personnel.
	The use of twinned holes.	There are no twinned holes drilled for the DeGrussa Mineral Resource.
	Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.	Primary data are captured on field tough book laptops using Logchief™ Software. The software has validation routines and data is then imported into a secure central database.
	Discuss any adjustment to assay data.	The primary data is always kept and is never replaced by adjusted or interpreted 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.*	Sandfire DeGrussa Survey team undertakes survey works under the guidelines of best industry practice. All surface drill collars are accurately surveyed using RTK GPS system within +/-50mm of accuracy (X, Y, Z) with no coordinate transformation applied to the picked up data. There is a GPS base station onsite that has been located by a static GPS survey from two government standard survey marks (SSM) recommended by Landgate. Downhole survey is completed by gyroscopic downhole methods at regular intervals. Underground drilling collar surveys are carried out using Trimble S6 electronic theodolite and wall station survey control. Re-traverse is carried out every 100 vertical meters within main decline. Downhole surveys are completed by gyroscopic downhole methods at regular intervals.

Criteria	JORC Code Explanation	Commentary
	Specification of the grid system used.	MGA94 Zone 50 grid coordinate system is used.
	Quality and adequacy of topographic control.	A 1m ground resolution DTM with an accuracy of 0.1m was collected by Digital Mapping Australia using LiDAR and a vertical medium format digital camera (Hasselblad). The LiDAR DTM and aerial imagery were used to produce a 0.1m resolution orthophoto that has been used for subsequent planning purposes.
Data spacing and distribution	*Data spacing for reporting of Exploration Results.*	No Exploration Results are included in this release.
	Whether the data spacing and distribution is sufficient to establish the degree of geological and grade continuity appropriate for the Mineral Resource and Ore Reserve estimation procedure(s) and classifications applied.	Data spacing and distribution are sufficient to establish the degree of geological and grade continuity appropriate for the JORC 2012 classifications applied.
	Whether sample compositing has been applied.	No sample compositing is applied during the sampling process.
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.*	The majority of the drill holes are orientated to achieve intersection angles as close to perpendicular to the mineralisation as practicable.
	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.	No significant sampling bias occurs in the data due to the orientation of drilling with regards to mineralised bodies.
Sample security	*The measures taken to ensure sample security.*	Chain of custody of samples is being managed by Sandfire Resources NL. Appropriate security measures are taken to dispatch samples to the laboratory. Samples are transported to the external laboratory by Toll IPEC or Nexus transport companies in sealed bulka bags. The laboratory receipt received samples against the sample dispatch documents and issues a reconciliation report for every sample batch. Laboratory dumps the excess material (residue) after 30 days unless instructed otherwise. Laboratory returns all pulp samples within 60 days.
Audits or reviews	*The results of any audits or reviews of sampling techniques and data.*	The sampling techniques and data collection processes are of industry standard and have been subjected to multiple internal and external reviews. Cube Consulting Pty completed a review during 13th - 17th October 2016 and found procedures to be consistent with industry standard and appropriate with minor recommendations for enhancement as part of continuous improvement.

Section 2: Reporting of Exploration Results

No Exploration Results are included in this release.

Section 3: Estimation and Reporting of Mineral Resources

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.*	Sandfire uses SQL as the central data storage system via Datashed™ software front end. User access to the database is regulated by specific user permissions. Only the Database Management team can overwrite data. Existing protocols maximise data functionality and quality whilst minimising the likelihood of error introduction at primary data collection points and subsequent database upload, storage and retrieval points. Data templates with lookup tables and fixed formatting are used for collecting primary data on field Toughbook laptops. The software has validation routines and data is subsequently imported into a secure central database.

Criteria	JORC Code Explanation	Commentary
		An IT contracting company is responsible for the daily Server backups of both the source file data on the file server and the SQL Server databases. The selected SQL databases are backed up each day to allow for a full recovery.
	Data validation procedures used.	The SQL server database is configured for optimal validation through constraints, library tables, triggers and stored procedures. Data that fails these rules on import is rejected or quarantined until it is corrected. Database is centrally managed by a Database Manager who is responsible for all aspects of data entry, validation, development, quality control and specialist queries. There is a standard suite of vigorous validation checks for all data.
Site Visits	*Comment on any site visits undertaken by the Competent Person and the outcome of those visits.*	The Competent Person for this Mineral Resource update is a full time employee of Sandfire Resources NL and undertakes regular site visits.
	If no site visits have been undertaken indicate why this is the case.	Sites visits are undertaken.
Geological interpretation	*Confidence in (or conversely, the uncertainty of) the geological interpretation of the mineral deposit.*	Interpretation is based on geological knowledge acquired through data acquisition from the open pit and underground workings, including detailed geological core and chip logging, assay data, underground development face mapping of orebody contacts and in-pit mapping. This information increases the confidence in the interpretation of the deposit.
	Nature of the data used and of any assumptions made.	All available geological logging data from diamond core and reverse circulation drilling are used for the interpretations. Interpreted fault planes have been used to constrain the wireframes where applicable. All development drives are mapped and surveyed and interpretation adjusted as per ore contacts mapped. Wireframes are constructed using cross sectional interpretations based on logged massive sulphides in combination with Cu, Fe and S analyses.
	The effect, if any, of alternative interpretations on Mineral Resource estimation.	The geological interpretation of mineralised boundaries are considered robust and alternative interpretations do not have the potential to impact significantly on the Mineral Resources. Ongoing site and corporate peer reviews, and external reviews, ensure that the geological interpretation is robust.
	The use of geology in guiding and controlling Mineral Resource estimation.	The interpreted mineralisation boundaries are used as hard boundaries during the Mineral Resource estimation.
	The factors affecting continuity both of grade and geology.	Sandfire DeGrussa Copper Mine mineralisation style, chemistry and regional setting are consistent with volcanogenic sulphide style deposit. The primary sulphide mineralisation consists of massive sulphide, semi-massive sulphide and more rarely, stringer mineralisation. Gold is associated with the chalcopyrite rich phases and occurs as a high silver electrum. Mineralisation terminates at known faults.
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.*	All known DeGrussa deposit mineralisation extends from 733500mE to 734785mE, 7172965mN to 7173590mN and 650m below surface. The DeGrussa sulphide lode generally strikes towards NE with a strike length of approximately 210m, dipping very steeply towards the south with a SSE subtle plunge and having a vertical extent of about 200m. The Conductor 1 lode lies north of DeGrussa and generally strikes NE dipping generally at 70° to the SW. It has a strike length of about 400m with a vertical extent of 370m plunging to SE at about 15°. Conductor 4 lenses lie to the east of DeGrussa and Conductor1 lodes and are stratigraphically deeper. Strike length is up to 510m with dips varying between 35°- 45° to the SE and a vertical extent of 3500m. Conductor 5 lenses are east of Conductor 4 and have strike length up to 280m meter strike length dipping at about 45° to the south-southwest, and a vertical extent of 370m.

Criteria	JORC Code Explanation	Commentary
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.*	Mineral Resource estimation is completed within Datamine™ StudioRM version 1.2.46.0 Resource Modelling software. Three dimensional mineralisation wireframes are completed within Surpac™ software and these are then imported into StudioRM™. Geostatistical ordinary kriging (OK) using dynamic local anisotropic search is used to estimate the Mineral Resource as it is considered appropriate given the nature of mineralisation and orebody configuration. The Mineral Resource database is uniquely flagged with mineralisation zone codes as defined by wireframe boundaries and then composited into density weighted 1m lengths and these are used for estimating the Mineral Resource. The composites are extracted with minimum passing of 70% and best fit such that no residuals are created. Statistical and geostatistical analysis are undertaken within Snowden's Supervisor™ software. Histograms, log-probability plots and mean variance plots are considered in determining the appropriate cut-offs for each mineralised zone. The points of inflexion in the upper tail of the distribution on the log-probability plots as well as their spatial distributions are examined to help identify outliers and decide on the treatments applied. High-grade cuts used are either as top-cuts or high grade spatial restriction or a combination of both. All grade values greater than the cut-off grade are set to the cut-off value (capped). Variography studies includes analysing series of fans in three principal directions of horizontal, across-strike vertical and dip planes. The selected strike, plunge and dip directions are used to locate the three directions for which experimental variogram models are fitted. The nugget variance is modelled first by the use of down-hole variograms based on 1m lag, reflecting the downhole composite spacing. Variograms are estimated by fitting spherical models in the three principal directions using the nugget variance modelled for the same mineralised zone. Quantitative Kriging Neighbourhood Analysis (QKNA) using the goodness of fit statistics is used to optimise estimation parameters. Elements estimated include Cu, Au, Ag, Fe, S, Pb, and Zn.
	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 new estimates have been checked against the previous estimates. The current Mineral Resource takes into account mine production using wireframe of the mined out open pit outline and CMS data for underground mined out areas as at the end of December 2016.
	The assumptions made regarding recovery of by-products.	No assumptions are made regarding recovery of by-products during the Mineral Resource estimation.
	Estimation of deleterious elements or other non-grade variables of economic significance (e.g. sulphur for acid mine drainage characterisation).	Estimates includes deleterious or penalty elements Pb, Bi, Zn, As, MgO as well as Magnetic Susceptibility and Pyrite:Pyrrhotite ratio for metallurgical modelling.
	In the case of block model interpolation, the block size in relation to the average sample spacing and the search employed.	Estimation is based on interpolation into three dimensional parent blocks of sizes X=5m by Y=5m by Z=5m within close spaced (GC) drilling areas where ore body drill hole intercept spacing varies from 0.2m to 45m averaging at 6m. Within the ResDef areas, parent block sizes of X=10m by Y=10m by Z=10 are considered adequate for drill hole intercept spacing varying from 8m to 90m and averaging 30m. All parent blocks have been sub-blocked into X=1m by Y=1m by Z=1m sizes. Parent block estimates are assigned to sub-blocks. Given that the orientation of mineralisation varies considerably within the DeGrussa deposit and to preserve the orientation of mineralisation, "Dynamic Anisotropy" option of StudioRM ™ is used. This option, allows orienting the search volume precisely such that it follows the trend of the mineralisation. Directional ranges are determined from variogram modelling and are used to constrain the search distances used in the block interpolation. To preserve local grade variation, the search neighbourhood strategy implemented involves the use of three estimation search runs with initial short-search set to approximately 75% of the variogram range for the respective element and extending the sample influence in later runs. To estimate a block, data from more than one drill hole is used; a minimum of 6/8 and maximum 30 composites are used with no more than 4 composites from a single drill-hole.

Criteria	JORC Code Explanation	Commentary
		Where high grade restriction is used it ensures that only blocks with centroids within a search radius corresponding to the first pass of a designated high-grade are estimated with composites including the high grades. Any block whose centroid is outside this limit is estimated with composites excluding the high grades.
	Any assumptions behind modelling of selective mining units.	No selective mining units are assumed in this estimate.
	Any assumptions about correlation between variables.	Within the massive sulphides there is a good and consistent correlation between Fe and S and density which has been analysed separately for all lodes using multiple regression to fit the density, Fe and S relationship. The regressed formula is then applied to block model estimated Fe and S to assign the estimated block density value.
	Description of how the geological interpretation was used to control the resource estimates.	The geological interpretation wireframes correlate with the massive sulphide mineralisation boundaries. The block model is assigned unique mineralisation zone codes that corresponds with the geological domain as defined by wireframes. Geological interpretations are then used as hard boundaries during interpolation where blocks are estimated only with composites having the corresponding zone code.
	Discussion of basis for using or not using grade cutting or capping.	Statistical analysis in conjunction with the examination of the spatial configuration of samples are used to assist in identifying outliers and decide on the treatments applied. High-grade cuts strategy used is either as a top-cut or high grade spatial restriction or a combination of both to minimise the smoothing of very high-grades in areas not supported by data.
	The process of validation, the checking process used, the comparison of model data to drill hole data, and use of reconciliation data if available.	The process of validation includes standard model validation using visual and numerical methods: • The block model estimates are checked against the input composite/drill hole data with sufficient spot checks completed on sections and plans. • The block model estimated global means for each mineralised domain are checked against the declustered composite mean grades to ensure they are within acceptable variance. • Efficiency models using block Kriging Efficiencies (KE) and Slope of Regression (ZZ) are used to quantitatively check the estimation quality. • Swath plots of the estimated block grades and composite mean grades are generated by eastings, northings and elevations and reviewed to ensure acceptable correlation. Reconciled production data verse Mineral Resource estimate is positive.
Moisture	*Whether the tonnages are estimated on a dry basis or with natural moisture, and the method of determination of the moisture content.*	Tonnages are estimated on a dry basis.
Cut-off parameters	*The basis of the adopted cut-off grade(s) or quality parameters applied.*	Based upon data review a notional lower cut-offs of 0.3% Cu for Oxides Copper and 1.0% Cu for Massive Sulphides appear to be a natural grade boundary between ore and trace assay values.
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.*	The upper portion of the DeGrussa deposit was mined by open pit and completed in two stages. The approximate dimensions of the open pit at completion were 600m length, 500m wide and 140m deep. Open pit mining comprised of conventional backhoe excavator methods with ore being mined in 5m benches on 2.5m flitches. The underground mining method is long-hole open stoping (both transverse and longitudinal) with minor areas of jumbo cut and fill or uphole benching in some of the narrower areas. The primary method of backfill will is paste fill. The sequence will aims for 100% extraction of the orebody. Detailed mine plans are in place and mining is occurring.

Criteria	JORC Code Explanation	Commentary
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.*	Sulphide mineralisation consists of massive sulphide, semi-massive sulphide and minor stringer zone mineralisation. Distinct iron sulphide mineralogy (and quantity) tends to define metallurgical response. Properties within the different ore types are relatively consistent across the ore bodies and appear to follow similar comminution parameters and flotation responses. The sulphide minerals are amenable to recovery by flotation. The dominant valuable component is copper, which is contained predominantly in chalcopyrite with minor assemblages of chalcocite mineralisation. Assumptions are based on DFS metallurgical test work and ongoing monitoring of the DeGrussa processing plant ramp up. Target recovery is 90% of Cu.
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 DeGrussa project is constructed with a fully lined Tailings Storage Facility and all Sulphide material mined from the operation will be processed in the concentrator, eliminating any PAF on the waste dumps.
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.*	Water immersion is the current methodology used in the measurement of densities. Regular and systematic density measurements are taken on representative number of diamond drill core according to a formal protocol. This data is included in the database. Within the massive sulphides bulk density varies from 2.8 g/cm3 to 4.9 g/cm3, with an average density reading of 3.7 g/cm3. Average density of 2.8 g/cm³ is assigned to waste blocks. To test the methodology and accuracy of the density measurements, regular samples constituting 20% of total measurements are submitted to an independent laboratory for measurements.
	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.	The procedure used is suitable for non-porous or very low porosity samples, which can be quickly weighed in water before saturation occurs.
	Discuss assumptions for bulk density estimates used in the evaluation process of the different materials.	Densities vary within the massive sulphides mineralisation and have consistent correlation with Fe and S. Regressed formula of density is used to calculate densities into blocks based on block estimated Fe and S. The host volcanic and sedimentary rocks are assigned an average density value of 2.8 g/cm3 consistent with measurements. Statistical analysis has shown that within the mineralised lenses pyrite/pyrrhotite dominant versus mixed mineralisation / lithologies constitute distinct statistical density sub-populations. The logged pyrite/pyrrhotite percentage greater than 70% are typically consistent with homogenous massive sulphides zones within the mineralised lenses. Outside these areas are the mixed mineralisation zones which consist of semi-massive sulphides with interbedded volcanic rocks or carbonate/chloride alterations. These density sub-domains are demarcated using geostatistical categorical kriging estimation method based on the logged pyrite/pyrrhotite percentage values. The density, Fe and S relationships are then fitted separately for each sub-domain and is then applied to the block model estimated Fe and S to assign the estimated block density value.

Criteria	JORC Code Explanation	Commentary
Classification	*The basis for the classification of the Mineral Resources into varying confidence categories.*	The Mineral Resources has been classified into Measured, Indicated and Inferred categories following the guidelines of the Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves (JORC Code 2012). The classification is based on drill hole intercept spacing, geological confidence, grade continuity and estimation quality. A combination of these factors guides the manual digitising of strings on drill sections to construct envelopes that are used to control the Mineral Resource categorisation. This process allows review of the geological control/confidence on the deposit. Measured Resources are areas within drill hole intercept spacing of 20m by 20m and estimated with a minimum of 8 samples with no more than 4 samples from any single drill hole. Indicated Mineral Resources are areas within drill hole intercept spacing of 40m by 40m, estimated with minimum 6 samples with no more than 4 samples from a single drill hole.
	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).	The Mineral Resource classification has appropriately taken into account data spacing, distribution, reliability, quality and quantity of input data as well as the confidence in predicting grade and geological continuity.
	Whether the result appropriately reflects the Competent Person's view of the deposit.	The Mineral Resource estimation appropriately reflects the Competent Person's view of the deposit.
Audits or reviews	*The results of any audits or reviews of Mineral Resource estimates.*	The process for geological modelling, estimation and reporting of Mineral Resources is industry standard and has been subject to an independent external review. Cube Consulting Pty undertook a review of the estimation during September through November 2016 and found the process to be of industry standard.
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 Mineral Resources has been reported in accordance with the guidelines of the 2012 edition of the Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves and reflects the relative accuracy of the Mineral Resources estimates. Resource has been reconciled against mined areas and results indicated appropriate accuracy.
	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.	The Mineral Resource has been classified into Measured, Indicated and Inferred categories with the Measured and Indicated Resource considered to be of a sufficient local confidence to allow mine planning studies to be completed.
	These statements of relative accuracy and confidence of the estimate should be compared with production data, where available.	Reconciled production data verse Mineral Resource estimate is positive.

Section 4: Estimation and Reporting of Ore Reserves

Criteria	JORC Code Explanation	Commentary
Mineral Resource estimate for conversion to Ore Reserves	*Description of the Mineral Resource estimate used as a basis for the conversion to an Ore Reserve.*	The Underground Ore Reserves estimate is based on the Mineral Resources estimate as at the 31st December 2016. The estimation and reporting of Mineral Resources is outlined in Section 3 of this Table.
	Clear statement as to whether the Mineral Resources are reported additional to, or inclusive of, the Ore Reserves.	Mineral Resources are reported inclusive of Ore Reserves.

Criteria	JORC Code Explanation	Commentary
Site visits	*Comment on any site visits undertaken by the Competent Person and the outcome of those visits.*	The Competent Person for this Mineral Resource update is a full time employee of Sandfire Resources NL and undertakes regular site visits.
	If no site visits have been undertaken indicate why this is the case.	Site visits are undertaken as described above.
Study status	*The type and level of study undertaken to enable Mineral Resources to be converted to Ore Reserves.*	The DeGrussa mine has been in operation since 2011. Underground stope production commenced in October 2012. The Modifying Factors used in the conversion of Mineral Resources to Ore Reserves are based on operational experience.
Cut-off parameters	*The basis of the cut-off grade(s) or quality parameters applied.*	Three copper only cut-off grades have been calculated and applied as economic cut-offs in the determination of the Ore Reserves. These are based on current and forecasted costs, revenues, mill recoveries and modifying factors, forecast for the life of the mine plan. These cut-off values are: • Full cost cut-off grade (2.3%) is based on all operating costs associated with the production of copper metal; • Stope incremental cut-off grade (1.7%) considers material below the full cost cut-off that is accessible; and • Development cut-off grade (0.9%) considers material that has to be mined in the process of gaining access to fully costed economic material.
Mining factors or assumptions	*The method and assumptions used as reported in the Pre-Feasibility or Feasibility Study to convert the Mineral Resource to an Ore Reserve (i.e. either by application of appropriate factors by optimisation or by preliminary or detailed design).*	Ore Reserves have been estimated by generating detailed mining shapes for all areas that contain Measured or Indicated Mineral Resources as well as access development. Internal stope dilution has been designed into the mining shapes and interrogated. External stope dilution and mining recovery factors have been applied post geological block model interrogation to generate final mining diluted and recovered ore tonnage and grade.
	The choice, nature and appropriateness of the selected mining method(s) and other mining parameters including associated design issues such as pre-strip, access, etc.	Primary mining methods employed are sub-level open stoping (SLOS) and long-hole open stoping (LHOS) with fill. Primary fill material is paste with minor use of cemented rock fill and rock fill when appropriate. The selected mining methods are considered appropriate for the nature of the defined Mineral Resources.
	The assumptions made regarding geotechnical parameters (e.g. pit slopes, stope sizes, etc), grade control and pre-production drilling.	Stopes to be mined in the short term are assessed on an individual basis using all related local mining, geological and geotechnical experience to date. This includes data gathered from backanalysis of stopes mined to date in adjacent or similar areas. Stopes to be mined in the medium to long term employ geotechnical parameters derived from area mining experience and / or diamond drill core.
	The major assumptions made and Mineral Resource model used for pit and stope optimisation (if appropriate).	The Mineral Resource model created to estimate the Mineral Resources as at the 31st December 2016 was used as the basis for stope and development design. No modifications were made to this model for mine design purposes.
	The mining dilution factors used.	Internal stope dilution from interrogation of detailed mining shapes against the geological block model ranges from 0% to 55% with a weighted average of 11%. External stope dilution is applied to stopes on an individual basis and is based on mining experience to date. This ranges from 5% to 70% with a weighted average of 11%. External dilution is considered at zero grade.
	The mining recovery factors used.	A mining recovery factor is applied to stopes on an individual basis. The factor is based on mining experience to date and ranges from 50% to 105% with a weighted average of 98%. The factor is applied to diluted stopes.
	Any minimum mining widths used.	A minimum mining width of 3.0m is used based on the nature of the deposit and the equipment fleet employed.

Criteria	JORC Code Explanation	Commentary
	The manner in which Inferred Mineral Resources are utilised in mining studies and the sensitivity of the outcome to their inclusion.	The Underground Ore Reserves contain approximately 0.1% of Inferred Mineral Resource. No modifications have been made to this material. Its inclusion and subsequent impact on economic viability is negligible.
	The infrastructure requirements of the selected mining methods.	DeGrussa is an operating mine and all infrastructure required to service the selected mining methods is in place.
Metallurgical factors or assumptions	*The metallurgical process proposed and the appropriateness of that process to the style of mineralisation.* *Whether the metallurgical process is well-tested technology or novel in nature.* *The nature, amount and representativeness of metallurgical test work undertaken, the nature of the metallurgical domaining applied and the corresponding metallurgical recovery factors applied.* *Any assumptions or allowances made for deleterious elements.* *The existence of any bulk sample or pilot scale test work and the degree to which such samples are considered representative of the orebody as a whole.* *For minerals that are defined by a specification, has the ore reserve estimation been based on the appropriate mineralogy to meet the specifications?*	The Ore Reserve estimate is based on an operating 1.6Mtpa process plant producing a 24.5% copper-concentrate that contains gold and silver. Copper recovery models based on Copper:Sulphur ratio were used in the determination of the Ore Reserve estimate. Average weighted LOM copper recovery is 92.2%. Gold recovery was fixed at 43.8%. Silver recovery was fixed at 41.4%. Process improvement projects are being implemented in FY17 to debottleneck the mill and provide improved recovery.
Environmental	*The status of studies of potential environmental impacts of the mining and processing operation. Details of waste rock characterisation and the consideration of potential sites, status of design options considered and, where applicable, the status of approvals for process residue storage and waste dumps should be reported.*	DeGrussa is an operating mine and is compliant with all environmental regulatory requirements and permits.
Infrastructure	*The existence of appropriate infrastructure: availability of land for plant development, power, water, transportation (particularly for bulk commodities), labour, accommodation; or the ease with which the infrastructure can be provided, or accessed.*	DeGrussa is an operating mine and all infrastructure required for continued operation is in place.
Costs	*The derivation of, or assumptions made, regarding projected capital costs in the study.* *The methodology used to estimate operating costs.* *Allowances made for the content of deleterious elements.* *The source of exchange rates used in the study.* *Derivation of transportation charges.* *The basis for forecasting or source of treatment and refining charges, penalties for failure to meet specification, etc.* *The allowances made for royalties payable, both Government and private.*	DeGrussa is an operating mine and capital costs are generally limited to that required to sustain the operation. Operating costs are based on current contracts and historical averages. No allowances required for deleterious elements (see Market Assessment) Exchange rates are based on ANZ bank December 2016 forecasts and vary over the life of the mine. The life-of-mine average rate is: • A$/US$: 0.725. Land freight and port charges are based on existing contracts. Sea freight charges based on Braemar indices. TC / RC based on benchmark. DeGrussa is subject to Government Royalties and Royalties for Native Title. Rates for Government Royalties are: • Copper is 5.0% of net revenue; • Gold is 2.5% of net revenue; and • Silver is 2.5% of net revenue. The Royalty rate for Native Title is: • 0.5% of gross revenue (copper, gold, silver).

Criteria	JORC Code Explanation	Commentary
Revenue factors	*The derivation of, or assumptions made regarding revenue factors including head grade, metal or commodity price(s) exchange rates, transportation and treatment charges, penalties, net smelter returns, etc.* *The derivation of assumptions made of metal or commodity price(s), for the principal metals, minerals and co-products.*	Commodity prices are based on the ANZ bank December 2016 forecast and vary over the life of the mine. The life-of-mine average values are: • Copper (US$/t): $5,955; • Gold (US$/oz): $1,351; and • Silver (US$/oz): $18.50. A revenue reduction factor of 23.2% has been applied which includes all future estimated and calculated transport, smelting, refining and royalty payments.
Market assessment	*The demand, supply and stock situation for the particular commodity, consumption trends and factors likely to affect supply and demand into the future.* *A customer and competitor analysis along with the identification of likely market windows for the product.* *Price and volume forecasts and the basis for these forecasts.* *For industrial minerals the customer specification, testing and acceptance requirements prior to a supply contract.*	Sandfire is a low cost copper concentrate producer selling into global market for custom concentrates. Sandfire concentrate is sold by competitive tender. Pricing is fundamentally based on the value of contained metals, the main metal being copper with gold and small silver credits. The price of copper being set based on the LME which is a mature, well established and publically traded exchange. Sandfire produces a clean concentrate, low in deleterious elements. Sandfire relies upon independent expert publications (CRU, Wood Mac, Metal Bulletin) and other sources (bank reports, trader reports, conferences, other trade publications) in forming a view about future demand and supply and the likely effects of this on both metal prices and concentrate prices.
Economic	*The inputs to the economic analysis to produce the net present value (NPV) in the study, the source and confidence of these economic inputs including estimated inflation, discount rate, etc.* *NPV ranges and sensitivity to variations in the significant assumptions and inputs.*	DeGrussa is an operating mine with a focus on operating cash margins. The mine plan created to derive the underground Ore Reserves provides positive cash margins in all years when all modifying factors are applied.
Social	*The status of agreements with key stakeholders and matters leading to social licence to operate.*	DeGrussa is an operating mine and all agreements are in place and are current with all key stakeholders including traditional owner claimants.
Other	*To the extent relevant, the impact of the following on the project and/or on the estimation and classification of the Ore Reserves:* *Any identified material naturally occurring risks.* *The status of material legal agreements and marketing arrangements.* *The status of governmental agreements and approvals critical to the viability of the project, such as mineral tenement status, and government and statutory approvals. There must be reasonable grounds to expect that all necessary Government approvals will be received within the timeframes anticipated in the Pre-Feasibility or Feasibility study. Highlight and discuss the materiality of any unresolved matter that is dependent on a third party on which extraction of the reserve is contingent.*	Sandfire has advised that DeGrussa is currently compliant with all legal and regulatory requirements and valid marketing arrangements are in place.
Classification	*The basis for the classification of the Ore Reserves into varying confidence categories.* *Whether the result appropriately reflects the Competent Person's view of the deposit.* *The proportion of Probable Ore Reserves that have been derived from Measured Mineral Resources (if any).*	Underground Ore Reserves have been derived from a mine plan that is based on extracting the 31 December 2016 Mineral Resources. Proven Ore Reserves have been derived from Measured Mineral Resources. Probable Ore Reserves have been derived from both Measured and Indicated Mineral Resources after consideration of all modifying factors. Part of C4 Measured Mineral Resources have been converted to Probable Ore Reserves on the basis of geotechnical uncertainty associated with mining against the Shiraz fault. The Ore Reserve classification appropriately reflects the competent person's view of the deposit. Approximately 5% of the Underground Probable Ore Reserve has been derived from Measured Mineral

Criteria	JORC Code Explanation	Commentary
		Resources.
Audits or reviews	*The results of any audits or reviews of Ore Reserve estimates.*	The Ore Reserve has been peer reviewed internally. The Ore Reserve estimate is in line with current industry standards.
Discussion of relative accuracy/ confidence	*Where appropriate a statement of the relative accuracy and confidence level in the Ore Reserve estimate using an approach or procedure deemed appropriate by the Competent Person. For example, the application of statistical or geostatistical procedures to quantify the relative accuracy of the reserve within stated confidence limits, or, if such an approach is not deemed appropriate, a qualitative discussion of the factors which could affect the relative accuracy and confidence of the estimate.* *The statement should specify whether it relates to global or local estimates, and, if local, state the relevant tonnages, which should be relevant to technical and economic evaluation. Documentation should include assumptions made and the procedures used.* *Accuracy and confidence discussions should extend to specific discussions of any applied Modifying Factors that may have a material impact on Ore Reserve viability, or for which there are remaining areas of uncertainty at the current study stage.* *It is recognised that this may not be possible or appropriate in all circumstances. These statements of relative accuracy and confidence of the estimate should be compared with production data, where available.*	The project is considered robust with the Ore Reserve copper grade of 4.6% Cu significantly higher than the full cost cut-off grade of 2.3% Cu. Approximately 4.0% of the Ore Reserve tonnes which contains 2% of the Ore Reserve contained copper tonnes falls between the development cut-off copper grade of 0.9% Cu and the full cost cut-off grade of 2.3% Cu. There has been an appropriate level of consideration given to all modifying factors, which are established from an operating mine, to support the declaration and classification of Ore Reserves. No statistical or geostatistical procedures were carried out to quantify the accuracy of the Ore Reserve. Underground Ore Reserves tonnes are split 10% DG, 35% C1, 28% C4, 26% C5 with the remaining in stockpiles. Annual ore production for the LOM approximately aligns with the Ore Reserve split. Approximately 91% of the UG Ore Reserves tonnes are classified as Proven with the remaining 9% classified as Probable.

Appendix 1 (continued) - JORC 2012 TABLE 1 MINERAL RESOURCE AND ORE RESERVE PARAMETERS – MONTY PROJECT

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.*	The Monty Mineral Resource area has been sampled by a combination of diamond (DD), reverse circulation (RC) and aircore (AC) drill holes. The Mineral Resource evaluation considered only DD data from historic and recent drilling of PQ3, HQ, HQ2, HQ3, NQ2 and NQ core sizes for a total 32,653m. None of the historic DD drilling intersected mineralisation. These have only been included in the density evaluation of the deposit in the waste zones. Sampling method used for recent DD drilling is half-core samples of HQ2 and NQ2 core sizes.
	Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.	Sampling and sample preparation method for recent drilling followed guidelines established by Sandfire as per industry standard.
	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 determination of mineralisation is based on observed amount of sulphides and lithological differences. DD core samples submitted to the laboratory are stage crushed firstly to -10mm via Jaw Crusher and homogenised through Rotary Splitting Devise (RSD). These are further crushed through Boyd crusher to -4mm to produce less than 2.5kg sub samples which are pulverised using LM2/LM5 mill to 90% passing 75µm. 0.3g and 0.15g charge portions of the sub-sample are collected and used for Mixed 4 Acid Digest (MAD) and MAD Hotbox methods respectively with ICPOES/MS. A 40g portion of the sub-sample is used for Pb collection Fire Assay.
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).*	All DD core used for the Mineral Resource estimation is HQ2 and NQ2 core sizes. 124 drill holes were completed for a total of 32,653m with inclination between -38º to -66º to achieve intersections at the required depth. The minority of the drill holes are almost to the northwest. All recent DD drill collar locations are surveyed using RTK GPS with downhole surveys completed using high speed gyroscopic survey tools at regular intervals. All core where possible is oriented using a Reflex ACT II RD orientation tool with stated accuracy of +/-1% in the range 0 to 88°.
Drill sample recovery	*Method of recording and assessing core and chip sample recoveries and results assessed.*	Diamond core recovery is logged and captured into the database with overall weighted core recoveries greater than 97%.
	Measures taken to maximise sample recovery and ensure representative nature of the samples.	Appropriate measures have been taken to maximise sample recovery and to ensure the representative nature of recent samples. This includes diamond core being reconstructed into continuous intervals on angle iron racks for orientation and reconciled against core block markers. Samples are routinely weighed and captured into the central database.
	Whether a relationship exists between sample recovery and grade and whether sample bias may have occurred due to preferential loss/gain of fine/coarse material.	No known sample recovery issues have impacted on potential sample bias.
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.*	Geological logging is completed for all holes and representative across the orebody. The lithology, alteration and structural characteristics of core are logged directly to a digital format following procedures and using Sandfire NL geologic codes. Data is imported into Sandfire NL's central database after validation in LogChief™.

Criteria	JORC Code Explanation	Commentary
	Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc) photography.	Logging is both qualitative and quantitative depending on the field being logged. All core is photographed.
	The total length and percentage of the relevant intersections logged.	All drill holes are fully logged.
Sub-sampling techniques and sample preparation	*If core, whether cut or sawn and whether quarter, half or all core taken.*	Core orientation is completed where possible and all are marked prior to sampling. Half core samples are produced using an Almonte or a Corewise Pty Ltd Core Saw. All samples are weighed and recorded.
	If non-core, whether riffled, tube sampled, rotary split, etc and whether sampled wet or dry.	No RC or AC sample is included in this Mineral Resource estimate.
	For all sample types, the nature, quality and appropriateness of the sample preparation technique.	Sample preparation for the initial exploration drilling was completed at Bureau Veritas laboratory in Perth and the majority of the infill Mineral Resource drilling were completed at the onsite laboratory: • Sample preparation at the onsite laboratory involves weighing and drying the original sample at 80° for up to 24 hours. Samples are then crushed through Jaques crusher to nominal -10mm followed by a second stage crushing through Boyd crusher to nominal -4mm. Samples are split to less than 2kg through linear splitter and excess retained. Sample splits are weighed at a frequency of 1:20 and entered into the job results file. Pulverising is completed using a LM2 mill to 90% passing 75%µm. Pulp fines test is completed at a minimum of 1:20. A 1.5kg barren wash is performed after pulverising each mineralised. Pulversed packets are shipped externally to Bureau Veritas laboratory in Perth for analysis. Coarse rejects are retained for QC checks. Sample preparation at the Bureau Veritas laboratory in Perth involves weighing and drying the original sample at 80° for up to 24 hours. DD samples are first crushed through a Jaques crusher to nominal -10mm. A second stage crushing is completed via Boyd crusher to a nominal -4mm. Samples are then split to less than 2.5kg through linear splitter and excess retained. Sample splits are weighed at a frequency of 1:20 and entered into the job. Pulverising is completed using a LM5 mill to 90% passing 75%µm. Grind size checks are completed at a minimum of 1 per batch. A 1.5kg barren quartz wash is pulverised after mineralised samples. Coarse rejects are stored and returned to Sandfire.
	Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.	Sandfire has protocols that cover auditing of sample preparation at the laboratories and the collection and assessment of data to ensure accurate steps are used in producing representative samples for the analytical process. Key performance indices include: • Contamination index of 90% (that is 90% blanks pass); • Crush Size index of P95-10mm; Grind Size index of P90-75µm; and • Check Samples returning at worst 20% precision at 90% confidence and bias of 5% or better. Weekly onsite laboratory inspections are completed to ensure the laboratory conforms to standards. Additional grind size checks are completed via check laboratories. The analytical laboratories conduct their own internal QC checks to ensure representativeness of the sub-sampling stages.
	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.	Sampling is to industry standard. No field duplicates have been taken.
	Whether sample sizes are appropriate to the grain size of the material being sampled	The sample sizes are considered appropriate for the massive sulphide Cu-Ag-Zn mineralisation style.

Criteria	JORC Code Explanation	Commentary
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.*	Primary assays are analysed through Bureau Veritas laboratory (Primary laboratory) in Perth using Mixed 4-Acid Digest (MAD) and X-ray fluorescence (XRF) analytical methods: • Base metal and extra element analysis are via MAD ICPOES/MS using 0.3g charge and 0.15g charge MAD Hotbox methods. The samples are digested and refluxed with a mixture of acids including Hydrofluoric, Nitric, Hydrochloric and Perchloric acids and conducted for multi elements including Cu, Pb, Zn, Ag, As, Fe, S, Sb, Bi, Mo, Re, Mn, Co, Cd, Cr, Ni, Se, Te, Ti, Zr, V, Sn, W and Ba. The MAD Hotbox method is an extended digest method that approaches a total digest for many elements however some refractory minerals are not completely attacked. The elements S, Cu, Zn, Co, Fe, Ca, Mg, Mn, Ni, Cr, Ti, K, Na, V are determined by ICPOES, and Ag, Pb, As, Sb, Bi, Cd, Se, Te, Mo, Re, Zr, Ba, Sn, W are determined by ICPMS. Samples are analysed for Au, Pd and Pt by firing a 40g portion of the sample with ICPMS finish. Lower sample weights are employed where samples have very high S contents. • The XRF analytical protocol comprises the fusion of 0.4g sample into a glass bead with a 9g flux comprising of 1% Tantalum Oxide;12.825 Sodium Nitrate and 0.5% Lithium Bromide) – 66:34 LT;LM+1% Ta. XRF is used to analyse for a suite of elements including Cu, Fe, SiO2, Al, Ca, K, MgO, P, S, Ti, Mn, Co, Zn, As and Pb. XRF results are used for comparative studies only and have not been used for the Mineral Resources estimate. Selected coarse rejects are analysed through the primary laboratory to test the precision at the initial sample splitting stage. These follow the same analytical protocol described above. Selected pulp rejects submitted are analysed by Intertek Genalyis Laboratory Services (Check Laboratory) as QC checks against the primary Bureau Veritas laboratory results. Analysis include: • Multi-element 4-Acid Digest with ICPOES/MS instrument finish. In cases where copper concentration exceeds the upper limit of 2% Cu, they are re-assayed by an ore grade ICPOES analytical method. Elements analysed include Ag, Al, As, Ba, Bi, Ca, Cd, Co, Cr, Cs, Cu, Fe, Ga, Ge, Hf, In, K, Li, Mg, Mn, Mo, Na, Nb, Ni, P, Pb, Re, S, Sb, Sc, Se, Si, Sr, Ta, Th, Ti, U, V, W, Y, Zn and Zr; • Sodium Peroxide Fusion in zirconia crucible with hydrochloric acid. Elements analysed by ICPOES/MS. This method is useful in identifying elements hosted in the minerals that may be resistant to acid digestions. Elements analysed under this method include Ca, As, Cu, Fe, K, Mg, Mn, Pb, S, Si, Ti and Zn; and • 50g Pb collection Fire Assay in new pots with ICPMS finish for Au, Pt and Pd. A third laboratory, MinAnalytical Laboratory Services Australia (Umpire Laboratory) analysed selected pulp rejects (Umpire Checks) submissions on a quarterly basis. Analysis include: • Multi-element 4-Acid Digest with ICPOES/MS instrument finish for Ag, Al, As, Ba, Bi, Ca, Cd, Co, Cr, Cu, Fe, K, Mg, Mn, Mo, Na, Ni, P, Pb, S, Sb, Sc, Sr, Te, Ti, V, Zn and Zr; • Sodium Peroxide Fusion in zirconia crucible with hydrochloric acid with ICPOES/MS finish. Elements analysed include Cu, Fe, Si, Al, Ca, K, Mg, S, Ti, Mn and Zn; and • Pb collection Fire Assay for Au, Pt and Pd using specially formulated flux to accommodate a variety of sample matrices. Some reduction in sample charge sometimes occur due to the fusion of difficult sample matrices. All the analytical methods are considered appropriate for the mineralisation style and the intended purposes.
	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.	No handheld XRF determined element concentrations have been used in the Mineral Resource estimate.

Criteria	JORC Code Explanation	Commentary
	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.	Sandfire Quality Control (QC) protocol is considered industry standard with Certified Reference Materials (CRM) submitted on regular basis with routine samples. CRMs and blanks are inserted at a minimum of 5% frequency rate. A minimum of 2% of assays are routinely re-submitted as Check Samples and Check Assays through blind submittals to the primary and secondary laboratory respectively. Additionally, Umpire Checks are completed on quarterly basis through a third laboratory. QC data returned is automatically checked against set pass/fail limits within SQL database and are either passed or failed on import on a batch to batch basis. On import a first pass automatic QC report is generated and sent to QAQC Geologists for recommended action. Results of all QC samples for every laboratory batch received are analysed to determine assay accuracy and repeatability. Only data that demonstrate sufficient accuracy and precision of assays are used for Mineral Resource updates. The participating laboratories conduct their own internal quality checks including the use of certified reference materials and/or in house controls, blanks and replicates. These quality results are reported along with sample results in the final reports. Sandfire has not verified the laboratory internal QC data.
Verification of sampling and assaying	*The verification of significant intersections by either independent or alternative company personnel.*	Significant intersections have been verified by alternative company personnel and the Competent Person.
	The use of twinned holes.	There are no twinned holes drilled for the Mineral Resource.
	Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.	Drill hole data are captured on field tough book laptops using Logchief™ Software. The software has validation routines and data is then imported into a secure central database.
	Discuss any adjustment to assay data.	The primary data for drilling is always kept and is never replaced by adjusted or interpreted 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.*	Collar coordinates for all recent drill holes are accurately surveyed using RTK GPS system within +/-50mm accuracy (X,Y,Z). Different downhole survey methods are used for the recent drilling including Eastman Single Shot (ESS) and high speed gyroscopic downhole methods (GYRO). The ESS surveys are completed by the drilling companies. GYRO surveys are completed by Surtron Technologies with different sets of instruments. The GYRO surveys completed by SPT GyroTracer Directional™ 42 mm (north seeker) instrument supersedes all other surveys.
	Specification of the grid system used.	Coordinate and azimuth are reported in MGA 94 Zone 50.
	Quality and adequacy of topographic control.	Topographic control was established from aerial photography using a series of surveyed control points.
Data spacing and distribution	*Data spacing for reporting of Exploration Results.*	No Exploration Results are included in this release.
	Whether the data spacing and distribution is sufficient to establish the degree of geological and grade continuity appropriate for the Mineral Resource and Ore Reserve estimation procedure(s) and classifications applied.	Data spacing and distribution are sufficient to establish the degree of geological and grade continuity appropriate for JORC 2012 classifications applied.
	Whether sample compositing has been applied.	No sample compositing is applied during the sampling process.
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.*	All drill holes are oriented to achieve high angles of intersection.
	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.	No orientation based sampling bias is known at this stage.

Criteria	JORC Code Explanation	Commentary
Sample security	*The measures taken to ensure sample security.*	Appropriate security measures are taken to dispatch samples to the laboratory. Chain of custody of samples is being managed by Sandfire. Samples are stored onsite and transported to the laboratory by a licenced transport company in sealed bulka bags. The laboratory receipts received samples against the sample dispatch documents and issues a reconciliation report for every sample batch. The laboratory stores the excess material (coarse residue) and return to Sandfire after 30 days unless instructed otherwise. The laboratory returns all pulp samples within 60 days.
Audits or reviews	*The results of any audits or reviews of sampling techniques and data.*	Sandfire sampling techniques and data collection processes are of industry standard and have been subjected to multiple internal and external reviews. Cube Consulting Pty completed a review during 18th - 20th February 2014 and found procedures to be consistent with industry standard and appropriate with minor recommendations for enhancement as part of continuous improvement.

Section 2: Reporting of Exploration Results

No Exploration Results are included in this release.

Section 3: Estimation and Reporting of Mineral Resources

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.*	Sandfire employs SQL as the central data storage system using Datashed software front end. User access to the database is regulated by specific user permissions. Existing protocols maximise data functionality and quality whilst minimising the likelihood of error introduction at primary data collection points and subsequent database upload, storage and retrieval points. The primary data for historic drilling was collected using LogChief™ software. The historic master database was then supplied to Sandfire in SQL format which was then imported into the Sandfire relational SQL drilling database.
	Data validation procedures used.	Data templates with lookup tables and fixed formatting are used for collecting primary data on field Toughbook laptops. The software has validation routines and data is subsequently imported into a secure central database. The SQL server database is configured for optimal validation through constraints, library tables, triggers and stored procedures. Data that fails these rules on import is rejected or quarantined until it is corrected. Database is centrally managed by a Database Manager who is responsible for all aspects of data entry, validation, development, quality control and specialist queries. There is a standard suite of vigorous validation checks for all data. The supplied historic database was subjected to standard validation checks using SQL and DataShed relational database.
Site Visits	*Comment on any site visits undertaken by the Competent Person and the outcome of those visits.*	The Competent Person for this Mineral Resource update is a full time employee of Sandfire Resources NL and undertakes regular site visits.
	If no site visits have been undertaken indicate why this is the case.	Site visits are undertaken.
Geological interpretation	*Confidence in (or conversely, the uncertainty of) the geological interpretation of the mineral deposit.*	The interpretation is based only on recent DD drilling on a nominal 40m × 30m spacing outlining Cu-Au-Zn mineralisation associated with massive sulphide and halo-style mineralisation and is based on a fully validated drill data.

Criteria	JORC Code Explanation	Commentary
		Where massive sulphide domain wireframes terminate between drill holes they do not extend more than half way between the mineralised and barren intercepts thus preventing excessive extrapolated of mineralisation. This interpretation is considered geologically and volumetrically realistic and is considered fit for purpose for estimating Mineral Resources in the Indicated/Inferred categories
	Nature of the data used and of any assumptions made.	All geological modelling was undertaken using Leapfrog Mining v2.6. In order to model the massive sulphide lenses, points were snapped to contacts between massive sulphide and the surrounding host sequence rocks. Isotropic, implicit interpolation was used to construct surfaces for these contacts. Where required, polylines were used to guide interpolation in a geologically realistic manner and to ensure that the upper and lower contacts converged, and crossed, at drill-indicated terminations of massive sulphide units. The output surfaces included drill hole contact points, such that the surfaces honoured all drill hole data. Domaining between upper and lower contacts was undertaken to create solids between contact surfaces. A similar process was used to create the internal halo solids and external halo solids. Seven (7) 3D wireframes solids have been modelled that encapsulate the massive sulphide mineralisation. Some of these solids contain internal zones of halo mineralisation. Five (5) internal halo solids have been modelled to constrain these zones.
	The effect, if any, of alternative interpretations on Mineral Resource estimation.	The geological interpretation of the mineralised boundaries are considered robust and alternative interpretations do not have the potential to impact significantly on the Mineral Resources at the time. The interpretation has undergone site and corporate peer reviews ensuring that the geological interpretation is robust.
	The use of geology in guiding and controlling Mineral Resource estimation.	The interpreted wireframe models are used as hard boundaries for the Mineral Resource estimate.
	The factors affecting continuity both of grade and geology.	Mineralisation at Monty is contained within a host sequence of sediments (siltstone, sandstone, conglomerate) and basalts in multiple sulphide lenses, at different statigraphic levels, surrounded by disseminated and/or blebby sulphide (halo mineralisation) in chlorite-altered host sequence litho-types. Based on similarities with the DeGrussa deposit, the Monty deposit is interpreted to be a Volcanogenic Massive Sulphide (VMS) deposit that formed during sub-sea floor replacement of host sequence stratigraphy by mineralising hydrothermal fluids. The host sequence is bounded both above, and below, by dolerite sills. These dolerite sills are interpreted to post-date mineralisation. The massive sulphide mineralisation typically comprises chalcopyrite ± pyrite ± pyrite ± pyrrhotite ± sphalerite. In isolated areas within the lowermost massive sulphide lense, bornite is present which have been constrained by incorporating continuity characteristics into two sub-domains. These have not been extended beyond 20m (½ drill-spacing) beyond drill intersections. The regolith profile at Monty comprises transported cover, saprolite (>25% weathering) followed by saprock (<25% weathering). Mineralisation at Monty does not extend to surface, terminating at a depth of approximately 72m from surface. At this depth the regolith comprises saprock (<25% weathering) with weathering affecting the rock mass. This interval only extends for an interval of approximately 10m (to 82m below surface).
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.*	All known Monty deposit mineralisation extends from 743,400mE to 743,800mE, 7,170,800mN to 7,171,300mN and 600m below surface. The Monty massive sulphide mineralisation generally strikes northeast and steeply dips to the northwest between 70-85°.

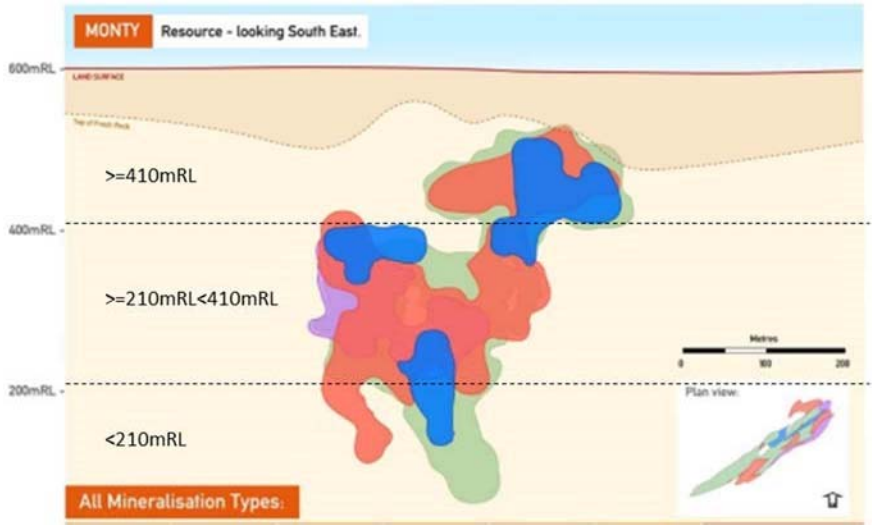
Criteria	JORC Code Explanation	Commentary
Estimation and modelling techniques	*The nature and appropriateness of the estimation technique(s) applied and key assumptions, including treatment of extreme grade values, domaining, interpolation parameters and maximum distance of extrapolation from data points. If a computer assisted estimation method was chosen include a description of computer software and parameters used.*	The Mineral Resource estimation was completed with Datamine™ Studio 3 Resource Modelling software. The Mineral Resource database was uniquely flagged with mineralised zone codes as defined by the wireframe boundaries and then composited into 1m density weighted lengths. The composite drill hole data was used for statistical and geostatistical analysis. Histograms, log-probability plots and mean variance plots were considered in determining the appropriate cut-offs for each mineralised zone. The points of inflexion in the upper tail of the distribution on the log-probability plots as well as their spatial locations were examined to help identify outliers and decide on the treatments applied. All grade values greater than the cut-off grade are set to the cut-off value (capped). Deterministic high-grade wireframes to restrict the influence of the high-grade bornite intercepts within the massive sulphide were modelled by factoring in the continuity characteristics of the bornite mineralisation using an Indicator Probability approach. Variography studies included analysing series of fans in three principal directions of horizontal, across-strike vertical and dip planes. The selected strike, plunge and dip directions were used to locate the three directions for which experimental variogram models were fitted. The nugget variance was modelled first by the use of down-hole variograms based on 1m lag, reflecting the downhole composite spacing. Variograms were estimated by fitting spherical models in the three principal directions using the nugget variance modelled. Quantitative Kriging Neighbourhood Analysis (QKNA) using goodness of fit statistics was completed to optimise estimation parameters. Elements estimated include Cu, Au, Ag, Fe, S, Pb and Zn. Grade estimation of the Monty deposit was completed using the geostatistical method of Ordinary Kriging.
	The availability of check estimates, previous estimates and/or mine production records and whether the Mineral Resource estimate takes appropriate account of such data.	This a maiden Mineral Resource estimate.
	The assumptions made regarding recovery of by-products.	No assumptions are made regarding recovery of by-products during the Mineral Resource estimation.
	Estimation of deleterious elements or other non-grade variables of economic significance (e.g. sulphur for acid mine drainage characterisation).	Estimates includes deleterious or penalty elements Pb, Bi, Zn, As, and MgO.
	In the case of block model interpolation, the block size in relation to the average sample spacing and the search employed.	The estimated grades are based on interpolation into three dimensional parent blocks of sizes X=20m by Y=10m by Z=10m sub-blocked into X=1m by Y=1m by Z=1m sizes. Subblocks are assigned parent block estimates. The block size is the optimum based on QKNA and takes into consideration the mineralisation drill hole intercept spacing that are within 40m. Given that the orientation of mineralisation varies within the Monty deposit and to preserve the orientation of mineralisation, “Dynamic Anisotropy” option of Datamine Studio3™ was used. This option, allows orienting the search volume precisely such that it follows the trend of the mineralisation. Directional ranges are determined from variogram modelling and are used to constrain the search distances. The search neighbourhood strategy implemented involves the use of two estimation search runs with initial short-search set to approximately 75% of the variogram range of the element being estimated (within 40m, in the majority of cases) and extending the sample influence in later runs. To estimate a block, a minimum of 3 and maximum 15 composites are used. All blocks are interpolated after the second pass. Searches have not exceeded 1½ of the range of continuity. High grade restriction of the bornite intercept within the massive sulphide zone was achieved by the use of a tightly constrained wireframe that was modelled to respect the continuity characteristics of the bornite mineralisation.

Criteria	JORC Code Explanation	Commentary
	Any assumptions behind modelling of selective mining units.	No selective mining units have been assumed in this current Mineral Resource.
	Any assumptions about correlation between variables.	Within the massive sulphides there is a very good and consistent correlation between Cu, Fe, S and density which has been analysed separately for the top and bottom zones using multiple regression to fit the density, Cu, and S relationship. Due to multicollinearity issues, Fe was removed from the regression models. The regressed formula was then applied to the block model estimated S and Cu values to assign densities for each block. The bornite sub-domains are assigned their average Archimedean measured core density values due to limited data to fit a regression.
	Description of how the geological interpretation was used to control the resource estimates.	The block model is assigned unique mineralisation zone codes that correspond with the interpreted geological zones as defined by wireframes. This enabled each mineralisation zone to be estimated separately using only corresponding composite data.
	Discussion of basis for using or not using grade cutting or capping.	Statistical analysis in conjunction with the spatial configuration of samples were used to assist in identifying outliers and decide on the treatments applied. High-grade restrictions are either as a top-cut or deterministic high grade spatial restriction (bornite sub-domains) to minimise the smoothing of very high-grades in areas not supported by data.
	The process of validation, the checking process used, the comparison of model data to drill hole data, and use of reconciliation data if available.	Standard model validation is completed using visual and numerical methods: • Checks to ensure the block model is appropriately flagged with domain codes as defined by wireframes; • Assessment of wireframe - block model variance for all domains; • Interrogation of block model on screen comparing individual block model grades with input data values; • Assessment of block model estimate global mean variances to the declustered input data composite mean grades for each mineralised zone; • Assessment of the estimation kriging variance and theoretical slope of regression for individual model blocks within each geological domain to monitor the degree of smoothing and to control conditional bias; • Assessment of swath plots of the estimated block grades and composite mean grades by eastings, northings and elevations; and • Peer reviews. This is a maiden Mineral Resource estimate; there is no reconciliation data available for use as a check on the estimates.
Moisture	*Whether the tonnages are estimated on a dry basis or with natural moisture, and the method of determination of the moisture content.*	Tonnages are estimated on a dry basis.
Cut-off parameters	*The basis of the adopted cut-off grade(s) or quality parameters applied.*	Based upon data review a notional lower cut-off of 1% Copper appear to be a natural grade boundary between ore and trace assay values.
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.*	It is anticipated that the Monty Mineral Resource will be accessed through underground mining using open stoping and fill methods.

Criteria	JORC Code Explanation	Commentary
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 current Mineral Resource does not include any metallurgical assumptions. It is envisaged that the DeGrussa processing plant will be used to treat the ore and preliminary test work reflecting the DeGrussa flowsheet has been completed by ALS Metallurgy on 4 discrete areas identified to date (upper portion, wide high grade zones, narrow very high grade zones and halo style zones). All testing to date has validated that the DeGrussa plant is a viable option for the treatment of the Monty ore with high recoveries expected.
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.*	No environmental assumptions have been made at this stage.
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.*	Water immersion is the current methodology used in the measurement of densities from DD core. Regular and systematic density measurements are taken on representative number of diamond drill core according to a formal protocol. This data is included in the database. Overall, a total of 6,307 Archimedian density measurements have been completed within the Mineral Resource area within the sulphide and the non-sulphide bearing rocks for the various weathering profiles. The breakdown is as follows: • A total of 5,993 measurements completed by Sandfire with readings from 1.1 g/cm3 to 4.7 g/cm3 averaging at 2.9 g/cm3 and • A total of 314 density determinations completed historically by Talisman Resources at Monty. These measurements were undertaken in non-sulphide bearing zones with the majority in weathered rock. Measurements range from 1.1 g/cm3 to 3.1 g/cm3 averaging at 1.8 g/cm3. Within the halo and massive sulphides density varies from 2.4 g/cm3 to 4.7 g/cm3, with an average density reading of 3.6 g/cm3. Within the non-sulphide bearing waste rocks density varies from 1.1 g/cm3 to 2.8 g/cm3, with an average density reading of 2.6 g/cm3. Following the evaluation of waste rock density data, the following average densities are assigned: • An average density of 1.7 g/cm3 assigned to the saprolite waste rock; and • An average of 2.8 g/cm3 assigned to fresh waste rock. To test the methodology and accuracy of the density measurements, regular samples totalling about 540 samples were submitted to an independent laboratory for measurements. The results of the external checks are very consistent with the Sandfire measurements.
	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.	The density determinations have accounted for void spaces, moisture and differences between alteration zones.
	Discuss assumptions for bulk density estimates used in the evaluation process of the different materials.	The regolith profile at Monty comprises transported cover, saprolite (>25% weathering) flowed by saprock (<25% weathering). At approximately 72m below surface, the regolith comprises saprock with weathering affecting the rock mass. This interval only extends for an interval of approximately 10m (to approximately 82m below surface) below which the nature of the saprock changes with weathering only occurring adjacent to fractures but otherwise not affecting the rock mass. Fracture related weathering of the Monty mineralisation extends to depths of up to 185m from surface.

Criteria	JORC Code Explanation	Commentary
		Modelling of top of fresh rock and the base at which oxidation occurs along fractures accounted for these variations and are used in the Mineral Resource evaluation process.
Classification	*The basis for the classification of the Mineral Resources into varying confidence categories.*	The current Mineral Resource has been classified into Indicated and Inferred categories following the guidelines of the Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves (JORC Code 2012). The classification is based on drill hole orebody intercept spacing, geological confidence, grade continuity and estimation quality. Indicated Mineral Resources are within areas with drill hole intercept spacing of within 40m by 30m.
	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).	The Mineral Resource classification has appropriately taken into account data spacing, distribution, reliability, quality and quantity of input data as well as the confidence in predicting grade and geological continuity.
	Whether the result appropriately reflects the Competent Person's view of the deposit.	The Mineral Resource reflects the Competent Person's view of the deposit.
Audits or reviews	*The results of any audits or reviews of Mineral Resource estimates.*	The Sandfire Monty Database has been subject to an independent data and assay audit. Maxwell Geoservices completed an audit in January 2016 and found the SQL database to be of industry standard, with minor issues noted such as unmatched data, missing data and noted minor schema limitations. The process for geological modelling, estimation and reporting of Mineral Resources is industry standard and has been subject to an independent external review. Cube Consulting Pty undertook a review of the estimation in April 2016 and found the process to be of industry standard with no fatal issues noted.
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 Mineral Resource has been reported in accordance with the guidelines of the 2012 edition of the Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves and the relative accuracy is reflected in the categorisation into Indicated and Inferred.
	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.	The statements relates to global estimates of tonnes and grade.
	These statements of relative accuracy and confidence of the estimate should be compared with production data, where available.	At this stage there is no production data to assess the relative accuracy and confidence of the Mineral Resource. The precision of the estimate is globally acceptable assuming that more detailed grade control drilling will be undertaken at the production stage.

Section 4: Estimation and Reporting of Ore Reserves

<table>
<tr><th>Criteria</th><th>JORC Code Explanation</th><th>Commentary</th></tr>
<tr><td rowspan="2">Mineral Resource estimate for conversion to Ore Reserves</td><td>Description of the Mineral Resource estimate used as a basis for the conversion to an Ore Reserve.</td><td>The Underground Ore Reserve estimate is based on the Monty deposit Mineral Resource estimate as at the 31 March 2016. This estimate does not contain a Measured Mineral Resource therefore only the Indicated Mineral Resource is available for conversion to an Ore Reserve. The Indicated Mineral Resource constitutes 99% of the total Monty deposit Mineral Resource estimate tonnes and 98% of the total contained copper. The remainder is classified as Inferred Mineral Resource.
A vertical percentage split of tonnage and contained copper of the Indicated Mineral Resource by RL is tabulated below.
<table>
<tr><th>Name</th><th>RL</th><th>Tonnes (%)</th><th>Contained Copper (%)</th></tr>
<tr><td>UZ</td><td>>=410mRL</td><td>22</td><td>11</td></tr>
<tr><td>LZ</td><td>>=210mRL<410mRL</td><td>72</td><td>87</td></tr>
<tr><td>LZ</td><td><210mRL</td><td>6</td><td>2</td></tr>
</table>


The estimation and reporting of the Monty deposit Mineral Resources is outlined in a SFR ASX Announcement, dated 13 April 2016.</td></tr>
<tr><td>Clear statement as to whether the Mineral Resources are reported additional to, or inclusive of, the Ore Reserves.</td><td>Mineral Resources reported are inclusive of Ore Reserves.</td></tr>
<tr><td rowspan="2">Site visits</td><td>Comment on any site visits undertaken by the Competent Person and the outcome of those visits.</td><td>The Competent Person for this Ore Reserve statement is a full-time employee of Sandfire Resources NL (SFR), is based in Perth, and undertakes regular site visits.</td></tr>
<tr><td>If no site visits have been undertaken indicate why this is the case.</td><td>Site visits are undertaken as described above.</td></tr>
</table>

Criteria	JORC Code Explanation	Commentary
Study status	*The type and level of study undertaken to enable Mineral Resources to be converted to Ore Reserves.*	A feasibility study was completed between June 2016 and April 2017.
Cut-off parameters	*The basis of the cut-off grade(s) or quality parameters applied.*	The cut-off parameters used to determine the project Ore Reserves are based on 100% project ownership. JV charges and fees are also considered. Three copper only cut-off grades have been calculated as economic cut-offs in the determination of the Ore Reserves. These are based on study estimated costs, revenues, mill recoveries and modifying factors. The cut-off values are: • Full cost cut-off grade (4.9% Cu) – is based on all operating costs associated with the production of copper metal; • Stope incremental cut-off grade (3.2% Cu) - considers material below the full cost cut-off that is accessible; and • Development cut-off grade (2.4% Cu) – considers material that has to be mined in the process of gaining access to fully costed economic material.
Mining factors or assumptions	*The method and assumptions used as reported in the Pre-Feasibility or Feasibility Study to convert the Mineral Resource to an Ore Reserve (i.e. either by application of appropriate factors by optimisation or by preliminary or detailed design).*	Ore Reserves have been estimated by generating detailed mining shapes that take account of cut-off grade criteria and geometric complexity for all areas that contain Indicated Mineral Resources. This also includes requirements for access development. Internal stope dilution has been designed into the mining shapes and interrogated. External stope dilution and mining recovery factors have been applied post geological model interrogation to generate final diluted and recovered material that is then reassessed against final Project cut-off grade criteria.
	The choice, nature and appropriateness of the selected mining method(s) and other mining parameters including associated design issues such as pre-strip, access, etc.	The Monty project is a time constrained project that requires its mining life to align with the processing life of the nearby DeGrussa mine. To minimise extraction risk and provide production capacity and flexibility the Ore Reserve requires to be accessed as early as practical. Development priority is given to accessing the Indicated Massive Sulphide Resource located between 210mRl and 410mRL. A deep weathering profile in the vicinity of the deposit has impacted on the selection of the location of the portal boxcut and subsequent decline pathway. Boxcut and decline development are located to provide early access to fresh rock in order to minimise orebody access timing risk. The mining method selected is long-hole open stoping (LHOS) with fill. Primary fill material will be Cemented Aggregate Fill (CAF) with unconsolidated rock fill (RF) used where consolidated fill is not required. This method allows for total extraction where economic and provides good extraction flexibility with variable geometry and ground conditions. An overhand mining sequence has been selected employing multiple mining panels. CAF sill pillars will be established to create mining panels. Strategic CAF rib pillars will be used to manage local stope and mining panel ground stability. The overhand sequence provides an opportunity to complete grade control drilling prior to accessing the orebody. The selected mining method is considered appropriate for the nature of the defined Mineral Resources and surrounding host rock. Experienced gained at the nearby DeGrussa underground mine has been adopted where applicable as extraction is expected to occur under comparable conditions.
	The assumptions made regarding geotechnical parameters (e.g. pit slopes, stope sizes, etc), grade control and pre-production drilling.	Both the boxcut and near surface decline locations have been assessed via specific diamond drilling programs and subsequent geotechnical assessment. A 40m long primary surface ventilation raise is planned to be established in close proximity to the planned decline pathway. Geotechnical parameters for this raise have been derived from the nearby boxcut and decline geotechnical assessments. No in situ stress measurements have been undertaken. The stress field has been estimated to be low to moderate, supported by the measured stress field at DeGrussa, which is located approximately 10 km west of the Monty Project. Stope and development geotechnical parameters have been derived from core logging of dedicated geotechnical and metallurgical diamond drill holes, resource diamond drill holes, rock strength testing data and a structural model.

Criteria	JORC Code Explanation	Commentary
		Stope stability (size) has been assessed using the industry accepted empirical stability chart method. This method is suitable to provide indicative stope stability assessments but reliable stability forecasts require local scale rock mass information. The method has known published limitations but is considered appropriate for this mine design in the manner in which it has been applied. Stope size in the Upper Zone (UZ) is constrained because of the influence of rock fracturing and oxidation associated with the Arneis Fault. This fault runs sub-parallel to and in and out of the UZ mineralisation. The level of confidence in stope performance in this zone is considered low. Rock mass conditions in the Low Zone (LZ) are considered to be fair to very good with mineralisation geometric complexity a primary influence on stope size. Grade control drilling requirements have been determined via the use of conditional simulation techniques. A drill hole spacing grid of 10m x 10m has been assumed.
	The major assumptions made and Mineral Resource model used for pit and stope optimisation (if appropriate).	The Monty deposit Mineral Resources as at the 31 March 2016 was used as the basis for stope and development design. No modifications were made to this model for mine design and stope optimisation purposes.
	The mining dilution factors used.	Internal stope dilution tonnage (waste material contained within the designed stope shape) has been captured via the stope design process and is variable dependent on the geometry of the mineralisation to be extracted. The geometry of the Monty deposit varies both on strike and dip with multiple lodes present. Internal stope dilution tonnage therefore varies and ranges from 0% to 90% with an average of 17%. Internal stope dilution is at zero grade. An external dilution factor (external to the stope shape) is also applied to stopes to account for blasting practices and expected local ground conditions. The UZ is impacted by the Arneis Fault that runs sub-parallel to and in and out of the mineralisation therefore a larger factor has been used compared to the LZ where ground conditions are better and are not impacted by a significant structure. The LZ uses a 3% external dilution tonnage factor at zero grade. The UZ uses a 33% external dilution tonnage factor at an average grade of the Halo Mineral Resource that envelops the massive sulphide.
	The mining recovery factors used.	A mining recovery factor of 95% is applied to all diluted stopes.
	Any minimum mining widths used.	A minimum mining width of 3.0m has been used which takes account of the selected equipment fleet, productivity requirements and the nature of the mineralisation.
	The manner in which Inferred Mineral Resources are utilised in mining studies and the sensitivity of the outcome to their inclusion.	No Inferred Mineral Resources are included in the Ore Reserves. The Monty deposit contains an Inferred Mineral Resource that constitutes less than 1% of the total mineral resource tonnage. Its inclusion in the LOM plan and subsequent impact on economic viability is negligible.
	The infrastructure requirements of the selected mining methods.	The selected mining method requires the following infrastructure: • Orebody access, including boxcut, and egress development drives and raises; • Orebody intake and return air ventilation development drives and raises; • Surface primary ventilation exhaust fans; • Underground service water and compressed air supply and dewatering system; • Underground communications system; • Underground power reticulation; • Crushing and screening facilities and a surface batch plant for shotcrete and CAF backfill supply; and • Surface explosive storage.

Criteria	JORC Code Explanation	Commentary
Metallurgical factors or assumptions	*The metallurgical process proposed and the appropriateness of that process to the style of mineralisation.* *Whether the metallurgical process is well-tested technology or novel in nature. The nature, amount and representativeness of metallurgical test work undertaken, the nature of the metallurgical domaining applied and the corresponding metallurgical recovery factors applied.* *Any assumptions or allowances made for deleterious elements.* *The existence of any bulk sample or pilot scale test work and the degree to which such samples are considered representative of the orebody as a whole.* *For minerals that are defined by a specification, has the ore reserve estimation been based on the appropriate mineralogy to meet the specifications?*	The Ore Reserve estimate is based on an operating 1.6 Mtpa concentrator plant producing a 24.5% copper-concentrate that contains gold and silver. The ore from Monty will be treated subject to the terms of an Ore Sale and Purchase Agreement. The Monty orebody is a volcanogenic massive sulphide similar in composition to the nearby DeGrussa orebodies. The DeGrussa plant will operate at 1.6 Mtpa and Monty will comprise up to 25% of the ore presented to the plant. The level of testwork is considered adequate as a result of adopting a processing blend strategy and using the existing DeGrussa concentrator plant flowsheet. The testwork completed focused on: • Understanding the comminution properties and how these properties affect the DeGrussa milling circuit achieving 1.6Mtpa at a primary grind of 45µm; • Performing flotation variability testing using the DeGrussa geometallurgical flowsheet to assess the robustness of this flowsheet on natural variations within the Monty ore; and • Investigate the resultant concentrate specifications in order to determine the quality of the concentrate. Flotation testwork was based on a total of eleven quarter core and half core diamond drill holes that were selected to cover the deposit with respect to spatial variability, ore variability, ore mineralogy and waste types. Composites were created to reflect full ore zones plus adjacent waste. Comminution testwork included SMC, Bond Ball Work Index and abrasion testing. Seven large diameter PQ diamond drill holes were drilled to provide the samples. These holes were drilled “twinning” some of the geological significant areas determined from geotechnical drilling. In particular, in relation to known structural controls, grade ranges, mineralogy and waste characteristics. Testwork on the Monty ore has shown that flotation and comminution characteristics of the ores are similar to DeGrussa ore and Monty can be treated at DeGrussa with high recoveries. Cu, Au and Ag recovery algorithms have been used in the determination of the Ore Reserve estimate. Elevated levels of bismuth, mercury, selenium and tellurium in concentrate have been reported from some of the bornite zone composites. Blending of ore from this zone requires a lower percentage (<10%) to manage the risk of penalties. No bulk sample or pilot scale testwork was undertaken as ore will be treated at the existing DeGrussa concentrator plant with Monty ores having similar flotation and comminution characteristics to DeGrussa ores.
Environmental	*The status of studies of potential environmental impacts of the mining and processing operation. Details of waste rock characterisation and the consideration of potential sites, status of design options considered and, where applicable, the status of approvals for process residue storage and waste dumps should be reported.*	Monty will require a number of environmental approvals, including Mining Proposal (Mining Act), Works Approval and Environmental Licence (EP Act), Native Vegetation Clearing Permit (EP Act), Groundwater Licence (DoW Licence to Take Water). No separate Commonwealth environmental assessment will be required, nor will the project require assessment by the Office of the Environmental Protection Authority (WA). All the necessary studies required to complete the various applications have been completed and reported. Other reports completed include the Mine Closure Plan.
Infrastructure	*The existence of appropriate infrastructure: availability of land for plant development, power, water, transportation (particularly for bulk commodities), labour, accommodation; or the ease with which the infrastructure can be provided, or accessed.*	Monty will utilise existing infrastructure and services installed to support mining operations at DeGrussa. The main items includes: • Access road from the Great Northern Highway; • Raw water system and borefield; • Accommodation village; • Aerodrome; • Assay laboratory; • Core farm;

Criteria	JORC Code Explanation	Commentary
		• External communication connections; • Underground heavy mobile equipment workshop; • Mine workers change room facilities; and • DeGrussa ROM pad; Infrastructure requirements specific to Monty include: • A 14km access road to Monty that will connect the Monty mine to the DeGrussa ROM pad; • Site earthworks including laydown areas, Potential Acid Forming (PAF) waste rock storage, ore stockpile, diversion drains and bunds, water storage and event ponds; • Mining offices, muster/crib room, toilets and first aid treatment; • Fuel storage and dispensing; • Service facilities for underground mining equipment; • Power generators and power distribution; • Waste water treatment plant with spray fields; • Communications tower; and • Crushing facilities, batch plant and CAF mixing.
Costs	*The derivation of, or assumptions made, regarding projected capital costs in the study.* *The methodology used to estimate operating costs.* *Allowances made for the content of deleterious elements.* *The source of exchange rates used in the study.* *Derivation of transportation charges.* *The basis for forecasting or source of treatment and refining charges, penalties for failure to meet specification, etc.* *The allowances made for royalties payable, both Government and private.*	Capital and operating costs have been derived from first principles. Quantity information was derived from detailed design and factored from similar works. Cost information primarily supplied from: • Existing DeGrussa contractors; and • DeGrussa historical costs. Monty ore will be subject to an ore treatment fee, as part of an Ore Sale and Purchase Agreement. The fee structure is subject to finalisation with negotiations nearing completion between Sandfire Resources NL (SFR) and Talisman Mining Ltd (TLM). No allowances have been made for deleterious elements. Exchange rates are based on ANZ bank December 2016 forecasts and vary over the life of the mine. The average weighted LOM AU$:US$ exchange rate is 0.72. Land freight and port charges are based on existing contracts. Sea freight charges based on Braemar indices. TC / RC based on benchmark. Monty is subject to Government Royalties. Rates for Government Royalties are: • Copper is 5.0% of net revenue (concentrate); • Gold is 2.5% of net revenue; and • Silver is 2.5% of net revenue.
Revenue factors	*The derivation of, or assumptions made regarding revenue factors including head grade, metal or commodity price(s) exchange rates, transportation and treatment charges, penalties, net smelter returns, etc.* *The derivation of assumptions made of metal or commodity price(s), for the principal metals, minerals and co-products.*	Commodity prices are based on the ANZ bank December 2016 forecast and vary over the life of the mine. Average weighted LOM values are: • Copper price: US$6,126/t; • Gold: US$1,366/oz; and • Silver: US$18.72/oz.
Market assessment	*The demand, supply and stock situation for the particular commodity, consumption trends and factors likely to affect supply and demand into the future.* *A customer and competitor analysis along with the identification of likely market windows for the product.* *Price and volume forecasts and the basis for these forecasts.* *For industrial minerals the customer specification, testing and acceptance requirements prior to a supply contract.*	Monty ore will be sold to SFR to be processed at DeGrussa into a copper concentrate containing gold and silver. SFR is a copper concentrate producer selling into global market for custom concentrates. Pricing is fundamentally on value of contained metals the main metal being copper with gold and small silver credits. SFR produces a clean concentrate, low in deleterious elements.

<table>
<tr><th>Criteria</th><th>JORC Code Explanation</th><th>Commentary</th></tr>
<tr><td></td><td></td><td>SFR relies upon independent expert publications (CRU, Wood Mac, Metal Bulletin) and other sources (bank reports, trader reports, conferences, other trade publications) in forming a view about future demand and supply and the likely effects of this on both metal prices and concentrate prices.
SFR concentrate is sold by competitive tender.</td></tr>
<tr><td>Economic</td><td>The inputs to the economic analysis to produce the net present value (NPV) in the study, the source and confidence of these economic inputs including estimated inflation, discount rate, etc.
NPV ranges and sensitivity to variations in the significant assumptions and inputs.</td><td>The economic evaluation has been completed on a 100% project ownership basis, including estimated JV charges and fees, and excludes tax considerations. The evaluation has not considered the commercial position of the respective JV parties.
Cost inputs as outlined in Costs section with the exclusion of corporate overheads, exploration expenditure, project financing or interest charges and cost escalation.
Revenue inputs as outlined in the Revenue factors section.
The project is considered to be economically robust. The project is most sensitive to copper price, copper grade and exchange rate. Individual variations in copper price (-20%), average copper grade (-15%) and exchange rate (+10%) all produce positive economic outcomes.</td></tr>
<tr><td>Social</td><td>The status of agreements with key stakeholders and matters leading to social licence to operate.</td><td>Monty is located wholly within a registered Native Title Claim. An agreement (LAA) exists between the claimants and SFR and the claimants have agreed to amend the existing LAA.</td></tr>
<tr><td>Other</td><td>To the extent relevant, the impact of the following on the project and/or on the estimation and classification of the Ore Reserves:
Any identified material naturally occurring risks.
The status of material legal agreements and marketing arrangements.
The status of governmental agreements and approvals critical to the viability of the project, such as mineral tenement status, and government and statutory approvals. There must be reasonable grounds to expect that all necessary Government approvals will be received within the timeframes anticipated in the Pre-Feasibility or Feasibility study. Highlight and discuss the materiality of any unresolved matter that is dependent on a third party on which extraction of the reserve is contingent.</td><td>The owner and proponent of Monty is an Unincorporated Joint Venture between SFR and TLM. SFR holds a 70% interest in the Joint Venture and is the manager while TLM holds the remaining 30% as minority holder. The Joint Venture is based on three agreements, namely:
• Exploration JV Agreement (EJVA);
• Mining JV Agreement (MJVA); and
• Ore Sale and Purchase Agreement (OSPA).
All three agreements have been signed.
All areas of the proposed development have been surveyed in accordance with the Aboriginal Heritage Act 1972 (WA) and any areas of significance have been noted and plotted on development plans.
The Mining Lease M52/1071 over the Monty Project covers all mining and support infrastructure required before being transported to the DeGrussa for processing. Miscellaneous License L52/170 is for Monty Haul Road and other infrastructure such as pipelines and power lines, as required.
<table>
<tr><th>Tenement</th><th>Area (ha)</th><th>Area (km2)</th><th>Holder(s)</th><th>Application Date</th><th>Grant Date</th></tr>
<tr><td>M52/1071</td><td>1,642</td><td>16.42</td><td>SFR - TLM</td><td>13-Jul-16</td><td>30-Mar-17</td></tr>
<tr><td>L52/170</td><td>246.48</td><td>2.46</td><td>SFR - TLM</td><td>10-Nov-16</td><td>17-Feb-17</td></tr>
</table></td></tr>
<tr><td>Classification</td><td>The basis for the classification of the Ore Reserves into varying confidence categories.
Whether the result appropriately reflects the Competent Person's view of the deposit.
The proportion of Probable Ore Reserves that have been derived from Measured Mineral Resources (if any).</td><td>Underground Ore Reserves have been derived from a mine plan that is based on extracting the 31 March 2016 Mineral Resources. Probable Ore Reserves have been derived from Indicated Mineral Resources after consideration of all modifying factors.
The Ore Reserve classification appropriately reflects the competent person's view of the deposit.
The 31 March 2016 Mineral Resource does not contain any Measured Mineral Resources.
Unmodified Massive Sulphide Indicated Mineral Resources comprise 191,000 tonnes at 7.7% Cu for 14,800 tonnes of contained copper. These are generally located at the extremities of the defined orebody where the mineralisation narrows.
Underground diamond drilling programs will target these areas during operations.</td></tr>
</table>

Criteria	JORC Code Explanation	Commentary
Audits or reviews	*The results of any audits or reviews of Ore Reserve estimates.*	The Ore Reserve has been internally reviewed. Modifying factors have been externally peer reviewed by: • AMC Consultants Pty Ltd - Mining, geotechnical, geohydrology; • Battery Limits Pty Ltd – Metallurgical; • Mintrex Pty Ltd - Surface Infrastructure; and • Integrate Sustainability Pty Ltd – Environment. No fatal flaws were identified in the modifying factors by the external peer reviewers.
Discussion of relative accuracy/ confidence	*Where appropriate a statement of the relative accuracy and confidence level in the Ore Reserve estimate using an approach or procedure deemed appropriate by the Competent Person. For example, the application of statistical or geostatistical procedures to quantify the relative accuracy of the reserve within stated confidence limits, or, if such an approach is not deemed appropriate, a qualitative discussion of the factors which could affect the relative accuracy and confidence of the estimate.* *The statement should specify whether it relates to global or local estimates, and, if local, state the relevant tonnages, which should be relevant to technical and economic evaluation. Documentation should include assumptions made and the procedures used.* *Accuracy and confidence discussions should extend to specific discussions of any applied Modifying Factors that may have a material impact on Ore Reserve viability, or for which there are remaining areas of uncertainty at the current study stage.* *It is recognised that this may not be possible or appropriate in all circumstances. These statements of relative accuracy and confidence of the estimate should be compared with production data, where available.*	The project is considered robust with the Ore Reserve copper grade of 8.6% Cu significantly higher than the full cost cutoff grade of 4.9% Cu. Approximately 19% of the Ore Reserve tonnes which contains 8% of the Ore Reserve contained copper tonnes falls between the development incremental cut-off copper grade of 2.4% Cu and the full cost cut-off grade of 4.9% Cu. There has been an appropriate level of consideration given to all modifying factors to support the declaration and classification of Ore Reserves. No statistical or geostatistical procedures were carried out to quantify the accuracy of the Ore Reserve. There is a lower level of confidence associated with the geotechnical parameters adopted to derive the Ore Reserves located in the UZ (>=410mRL) compared to those adopted for the LZ (<410mRL). This area is impacted by rock fracturing and oxidation associated with the Arneis Fault. This fault runs sub-parallel to and in and out of the UZ mineralisation that forms part of the Ore Reserve. This structure will negatively impact on stope performance in this zone. The zone is marginally economic therefore is sensitive to changes in the key economic inputs e.g. copper price, copper grade. The UZ contains approximately 15% of the Ore Reserve tonnes and 8% of the Ore Reserve contained copper.

Appendix 1 (continued) - JORC 2012 TABLE 1 MINERAL RESOURCE PARAMETERS – BLACK BUTTE PROJECT

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.*	Diamond drilling was used to obtain high quality subsurface samples. 106 drill holes totalling 23,704 meters of drilling were completed in the Johnny Lee Upper Zone (JL UZ). 47 drill holes totalling 21,782 meters of drilling completed in the Johnny Lee Lower Zone (JL LZ). 29 drill holes totalling 16,649 meters of drilling completed in the Lowry Middle Zone (MZ). Holes generally drilled vertically or near vertically to optimally intersect the mineralised zones. Mineralised zones continuously sampled at less than 2 m intervals, breaking on lithology and mineralisation boundaries. Continuous sampling 9 m above and 9 m below mineralised zones. Core samples were split in half, with half the core analysed at ALS Chemex and the other half securely archived. The core samples were prepared by jaw crushing to 70% less than 2mm (ALS Chemex code CRU-31) followed by pulverisation (ALS Chemex code PUL-31) and riffle splitting (ALS Chemex code SPL-21) to create a 250 g split to 85% less than 75 µm.
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).*	The deposits were sampled using diamond core drilling. The Johnny Lee Upper Zone was sampled by 106 holes totalling 23,705m. The Johnny Lee Lower Zone was sampled by 47 holes totalling 21,783.16m. The Lowry deposit was sampled by 29 holes totalling 16,649m. Historical drilling used NQ and HQ diameter core drilling. Tintina predominantly drilled HQ diameter core in the deposits, with 4 holes PQ diameter. Tintina has drilled 11 oriented core holes using a Reflex Act II instrument that orients the core barrel using continuously recording gravity vectors measured across the tool which establishes orientation using post-processing software.
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.*	Recovered core was measured for each core run and recorded on paper and electronic drillhole logs, and ultimately imported into Microsoft Access®. In general, core recovery is satisfactory to excellent. There are no drilling, sampling or recovery factors that could materially impact the accuracy and reliability of the results. There are no recognised relationships between core recovery and metal grades due to material losses or gains of fine or coarse material during drilling operations that could result in sample bias.
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 core holes are logged in entirety by geologists. 100 % of relevant intersections are logged. Information of both a qualitative and quantitative nature are recorded and entered into a Microsoft Access® database include recovery, RQD, hardness, weathering, lithology, sedimentary structures, deformation/alteration, mineralisation, mineralisation estimates, a graphic log, a descriptive log. All core holes are photographed in entirety.

Criteria	JORC Code Explanation	Commentary
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.*	A diamond saw was used to obtain half sawn samples of varying length for assaying purposes. Assay sample lengths typically ranged between 0.1m to 1.5m averaging about 1m in well mineralized horizons. Sample intervals were typically set at 2.0m lengths outside of the mineralised zones but all samples were broken on lithologic or structural contacts. No other sampling methods were used to collect data for resource estimation at the various Black Butte deposits. The Competent Person believes that the core samples from the Black Butte deposits are of high quality and appropriate for the sample preparation that was used by ALS Chemex at their prep facility in Reno, NV, USA. Standard reference materials (SRM's) were submitted along with regular sawn drill core samples at a frequency of one SRM for about every 20 regular samples. Tintina implemented a procedure of having ALS Chemex to create a duplicate pulp for every 30 drill core samples. A total of 803 duplicate pulp samples were generated for the 2010 through 2012 Tintina drilling campaigns. The mean copper grade for the original and duplicate pulp samples were within 0.5% of one another. The sample sizes are deemed to be appropriate relative to the grain size of 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 (e.g. standards, blanks, duplicates, external laboratory checks) and whether acceptable levels of accuracy (i.e. lack of bias) and precision have been established.*	The sawn drill core samples were prepared and analysed by ALS Chemex at their facilities located in Reno, NV and Vancouver BC. The core was crushed to 70% passing 2 mm, passed through a riffle splitter to generate a nominal 400 gram split that was pulverized to generate approximately a 250 to 300 gram sub-sample with 85% passing 75 µm. A four-acid digestion (total) was used and the samples were analysed for 33 elements using induced coupled plasma methods (Chemex method ME-ICP61a) and an "ore" grade copper analysis (Chemex method Cu-G62). No geophysical or other handheld instruments were used by Tintina in the logging of drill core used for estimating Mineral Resources. At least one standard reference material (SRM) and one blank were submitted with every 20 regular sawn core samples. Six certified standards were purchased from WCM Minerals. The certified grade ranges from these standards and the matrix of the standards consistent with the style of mineralization at the Black Butte project and are deemed to be suitable for quality control purposes. Approximately 813 SRM's were submitted by Tintina with their regular sample stream. Landscaping marble was used as a blank material with approximately 810 samples submitted. In addition to the ALS Chemex duplicate pulp assays, the pulps from 70 samples prepped and assayed by ALS Chemex from HQ and NQ diameter sawn core were sent to Inspectorate Labs for check assay purposes. Pulps from 63 PQ diameter metallurgical core hole samples that were initially prepared and assayed by Inspectorate were sent to ALS Chemex for check assay purposes. Based on the performance of standards, blanks, duplicate pulps, and cross check assays, the Competent Person believes that the Black Butte assay data are representative, repeatable, and suitable to be used for estimating Mineral Resources.

Criteria	JORC Code Explanation	Commentary
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.*	Significant intersections were not independently assayed. Significant core hole intersections were visually examined in the core box. Significant visible chalcopyrite mineralisation corresponds directly to assay results obtained from ALS Chemex. Tintina's initial exploration efforts at the Black Butte project consisted of drilling five confirmation twin holes to test previous core hole results that were obtained by Cominco American Incorporated (CAI) and Utah International Inc. (UII). The confirmation holes showed that in half the cases, the grade and or thickness of the old holes was greater than the new holes and in half the cases the new holes showed thicker and higher grade intersections than the older data. Currently 90% and 70% of the Upper and Lower Johnny Lee zones, respectively, were generated by Tintina. In general, the average thickness of the Tintina drilling of the Upper and Lower Johnny Lee deposits is slightly greater than the older drilling results. The majority of the drilling at the Lowry deposit was generated by Tintina (80%), the rest (4 holes) was collected by CAI. The average copper grades from spatially paired core hole samples by company show close comparisons suggesting minimal biases between drill campaigns. All project data are stored in a Microsoft Access® database that is managed by an outside consultant. All assay results were imported from CSV files that were provided to Tintina by ALS Chemex. All data collected from core logging is hand entered into DDH3 Site Tool, a data entry application, by Tintina project personnel. Various key information like sample interval depths, RQD, core recovery, SG measurements, lithologic, alteration, structural data, and down-hole surveys are entered into the data entry application which is then imported into Access. Copies of the data are maintained by the outside consultant, on local onsite computers, and a corporate FTP site that is maintained by Tintina. Data were exported out of the master Access database and provided to the Competent Person as separate Excel collar, survey, assay, and geology files. Those files were then imported into MineSight®, a commercial engineering software package. No adjustments were made to the assay data other than cutting high-grade outliers prior to compositing the drill hole data and block grade estimation.
Location of data points	*Accuracy and quality of surveys used to locate drill holes (collar and down-hole surveys), trenches, mine workings and other locations used in Mineral Resource estimation.* *Specification of the grid system used.* *Quality and adequacy of topographic control.*	All drill collars were surveyed by WWC Engineering of Helena, MT using Trimble R8 receivers with TSC3 data collector and Trimble Access software. Drill collar data correlates with a locally flown LiDAR survey. Down hole surveys were taken using Reflex single shot, on average every 30 to 60 meters, depending upon hole length. The project uses UTM Zone 12 North, meters and vertical NAVD 88, meters Topographic control is deemed of good quality, tied into a locally flown LiDAR survey with 5cm accuracy.
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 approximate drill hole spacing for the Upper Johnny Lee deposit is variable, approximating 25m x 25m in the Measured portion of the zone, and 40m x 65m in the Indicated, and about 75m x 75m in the Inferred portion. The approximate drill hole spacing for the Lower Johnny Lee deposit is variable, approximating 30m x 60m in the Indicated portion of the zone, and about 75m x 75m in the Inferred portion. The approximate drill hole spacing for the Lowry deposit is variable, approximating 30m x 60m in the Indicated portion of the zone, and 75m x 75m in the Inferred portion. The data spacing within each deposit resulted in the assignment of Measured, Indicated, and Inferred Mineral Resources. The spacing is believed to fairly represent/define each category. The original assay intervals were composited into 1-meter-lengths starting and ending at the hanging wall and footwall contacts of the copper grade wireframes. Residual lengths less than 0.5m after the last composite in the wireframe were combined with the last composite to minimize short composites. Length weighting was used in the estimation process.

Criteria	JORC Code Explanation	Commentary
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 Upper Johnny Lee mineralised zones are relatively flat lying dipping approximately 10° to the south. The near vertical and steeply inclined exploration core holes that were drilled from the surface are believed to be reasonable and provide unbiased sampling conditions. The Lower Johnny Lee zone is also relatively flat lying dipping between 5-10° to the east. The near vertical exploration core holes drilled from the surface provide reasonable, unbiased sampling conditions. The Lowry mineralised zone dips about 30° to the south. The near vertical core holes drilled from the surface define thicknesses through the mineralised zone that are 10 to 15% longer than the true thickness but the copper wireframes take these apparent thicknesses into consideration. In general, the surface core holes intersected Upper and Lower Johnny Lee zones at near right angles providing intersections lengths that are close to the true thickness of the mineralisation. The copper wireframes are snapped directly to the drill holes generating a constrained volume that has minimal sample bias.
Sample security	*The measures taken to ensure sample security.*	Tintina personnel take all drill cores from the drill rig, directly to the Tintina office/logging/processing facility and warehouse in White Sulphur Springs, MT. All samples are secure in this location. Samples are placed in sealed, labelled bags and grouped together into larger sealed bags for shipment to ALS labs in Reno, NV. Shrink wrapped pallets are used to protect sample integrity during shipment. Remaining core is kept in locked warehouses.
Audits or reviews	*The results of any audits or reviews of sampling techniques and data.*	The Competent Person (Michael Lechner) made two site inspections (October 21, 2010 and September 20, 2011). General site layout arrangements, drilling procedures, drill sites, sample security measures, core handling/storage, core logging/sampling procedures were reviewed while on site. In addition, the geologic interpretation of the various mineralised zones was reviewed with Tintina's geologic staff. Tintina's drilling, sampling, and logging procedures were found to be reasonable and well managed. The sample data were of excellent quality and suitable for estimating Mineral Resources.

Section 2: Reporting of Exploration Results

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 property consists of three tracts of fee-simple lands totalling 7,684.28 acres and 525 unpatented lode mining claims on US Forest Service lands totalling approximately 9,926 acres. The Johnny Lee and Lowry resources lie within two of the tracts of fee-simple land. These tracts are private ranch lands. Signed in 2010, the term is for 30 years and is renewable for subsequent periods of 10 years each. Escalating advanced minimum royalty payments are made annually. Both agreements carry a 5% NSR with an option to buy this down to 2% for $5,000,000 (USD). There are no known impediments to obtaining a license to operate in the area. The agreements do stipulate that underground mining only may take place.
Exploration done by other parties	*Acknowledgment and appraisal of exploration by other parties.*	Early 20th century exploration focused on extensive gossans in the area recognising the iron potential. No adits, shafts or workings penetrated the redox boundary into sulfide bearing rock. The modern exploration work was carried out between 1976 and 1995 by Cominco American Inc. (CAI), including a BHP Billiton Limited (BHP)/CAI joint venture from 1985 to 1993. Exxon Minerals obtained a lease on a portion of the property in 1981 and joint ventured to CAI in 1984. Approximately 66 diamond core holes were completed in the two lease areas by CAI and CAI/BHP joint venture. CAI dropped all leases in the mid 1990’s and retained no royalties or rights. CAI did complete preliminary resource calculations on the JL UZ and JL LZ and completed initial metallurgical testing. These reports are proprietary and are not available to Tintina.

Criteria	JORC Code explanation	Commentary
Geology	*Deposit type, geological setting and style of mineralisation.*	Shale-hosted bedded sulfide copper-cobalt deposit, Middle Proterozoic sediments of the Belt Supergroup Three styles of mineralisation dominate: 1. Dolomitic shale hosted bedded sulfides with chalcopyrite replacing fine grained bedded pyrite (JL UZ); 2. Deposits at the Chamberlain Formation - Newland Formation contact with coarser-grained chalcopyrite replacing pyrite in silicified sediments (JL LZ); and 3. Deposits with replacement of pyritic silicified brecciated shale and carbonate (Lowry MZ).
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 have been reported in this release.
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 exploration results have been reported in this release.
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').*	No exploration results have been 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.*	Location map shown in Figure 1 of this release. Other diagrams are appended to the end of this document
Balanced reporting	*Where comprehensive reporting of all Exploration Results is not practicable, representative reporting of both low and high grades and/or widths should be practiced to avoid misleading reporting of Exploration Results.*	No exploration results have been reported in this release.

Criteria	JORC Code explanation	Commentary
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.*	Compilation and digitising of historical geological mapping has aided in increased understanding of the deposit area. Historical soil sampling data and soil sampling by Tintina in 2011, 2012 and 2016 show modestly anomalous results that require further field review. In March 2012 Tintina contracted Aeroquest to complete an airborne magnetics and resistivity survey over the district. The survey shows strong conductive responses coincident with gossan trends. Magnetics is useful in delineating the margin of thicker to thinning sequences of Belt rocks. Strong northeast and northwest trending linear magnetic features correlate with mapped Eocene intrusives. These responses were further refined in a 2012 ground magnetics survey over the Johnny Lee and Lowry deposit areas.
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.*	The Johnny Lee deposit is well defined, but the Lowry deposit remains open on the south end. Many opportunities remain for step out drilling, and drill testing of under evaluated gossan outcrops and geophysical anomalies.

Section 3: Estimation and Reporting of Mineral Resources

Criteria	JORC Code explanation	Commentary
Database integrity	*Assumptions made regarding possible waste and process residue disposal options.* *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 spot checks were made to ensure that logged drill hole information, collar coordinates, and down-hole survey information were accurately entered into the drill hole database. No errors were discovered. Assay certificates from the majority of assay intervals located inside of the massive sulfide wireframes used for Mineral Resources were compared against the electronic database. No errors were found. Checks were made to find possible overlapping intervals or missing intervals. Minor errors in coding mineralised intervals were corrected.
Site Visits	*Comment on any site visits undertaken by the Competent Person and the outcome of those visits.* *If no site visits have been undertaken indicate why this is the case.*	The Competent Person (Michael Lechner) made two site inspections (October 21, 2010 and September 20, 2011). General site layout arrangements, drilling procedures, drill sites, sample security measures, core handling/storage, core logging/sampling procedures were reviewed while on site. In addition, the geologic interpretation of the various mineralised zones was reviewed with Tintina's geologic staff. Tintina's drilling, sampling, and logging procedures were found to be reasonable and well managed. The sample data were of excellent quality and suitable for estimating Mineral Resources.
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 basic geological interpretation of the various Black Butte mineralised zones has been recognised for many decades. Tintina's geologic staff has greatly refined the lithologic, structural, and mineralised framework of the deposits by virtue of significantly more drilling information since the discovery of mineralisation in the 1970's. The extent and geometry of the massive sulfide and semi-massive sulfide lenses are well defined by the current drill hole spacing, providing for relatively high confidence in the underlying resource estimate which is confined by copper grade/mineralogical assemblages. The copper mineralisation is associated with a subaqeous hydrothermal vent field within a shale basin. Copper grades within the sulfide blankets that debouched from the seafloor vents are seen to be variable. Tonnage estimates could vary based on cutoff grade and minimum mining thickness criteria were used in developing the copper grade wireframes that were used to constrain the estimate of Mineral Resources. Semi-sulfide and massive sulfide lithologies were used in conjunction with copper assays and structural information to design the wireframes used in the grade estimation process. Infill drilling may show areas with weaker or higher localized grade mineralization than the current estimate, although it is believed that no material changes would occur with offsetting gains and losses.

Criteria	JORC Code explanation	Commentary
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.*	Five wireframes were used to constrain the estimate of mineral resources for three mineralised zones at the Black Butte property. The Upper Johnny Lee deposit is represented by two wireframes, a main zone (unit 31) and a less extensive upper zone (unit 32). Units 31 and 32 measure approximately 1065m by 600m and 600m by 300m in the north-south and east-west dimensions, respectively. Unit 32 ranges from about 25m to 125m below the surface. Unit 31 ranges from about 30m to 125m below the surface. The Lower Johnny Lee wireframe measures about 1275m by 250m in the northwest-southeast and northeast-southwest dimensions, respectively. The Lower Johnny Lee ranges between 325m and 450m below the surface. The main Lowey zone wireframe (unit 21) measures about 650m by 300m in the north-south and east-west dimensions. The Lowry zone ranges between 250m and 700m below the surface.
Estimation and modelling techniques	*The nature and appropriateness of the estimation technique(s) applied and key assumptions, including treatment of extreme grade values, domaining, interpolation parameters and maximum distance of extrapolation from data points. If a computer assisted estimation method was chosen include a description of computer software and parameters used.* *The availability of check estimates, previous estimates and/or mine production records and whether the Mineral Resource estimate takes appropriate account of such data.* *The assumptions made regarding recovery of by-products.* *Estimation of deleterious elements or other non-grade variables of economic significance (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.*	The copper and cobalt mineralisation contained within the massive sulfide and semi-massive sulfide lenses show significant stratigraphic control at the Black Butte deposits. Copper grade (1% and 2% cutoffs), logged lithology, mineralisation styles, along with syn-mineralisation and post-mineralisation structures were used to construct wireframes that were used to constrain the grade models. The percentage of the block enclosed by the wireframes was stored for accurate tonnage/volume tabulations. High-grade outlier values were capped prior to building 1-meter-long composites. The following copper capping limits were used for various Black Butte deposits: Upper Johnny Lee unit 31 (15% Cu) unit 32 (8%Cu), Lower Johnny Lee (20% Cu), and Lowry (12.5%Cu). A two pass inverse distance cubed estimation method was used for estimating Mineral Resources using MineSight® software. The first estimation pass required at least one drill hole composite and a maximum of three composites. The second pass required that at least two drill holes be used in the estimate. The second pass overwrote many of the first pass estimates, leaving an outer perimeter of the resource that was essentially estimated by one drill hole. Eligible drill hole composite samples were selected using a type of dynamic anisotropy by using real world XY coordinates and a relative coordinate. The relative position of each model block and each drill hole composite were determined with respect to the hanging wall and footwall contacts of the mineralised wireframes. This method resulted in the distribution of block grades that closely follow the undulating stratigraphy of the massive sulfide zones. Several sectional polygonal resource estimates were made in the 1980's by Cominco American but there were no rigorous resource estimates from which to compare. There is no recorded production from the Black Butte deposits. Grades were estimated for copper, cobalt, gold, and silver. No value or recovery assumptions were assigned to cobalt, gold, or silver. Grades were estimated for lead, zinc, sulfur, arsenic, iron, and barium. The Upper and Lower Johnny Lee block models contained block sizes of 5m x 5m x 1m in the X, Y, and Z dimensions. The Lowry block model consisted of blocks measuring 5m x 5m x 2.5m. The drill hole spacing for the various deposits was variable ranging between 25-30m in more closely drilled areas to 60m to 75m in other portions of the zones. Maximum search distances of 200 meters were used for the Upper Johnny Lee and Lowry deposits. A maximum search distance of 250m was used for the Lower Johnny Lee deposit. These search distances were oriented along the stratigraphic surfaces that are coincident with sulfide mineralisation. No assumptions were made regarding modeling selective mining units. In general there are some crude correlations between the presence of copper and other sulfide mineral assemblages however, all metals were estimated independently using the same interpolation parameters. Because the mineralisation at Black Butte is thought to represent sulfide accumulations adjacent to Proterozoic seafloor vents, wireframes were constructed to define copper bearing zones within thicker pyritic sulfide beds. Drill hole composites that were used to estimate block grades were selected based on their location relative to the hanging wall and footwall contacts of the modeled copper zones. This strategy resulted in block grade distributions that display a high degree of stratigraphic control, as demonstrated by

Criteria	JORC Code explanation	Commentary
		numerous drill hole intersections. Grade capping was used and was based on examining cumulative probability plots. The block grade models were validated by 1) comparing block grades in section and plan to the drill hole composites; and 2) comparisons with nearest neighbour models (global bias checks and swath plots). There is no production data that could be used for reconciliation comparisons.
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 estimated by using dry bulk density values that were established for mineralized and non-mineralised materials.
Cut-off parameters	*The basis of the adopted cut-off grade(s) or quality parameters applied.*	Cutoff grades were established by considering copper metal prices, copper recovery, mining costs, processing costs, and G&A costs.
Mining factors or assumptions	*Assumptions made regarding possible mining methods, minimum mining dimensions and internal (or, if applicable, external) mining dilution. It is always necessary as part of the process of determining 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.*	It has been assumed that the Johnny Lee deposits will be mined by underground methods. The copper wireframes that were used to estimate Mineral Resources were designed with minimum cutoff grades (1% and 2%) copper and minimum thickness (2 meters). The Mineral Resources have internal dilution built into the estimate due to the inclusion of material below the 1% and 2% wireframe cutoffs. No allowance was made for external dilution for 43-101 or JORC resource declaration. Tintina has been working with various geotechnical and underground mining consultants to estimate the amount of external dilution that might be expected with various mining methods.
Metallurgical factors or assumptions	*The basis for assumptions or predictions regarding metallurgical amenability. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider potential metallurgical methods, but the assumptions regarding metallurgical treatment processes and parameters made when reporting Mineral Resources may not always be rigorous. Where this is the case, this should be reported with an explanation of the basis of the metallurgical assumptions made.*	In support of a PEA level study, metallurgical test work was conducted in 2011-2012 at Inspectorate Exploration and Mining Services Ltd in Vancouver, BC Canada. Supporting mineralogy studies were performed by G&T Metallurgical and SGS. Investigations indicated the following results: • The Johnny Lee UZ copper-cobalt mineralization is very fine grained and complex requiring a primary grind level of 80% passing 38 μm and a rougher concentrate regrind of 80% passing 8 μm for effective liberation and recovery of copper minerals to a marketable concentrate. At an average LOM head grade of 2.6% copper, annual copper recovery works out to 83.6% at 21.7% copper concentrate grade. • The Johnny Lee LZ copper mineralization is much coarser grained and could be processed at a coarser grind but as the mineralized material from both zones will be comingled the process conditions of the locked cycle test on the LZ composite were kept the same as those used for the UZ composite; the LZ composite responded very well to these conditions. The LOM average grade mineralization of 4.9% copper is estimated to yield a copper recovery of 97% at a 27% copper concentrate grade. The cobalt and silver recoveries to concentrate for both zones were very low due to the complex very fine grained mineralogy of these elements which appear to be mostly associated with pyrite; the potential for economic recovery of these elements is considered to be very low.
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 principal environmental challenges for the Project are waste and water management. The project will involve an underground cut and fill mine. Mineral processing will take place at the project site with a design capacity of 3300 tpd. 45% of the mill tails will return underground as cemented paste tails; and 55% of the mill tails will be contained in a lined central tailings impoundment. Disposal of water from mine dewatering will be treated using reverse osmosis, then discharged either to surface waters or ground waters via underground infiltration galleries. All waste rock brought to surface will be placed in the tailings impoundment. There will be no remnant stockpiles of material after closure other than the capped and reclaimed tailings facility. All other surface disturbance will be removed and returned to its pre-mining state for agriculture use and cattle grazing.

Criteria	JORC Code explanation	Commentary
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.*	The Tintina method of measuring specific gravity is selection of a piece of solid, representative core from each horizon, and to weigh the core in air, and weigh while submerged in water. Samples are dried before measured. Relative bulk density = weight in air / (weight in air-weight in water). 577 pieces of drill core were measured for the JL Upper Sulfide Zone. The average bulk density of these 577 samples was 3.60 gm/cm³. These are representative of the various lithologic units within the Upper Sulfide Zone. Based on 181 JL UZ massive sulfide determinations, a bulk density value of 3.99 g/cm³ was selected for UZ horizons 31 and 32. 156 density determinations were made from the JL LZ. Of these 53 were within the wireframe and the average bulk density is determined at 3.49 g/cm³. 103 measurements were made outside the wireframe and the average bulk density is determined at 3.07 g/cm³. In 2012 Tintina sent 58 samples to ALS Chemex in Reno, Nevada for bulk density determination after making their own bulk density measurements. The Chemex results were 4-5% higher than Tintina's results. 117 bulk density determinations were made for the Lowry Middle Zone resource. The average bulk density measured was 3.18 g/cm³. While massive and semi-massive lithologies yielded greater values, consideration was given to the variety of lithologies within the MZ wireframe, the average bulk density value was determined to be more appropriate.
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 Competent Person used mineralised continuity and drill hole spacing to classify the estimated blocks into Measured (Upper Johnny Lee main zone only), Indicated, and Inferred categories. The Measured and Indicated categorisations were defined by 3D wireframe shapes constructed by the Competent Person to reflect mineralised continuity defined by reasonably spaced drilling data. Appropriate account has been taken of all relevant factors. The results appropriately reflect the Competent Person's view of the deposits.
Audits or reviews	*The results of any audits or reviews of Mineral Resource estimates.*	April 30, 2012 review by BD Resource Consulting, Inc. The review of the project states that the resource classification takes into consideration the uncertainty of existing drill spacing. Feb 13, 2013 review by Orion Resource Partners (USA) LP. The review of the project did not identify any fatal flaws or any red flag issues that may materially affect the progress or the economics of the project.
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.*	It is the opinion of the Competent Person that the Black Butte Mineral Resources are globally unbiased and represent a reasonable estimate of insitu Mineral Resources. Nearest neighbour grade models and visual inspections of block model cross sections and level plans were used to validate the models. The relative elevation interpolation method helped to minimise grade smearing and smoothing within the constraining wireframes. The statement relates to global estimates but the higher resource categories are suitable for technical and economic evaluation. No production data are available of compare against the resource estimate.

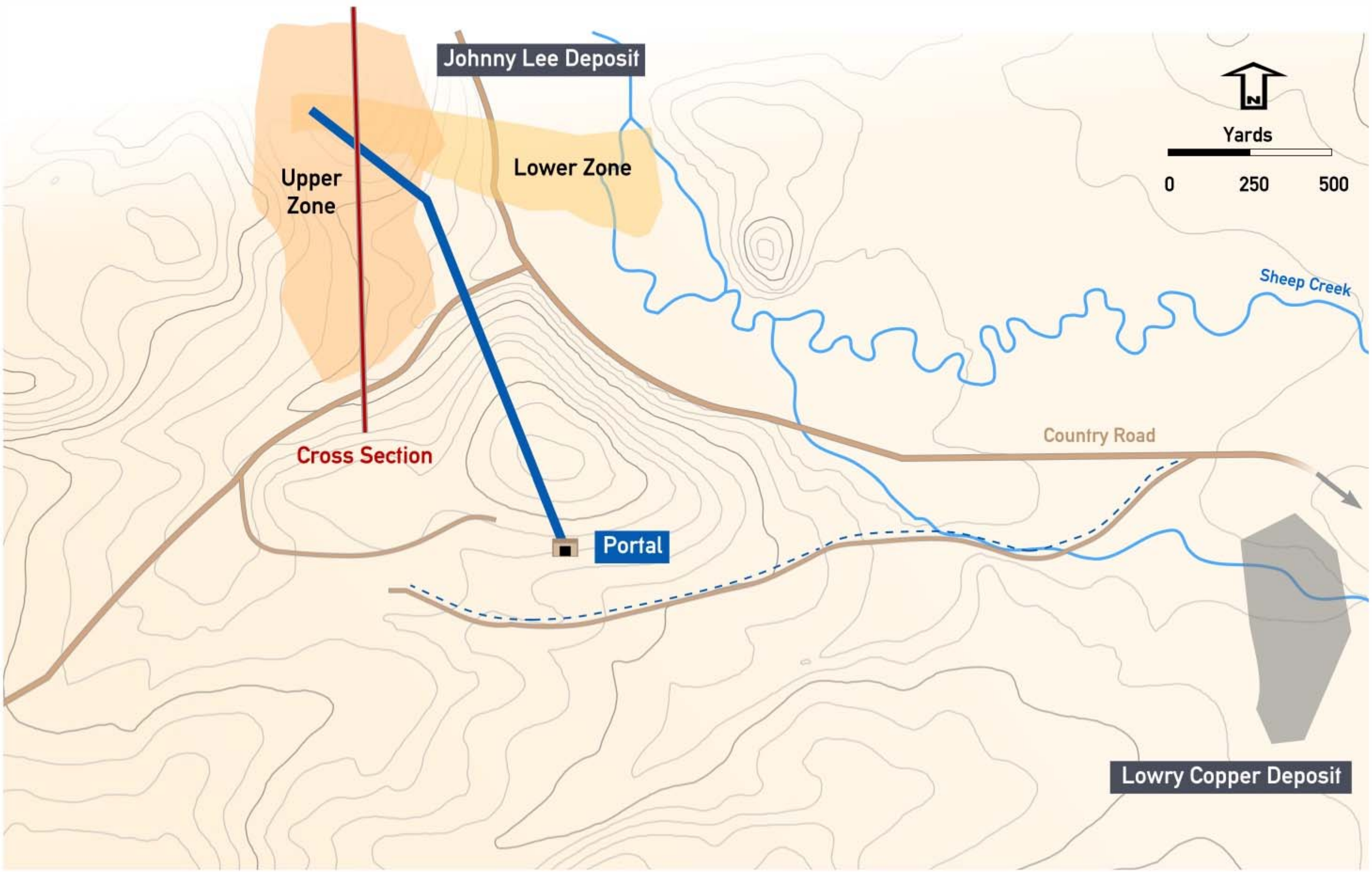


Figure: Plan view of Black Butte deposit.

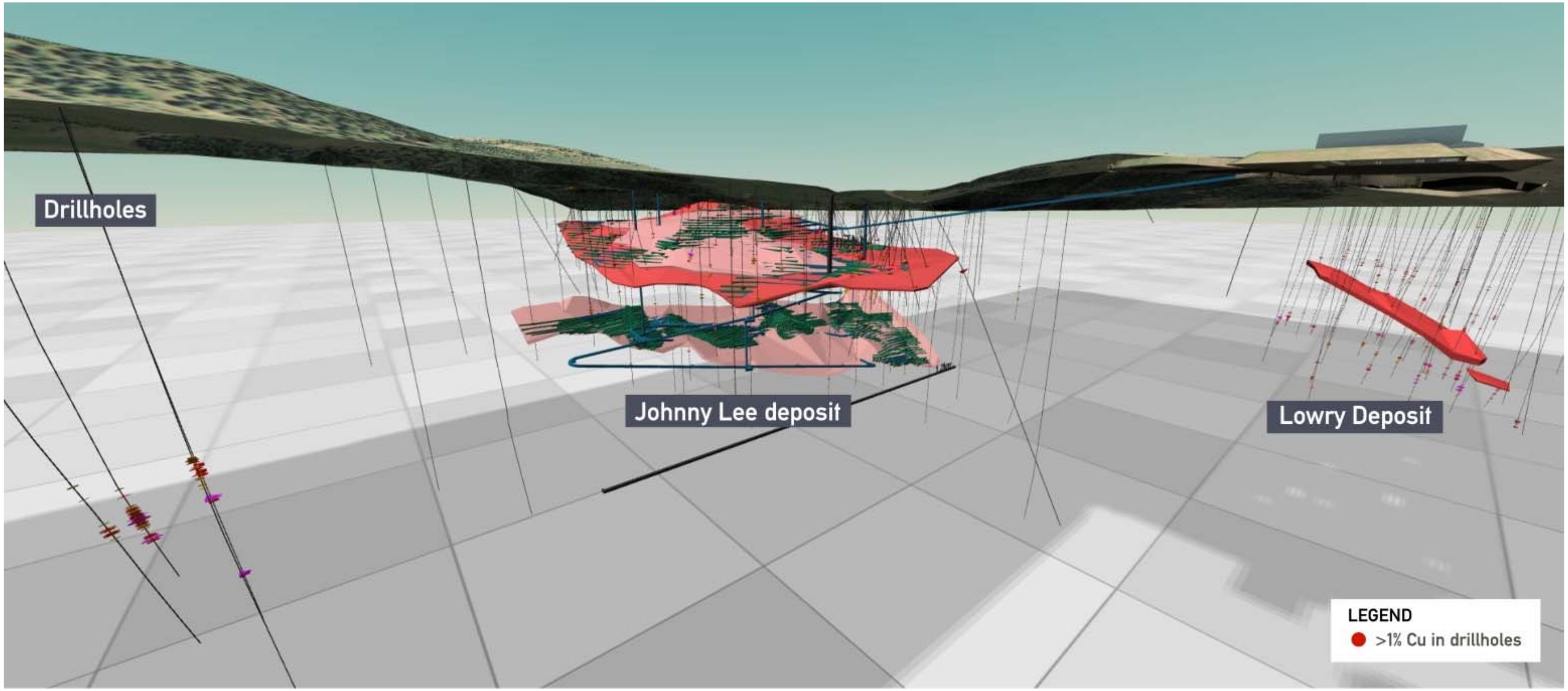


Figure: Oblique view of Black Butte deposit showing lodes, drill holes and > 1% Cu intersections.

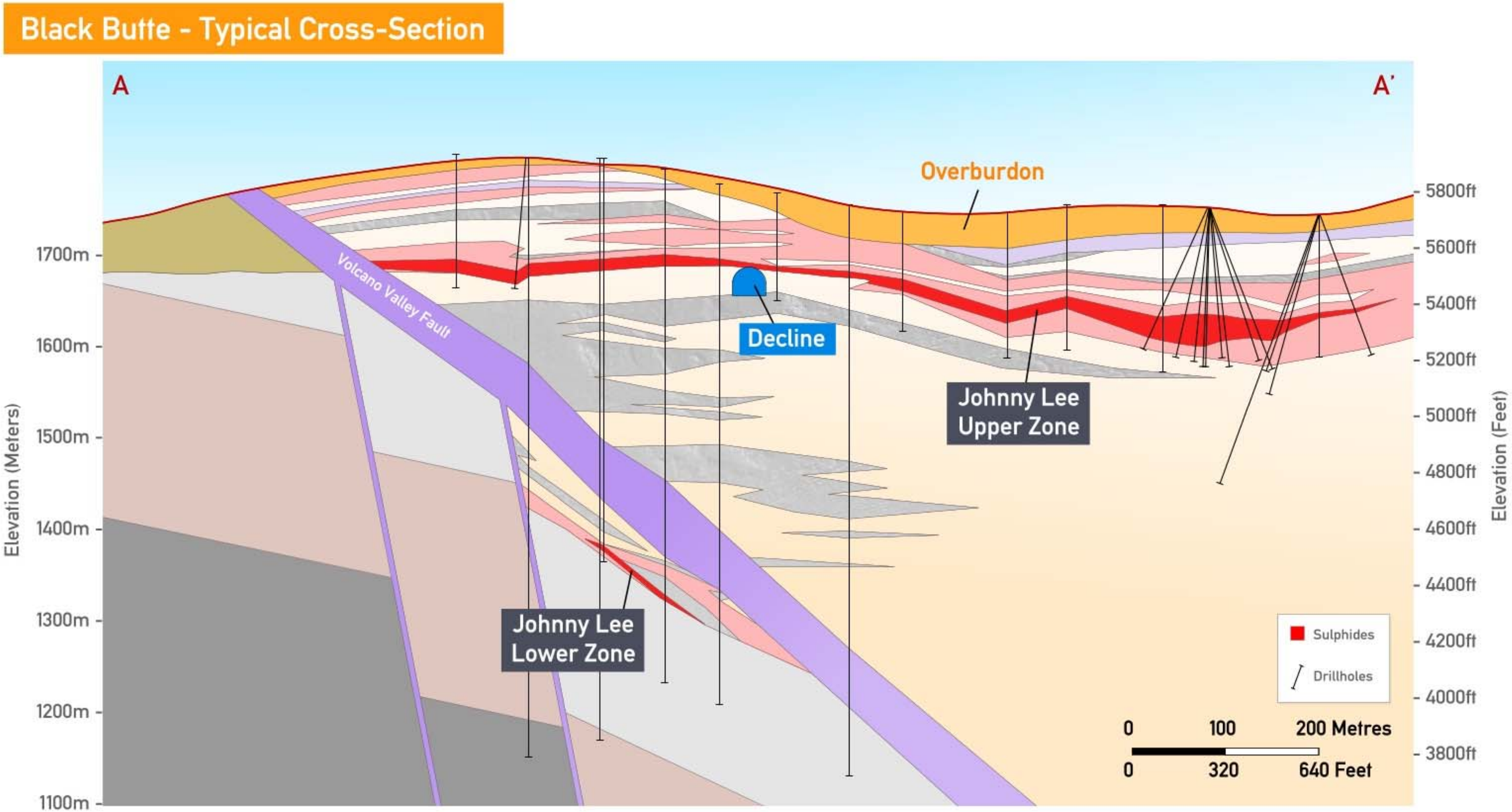


Figure: Cross section showing drill holes and position of the lodes.

Appendix 1 (continued) - JORC 2012 TABLE 1 MINERAL RESOURCE PARAMETERS – THADUNA GREEN DRAGON PROJECT

Section 1: Sampling Techniques and Data

<table>
<tr><th>Criteria</th><th>JORC Code Explanation</th><th>Commentary</th></tr>
<tr><td rowspan="3">Sampling techniques</td><td>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.</td><td>The Mineral Resource estimate used a combination of recent data (Sandfire Metallurgical test drilling in 2014 and Res Def infill drilling in 2015) and historic data (Ventnor Resources between 2009 and 2014).
Drilling Summary by Company and Deposit:
<table>
<tr><th>Company</th><th>Date</th><th>Deposit</th><th>Drill Type</th><th>Count</th><th>Total Metres</th></tr>
<tr><td>Ventnor</td><td>2011 -2014</td><td>Green Dragon</td><td>RC</td><td>94</td><td>13,570.90</td></tr>
<tr><td></td><td></td><td></td><td>DD (HQ Met)</td><td>2</td><td>389.60</td></tr>
<tr><td></td><td></td><td>Thaduna</td><td>RC</td><td>221</td><td>41,533.19</td></tr>
<tr><td></td><td></td><td></td><td>DD</td><td>18</td><td>8,619.00</td></tr>
<tr><td>Sandfire</td><td>2014</td><td>Thaduna</td><td>DD (PQ Met)</td><td>8</td><td>808.50</td></tr>
<tr><td>Sandfire</td><td>2015</td><td>Thaduna</td><td>RC</td><td>5</td><td>1,214.00</td></tr>
<tr><td></td><td></td><td></td><td>DD</td><td>8</td><td>2,455.20</td></tr>
<tr><td>Green Dragon</td><td></td><td></td><td>RC</td><td>94</td><td>13,570.90</td></tr>
<tr><td></td><td></td><td></td><td>DD</td><td>2</td><td>389.60</td></tr>
<tr><td></td><td>Total</td><td></td><td></td><td>96</td><td>13,960.50</td></tr>
<tr><td>Thaduna</td><td></td><td></td><td>RC</td><td>226</td><td>42,747.19</td></tr>
<tr><td></td><td></td><td></td><td>DD</td><td>34</td><td>11,882.70</td></tr>
<tr><td></td><td>Total</td><td></td><td></td><td>260</td><td>54,629.89</td></tr>
</table>
Of the 221 RC holes completed by Ventnor at Thaduna, 62 were completed to final depth by DD tail.
Interval selection for the 2015 RC/DD holes were sampled based upon mineralisation and alteration characteristics.
Historic RC holes were sampled to entirety at 1m intervals through cone or riffle splitter. All samples were analysed at the rig with handheld XRF instrument. Where mineralisation was known to occur (usually Cu>0.1%), additional samples 4m on either side of the mineralised interval were taken and these were submitted for analysis at the laboratory.
Historic DD holes were sampled to a maximum of 1m lengths within mineralised intervals. Additional samples were taken 5m on either side of the mineralised intervals.</td></tr>
<tr><td>Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.</td><td>Sampling and sample preparation method for recent drilling followed guidelines established by Sandfire Resources which are considered industry standard and are deemed appropriate.
Historic sampling and sample preparation protocols were deemed appropriate at the time.</td></tr>
<tr><td>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</td><td>Recent DD drilling was staged crushed to -35mm via Jaw Crusher and homogenised through Rotary Splitting Devise (RSD) to produce 5kg sub samples. The sub samples were further stage crushed through Jaw and Cone crushed to -3.35mm and pulverised using LM2 mill to 90% passing 75µm. A 50g charge was used for fire assay.
For the historic drilling, the original sample was crushed when required to 2kg through linear splitter and pulverised through LM2 mill to 90% passing 75µm.</td></tr>
</table>

Criteria	JORC Code Explanation	Commentary
	has inherent sampling problems. Unusual commodities or mineralisation types (e.g. submarine nodules) may warrant disclosure of detailed information.	
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).*	Drill type used for recent data was DD holes using PQ size. The 16 DD drillholes at Thaduna were completed for a total of 3,263.70m with inclination between -32º to -60º to achieve intersections at the required depth. All drill holes except TDDD008 were drilled to the north-east. Drill type for historic data include RC with face hammer sampling and DD holes with NQ2 and HQ core size. All recent drill collars are surveyed using RTK-GPS with downhole surveying. Documentation indicates that collar data for historic data was established mainly by RTK-GPS with 8% of data being measured by standard GPS instrument. Where historic drillhole collars could be located they were re-surveyed using RTK-GPS survey. All core (recent and historic) where possible is oriented using a Reflex ACT II RD orientation tool with stated accuracy of +/-1% in the range 0 to 88°.
Drill sample recovery	*Method of recording and assessing core and chip sample recoveries and results assessed.*	Diamond core recovery is logged and captured into the database for recent data. The core recoveries were measured by drillers for every drill run. The core length recovered was physically measured for each run and recorded and used to calculate the core recovered as a percentage core recovered. Overall recoveries are greater than 98%. Recovery data have been collected for the historic DD data with average core recoveries greater than 99%.
	Measures taken to maximise sample recovery and ensure representative nature of the samples.	Appropriate measures were taken to maximise sample recovery and ensure the representative nature of recent samples. This include diamond core being reconstructed into continuous intervals on angle iron racks for orientation and reconciled against core block markers. Protocols for historic DD hole drilling indicates that core was metre marked and orientated to check against the driller's blocks, ensuring all core loss was accounted for. At the RC rig, sampling system were routinely cleaned to minimise the chances for contamination and focused on sample quality.
	Whether a relationship exists between sample recovery and grade and whether sample bias may have occurred due to preferential loss/gain of fine/coarse material	No known sample recovery issues have impacted on potential sample bias.
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.*	Geological logging is completed for all recent holes and is representative across the orebody. The lithology, alteration and structural characteristics of core were logged directly onto a digital format following procedures and using Sandfire NL geologic codes. Data was imported into Sandfire Resources' central database after validation in LogChief™. Geological logging for historic data show variable quality and consistency. All DD core and RC chips have been re-logged by Sandfire. Re-logging data where available superseded the historic data for this update.
	Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc) photography.	Logging is both qualitative and quantitative depending on field being logged. All cores both recent and historic are photographed.
	The total length and percentage of the relevant intersections logged.	All drillholes are fully logged.
Sub-sampling techniques and sample preparation	*If core, whether cut or sawn and whether quarter, half or all core taken.*	The 8 2015 DD hole samples were half core produced using Almonte Core saw Historic DD hole samples are half core produced using Almonte Core saw. All samples are weighed and recorded.

Criteria	JORC Code Explanation	Commentary
	If non-core, whether riffled, tube sampled, rotary split, etc and whether sampled wet or dry.	Historic RC samples were split using a cone or riffle splitter at 1m intervals. The majority of the historic RC samples are dry. On the occasion that wet samples were encountered, they were dried prior to splitting with a riffle splitter. The 5 RC holes were split using a cone splitter at 1m intervals.
	For all sample types, the nature, quality and appropriateness of the sample preparation technique.	Sample preparation protocol for the recent metallurgical drilling involved full core being cut and submitted to the laboratory. The samples were stage crushed to -35mm via Jaw Crusher and homogenised via a Rotary Splitting Device and a 5.0kg sub sample was taken and further stage crushed via Jaw and Cone crushed to -3.35mm. Representative subsamples were split and pulverised using a LM2 pulveriser mill to 90% passing 75µm. Sample preparation protocols for resource drilling involved DD core being cut and halved and submitted to the laboratory. All DD samples were first crushed through a Jaques crusher to nominal -10mm. Second stage crushing was through a Boyd crusher to a nominal -4mm. All RC samples were only Boyd crushed to -4mm. Sample is then split to less than 2kg through linear splitter and pulverised using LM5 mill to 90% passing 75% µm. The historic sample preparation protocols involved DD core being cut and halved and submitted to the laboratory. RC samples comprised 1m samples from a cone or riffle splitter. The original sample was dried and weighed on submission to laboratory. The sample was then crushed and where required split to less than 2kg through linear splitter and pulverised using LM2 mill to 90% passing 75%µm.
	Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.	The representativeness of all sub-sampling stages for both recent and historic data are unknown at this stage due to insufficient QC checks. It is assumed that the analytical laboratory carried out its own internal QC checks to ensure representativeness of the sub-sampling stages, however documentation is incomplete.
	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.	Sampling for recent and historic drilling are to industry standard. No field duplicates have been taken for recent data. Some field and pulp duplicates have been completed for the historic drilling and identified no issues.
	Whether sample sizes are appropriate to the grain size of the material being sampled.	The sample sizes are considered appropriate for the hydrothermal Cu and Ag mineralisation style.
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.*	Recent samples were submitted to ALS Minerals for sub-sampling and assay. Base metal and extra element analysis was conducted via four acid digest ICPMS or ICPAES. Where the copper analysis reaches the detection limit of 5% Cu, they were re-analysed by ore-grade ICP analytical method; the sample preparation and analytical method are considered appropriate for this mineralisation style. Similar protocols were used for the historic DD and RC drilling; samples were submitted to Genalysis for multi-element four acid digest ICP with AS finish. In cases where copper assays reach the high detection limit of 5% Cu, they were re-assayed by an ore grade ICP analytical method. This method is considered appropriate for the mineralisation style.
	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.	Handheld XRF instrument were used to determine element concentrations in the historic RC drilling. These results were used as a guide for laboratory analysis of samples. No handheld XRF determined elements concentrations have been used in the Mineral Resource estimation.

Criteria	JORC Code Explanation	Commentary
	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.	No quality control samples were included in the recent drilling samples for analysis. To ensure that an acceptable level of accuracy and precision has been achieved, pulp Check Assay was completed through a different analytical laboratory. Result indicates a satisfactory level of accuracy and precision. Quality control procedures for historic included the use of certified standards, blanks and field duplicates; these were inserted at a below industry standards rate (2% overall rate of insertion) with no evidence of tracking anomalies or failures and their rectification. There is no evidence of historic Umpire Checks for any drill type. To verify that the accuracy and precision underlying the historic data is acceptable, Check Assays through a different laboratory (Bureau Veritas - Perth), was undertaken. The results indicates that an acceptable levels of accuracy and precision has been achieved.
Verification of sampling and assaying	*The verification of significant intersections by either independent or alternative company personnel.*	Significant intersections have been verified by alternative company personnel and the Competent Person.
	The use of twinned holes.	There are no twinned holes drilled for the Mineral Resource.
	Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.	Recent drill hole data were captured onto field tough book laptops using Logchief™ Software. The software has validation routines and data was then imported into a secure central database. Historic drill holes data were captured on tough book laptop using ioLogger™ software. The software has validation routines and the validated data was imported by ioGlobal onto a database which was hosted externally. It appears that no adjustment was made to the historic assay data.
	Discuss any adjustment to assay data.	The primary data is always kept and is never replaced by adjusted or interpreted 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.*	Collar coordinates for all recent drill holes are accurately surveyed using RTK- GPS system within +/- 50mm accuracy (XYZ). Coordinates are based on control previously established by MHR Surveyors which was derived by ties into the Government SSM/BM network. Where historic drillhole collars could be located these were re-surveyed using a RTK-GPS survey instrument. The re-surveyed collar data indicated that the historic drill hole locations were accurately determined. Downhole survey for recent drilling were completed by gyroscopic downhole methods at regular intervals. Different downhole survey methods were used for the historic drill hole data including Eastman Single Shot, Flexit GyroSmart, Flexit MultiSmart and ProShot with all surveys appropriately prioritised. Given the extreme deviations evident in the historic drill hole survey data, a number of drillholes were flushed, lined with PVC and re-surveyed using a Humphreys Gyroscope. The resurveys indicated that the original surveys were generally fit for purpose although some unrealistic forward projections had been made for drillholes that had only been partially surveyed during historic drilling. These forward projections were changed such that the projected hole-paths follow average trends within the drillhole rather than trends based on the differences between the penultimate and final surveys.
	Specification of the grid system used.	Coordinate and azimuth are reported in MGA 94 Zone 50 for both recent and historic data.
	Quality and adequacy of topographic control.	Topographic control was established from aerial photography using a series of 33 surveyed control points
Data spacing and distribution	*Data spacing for reporting of Exploration Results.*	No Exploration Results are included in this release.
	Whether the data spacing and distribution is sufficient to establish the degree of geological and grade continuity appropriate for the Mineral Resource and Ore Reserve estimation procedure(s) and classifications applied.	Data spacing and distribution are sufficient to establish the degree of geological and grade continuity appropriate for JORC 2012 classifications applied.
	Whether sample compositing has been applied.	No sample compositing is applied during the sampling process.

Criteria	JORC Code Explanation	Commentary
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.*	All drillholes are oriented to achieve high angles of intersection.
	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.	No orientation based sampling bias is known at this stage.
Sample security	*The measures taken to ensure sample security.*	Appropriate security measures are taken to dispatch samples to the laboratory. Chain of custody of samples is being managed by Sandfire Resources NL. Samples are stored onsite and transported to laboratory by a licence transport company in sealed bulk bags. The laboratory receipts received samples against the sample dispatch documents and issues a reconciliation report for every sample batch. It is assumed that appropriate security protocols were taken for historic drill hole samples dispatched to the laboratory.
Audits or reviews	*The results of any audits or reviews of sampling techniques and data.*	No external audits or reviews of the sampling techniques have been completed for the recent drilling. No evidence of external reviews has been supplied for the historic drilling data.

Section 2: Reporting of Exploration Results

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 Green Dragon and the Thaduna deposits are 100% Sandfire Resources NL owned and located in tenements M52/1060 and M52/1061, respectively.
	The security of the tenure held at the time of reporting along with any known impediments to obtaining a licence to operate in the area.	All tenements are current and in good standing. These tenements are currently subject to a Native Title Claim by the Yungunga-Nya People (WAD6132/98). Sandfire currently has Land Access Agreements in place with the Yungunga-Nya Native Title Claimants which overlay the Thaduna Green Dragon Project which allows for mining and exploration activities to commence on their traditional land.
Exploration done by other parties	*Acknowledgment and appraisal of exploration by other parties.*	Aside from Sandfire Resources and Ventnor there has been no recent exploration undertaken on the Thaduna Green Dragon Project. Drilling that has been prior to late 1970's has been used as a guide in the initial drill program, but has not been included in any estimation.
Geology	*Deposit type, geological setting and style of mineralisation.*	The Thaduna and Green Dragon deposits are hydrothermal, fault controlled, sediment hosted Cu and minor Ag mineralisation structures.
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; and* • *hole length.*	No exploration results have been reported in this release.

Criteria	JORC Code Explanation	Commentary
	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.	
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 results have been reported in this release.
	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.	No exploration results have been reported in this release.
	The assumptions used for any reporting of metal equivalent values should be clearly stated.	No exploration results have been reported in this release.
Relationship between mineralisation widths and intercept lengths	*These relationships are particularly important in the reporting of Exploration Results.*	No exploration results have been reported in this release.
	If the geometry of the mineralisation with respect to the drill-hole angle is known, its nature should be reported.	No exploration results have been reported in this release.
	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').	No exploration results have been 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.*	Location map shown in Figure 1 of this release. Other diagrams are appended to the end of this document.
Balanced reporting	*Where comprehensive reporting of all Exploration Results is not practicable, representative reporting of both low and high grades and/or widths should be practiced to avoid misleading reporting of Exploration Results.*	No exploration results have been 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.*	Other exploration data collected is not considered as material to this document at this stage. Further data collection will be reviewed and reported when considered material.
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.*	The results of column leach and flotation studies will be fed into an ongoing project feasibility study being undertaken by Sandfire Resources.

Section 3: Estimation and Reporting of Mineral Resources

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.*	Sandfire employs SQL as the central data storage system using DataShed software front end. User access to the database is regulated by specific user permissions. Only the Database Manager can overwrite data. Existing protocols maximise data functionality and quality whilst minimising the likelihood of error introduction at primary data collection points and subsequent database upload, storage and retrieval points. The primary data for historic drilling was collected using ioLogger™ on laptop computers. The data was validated at the time of entry and then uploaded into a SQL database managed by an extern contractor (ioGlobal) who maintains full records of data import and modifications. The historic master database was supplied in a MS Access format and imported into the Sandfire relational SQL database.
	Data validation procedures used.	Data templates with lookup tables and fixed formatting are used for collecting primary data on field Toughbook laptops. The software has validation routines and data is subsequently imported into a secure central database. The SQL server database is configured for optimal validation through constraints, library tables, triggers and stored procedures. Data that fails these rules on import is rejected or quarantined until it is corrected. Database is centrally managed by a Database Manager who is responsible for all aspects of data entry, validation, development, quality control and specialist queries. There is a standard suite of vigorous validation checks for all data. The supplied historic database was subjected to thorough audit and validation checks using SQL and DataShed relational database. Data has also been checked against more than 90% of the original assay certificates that were re-issued by the analytical laboratory. No major issues were identified.
Site Visits	*Comment on any site visits undertaken by the Competent Person and the outcome of those visits.*	Competent Person for this Mineral Resource update has not visited the Thaduna project site at this point in time.
	If no site visits have been undertaken indicate why this is the case.	Site visit was not required as no drilling, sampling and mining activities were occurring at the time. The Mineral Resource update is largely based on historic data.
Geological interpretation	*Confidence in (or conversely, the uncertainty of) the geological interpretation of the mineral deposit.*	Mineralisation at the Thaduna deposit is hosted by a North-North-East striking, steeply (70-85°) West-South-West dipping anastomosing fault system. The Thaduna fault system cross-cuts tightly folded sediments (siltstone, greywacke and conglomerate) of the Thaduna Formation. Cu-Ag mineralisation at Thaduna is orogenic in nature and is related to mineralised hydrothermal fluids that infiltrated the rock mass along fault zones and associated fractures. One major fault "Main fault" and 4 subordinate splays ("Splay Faults") have been recognised. Adjacent to the faults are zones of weakly mineralised zones ("Halo Zones"). Mineralisation in the Fault zones is generally of higher tenor and more laterally continuous than that of the Halo zones. The interpretation, whilst based upon partially validated data, is considered geologically and volumetrically realistic and is considered suitable for a scoping study.
	Nature of the data used and of any assumptions made.	The interpretation of mineralised zones was undertaken using Surpac™ Mining Software v6.7. Wireframes were snapped to coded drill hole intervals. The previous Leapfrog™ interpretations which were undertaken prior to the completion of the recent drilling were reviewed and guided this update interpretation with minor variations. The Main Fault zone solid was modelled using a combination of carbon alteration and strong fracturing. Where no re-logging data was available, historic data and/or Cu grade was used to determine the approximate position of the zone. The 4 splay fault zones were modelled in a similar fashion. The zones of halo mineralisation were not constrained using a copper cut-off grade. Internal waste was included where carbon alteration or strong fracturing was logged. Interval selection was based on a minimum downhole length of 2m.

Criteria	JORC Code Explanation	Commentary
	The effect, if any, of alternative interpretations on Mineral Resource estimation.	The geological interpretation of mineralised boundaries are considered robust and alternative interpretations do not have the potential to impact significantly on the Mineral Resources at the time. The interpretation has undergone corporate peer reviews ensuring that the geological interpretation is robust.
	The use of geology in guiding and controlling Mineral Resource estimation.	The interpreted wireframe models are used as hard boundaries during the Mineral Resource estimation.
	The factors affecting continuity both of grade and geology.	Cu-Ag mineralisation at Thaduna is orogenic in nature and is related to mineralised hydrothermal fluids that infiltrated the rock mass along fault zones and associated fractures. The fault zones are characterised by intense fracturing, irregular quartz-carbonate veining and pervasive carbon alteration. Below the base of oxidation, Cu and Ag is intimately associated with chalcopyrite ± bornite. The halo mineralisation zones are characterised by moderately fractured rock with irregular and extensional quartz-carbonate veins/veinlets, moderate carbon alteration and minor sulphide mineralisation. Where oxidised, the orebody is characterised by the presence of azurite, malachite and chrysocolla. Chalcocite is developed in the transitional zone between partly oxidised and fresh rock. Supergene enrichment of copper grades is a notable feature of the Thaduna deposit.
Dimensions	*The extent and variability of the Mineral Resource expressed as length (along strike or otherwise), plan width, and depth below surface to the upper and lower limits of the Mineral Resource.*	All known Thaduna deposit mineralisation extends from 772,250mE to 773,250mE, 7,175,400mN to 7,176,940mN and to a maximum of 660m below surface. The Thaduna mineralisation fault system generally strikes North-North-East and steeply dips to the West-South-West between 70-85°.
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 Mineral Resource estimation has been completed within Surpac™ v6.7 Mining software. The Mineral Resource database was uniquely flagged with mineralised fault zone codes and then composited into 1m lengths. The composite drillhole data was used for statistical and geostatistical analysis using Isatis™ v14 geostatistical and mining software. Histograms, log-probability plots and mean variance plots were considered in determining the appropriate cut-offs for each mineralised zone. The points of inflexion in the upper tail of the distribution on the log-probability plots as well as their spatial locations were examined to help identify outliers and decide on the treatments applied. High-grade cuts used were either as a top-cut. All grade values greater than the cut-off grade were set to the cut-off value (capped). Deterministic high-grade wireframes models representing high-grade shoot areas were not considered appropriate due to the narrow nature of the mineralised domains and the nature of the spatial distribution of these high-grade samples. Variography studies included analysing series of fans in three principal directions of horizontal, across-strike vertical and dip planes. The selected strike, plunge and dip directions were used to locate the three directions for which experimental variogram models were fitted. The nugget variance was modelled first by the use of down-hole variograms based on 1m lag, reflecting the downhole composite spacing. Variograms were estimated by fitting spherical models in the three principal directions using the nugget variance modelled for the same mineralised zone. Quantitative Kriging Neighbourhood Analysis (QKNA) using goodness of fit statistics was completed to optimise estimation neighbourhood parameters. The process involved assessing the quality of estimation parameters using geostatistical Slope of Regression (ZZ), Kriging Efficiency (KE), Kriging Variance (KV) and the Number of Negative Kriging Weights (NNKW) results as a measure. The analysis was conducted for various regions within the dataset for variable test parameters. Parameters that were tested and optimised are the parent block sizes, search parameters, number of samples and block discretisation. Copper and Silver are the only economic metals estimated in the current Mineral Resource. Grade estimation of the Thaduna deposit was carried out using the geostatistical method of Ordinary Kriging (OK) into parent cell blocks.

Criteria	JORC Code Explanation	Commentary
	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 current Mineral Resource takes into account historic production using wireframe that represent the mined out open pit and an approximation of the material mined by underground methods. The current Mineral Resource has been reviewed against historic estimates and have been found to be reasonably comparable.
	The assumptions made regarding recovery of by-products.	No by-products are modelled.
	Estimation of deleterious elements or other non-grade variables of economic significance (e.g. sulphur for acid mine drainage characterisation).	No deleterious elements are modelled.
	In the case of block model interpolation, the block size in relation to the average sample spacing and the search employed.	Grade interpolation (Thaduna) is based on interpolation into three dimensional parent blocks of sizes X=10m by Y=20m by Z=5m sub-blocked into X=1.25m by Y=5m by Z=1.25m sizes. Parent block evaluations were then assigned to sub-blocks. Grade interpolation (Green Dragon) is based on interpolation into three dimensional parent blocks of sizes X=20m by Y=10m by Z=5m sub-blocked into X=5m by Y=1.25m by Z=1.25m sizes. Parent block evaluations were then assigned to sub-blocks. The block size is considered the optimum based on QKNA and taking into consideration the typical drill hole spacing which is of the order 40m by 40m and geometry of the mineralised wireframe dimensions. The block estimation incorporates the spatial continuity characteristics using the variogram model parameters. A minimum of 8-10 samples and not more than 26 samples have been used to inform blocks. Search ellipsoid was aligned to the variogram orientation parameters. A single search estimation run was used with the maximum search radius set to fill the modelled volume.
	Any assumptions behind modelling of selective mining units.	No selective mining units have been assumed in this current Mineral Resource
	Any assumptions about correlation between variables.	This current Mineral Resource has not incorporated any correlation between variables.
	Description of how the geological interpretation was used to control the resource estimates.	The block model has been assigned unique mineralisation zone codes that corresponds with the interpreted geological zones as defined by wireframes. This enabled each mineralisation zone to be estimated separately using only corresponding composite data. In addition, the weathering state of the mineralised material has been used to isolate interpolation of fully oxidised, partially oxidised and fresh rock. A soft boundary approach has been used across the modelled weathering state boundaries whereby data from within 10m across the boundaries has been used in the interpolation of each modelled weathering state.
	Discussion of basis for using or not using grade cutting or capping.	Statistical analysis in conjunction with the spatial configuration of samples were used to assist in identifying outliers and decide on the treatments applied. High-grade cuts used as a top-cut in order to reduce the smoothing of very high-grades in areas not supported by data.
	The process of validation, the checking process used, the comparison of model data to drill hole data, and use of reconciliation data if available.	Standard model validation was completed using visual and numerical methods: • Block model estimates were visually interrogated on-screen on sections and plans and compared with samples and found no significant bias between block estimates and drillhole data; and • Block model estimate global means were compared with the declustered composite mean grades for each mineralised zone and found satisfactory variances. Swath plots of the estimated block grades and composite mean grades by eastings, northings and elevations were reviewed. The results shows a reasonable correlation between block estimates and input composite data within the material domains. There is no reconciliation data available for use as a check on the estimates.

Criteria	JORC Code Explanation	Commentary
Moisture	*Whether the tonnages are estimated on a dry basis or with natural moisture, and the method of determination of the moisture content.*	Tonnages are estimated on a dry basis.
Cut-off parameters	*The basis of the adopted cut-off grade(s) or quality parameters applied.*	Based upon data review a notional lower cut-off of 0.2% Cu appears to be a natural grade boundary between ore and trace assay values. The economic mineralisation is closely correlated with the alteration type and the relogging undertaken by Sandfire has allowed definition of the mineralisation based primarily on geological alteration type without strict reliance on grade above a cut-off.
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.*	It is anticipated that the upper portion of the Thaduna Mineral Resource will be exploited by an open cut mine and the deeper portions will be accessed through underground mining.
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 current Mineral Resource does not include any metallurgical assumptions. It is envisaged that the DeGrussa processing plant will be used to treat the ore and initial metallurgical test work has proven that the ore is amendable to leaching or flotation or both. There is an ongoing evaluation on the potential for an oxide copper leach plant for DeGrussa with the view of including amenable ore from Thadunna.
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.*	At this stage no environmental assumptions have been made. A previously mined open pit copper mine exist at Thaduna and opposition to the development of a mine is considered unlikely.
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.*	A total of 26 density determinations were completed historically by Ventnor Resources at Thaduna. These measurements were undertaken in ore and waste zones with no significant variation observed between both zones. An average fresh material density of 2.77g/cm3 has been used historically for Thaduna. A density value 2.2g/cm3 was used for oxides. The results for oxidised material were based on a historic evaluation report of the Thaduna Copper deposit (Hassel, 1974) which completed density determinations on a total of 50 samples of the Thaduna copper mine. For this current Mineral Resource update, a substantial amount of density tests were completed for the Thaduna fresh material covering mineralised and waste zones. A total of core density tests totalling 306 measurements were completed from which 276 results were used to estimate the assigned fresh density value. Two outlier values of 4.19g/cm3 (waste transitional zone) and 9.38g/cm3 (waste fresh zone) were removed from the analysis. Within the fresh zones (low-grade mineralised and non-mineralised – 200 determinations) density varies from 2.39g/cm3 to 3.53g/cm3 with a median and average density values of 2.78g/cm3 and 2.78/cm3 respectively. This values are very consistent with those obtained historically by Ventnor Resources.

Criteria	JORC Code Explanation	Commentary
		Within the fresh zones (mineralised) the 76 available density determinations vary from 2.37g/cm3 to 3.53g/cm3 with a median and average density values of 2.74g/cm3 and 2.73g/cm3 respectively. Within the mineralised transitional and oxide zones no density determinations are available. The low-grade and waste transitional and oxide zones contain 8 and 22 determinations respectively. The 8 transitional determinations have a median and average of 2.30g/cm3 and 2.23g/cm3 respectively. The 22 oxide determinations have a median and average of 2.05g/cm3 and 2.09g/cm3 respectively. The Green Dragon deposit has a total of 21 bulk density determinations from the low grade and waste zones and 6 from the mineralised domain 502. This small amount of data suggest that the bulk densities at Green Dragon are generally similar to those at Thaduna in the oxide and transitional zones but are less than those at Thaduna in the fresh zone with averages 2.4g/cm3 in the fresh mineralised domain and 2.67 g/cm3 in the fresh waste domain. Approximately 40% of the total density measurements completed have been checked externally. The results of the external checks are very consistent with the site measurements.
	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.	The bulk density determinations have accounted for void spaces, moisture and differences between alteration zones. Within the same weathering profile, bulk density does not vary significantly between different alteration zones.
	Discuss assumptions for bulk density estimates used in the evaluation process of the different materials.	The depth of weathering of the Thaduna deposit is highly variable. Increased permeability adjacent to the Thaduna Fault system has resulted in deeper oxidation adjacent to the fault zone compared with that in the surrounding host-rock. Modelling of top of fresh rock and top of transitional rock accounted for these variations and used in the evaluation process. Within oxidised profile, a bulk density of 2.0g/cm3 and within the partially oxidised transitional zone, a bulk density of 2.3g/cm3 has been used for this study at both Thaduna and Green Dragon. A bulk density of 2.77g/cm3 has been used for the fresh mineralised, low-grade and waste material at Thaduna and 2.60 g/cm3 for the fresh mineralised, low-grade and waste material at Green Dragon.
Classification	*The basis for the classification of the Mineral Resources into varying confidence categories.*	The current Mineral Resource has been classified into Indicated and Inferred categories following the guidelines of the Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves (JORC Code 2012). The classification is based on drill hole-orebody intercept spacing, geological confidence, grade continuity and estimation quality. A combination of these factors guided the manual digitising of strings on drill sections to construct envelopes that were used to control the Mineral Resource categorisation. This process allows review of the geological control/confidence on the deposit. Indicated Mineral Resources are blocks with well-established geological continuity within areas with an average distance to informing data of less than 50m. Inferred Mineral Resources are blocks with moderately well-established geological continuity within areas with an average distance to informing data of less than 100m. Unclassified portions of the model include areas where there is uncertainty regarding the mining depletion or insufficient drill data to establish geological continuity.
	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).	The Mineral Resource classification has appropriately taken into account data spacing, distribution, reliability, quality and quantity of input data as well as the confidence in predicting grade and geological continuity.
	Whether the result appropriately reflects the Competent Person's view of the deposit.	The Mineral Resources reflect the Competent Person's view of the deposit.
Audits or reviews	*The results of any audits or reviews of Mineral Resource estimates.*	This current Mineral Resource has not been subject to external audits or reviews.

Criteria	JORC Code Explanation	Commentary
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 Mineral Resource has been reported in accordance with the guidelines of the 2012 edition of the Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves and the relative accuracy is reflected in the categorisation into Indicated and Inferred.
	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.	The statements relates to global estimates of tonnes and grade.
	These statements of relative accuracy and confidence of the estimate should be compared with production data, where available.	At this stage there is no production data to assess the relative accuracy and confidence of the Mineral Resource. The precision of the estimate is globally acceptable assuming that more detailed grade control drilling will be undertaken at the production stage.

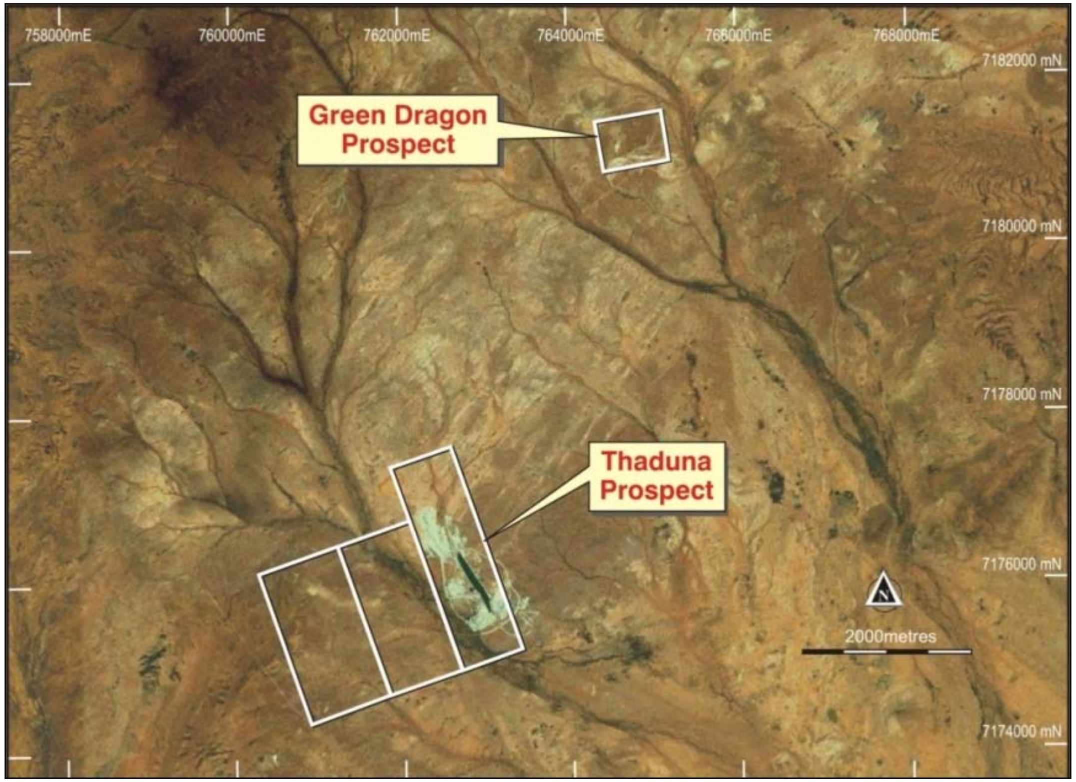


Figure: Thaduna and Green Dragon Project location.

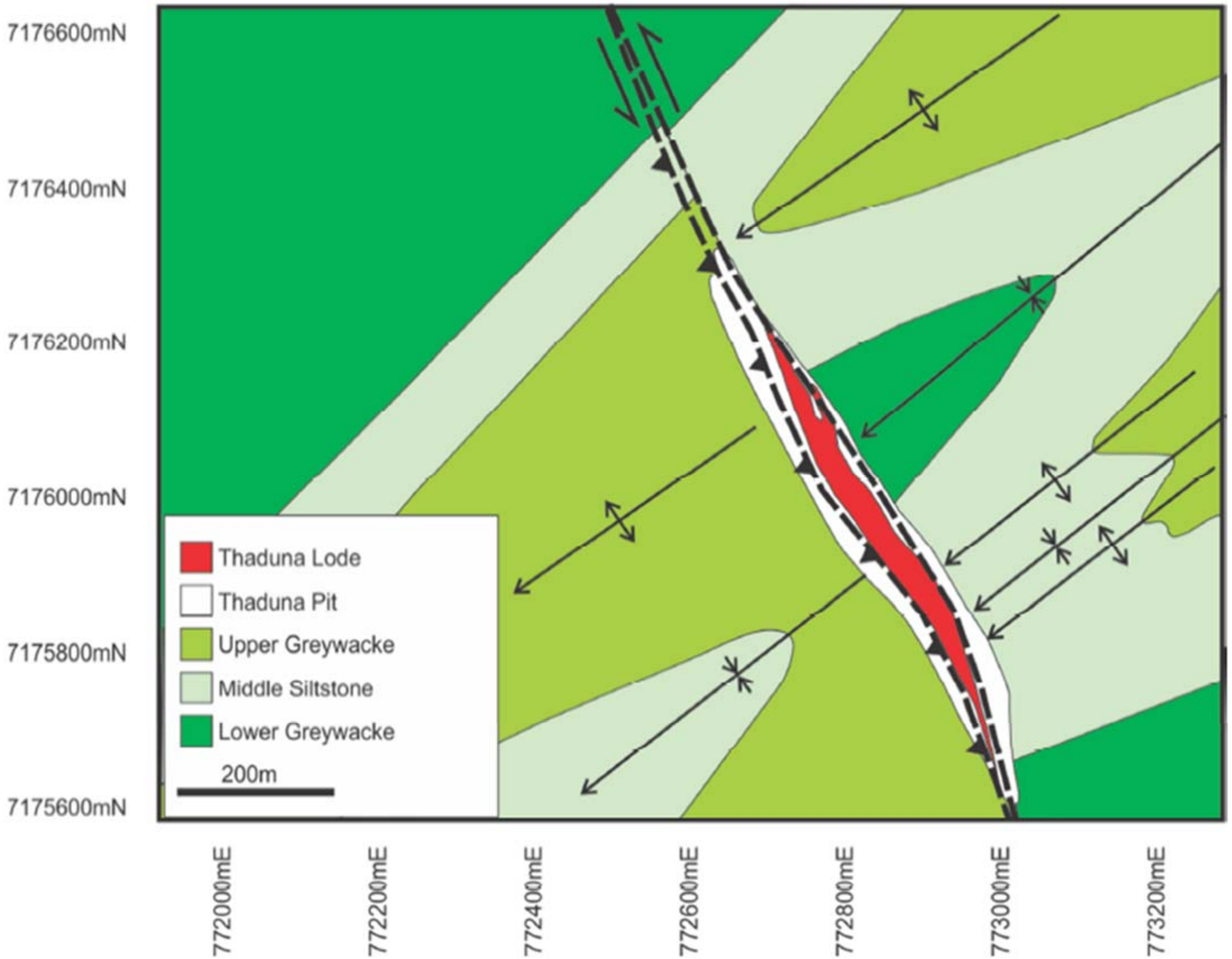


Figure: Simplified geological map of the Thaduna deposit.

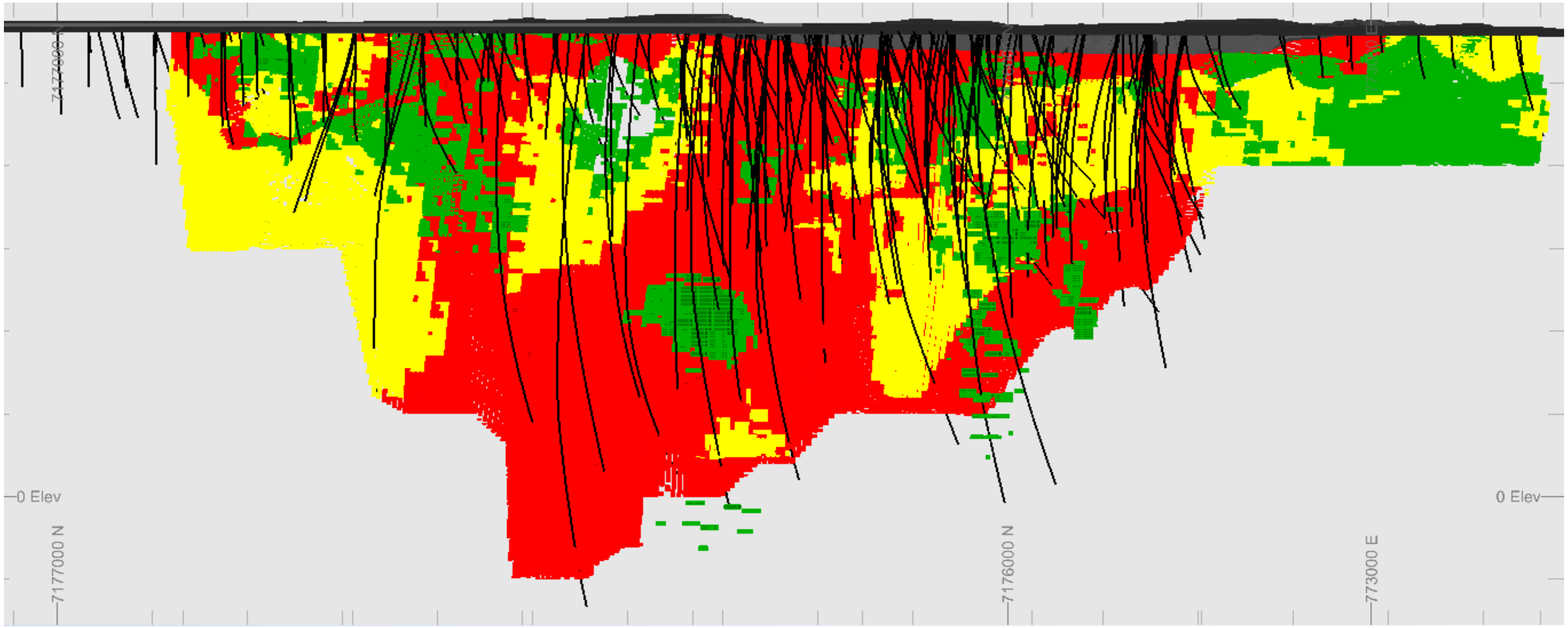


Figure: Long section of the Thaduna deposit showing drilling and the block model (Green = +0.2% Cu, Yellow = +0.5% Cu and Red = +1% Cu).

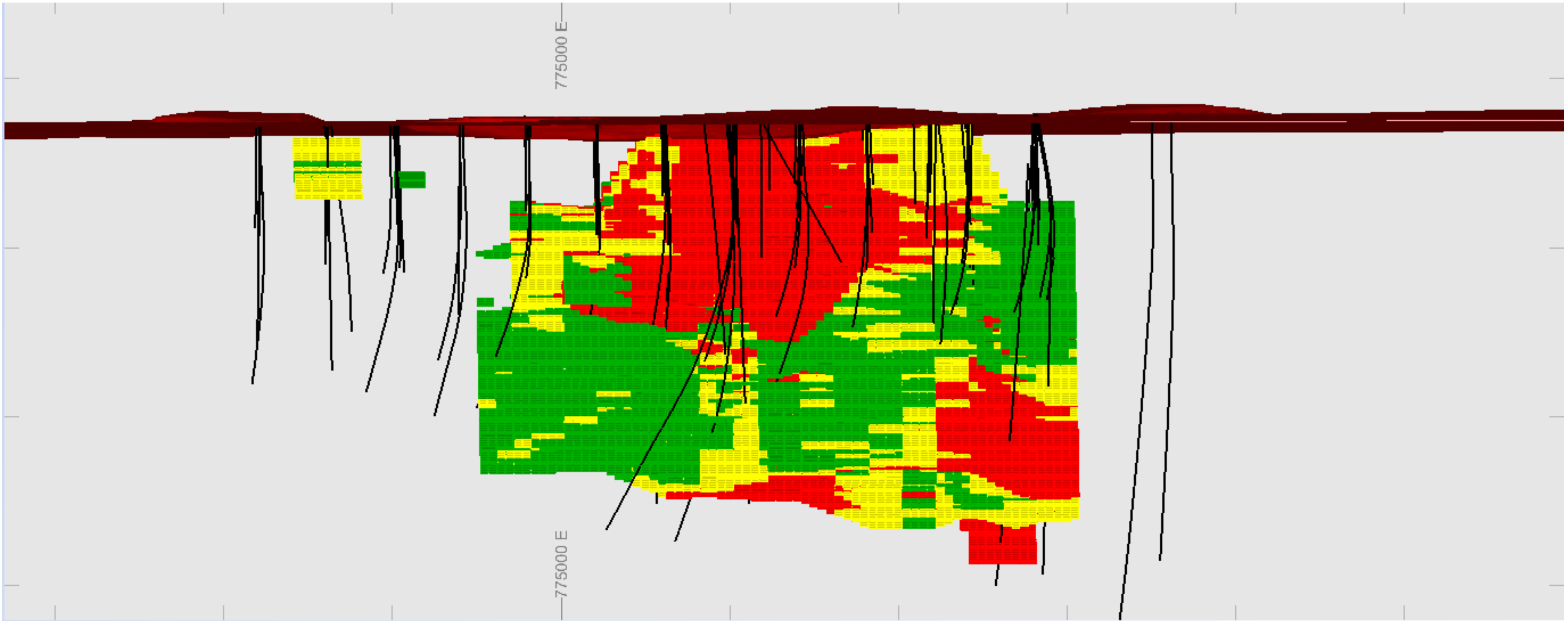


Figure: Long section of the Green Dragon deposit showing drilling and the block model (Green = +0.2% Cu, Yellow = +0.5% Cu and Red = +1% Cu)

Appendix 1 (continued) - JORC 2012 TABLE 1 MINERAL RESOURCE PARAMETERS – TEMORA PROJECT AREA – The Dam Project

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.*	Sampling techniques undertaken by previous owners include core sampling of NQ2 and/or NQ3 Diamond Drill (DDH) core; Reverse Circulation (RC) face sampling, open-hole percussion (PER), air-core (AC) and rotary air blast (RAB) chip samples.
	Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.	Sampling techniques undertaken by previous owners include half core sampling of DDH core; RC samples collected by riffle splitter for single metre samples or sampling spear for composite samples; PER, AC and RAB samples collected using riffles splitters or a sampling spear. Sampling was undertaken by the then current owner's protocols and QAQC procedures as per the prevailing industry standards.
	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.*	Diamond drilling was used to obtain 5,719 one metre; 1,518 two metre and 1,187 three metre samples along with significantly lesser quantities of other sample intervals varying from 74 metres to 0.2 metres. These samples comprised half core along with pulverized and riffle split half core products to achieve acceptable (representative) sample weights for analytical assay. RC drilling was used to obtain 4,122 two metre samples and 414 three metre samples along with significantly lesser quantities of other sample intervals varying from 10 metres to 1 metre. RAB drilling was used to obtain 622 three metre, 554 two metre and 118 one metre samples along with significantly lesser quantities of other sample intervals varying from 66 metres to 0.58 metre. AC drilling was used to obtain 479 two metre samples along with significantly lesser quantities of other sample intervals varying from 4 metres to 0.2 metre.
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).*	The drilling database for The Dam project comprises the results from 23 AC holes totalling 1,484 metres; 50 diamond drill holes DDH totalling 14,350.17 metres consisting of HQ-size (1,434.2 metres), HQ3-size (792.4 metres), NQ size (630.1 metres) and NQ3-size (2,948.9 metres) with size of the remaining meterage not recorded in the database; 133 RAB holes totalling 4,193.67 metres; 93 RC holes totalling 12,081.3 metres Of these, the results from 54 drillholes were used for the Dam resource interpretation and estimation. This drilling including 28 Diamond drill holes, 8 RAB/AC holes, and 18 RC holes. Of these, 6 diamond drill holes, of the TTDD series, were drilled by Goldminco since 2007. Historical holes TD and TP series were drilled by Paragon Gold between 1990 and 1993. The ACDGB, DDnnGB (where nn is a two digit number), and RCnnGB holes were drilled by CRAE between 1993 and 1997. DRC01 and DD02 were drilled by Cyprus Amax between 1997 and 1999.
Drill sample recovery	*Method of recording and assessing core and chip sample recoveries and results assessed.*	There are no documentation of core and chip recoveries within the Goldminco database for the Yiddah project.
	Measures taken to maximise sample recovery and ensure representative nature of the samples.	It is assumed that appropriate measures were taken by Goldminco to maximise sample recovery, however documentation is incomplete.
	Whether a relationship exists between sample recovery and grade and whether sample bias may have occurred due to preferential loss/gain of fine/coarse material.	No relationship between sample recovery and grade is known.

Criteria	JORC Code Explanation	Commentary
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.*	Project database records contain varyingly detailed geological logs of the range of all drilling products describing regolith, colour, weathering, texture, grain size, principal and secondary lithologies along with qualitative and quantitative assessments of alteration, sulphide minerals, veining, non-sulphide minerals and remarks. The level of detail logged complies with the Indicated and Inferred Mineral Resource classifications for this project.
	Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc) photography.	The drilling products have been logged both qualitatively and quantitatively according to the particular attribute being assessed.
	The total length and percentage of the relevant intersections logged.	59 of the 299 or approximately 20% of the holes drilled have been logged and their results entered into the project database. Similarly, 17,947.26 metres from a total of 32,109.14 metres or approximately 56% of the metres drilled have been logged.
Sub-sampling techniques and sample preparation	*If core, whether cut or sawn and whether quarter, half or all core taken.*	Diamond drillcore of both HQ and NQ size from drilling by Paragon Gold, CRAE and Cyprus Gold was sawn in half by a diamond bladed core saw and half core was submitted for assay. Goldminco drillholes TTDD001-6 were started as aircore precollars to refusal. Aircore samples were collected in green bags every two metres by the drillers, and Goldminco field technicians or geologists sampled the bags using a spear. Aircore samples every 2 metres were submitted for analysis. Drillcore at The Dam is very fractured, particularly from the surface down to 300m depth, in the shear zone in the hanging wall of the major fault. To improve core preservation, logging and sampling, triple tubed HQ3 core from Goldminco holes TTDD002, 3, 4 and 4A were placed into lengths of split 65mm diameter DWV PVC pipe, wrapped in plastic and cut with a bricksaw into lengths that would fit into core trays on site beside the drill rig. Drillcore from all the holes TTDD001 – 4A was cut in half, using a Westernex Almonte automatic core saw or where incompetent was split using a knife or rock chisel, and sampled every 1m for analysis
	If non-core, whether riffled, tube sampled, rotary split, etc and whether sampled wet or dry.	Reverse circulation drilling samples were split by riffle splitters with a sample of between 3 and 5 kilograms submitted to the laboratory.
	For all sample types, the nature, quality and appropriateness of the sample preparation technique.	The sub-sampling techniques and sample preparation methodologies have been undertaken using standard industry practices current at the time. These are considered to be appropriate for use in the ongoing assessment and development of the project.
	Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.	Half diamond drillcore was crushed by jaw crusher and a 3 kilogram split was pulverized to 70% passing -75 microns. Reverse circulation drill samples of less than 4 kilograms were pulverised entirely to 70% passing -75 micron in an LM5 pulverizer. Samples greater than 4 kilograms were sub split and half the sample was pulverized. Goldminco aircore and half core samples were sent with standards every 50 samples to the SGS laboratory in West Wyalong for analysis. Samples between 1 and 3.5kg are dried, crushed, milled to <75 microns, and split for analysis.
	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.	Repeats and second splits for sampling undertaken by Goldminco were analysed every twenty or so samples. A separate small subsample was sent to the SGS laboratory in Townsville for Cu, Pb, Zn, As, Ag, Mo and S analysis by ICP40Q using 4 acid digestion and ICP21Q for when elements were above normal detection limits.
	Whether sample sizes are appropriate to the grain size of the material being sampled	The sample sizes are appropriate to the porphyry and related styles of mineralisation.

Criteria	JORC Code Explanation	Commentary
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.*	CRAE analysed for Au by 50g fire assay and Cu, Pb, Zn, Mo, Ag, As Mn, Fe by AAS. Cyprus Gold analysed for Au by 50g fire assay and Cu, Pb, Zn by ICP methods. It is unknown what steps the mining and exploration companies made to secure the samples.
	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.	No geophysical tools were used to analyse the drilling products.
	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.	Repeats and second splits for sampling undertaken by Goldminco were analysed every twenty or so samples. A separate small subsample was sent to the SGS laboratory in Townsville for Cu, Pb, Zn, As, Ag, Mo and S analysis by ICP40Q using 4 acid digestion and ICP21Q for when elements were above normal detection limits.
Verification of sampling and assaying	*The verification of significant intersections by either independent or alternative company personnel.*	A program of external quality control (QC) and quality assurance (QA) was been applied by Goldminco to check for contamination, accuracy and precision. An Independent assessment of the results of historic (in house) and current certified standards and laboratory duplicates has been undertaken. Blanks were not inserted externally by Goldminco but the results of internal laboratory blanks are made available to Goldminco. A visual inspection of these results did not appear show any significant sample contamination issues. Goldminco inserted a certified standard for every 50 samples submitted for assay which was inserted in the sample stream prior to the samples leaving site. The available QAQC assay data for the project was reviewed with respect to QAQC performance. From a total of 104 gold and 34 copper QAQC samples submitted, 3 gold and 1 copper sample were identified as exceeding the sample variance limits (3SD). The number of errors found is not considered significant and could largely be explained by sample switches. The standards used comprise historic in-house (uncertified) standards and more recently certified standards supplied by Ore Research and Exploration. Overall, the standards have performed well and indicate the sample data is of an acceptable standard. The drill core from 2 diamond drill holes, DD93GB45 and DD94GB72 which intersected significant mineralisation were checked the Competent Person.
	The use of twinned holes.	There are no known twinned holes drilled for the Mineral Resource.
	Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.	Results for QAQC samples are assessed on a batch by batch manner, at the time of uploading drill sample assays to the Acquire database. The Acquire database reports on the performance of the QAQC samples against the expected result and within tolerance limits. If the QAQC samples fail the batch report, the Geologist investigates the occurrence and actions either a) acceptance of the result into the database or b) reject the result and organised a re-assay of the sample with the laboratory.
	Discuss any adjustment to assay data.	No adjustment was made to the raw 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.*	Collar surveys, where disclosed, were undertaken using GPS technology. Downhole surveys were varyingly undertaken using a variety of technologies including single- and multi-shot, gyroscopic and north seeking gyroscopic instruments.
	Specification of the grid system used.	Collar and down hole azimuths used for The Dam Resource interpretation and estimation is based on AGD 66, Zone 55 datum. This was selected as all historical survey data were stored in AGD 66.
	Quality and adequacy of topographic control.	The drill hole collars were surveyed using GPS technology and these were used to build the topographic surface which is relatively flat.

Criteria	JORC Code Explanation	Commentary
Data spacing and distribution	*Data spacing for reporting of Exploration Results.*	The holes used for the resource estimation were drilled over approximately 1,200 metres strike length to a maximum vertical depth of 500 metres. The drill sections are spaced between 50 and 100 metres apart with each section having 2 or more holes.
	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.	Resource definition drill spacing and distribution of exploration results is sufficient to support Mineral Resource Estimation procedures.
	Whether sample compositing has been applied.	No sample compositing has been applied to the exploration results.
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.*	The range in declination of the drilling has been inclined between 55 and 65 (124 holes); 65 to 75 (6 holes); 75 to 85 (3) and 85 to 90 (146). 11 of the moderate to steeply inclined holes were drilled towards ENE (61 degrees) and 124 were drilled towards WSW (243 degrees) relative to AMG north. Consequently, the majority of the inclined holes are drilled orthogonally to the north-northwest strike of The Dam mineralized zone and intercept it obliquely at depth.
	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 the drilling was oriented perpendicular to the general strike of the Dam deposit and it is considered that no sampling bias has been introduced.
Sample security	*The measures taken to ensure sample security.*	Sample storage at Goldminco was undertaken as follows: • Half core diamond drill holes are stored on site in covered, plastic trays to minimise oxidation due to open air storage and weather. • A number of early diamond drill holes are stored at the Londonderry Core farm • Crush rejects are stored for a short time at the laboratory before being flagged for disposal following acceptance of QAQC for the drill hole results. • Pulps are disposed when the QAQC results of the drill hole are accepted, and the geology department has deemed there to be no further use for the pulps.
Audits or reviews	*The results of any audits or reviews of sampling techniques and data.*	Goldminco provided an accredited independent consultant with an MS Access drillhole database called Temora.mdb covering the Temora project areas. Goldminco managed the drilling database using acQuire software under the supervision of a full time database administrator. Goldminco had undertaken extensive validation of the database since acquisition of the project in 2003. The independent consultant undertook some cursory database validation checks and found the database to be clean, consistent and free of obvious errors. A senior representative of the independent consultancy undertook site based checks of the database to verify grade intersections were consistent with a visual inspection of mineralisation in the core. New and old collar positions were also verified where possible in the field. A further assessment of the database was undertaken by the Competent Person. No significant errors were found and it is considered that the data management processes in place are robust and adequate and believes that the database is an accurate representation of the project drilling data.

Section 2: Reporting of Exploration Results

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 Dam Project is located approximately 14 kilometres north-northwest of the town of Temora in central New South Wales, Australia. It falls partially within the confines of Exploration License EL5864 with the remaining portion falling within EL6845, both of which are 100% held by Sandfire Resources NL. The titles are for Group 1 minerals. EL5864 was granted on 29 May 2001 and the expiry date is 28 May 2022. EL6845 was granted on 03 August 2007 and the expiry date is 03 August 2016. Renewal has been sought for EL6845. EL5864 has a royalty agreement of 2% NSR (Net Smelter Return) to Newcrest Ltd, payable upon the commencement of mining which partly covers The Dam prospect. EL6845 has a 12.5% Net Profits Interest for that part which covers the historic EL2151. This area includes the Mandamah, Cullingerai and Estoril deposits but does not apply to the area hosting The Dam deposit.
	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.	There are no obvious impediments known to exist at this stage of exploration to obtaining a license to operate in this area.
Exploration done by other parties	*Acknowledgment and appraisal of exploration by other parties.*	The Dam mineralisation was discovered in 1990 by Paragon Gold by RAB drilling in EL2059 east of the Gidginbung Gold-Silver Mine in ML1167. In 1993, Paragon Gold changed name to Gold Mines of Australia, and CRA Exploration farmed into the project and implemented various exploration techniques before exiting EL2059 in 1996. Cyprus Gold / Cyprus Amax farmed into EL2059 in 1997, collecting more data and calculating a preliminary resource estimate. Cyprus exited in 1999, Gold Mines of Australia went into receivership in 2000, and EL2059 was split into two. Goldfields Exploration / Aurion Gold Exploration and Newcrest Exploration both ended up with part of The Dam deposit. EL2059 of Goldfields Exploration /Aurion Gold Exploration was farmed out to Goldminco Corporation in 2004, and in 2006 a resource estimated for The Dam was completed Cube Consulting and reported in accordance with the NI 43-101 (Zammit, 2006). In 2006-2007 Goldminco drilled 4 diamond holes and flew a 50m spacing and 30m height detailed aeromagnetic survey using a helicopter. Later in 2007 EL2059 was grouped with the other Temora project ELs into a new single EL6845. Newcrest Exploration were granted EL5864 in 2001, and drilled 8 diamond holes west and south of The Dam prospect until 2007 when they commenced farm out negotiations. In 2008 Newcrest farmed out EL5864 to Templar Resources. Sandfire Resources NL acquired the project and EL6845 from Goldminco (then a wholly owned subsidiary of Straits Resources Limited) in October 2015.
Geology	*Deposit type, geological setting and style of mineralisation.*	The Temora project area is located in the Gilmore Fault Zone, a major fault bounding the Eastern Lachlan Orogen and Central Lachlan Orogen of Eastern Australia. Three main geological units are present in the tenement areas, from west to east respectively: • The Wagga Group, a Ordovician-Early Silurian quartzose sandstone-shale sequence that formed as deep ocean turbidites, and are variably metamorphosed by intrusive S-type granites; • The Gidginbung Volcanics, an Ordovician-Early Silurian mafic-intermediate volcanic and intrusive sequence of the Macquarie Arc. Macquarie Arc volcanics formed in an island arc above subduction; and • The Ootha Group, a Siluro-Devonian clastic sequence of conglomerate-sandstone-siltstone and minor felsic volcanics. The unit widely recognised in the area is the Yiddah Formation. Mineralisation styles can be broadly grouped into three main types: • High sulphidation epithermal Au: Gidginbung; • Porphyry Cu-Au-Mo: Yiddah, Mandamah, Cullingerai, Estoril, The Dam; and • Mesothermal vein Au: Reefton, Barmedman. The mineralised zone at The Dam deposit is hosted by variably altered microtonalite, andesite, dacitic volcanics, and volcaniclastics of the Late Ordovician Gidginbung Volcanics (Mowat 2003). The zone has had

Criteria	JORC Code Explanation	Commentary
		a complex history of overprinting alteration and multi-generational development (telescoping) of vein systems. The mineralisation is interpreted to be a late Ordovician porphyry Cu-Au system with an overprinting advanced argillic shear-related system that formed in an Early Silurian high strain zone and sourced fluids from the waning stages of the Late Ordovician to Early Silurian magmatic events.
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; and* • *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 have been reported in this release.
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 results have been reported in this release.
	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.	No exploration results have been reported in this release.
	The assumptions used for any reporting of metal equivalent values should be clearly stated.	No exploration results have been reported in this release.
Relationship between mineralisation widths and intercept lengths	*These relationships are particularly important in the reporting of Exploration Results.*	No exploration results have been reported in this release.
	If the geometry of the mineralisation with respect to the drill-hole angle is known, its nature should be reported.	No exploration results have been reported in this release.
	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').	No exploration results have been 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.*	Location map shown in Figure 1 of this release. Other diagrams are appended to the end of this Table 1 document.
Balanced reporting	*Where comprehensive reporting of all Exploration Results is not practicable, representative reporting of both low and high grades and/or widths should be practiced to avoid misleading reporting of Exploration Results.*	No exploration results have been reported in this release.

Criteria	JORC Code Explanation	Commentary
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.*	Preliminary metallurgical test work for five deposits from the Temora area, including Dam, was completed by AMMTEC, Perth, during the period September 2008 to January 2009. Composites were prepared from single drillholes from each of the five deposits. Grinding tests on the composites were within the range seen for porphyry deposits in Arizona (USA and British Columbia (Canada). Due to a wide range of alteration styles across the Temora deposits, resulting in differences in sample hardness, a wide variation in grind time was necessary to achieve this size range across individual deposits. Flotation testing on the composites clearly demonstrated that at the right grind and reagent regime, copper recoveries of over 90% could be achieved at marketable concentrate grades of over 20%Cu and in all cases the copper floated exceedingly quickly.
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.*	Continue infill drilling within the currently modelled resource outlines in order to increase the confidence in the geological and weathering models as well as establish grade continuity; Continue with resource definition drilling to test strike potential; Continue with district exploration incorporating current understanding of geological, structural and mineralisation controls at the existing Temora Prospects; Expand and maintain an auditable quality assurance system for all ongoing data collection. Continue with collection of SG measurements, and Additional metallurgical test work to be undertaken as a routine part of exploration.

Section 3: Estimation and Reporting of Mineral Resources

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 database used for the Dam resource modelling and estimation was extracted from the Goldminco Datashed database which is a professional relational SQL database management package. Datashed is an industry recognized data management system that utilizes rigorous data validation procedures during data entry along with enhanced security and flexible reporting to protect the exploration records.
	Data validation procedures used.	For the Mineral Resource, data tables were exported from the SQL database as comma separated files (CSV's) using export tools embedded with the database management system. These CSV files were then imported into a standalone Access database for the sole purpose of the estimation. The project records extracted from the master database have been checked and validated by an independent expert who found the database to be clean, consistent and free of obvious errors.
Site Visits	*Comment on any site visits undertaken by the Competent Person and the outcome of those visits.*	The 2011 resource estimate for the Dam deposit was estimated by Mr. Byron Dumpleton who was the Mineral Resource Manager for Straits Resources. Mr Dumpleton had visited the project site and had a good understanding of the project geology based on a detailed review of the mineralization in drill core and surface outcrop exposures. A project site visit was undertaken in March 2017 by the Competent Person to verify grade intersections were consistent with a visual inspection of mineralisation in the core.
	If no site visits have been undertaken indicate why this is the case.	Site visit was undertaken by an independent expert as outlined above.
Geological interpretation	*Confidence in (or conversely, the uncertainty of) the geological interpretation of the mineral deposit.*	The current Dam resource interpretation was based on a single mineralized zone occurring in the hanging wall of the Dam Fault (locally referred to as the Footwall fault). A wireframe for the mineralized envelope was constructed based on sectional interpretation using a 500ppm Cu cut-off snapped to drillhole intersections where drilling data was available, and truncated against the fault surface.

Criteria	JORC Code Explanation	Commentary
	Nature of the data used and of any assumptions made.	The mineralised domain comprising the Dam has been broadly defined using a combination of geological and low grade cut-off criteria based on available drillhole information. The mineralisation interpretations used in this estimate were an attempt to encompass the complete mineralised distribution and produce a model that reduces the risk of conditional bias often introduced where the constraining interpretation and data selection is based on a significantly higher grade than the natural geological cut-off. Criteria used in defining the mineralised domain can be summarised as follows: • Determine a nominal low grade "geological" cut-off to assist in defining mineralised outlines; • Incorporate lithology, alteration, veining and mineralisation characteristics where available; • No minimum width or downhole length criteria was applied; and • No internal dilution or edge dilution criteria was applied.
	The effect, if any, of alternative interpretations on Mineral Resource estimation.	The nature and extent of the mineralised domain comprising the Dam project is consistent with the geological models for the other projects comprising Temora Project Area. Consequently, no alternative interpretations have been considered.
	The use of geology in guiding and controlling Mineral Resource estimation.	As outlined above, lithology, alteration, veining and mineralisation characteristics, where available, were used to define the mineralized domain.
	The factors affecting continuity both of grade and geology.	The nature, extent and intensity of porphyry-related alteration and proximity to the brittle-ductile structures comprising the Gilmore Fault Zone have a dominant influence on the mineralization grade and geology.
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 mineralized domain at the Dam is a steeply dipping (75 degrees towards the 055) tabular-shaped solid measuring 900 metres along strike, 150 metres in width (plan) and extends 320 metres vertically beneath the surface.
Estimation and modelling techniques	*The nature and appropriateness of the estimation technique(s) applied and key assumptions, including treatment of extreme grade values, domaining, interpolation parameters and maximum distance of extrapolation from data points. If a computer assisted estimation method was chosen include a description of computer software and parameters used.*	The Dam Resource was estimated by the ordinary kriging method using Surpac Version 6.2.2. software. A statistical analysis of the copper, gold and molybdenum composite samples was undertaken to determine the respective thresholds for cutting extreme grades where necessary. Variography was conducted on the 5 metre composites using the surpac variogram mapping tool, and reviewed to gain an understanding of potential grade continuity and range. Initial variograms were directed down hole to determine nugget effect. This indicated a nugget component of 15% for gold, 8% for copper and 12% for molybdenum. Experimental variograms were subsequently calculated and modeled for gold, copper and molybdenum. Gold required the assistance of the relative pair-wise variogram to ascertain grade continuity. Modelled variography for gold, copper and molybdenum was quite similar with a maximum direction of continuity in the along strike direction +10° towards 140° and secondary direction of continuity -70° towards 050°. The search routine parameters used for the interpolation are tabulated below.

Domain	Au	Fresh (Cu)	Fresh (Mo)
Search Type	Ellipsoid	Ellipsoid	Ellipsoid
Min Number of Composites	3	3	3
Max Number of Composites	16	16	16
Search Distance Major Axis (m)	150	150	150
Bearing of Major Axis	140	140	140
Plunge of Major Axis	10	10	10

Criteria	JORC Code Explanation	Commentary
		Dip of Semi-Major Axis 70 70 70 Major / Semi-Major Axis Ratio 2 2 2 Major / Minor Axis Ratio 2.5 2.5 2.5 A second pass estimate for fresh molybdenum was completed with the same parameters but with the major search distance set to 300m. This was completed to ensure that all blocks with a gold and copper estimate, also contained a molybdenum estimate.
	The availability of check estimates, previous estimates and/or mine production records and whether the Mineral Resource estimate takes appropriate account of such data.	A Mineral Resource Estimate was completed by Cube Consulting in 2008 and reported at a 0.25% CuEq cut-off. A total of 33Mt at 0.31% Cu and 0.43g/t Au was estimated for the Dam deposit with 21Mt t 0.35% Cu and 0.5g/t Au as Indicated and 12Mt at 0.25%Cu and 0.31g/t Au as Inferred.
	The assumptions made regarding recovery of by-products.	No assumptions were made regarding the recovery of by-products.
	Estimation of deleterious elements or other non-grade variables of economic significance (e.g. sulphur for acid mine drainage characterisation).	No estimation for potentially deleterious elements (As, S etc.) was undertaken.
	In the case of block model interpolation, the block size in relation to the average sample spacing and the search employed.	Data spacing was the primary consideration taken into account when selecting an appropriate estimation block size. The most common drillhole spacing at the Dam is approximately 100 metres (north-south) x 50 metres (east-west) but is variable and can range from less than 40 metres and up to 200 metres. The metrics used for the Dam block model are tabulated below. **Type** / **Y** / **X** / **Z** Minimum Coordinates 6200800 542200 -350 Maximum Coordinates 6202200 543500 400 User Block Size 50 20 10 Min. Block Size 25 10 5 Rotation 0 0 0
	Any assumptions behind modelling of selective mining units.	Modelling was not reported to take into account the dimensions of selective mining units.
	Any assumptions about correlation between variables.	No correlation analysis was undertaken and consequently, no correlation relationships were used in the Resource estimation.
	Description of how the geological interpretation was used to control the resource estimates.	The estimate for copper and molybdenum was constrained both by composite and block selection to below the oxide zone within the mineralised domain. Gold was estimated into the mineralised domain both within and below the base of oxide zone, under a soft boundary condition.
	Discussion of basis for using or not using grade cutting or capping.	Based on an examination of tabulated statistics and probability plots for the individual Dam composite files, minimal potential outliers were identified. After consideration of the 3D position of these composites no high-grade assay cuts were required for copper and minimal top cuts applied to gold (3 g/t which affected 3 composite samples) and molybdenum (250 g/t which affected 1 composite sample) for the mineralised domain.
	The process of validation, the checking process used, the comparison of model data to drill hole data, and use of reconciliation data if available.	Computer screen visual sectional and flitch validation along with block model cell volumes verses the solid volume percentage variance checks were conducted for the Dam model.
Moisture	*Whether the tonnages are estimated on a dry basis or with natural moisture, and the method of determination of the moisture content.*	The tonnages have been estimated on a dry basis.

Criteria	JORC Code Explanation	Commentary
Cut-off parameters	*The basis of the adopted cut-off grade(s) or quality parameters applied.*	In March 2012, a Mineral Resource Estimate (JORC 2004) was announced to the market by Straits Resources using a 0.3% Cu Equivalent cut-off using a Cu price of USD$7,900 and gold price of USD$1,765 per oz. No metal recoveries were used in the CuEq calculation. In order to comply with the JORC 2012 Code, the metal prices were adjusted to current prices and metallurgical recoveries were used based on the metallurgical testwork undertaken in 2008. A Cu Equivalent cut-off of 0.3% was chosen to model the overall extents of the copper and gold mineralisation at Dam reflecting the large scale generally low grade disseminated porphyry style mineralisation. The copper equivalent values are calculated according to the following formula and assumed metal prices and recoveries: Ceq = Cu % + Au g/t ((PAu* RecAu)/ (PCu* RecCu)) Cu price = 3.53 AUD$/lb Au Price = 1,600 AUD$/oz Cu Recovery = 90% Au Recovery = 75% Therefore, the value to be used is: Ceq = Cu % + Au g/t ((1600 / 31.1035 * 0.75) / (3.53 * 22.04 * 0.90)) Ceq = Cu % + (Au g/t * 0.55)
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.*	The Resources for the Dam have been reported assuming open pit mining techniques would be implemented in the event the project is shown to be economically viable on a combined or standalone basis.
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.*	No metallurgical factors or assumptions (e.g. recoveries) have been incorporated into the resource estimate but have been included in the Cu Equivalent calculation used for reporting of the Mineral Resource. In 2008, a suite of drill core samples from the Yiddah, Mandamah, Dam, Cullingerai and Estoril Porphyry Copper-Gold deposits were sent for metallurgical testwork at AMMTEC laboratories in Perth. Samples were divided into high grade and low grade. An additional low grade bulk sample was also tested. Flotation testing demonstrated that copper recoveries of over 90% could be achieved at marketable concentrate grades over 20% Cu and in all cases the copper floated exceedingly quickly. The Dam deposit copper recoveries for low grade material were 82.3% and 59% for Au.
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.*	No environmental factors or assumptions (e.g. acid mine drainage considerations) have been incorporated into the resource estimate.

Criteria	JORC Code Explanation	Commentary
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.*	Specific gravity values have been based on measurements of individual core samples conducted by Goldminco site personnel using the Archimedes Principle. The assigned density values represent the mean value for the given data set.
	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.	The procedure used is suitable for non-porous or very low porosity samples, which can be quickly weighed in water before saturation occurs.
	Discuss assumptions for bulk density estimates used in the evaluation process of the different materials.	Density values of 2.5 tonnes per cubic metre (t/m3) for fresh rock and 2.1 t/m3 for oxidized rock was used for the Dam resource model.
Classification	*The basis for the classification of the Mineral Resources into varying confidence categories.*	The range of criteria considered by Goldminco to classify the Mineral Resource for the Dam included: • Geological continuity and volume models; • Drill spacing and mining information; • Modelling technique, and • Estimation properties including search strategy, number of composites, average distance of composites from blocks and kriging quality parameters such as slope of regression. Approximately 64% of the interpreted mineralised volume of the Dam Prospect deposit has been classified as an Indicated Resource. The Indicated area is defined by a drill spacing which varies from approximately 60m x 40m to 100m x 50m. It is therefore reasonable to expect that further resource definition drilling within the Inferred areas may result in significant material departures both positive and negative from the current estimate. The classification also considers the likely potential for economic development of the project using open cut mining methods by constraining the resource inside a Whittle optimized pit shell generated using optimistic input parameters and the pit shell with a revenue factor of 2 (Figure 2).
	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).	The criteria used to determine the classification are considered by the Competent Person to have been reasonably applied.
	Whether the result appropriately reflects the Competent Person's view of the deposit.	The Mineral Resource has been classified into the confidence categories of Indicated and Inferred according primarily to sample density and geological confidence, and reflect the Competent Person's view on the deposit.
Audits or reviews	*The results of any audits or reviews of Mineral Resource estimates.*	An audit of the resource estimate was undertaken by the Competent Person who is an independent consultant and is a Competent Person as defined by the JORC Code, 2012 Edition, having five years' experience that is relevant to the style of mineralisation and type of deposit described in the Report and to the activity for which he is accepting responsibility. It was concluded that the model is a reasonable reflection of the current understanding of the geological and structural controls of the mineralisation in the project area and copper and gold grades based on the available drill hole assay data.
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 Mineral Resources has been reported in accordance with the guidelines of the 2012 edition of the Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves and reflects the relative accuracy of the Mineral Resources estimates.

Criteria	JORC Code Explanation	Commentary
	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.	The statement relate to a global estimate of tonnes and grade.
	These statements of relative accuracy and confidence of the estimate should be compared with production data, where available.	No mining activities have been undertaken at the Dam and consequently, it is not possible to reconcile production data against the Mineral Resource Estimate.

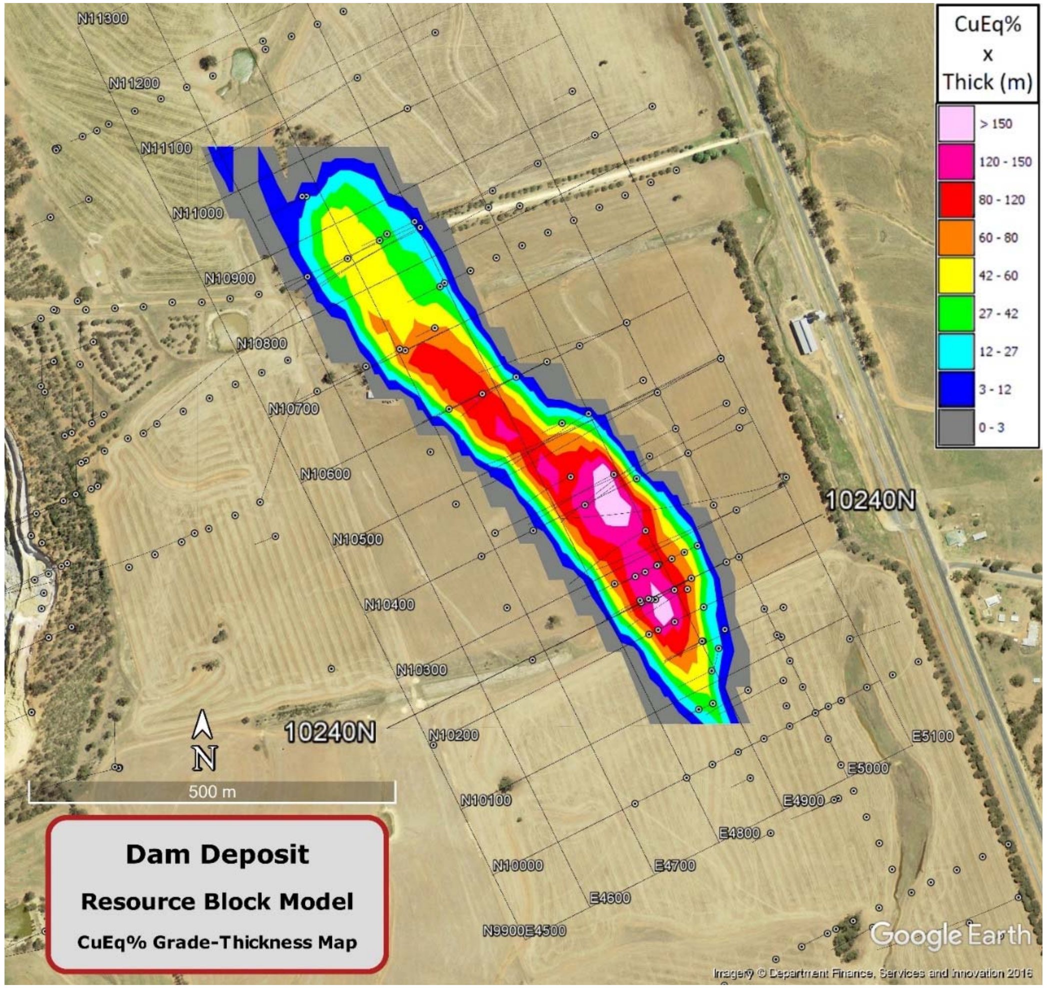


Figure: Plan view of drillhole locations and CuEq% Grade – Thickness Map.

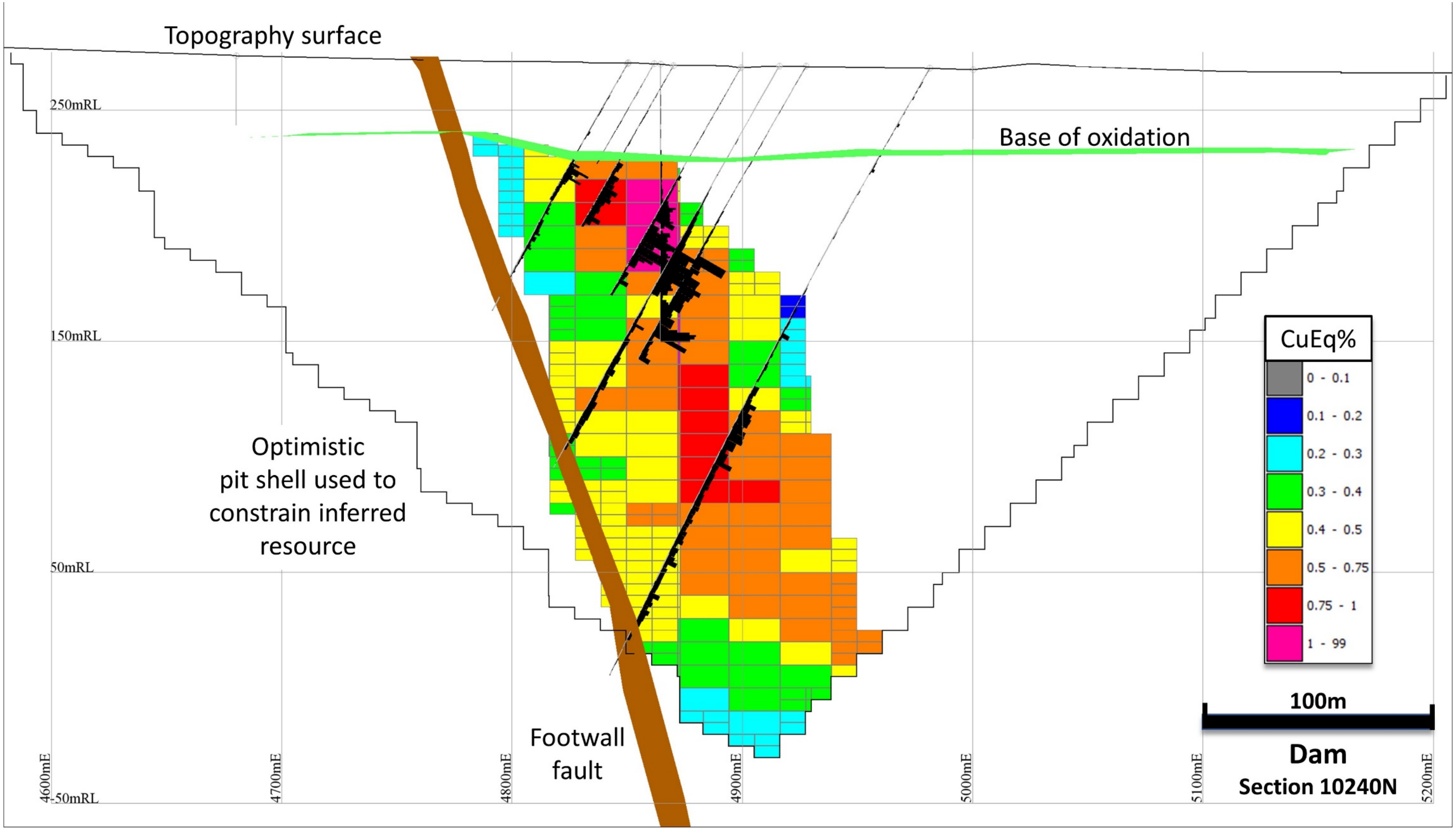


Figure: Cross Section showing optimistic pit shell.

Appendix 1 (continued) - JORC 2012 TABLE 1 MINERAL RESOURCE PARAMETERS – TEMORA PROJECT – Cullingerai Project

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.*	Sampling techniques undertaken by previous owners include core sampling of NQ2 and HQ3 Diamond Drill (DDH) core; Reverse Circulation (RC) face sampling, air-core (AC) and rotary air blast (RAB) chip samples.
	Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.	Sampling techniques undertaken by previous owners include half core sampling of DDH core; RC samples collected by riffle splitter for single metre samples or sampling spear for composite samples; AC and RAB samples collected using riffles splitters or a sampling spear. Sampling was undertaken by the then current owner's protocols and QAQC procedures as per the prevailing industry standards.
	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.*	Diamond drilling was used to obtain 5,985 one metre; 392 two metre and 348 four metre samples along with significantly lesser quantities of other sample intervals varying from 2 metres to 1 metre. These samples comprised half core along with pulverized and riffle split half core products to achieve acceptable (representative) sample weights for analytical assay. RC drilling was used to obtain 280 two metre samples and 112 one metre samples with significantly lesser quantities of other sample intervals varying from 4 metres to 1 metres. RAB drilling was used to obtain 8 three metre, 1 one metre and 1 thirty-nine metre samples. AC drilling was used to obtain 1,470 two metre, 591 four metre and 22 one metre samples.
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).*	The drilling database for the Cullingerai project comprises the results from 72 air core (AC) holes totalling 5,322 metres; 16 air core with diamond tails (ACD) holes totalling 5,548.6 metres; 4 diamond drill holes (DDH) totalling 1,231.4 metres; 3 rotary air blast (RAB) holes totalling 246.8 metres and 3 reverse circulation (RC) holes totalling 462 metres. A total of 57 air core (AC), 3 reverse circulation (RC) and 20 diamond (DDH, ACD, RCD) holes were used as part of the resource estimate.
Drill sample recovery	*Method of recording and assessing core and chip sample recoveries and results assessed.*	There are no documentation of core and chip recoveries within the Goldminco database for the Cullingerai project.
	Measures taken to maximise sample recovery and ensure representative nature of the samples.	It is assumed that appropriate measures were taken by Goldminco to maximise sample recovery, however documentation is incomplete.
	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.	It is assumed that appropriate measures were taken by Goldminco to maximise sample recovery, however documentation is incomplete.
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.*	Project database records contain varyingly detailed geological logs of all drilling products describing regolith, colour, weathering, texture, grain size, principal and secondary lithologies along with qualitative and quantitative assessments of alteration, sulphide minerals, veining, non-sulphide minerals and remarks. The level of detail logged complies with the Inferred Mineral Resource classification for this project.
	Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc) photography.	The drilling products have been logged both qualitatively and quantitatively according to the particular attribute being assessed.
	The total length and percentage of the relevant intersections logged.	98 of the 98 or 100% of the holes drilled have been logged. Similarly, 12,810.8 metres from a total of 12,810.8 metres or 100% of the metres drilled have been logged.

Criteria	JORC Code Explanation	Commentary
Sub-sampling techniques and sample preparation	*If core, whether cut or sawn and whether quarter, half or all core taken.*	Diamond drillcore of both NQ2 and HQ3 size from drilling by Goldfields and Goldminco was sawn in half by a diamond bladed core saw and half core was submitted for assay.
	If non-core, whether riffled, tube sampled, rotary split, etc and whether sampled wet or dry.	Reverse circulation drilling samples were split by riffle splitters with a sample of between 3 and 5 kilograms submitted to the laboratory.
	For all sample types, the nature, quality and appropriateness of the sample preparation technique.	The sub-sampling techniques and sample preparation methodologies have been undertaken using standard industry practices current at the time. These are considered to be appropriate for use in the ongoing assessment and development of the project.
	Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.	Half diamond drillcore was crushed by jaw crusher and a 3 kilogram split was pulverized to 70% passing -75 microns. Reverse circulation drill samples of less than 4 kilograms were pulverised entirely to 70% passing -75 micron in an LM5 pulverizer. Samples greater than 4 kilograms were sub split and half the sample was pulverized.
	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.	No records as to the use of duplicate and check sampling protocols and activities are evident in the Goldminco database.
	Whether sample sizes are appropriate to the grain size of the material being sampled	The sample sizes are appropriate to the porphyry and related styles of mineralisation.
Quality of assay data and laboratory tests	*The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total.*	Goldfields samples of aircore and half core were analysed by Analabs Orange for Au by fire assay (F614) with repeats approximately every 10 samples and second splits every 20 samples. Cu, Pb, Zn, Mo, Fe (and As for aircore samples) were also analysed by Analabs Orange using technique A102. Goldfields standards were submitted every 50 samples for quality assurance and control. Goldminco samples were analysed for Au by fire assay with AAS finish (FAA505) at SGS West Wyalong. Repeats and second splits were analysed every twenty or so samples. A separate small subsample was sent to the SGS laboratory in Townsville for Cu, Pb, Zn, As, Ag, Mo and S analysis by ICP40Q using 4 acid digestion and ICP21Q for when elements are above normal detection limits.
	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.	No geophysical tools were used to analyse the drilling products
	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.	A program of external quality control (QC) and quality assurance (QA) has been applied by Goldminco for the Temora Project to check for contamination, accuracy and precision. Certified standards were inserted in the sample stream prior to the samples leaving site for every 50 samples submitted for assay. The standards used comprise historic in-house (uncertified) standards and more recently certified standards supplied by Ore Research and Exploration.
Verification of sampling and assaying	*The verification of significant intersections by either independent or alternative company personnel.*	The available QAQC assay data for the project was reviewed with respect to QAQC performance. From a total of 104 gold and 34 copper QAQC samples submitted, 3 gold and 1 copper sample were identified as exceeding the sample variance limits (3SD). The number of errors found is not considered significant and could largely be explained by sample switches. The standards used comprise historic in-house (uncertified) standards and more recently certified standards supplied by Ore Research and Exploration. Overall, the standards have performed well and indicate the sample data is of an acceptable standard. The drill core from 2 diamond drill holes, TCLD001 and TCLD003 which intersected significant mineralisation were checked by the Competent Person.

Criteria	JORC Code Explanation	Commentary
	The use of twinned holes.	There are no known twinned holes drilled for the Mineral Resource.
	Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.	Results for QAQC samples are assessed on a batch by batch manner, at the time of uploading drill sample assays to the Acquire database. The Acquire database reports on the performance of the QAQC samples against the expected result and within tolerance limits. If the QAQC samples fail the batch report, the Geologist investigates the occurrence and actions either a) acceptance of the result into the database or b) reject the result and organised a re-assay of the sample with the laboratory.
	Discuss any adjustment to assay data.	No adjustment was made to the raw 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.*	Collar surveys, where disclosed, were undertaken using GPS technology. Downhole surveys were varyingly undertaken using a variety of technologies including single- and multi-shot, gyroscopic and north seeking gyroscopic instruments.
	Specification of the grid system used.	Collar and down hole azimuths used for the Cullingerai Resource interpretation and estimation is based on AGD 66, Zone 55 datum. This was selected as all historical survey data were stored in AGD 66.
	Quality and adequacy of topographic control.	The drill hole collars were surveyed using GPS technology and these were used to build the topographic surface which is relatively flat.
Data spacing and distribution	*Data spacing for reporting of Exploration Results.*	The holes used for the resource estimation were drilled over approximately 1000 metres strike length to a maximum vertical depth of 350 metres. The drill sections range in spacing from 50 metres over 150 metres of strike in the southern zone to 100 metres over 500 metres of strike in the northern zone, with each section having 2 or more holes.
	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.	Resource definition drill spacing and distribution of exploration results is sufficient to support Mineral Resource Estimation procedures.
	Whether sample compositing has been applied.	No sample compositing has been applied to the exploration results.
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.*	The range in declination of the drilling has been inclined between 57 and 65 (23 holes) and vertically (61 holes). 22 of the moderate to steeply inclined holes were drilled towards the ENE (63 degrees) relative to AMG north. Consequently, the majority of the inclined holes are drilled orthogonally to the strike of the Mandamah mineralized zone and intercept it obliquely at depth.
	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 the drilling was oriented perpendicular to the general strike of the Cullingerai deposit and it is considered that no sampling bias has been introduced.
Sample security	*The measures taken to ensure sample security.*	Sample storage undertaken by the previous owner of the project (Goldminco) was as follows: Half core diamond drill holes are stored on site in covered, plastic trays to minimise oxidation due to open air storage and weather. Crush rejects are stored for a short time at the laboratory before being flagged for disposal following acceptance of QAQC for the drill hole results. Pulps are disposed when the QAQC results of the drill hole are accepted, and the geology department has deemed there to be no further use for the pulps.
Audits or reviews	*The results of any audits or reviews of sampling techniques and data.*	A program of external quality control (QC) and quality assurance (QA) was applied by Goldminco to check for contamination, accuracy and precision. Cube Consulting was supplied by Goldminco with up to date graphs summarising the results of historic (in house) and current certified standards and laboratory duplicates. Blanks were not inserted externally by Goldminco but the results of internal laboratory blanks are made available to Goldminco. A visual inspection of these results did not appear show any significant sample

Criteria	JORC Code Explanation	Commentary
		contamination issues. For drilling undertaken by Goldminco, a certified standard was inserted in the sample stream prior to the samples leaving site for every 50 samples submitted for assay. The available QAQC assay data for the project to the end of June was reviewed with respect to QAQC performance. From a total of 104 gold and 34 copper QAQC samples submitted, 3 gold and 1 copper sample were identified as exceeding the sample variance limits (3SD). The number of errors found is not considered significant and could largely be explained by sample switches. The standards used comprise historic in-house (uncertified) standards and more recently certified standards supplied by Ore Research and Exploration. Overall, the standards have performed well and indicate the sample data is of an acceptable standard. A further assessment of the database was undertaken by the Competent Person. No significant errors were found and it is considered that the data management processes in place are robust and adequate and believes that the database is an accurate representation of the project drilling data.

Section 2: Reporting of Exploration Results

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 Cullingerai deposit is located approximately 30 km northwest of the town of Temora in central New South Wales, Australia. It falls completely within the confines of Exploration License EL6845 held by Sandfire Resources NL. The title is for Group 1 minerals and was granted on 03 August 2007. The expiry date is 03 August 2016 and renewal of the license has been sought. In addition to the statutory royalties payable to the New South Wales Department of Primary Industries for the right to extract and use the State's mineral resources, a portion of EL6845 (referred to as EL 2151) has an equitable 12.5% net profit interest royalty agreement with Lachlan Resources Pty Ltd, a wholly owned subsidiary of Barrick Gold Corporation. This area includes the Mandamah, Cullingerai and Estoril deposits.
	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.	There are no obvious impediments known to exist at this stage of exploration to obtaining a license to operate in this area.
Exploration done by other parties	*Acknowledgment and appraisal of exploration by other parties.*	The Cullingerai prospect was identified by Placer Exploration (in joint venture with Gold Mines of Australia) in EL2151 from regional aircore traverses during the late 1990's. This work outlined an area of copper/gold anomalism which was followed up by 2 short RC holes. Gold Mines of Australia went into receivership in 2000, when Goldfields Exploration (and subsequently named Aurion Gold Exploration) acquired the tenement. Goldfields/Aurion Gold drilled infill aircore holes, 2 RC holes and 4 diamond holes between 2000 and 2002. EL2151 was farmed out to Goldminco Corporation in 2004, and in 2007 the EL was grouped with the other Temora project ELs into a new single EL6845. Early in 2008, Goldminco drilled infill aircore holes to the south and west of the Cullingerai deposit which were used, along with all historic drilling, to estimate a maiden resource in September 2008. Subsequently, Goldminco drilled 16 aircore holes with diamond tails between 2009 and 2011, which contributed to an updated resource that was estimated in November 2012. Sandfire Resources NL acquired the project and EL6845 from Goldminco (then a wholly owned subsidiary of Straits Resources Limited) in October 2015.
Geology	*Deposit type, geological setting and style of mineralisation.*	The Cullingerai copper-gold porphyry system is covered by up to 50 metres of alluvium and comprises copper-gold mineralisation within a sequence of fine grained volcaniclastic sediments including bedded sandy volcaniclastic tuffs, fragmental breccias and rare inter-collated fine-grained coherent flow-banded feldspar-phyric lavas. The volcanic pile has subsequently been intruded by a sequence of diorite and

Criteria	JORC Code Explanation	Commentary
		monzodiorite dykes. Typical porphyry style alteration zonation has been recognized at Cullingerai. The propylitic assemblage (chlorite-pyrite-epidote-carbonate ± albite +/- sericite) occurs outboard of the main chalcopyrite zone, whereas higher-grade chalcopyrite mineralization is associated with a weak potassic assemblage (magnetite-K-feldspar-biotite ± chlorite), which is best developed in monzodiorite porphyry intrusives. Mineralisation appears to correlate spatially with strong prograde magnetite alteration. A late weak phyllic wash of sericite and pyrite ± carbonate and chlorite overprints both the propylitic and potassic alteration zones. Phyllic alteration at Cullingerai appears to be directly related to the collapse of the porphyry hydrothermal system rather than the late regional deformation along the Gilmore Fault Zone and associated structures (e.g. at Yiddah). Mineralization generally dips approximately 60 degrees to the WSW, and strikes NNE parallel to the regional structural fabric. Two distinct styles of sulphide mineralization occur at Cullingerai; porphyry-style sheeted and stockwork quartz vein systems to the north, and high-grade breccia hosted mineralization to the south. Gold occurs with copper in the northern zone, but there is little gold in the southern 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; and* • *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 have been reported in this release.
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 results have been reported in this release.
	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.	No exploration results have been reported in this release.
	The assumptions used for any reporting of metal equivalent values should be clearly stated.	No exploration results have been reported in this release.
Relationship between mineralisation widths and intercept lengths	*These relationships are particularly important in the reporting of Exploration Results.*	No exploration results have been reported in this release.
	If the geometry of the mineralisation with respect to the drill-hole angle is known, its nature should be reported.	No exploration results have been reported in this release.
	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').	No exploration results have been reported in this release.

Criteria	JORC Code Explanation	Commentary
Diagrams	*Appropriate maps and sections (with scales) and tabulations of intercepts should be included for any significant discovery being reported These should include, but not be limited to a plan view of drill hole collar locations and appropriate sectional views.*	Location map shown in Figure 1 of this release. Other diagrams are appended to the end of this Table 1 document.
Balanced reporting	*Where comprehensive reporting of all Exploration Results is not practicable, representative reporting of both low and high grades and/or widths should be practiced to avoid misleading reporting of Exploration Results.*	No exploration results have been 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.*	Preliminary metallurgical test work for five deposits from the Temora area, including Cullingerai, was completed by AMMTEC, Perth, during the period September 2008 to January 2009. Composites were prepared from single drillholes from each of the five deposits. Grinding tests on the composites were within the range seen for porphyry deposits in Arizona (USA and British Columbia (Canada). Due to a wide range of alteration styles across the Temora deposits, resulting in differences in sample hardness, a wide variation in grind time was necessary to achieve this size range across individual deposits, with relatively hard ore from Cullingerai requiring longer grind times. Flotation testing on the composites clearly demonstrated that at the right grind and reagent regime, copper recoveries of over 90% could be achieved at marketable concentrate grades of over 20%Cu and in all cases the copper floated exceedingly quickly.
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.*	• Continue infill drilling within the currently modeled resource outlines in order to increase the confidence in the geological and weathering models as well as establish grade continuity; • Continue with resource definition drilling to test strike potential; • Continue with district exploration incorporating current understanding of geological, structural and mineralisation controls at the existing Temora Prospects; • Expand and maintain an auditable quality assurance system for all ongoing data collection; • Continue with collection of SG measurements; and • Additional metallurgical test work to be undertaken as a routine part of exploration.

Section 3: Estimation and Reporting of Mineral Resources

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 database used for the Cullingerai resource modelling and estimation was extracted from the Goldminco Datashed database which is a professional relational SQL database management package. Datashed is an industry recognized data management system that utilizes rigorous data validation procedures during data entry along with enhanced security and flexible reporting to protect the exploration records.
	Data validation procedures used.	For the Mineral Resource, data tables were exported from the SQL database as comma separated files (CSV's) using export tools embedded with the database management system. These CSV files were then imported into a standalone Access database for the sole purpose of the estimation. The project records extracted from the master database have been checked and validated by an independent expert who found the database to be clean, consistent and free of obvious errors.
Site Visits	*Comment on any site visits undertaken by the Competent Person and the outcome of those visits.*	A site visit was undertaken by an independent expert who is qualified to be compliant with JORC 2012 standards, to verify grade intersections were consistent with a visual inspection of mineralisation in the core. New and old collar positions were also verified where possible in the field. It was determined that the data management processes in place were robust and adequate and that the database is an accurate representation of the project drilling data.
	If no site visits have been undertaken indicate why this is the case.	Site visit was undertaken by an independent expert as outlined above.

Criteria	JORC Code Explanation	Commentary
Geological interpretation	*Confidence in (or conversely, the uncertainty of) the geological interpretation of the mineral deposit.*	Fresh rock hosted porphyry copper-gold mineralization at Cullingerai is concealed by Quaternary aged transported cover and insitu weathered basement to depths approaching 100m. The weathered bedrock horizon hosts supergene enriched copper and gold mineralization. Copper-gold mineralization occurs in all lithologies and alteration styles without a clear geological boundary within the fresh rock environment. Therefore, the interpretation methodology was to define the boundaries between the transported oxide, weathered basement oxide and fresh rock interfaces.
	Nature of the data used and of any assumptions made.	Two planar sub-horizontal digital terrane models (dtm's) were created in Surpac for the base of transported cover and base of weathering horizons. Mineralization at Cullingerai is divided into northern and southern zones based on mineralization style and drill spacing. Mineralization to the south is dominated by the steeply dipping high grade copper breccia, whereas the northern zone is characterised by more typical vein hosted porphyry Cu-Au style mineralization. At present, a gap in drilling on the order of 350m separates the northern and southern zones. Each of the Cullingerai north and south sulphide zones contains a higher grade copper and gold mineralised core. Due to the wide drill spacing and limited number of drill holes, wireframes equal to 0.45% Copper equivalent were created to assist with the grade estimation for gold and copper respectively.
	The effect, if any, of alternative interpretations on Mineral Resource estimation.	The nature and extent of the mineralised domain comprising the Cullingerai project is consistent with the geological models for the other projects comprising the Temora Project Area. Consequently, no alternative interpretations have been considered.
	The use of geology in guiding and controlling Mineral Resource estimation.	Two grade-based wireframes interpreted to confine the mineralization in the northern and southern zones were used to constrain the estimation. The base of transported overburden and base of weathering surfaces were also used to further domain these solids.
	The factors affecting continuity both of grade and geology.	The nature, extent and intensity of porphyry-related alteration and proximity to the brittle-ductile structures comprising the Gilmore Fault Zone have a dominant influence on the mineralization grade and geology.
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 mineralized domains at Cullingerai are sub-horizontal tabular-shaped solids measuring 1150 metres along strike, 230 metres in width (plan) and extends 320 metres vertically beneath the surface.
Estimation and modelling techniques	*The nature and appropriateness of the estimation technique(s) applied and key assumptions, including treatment of extreme grade values, domaining, interpolation parameters and maximum distance of extrapolation from data points. If a computer assisted estimation method was chosen include a description of computer software and parameters used.*	Estimates were calculated for Cu-Au-Mo-Pb-Zn and S within both the oxide and sulphide zones. Ordinary kriging was used to estimate oxide Au and sulphide Au-Cu-Mo while inverse distance weighting was used to estimate oxide Cu-Pb-Zn-S and sulphide Pb-Zn-S. All modeling was conducted using Surpac Version 6.2.2 software. Histogram analysis followed by 3D spatial analysis were the primary methods used to determine whether high grade cuts were required. Variography was conducted on the composites for all the elements modelled, using the Surpac variogram mapping tool. The gold downhole variography within the oxide domain showed a nugget component of 40%. The maximum direction of continuity was observed to be in the along strike direction 0° towards 160°, with the across strike direction 0° towards 250° as the secondary direction of continuity. The copper downhole variography within the sulphide domain indicates a nugget component of 18%. The maximum direction of continuity was observed to be in the along strike direction 0° towards 160°, with the secondary direction of continuity at -60° towards 250°. The gold downhole variography within the sulphide domain indicates a nugget component of 28%. The maximum direction of continuity was observed to be in the along strike direction 0° towards 160°, with the secondary direction of continuity at -60° towards 250°.

Criteria	JORC Code Explanation	Commentary
		The molybdenum downhole variography within the sulphide domain indicates a nugget component of 20%. The maximum direction of continuity was observed to be in the along strike direction 0° towards 150°, with the secondary direction of continuity at -60° towards 250°. The ordinary kriged search routine parameters used for the oxide gold and copper, molybdenum, lead, zinc and sulphur interpolation are tabulated below:

Estimate	Oxide Au	Oxide Cu-Mo-Pb-Zn-S
Search Type	Ellipsoid	Ellipsoid
Min Number of Composites	4	4
Max Number of Composites	16	16
Search Distance Major Axis (m)	200	200
Bearing of Major Axis	160	160
Plunge of Major Axis	0	0
Dip of Semi-Major Axis	0	0
Major / Semi-Major Axis Ratio	2	2
Major / Minor Axis Ratio	10	10

Within the sulphide zone, Au-Cu-Mo were estimated by ordinary kriging and Pb-Zn-S by inverse distance squared. Separate Au-Cu estimates were calculated for the north and south mineralised zones. The search routine parameters for the northern zone are listed in the table below:

Estimate	north_Au1	north_Au2	north_Cu1	north_Cu2
Search Type	Ellipsoid	Ellipsoid	Ellipsoid	Ellipsoid
Min Number of Composites	4	4	4	4
Max Number of Composites	16	16	16	16
Search Distance Major Axis (m)	200	200	200	200
Bearing of Major Axis	160	160	160	160
Plunge of Major Axis	0	0	0	0
Dip of Semi-Major Axis	-60 to 250	-60 to 250	-60 to 250	-60 to 250
Major / Semi-Major Axis Ratio	1.5	1.5	1.5	1.5
Major / Minor Axis Ratio	1.5	1.5	1.5	1.5

Criteria	JORC Code Explanation	Commentary
		The search routine parameters for the northern zone are listed in the table below:

Estimate	south_Au1	south_Au2	south_Cu1	south_Cu2
Search Type	Ellipsoid	Ellipsoid	Ellipsoid	Ellipsoid
Min Number of Composites	4	4	4	4
Max Number of Composites	16	16	16	16
Search Distance Major Axis (m)	100	100	100	100
Bearing of Major Axis	160	160	160	160
Plunge of Major Axis	0	0	0	0
Dip of Semi-Major Axis	-90	-90	-90	-90
Major / Semi-Major Axis Ratio	1.5	1.5	1.5	1.5
Major / Minor Axis Ratio	5	5	5	5

A single pass ordinary kriged molybdenum and inverse distance squared lead-zinc and sulfur estimate was only applied to blocks that contained a copper estimate. The search routine parameters are tabulated below:

Estimate	Sulphide Mo	Sulphide Pb-Zn-S
Search Type	Ellipsoid	Ellipsoid
Min Number of Composites	4	4
Max Number of Composites	16	16
Search Distance Major Axis (m)	200	200
Bearing of Major Axis	150	160
Plunge of Major Axis	0	0
Dip of Semi-Major Axis	-60 to 240	-60 to 250
Major / Semi-Major Axis Ratio	1.5	1.5
Major / Minor Axis Ratio	1.5	1.5

Criteria	JORC Code Explanation	Commentary
	The availability of check estimates, previous estimates and/or mine production records and whether the Mineral Resource estimate takes appropriate account of such data.	An Inferred Mineral Resource Estimate was completed by Cube Consulting in 2008 and reported at a 0.25% CuEq cut-off. A total of 8.7Mt at 0.28% Cu and 0.37g/t Au was estimated for the Cullingerai deposit.
	The assumptions made regarding recovery of by-products.	No assumptions were made regarding the recovery of by-products.
	Estimation of deleterious elements or other non-grade variables of economic significance (e.g. sulphur for acid mine drainage characterisation).	Estimation for Sulphur which may be used to assess potentially deleterious effects was undertaken.

Criteria	JORC Code Explanation	Commentary
	In the case of block model interpolation, the block size in relation to the average sample spacing and the search employed.	The block model cell size chosen for this model was driven by the nature of the mineralization and drill spacing. The resource has been drilled over approximately 900m strike length on drill sections spaced at approximately 100m centres with generally one to four holes per section. The metrics of the Cullingerai block model are tabulated below: **Type** | **Y** | **X** | **Z** Minimum Coordinates | 6213750 | 536000 | -117 Maximum Coordinates | 6214900 | 536900 | 233 User Block Size | 50 | 20 | 10 Min. Block Size | 25 | 10 | 5 Rotation | 0 | 0 | 0
	Any assumptions behind modelling of selective mining units.	Modelling was not reported to take into account the dimensions of selective mining units.
	Any assumptions about correlation between variables.	No correlation analysis was undertaken and consequently, no correlation relationships were used in the Resource estimation.
	Description of how the geological interpretation was used to control the resource estimates.	Two grade-based wireframes interpreted to confine the mineralization in the northern and southern zones were used to constrain the estimation as hard boundaries. The base of transported overburden and base of weathering surfaces were also used to further domain these solids.
	Discussion of basis for using or not using grade cutting or capping.	Statistical analysis of the nature and distribution of the various elements modelled was undertaken and indicated there to be no need to apply any high-grade cuts.
	The process of validation, the checking process used, the comparison of model data to drill hole data, and use of reconciliation data if available.	Only visual sectional and flitch validation on computer screen was conducted along with the block model cell volume vs the solid volume percentage variance checks for the Cullingerai model. No swath plots were constructed as the resource is still at a preliminary stage and was only classified as Inferred.
Moisture	*Whether the tonnages are estimated on a dry basis or with natural moisture, and the method of determination of the moisture content.*	The tonnages have been estimated on a dry basis.
Cut-off parameters	*The basis of the adopted cut-off grade(s) or quality parameters applied.*	In March 2012, an Inferred Cullingerai Resource (JORC 2004) was announced to the market by Straits Resources using a 0.3% Cu Equivalent cut-off using a Cu price of USD$7,900 and gold price of USD$1,765 per oz. No metal recoveries were used in the CuEq calculation. In order to comply with the JORC 2012 Code, the metal prices were adjusted to current prices and metallurgical recoveries were used based on the metallurgical testwork undertaken in 2008. A Cu Equivalent cut-off of 0.3% was chosen to model the overall extents of the copper and gold mineralisation at Cullingerai reflecting the large scale generally low grade disseminated porphyry style mineralisation. The copper equivalent values are calculated according to the following formula and assumed metal prices and recoveries: Ceq = Cu % + Au g/t ((PAu* RecAu)/ (PCu* RecCu)) Cu price = 3.53 AUD$/lb Au Price = 1,600 AUD$/oz Cu Recovery = 90% Au Recovery = 75%

Criteria	JORC Code Explanation	Commentary
		Therefore, the value to be used is: Ceq = Cu % + Au g/t ((1600 / 31.1035 * 0.75) / (3.53 * 22.04 * 0.90)) Ceq = Cu % + (Au g/t * 0.55)
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.*	The Resource for Cullingerai has been reported assuming open pit mining techniques would be implemented in the event the project is shown to be economically viable on a combined or standalone basis.
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.*	No metallurgical factors or assumptions (e.g. recoveries) have been incorporated into the resource estimate but have been included in the Cu Equivalent calculation used for reporting of the Mineral Resource. In 2008, a suite of drill core samples from the Yiddah, Mandamah, Dam, Cullingerai and Estoril Porphyry Copper-Gold deposits were sent for metallurgical testwork at AMMTEC laboratories in Perth. Samples were divided into high grade and low grade. An additional low grade bulk sample was also tested. Flotation testing demonstrated that copper recoveries of over 90% could be achieved at marketable concentrate grades over 20% Cu and in all cases the copper floated exceedingly quickly. The Cullingerai deposit reported recoveries for low grade material at 54% for Cu and 34.4%.
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.*	No environmental factors or assumptions (e.g. acid mine drainage considerations) have been incorporated into the resource estimate.
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.*	Specific gravity values have been based on measurements of individual core samples conducted by on site personnel using the Archimedes Principle. The assigned density values represent the mean value for the given data.
	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.	The model is divided into three density zones, which are defined by the base of transported cover (to approximately 190m RL), the base of weathering (to approximately 160m RL) and fresh rock occurring below the weathered oxide zone as observed in drilling.
	Discuss assumptions for bulk density estimates used in the evaluation process of the different materials.	The specific gravity values assigned to each domain are tabled below:

Prospect	Rock Type	oxide attribute	density
Cullingerai	Transported	3	2.0
	Oxide	2	2.2
	Fresh	1	2.76

Criteria	JORC Code Explanation	Commentary
Classification	*The basis for the classification of the Mineral Resources into varying confidence categories.*	The resource classification criteria used for the June 2011 Cullingerai resource model is based on drill spacing and geological knowledge and confidence. All material at Cullingerai is classified as Inferred. The classification also considers the likely potential for economic development of the project using open cut mining methods by constraining the resource inside a Whittle optimized pit shell generated using optimistic input parameters and the pit shell with a revenue factor of 2 (refer figure below).
	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).	The criteria used to determine the classification are considered by the Competent Person to have been reasonably applied.
	Whether the result appropriately reflects the Competent Person's view of the deposit.	The Mineral Resource has been classified into the confidence category of Inferred according primarily to sample density and geological confidence, and reflects the Competent Person's view on the deposit.
Audits or reviews	*The results of any audits or reviews of Mineral Resource estimates.*	An audit of the resource estimate was undertaken by the Competent Person who is an independent consultant and is a Competent Person as defined by the JORC Code, 2012 Edition, having five years' experience that is relevant to the style of mineralisation and type of deposit described in the Report and to the activity for which he is accepting responsibility. It was concluded that the model is a reasonable reflection of the current understanding of the geological and structural controls of the mineralisation in the project area and copper and gold grades based on the available drill hole assay data.
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 Mineral Resources has been reported in accordance with the guidelines of the 2012 edition of the Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves and reflects the relative accuracy of the Mineral Resources estimates.
	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.	The statement relates to a global estimate of tonnes and grade.
	These statements of relative accuracy and confidence of the estimate should be compared with production data, where available.	No mining activities have been undertaken at Cullingerai and consequently, it is not possible to reconcile production data against the Mineral Resource Estimate.

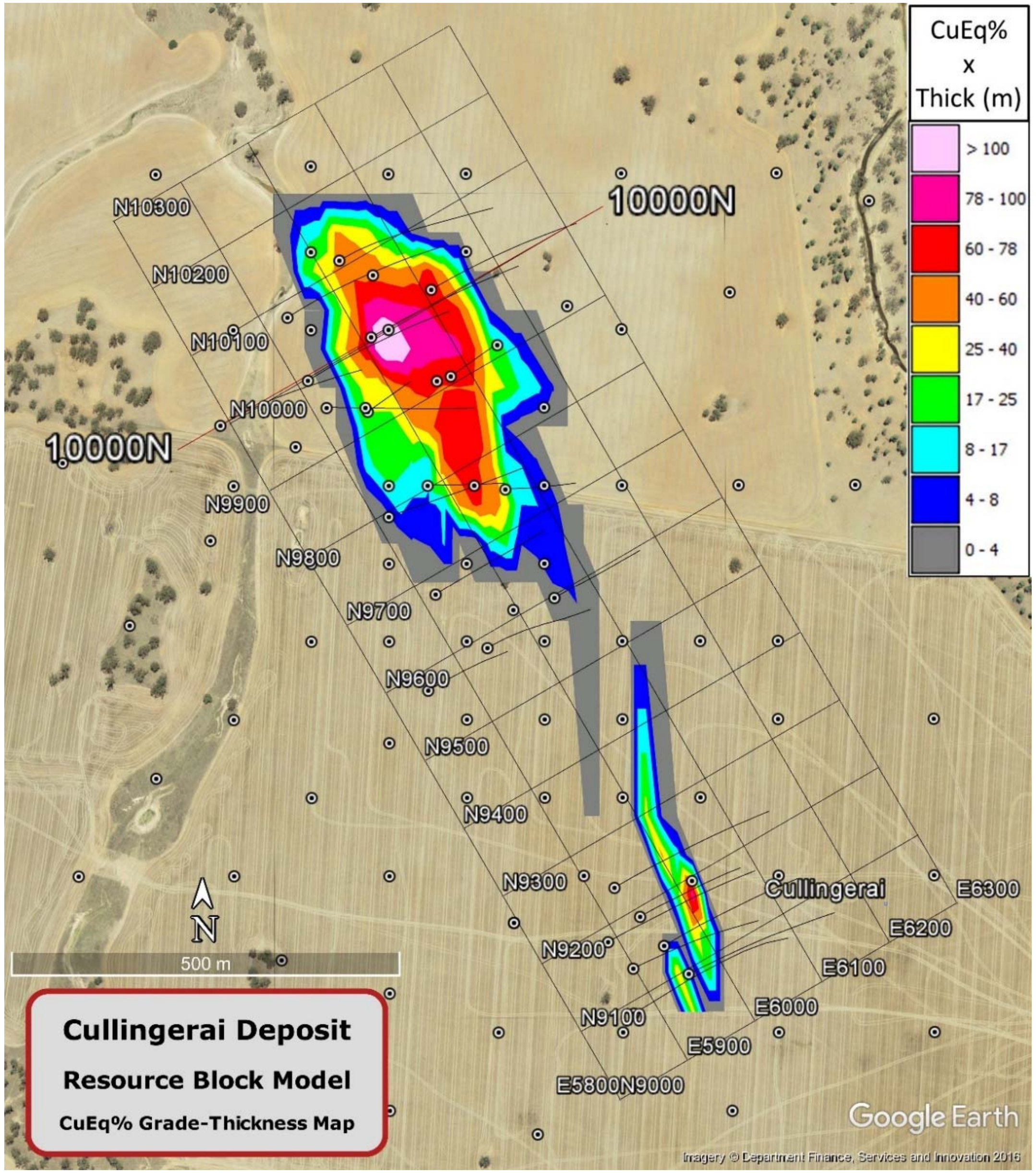


Figure: Plan view of drillhole locations and CuEq% Grade – Thickness Map.

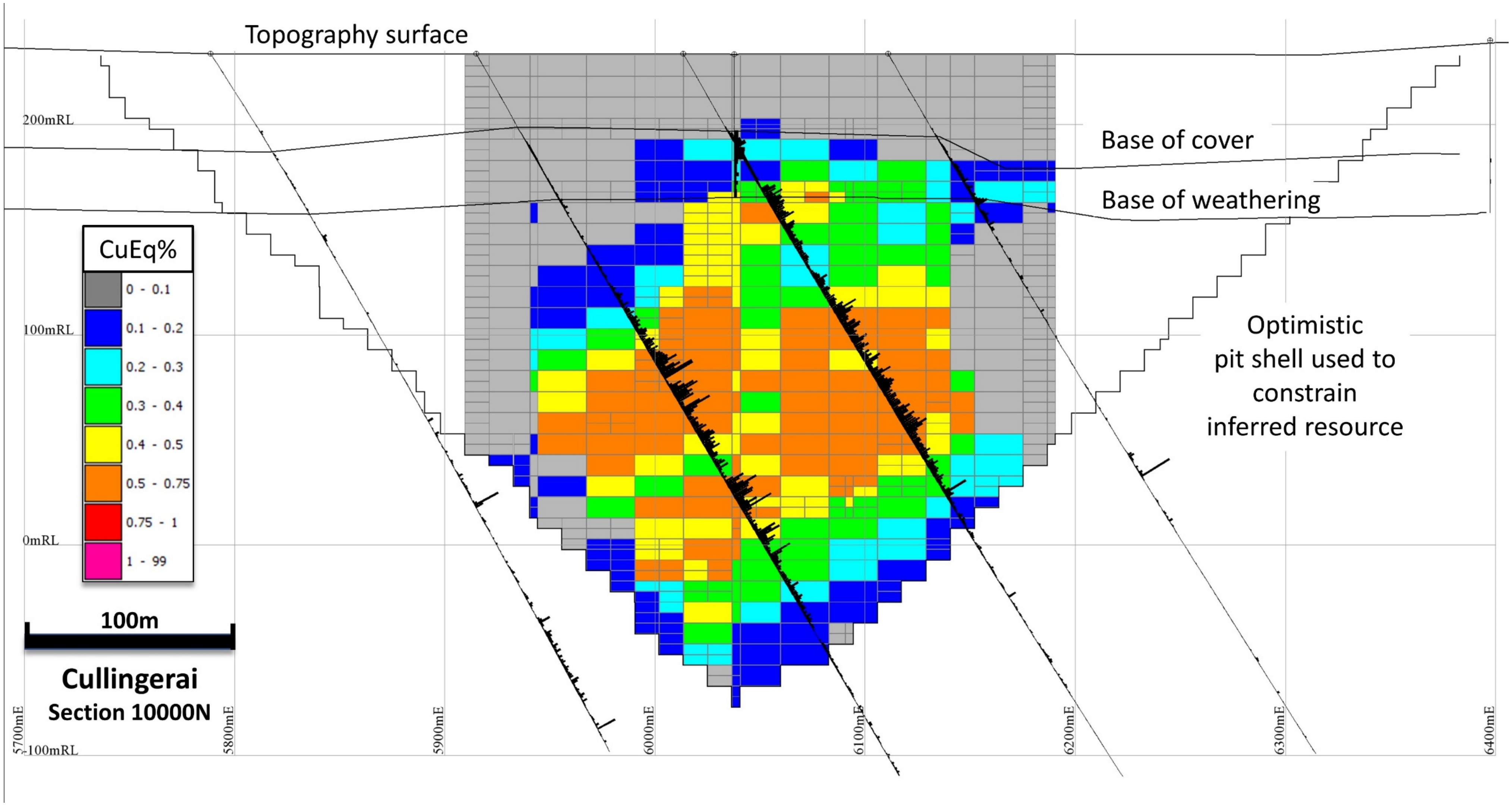


Figure: Cross Section showing optimistic pit shell

Appendix 1 (continued) - JORC 2012 TABLE 1 MINERAL RESOURCE PARAMETERS – TEMORA PROJECT – Estoril Project

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.*	Sampling techniques undertaken by previous owners include core sampling of NQ2 Diamond Drill (DDH) core; Reverse Circulation (RC) face sampling, air-core (AC) and rotary air blast (RAB) chip samples.
	Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.	Sampling techniques undertaken by previous owners include half core sampling of DDH core; RC samples collected by riffle splitter for single metre samples or sampling spear for composite samples; AC and RAB samples collected using riffles splitters or a sampling spear. Sampling was undertaken by the then current owner's protocols and QAQC procedures as per the prevailing industry standards.
	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.*	Diamond drilling was used to obtain 2,071 one metre and 230 two metre samples along with significantly lesser quantities of other sample intervals varying from 4 metres to 0.3 metre. These samples comprised half core along with pulverized and riffle split half core products to achieve acceptable (representative) sample weights for analytical assay. RC drilling was used to obtain 321 two metre samples and 1 one metre sample. RAB drilling was used to obtain 7 three metre samples and 1 one point eight metre sample. AC drilling was used to obtain 1,538 two metre, 308 four metre and 29 one metre samples.
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).*	The drilling database for the Estoril project comprises the results from 55 air core (AC) holes totalling 4,255.5 metres; 1 air core with diamond tail (ACD) hole totalling 504 metres; 6 diamond drill holes (DDH) totalling 2,204.6 metres; 1 rotary air blast (RAB) holes totalling 79.8 metres and 5 reverse circulation (RC) holes totalling 693 metres. A total of 12 air core (AC), 3 reverse circulation (RC) and 5 diamond (DDH, ACD, RCD) holes were used as part of the resource estimate.
Drill sample recovery	*Method of recording and assessing core and chip sample recoveries and results assessed.*	There are no documentation of core and chip recoveries within the Goldminco database for the Estoril project.
	Measures taken to maximise sample recovery and ensure representative nature of the samples.	It is assumed that appropriate measures were taken by Goldminco to maximise sample recovery, however documentation is incomplete.
	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.	It is assumed that appropriate measures were taken by Goldminco to maximise sample recovery, however documentation is incomplete.
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.*	Project database records contain varyingly detailed geological logs of all drilling products describing regolith, colour, weathering, texture, grain size, principal and secondary lithologies along with qualitative and quantitative assessments of alteration, sulphide minerals, veining, non-sulphide minerals and remarks. The level of detail logged complies with the Inferred Mineral Resource classification for this project.
	Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc) photography.	The drilling products have been logged both qualitatively and quantitatively according to the particular attribute being assessed.

Criteria	JORC Code Explanation	Commentary
	The total length and percentage of the relevant intersections logged.	68 of the 68 or 100% of the holes drilled have been logged. Similarly, 7,269.25 metres from a total of 7736.9 metres or 94% of the metres drilled have been logged.
Sub-sampling techniques and sample preparation	*If core, whether cut or sawn and whether quarter, half or all core taken.*	The seven diamond holes were sampled every 2m or 4m in the aircore precollars, and then every 1m of half NQ2 core.
	If non-core, whether riffled, tube sampled, rotary split, etc and whether sampled wet or dry.	Aircore holes were sampled as 2m or 4m composites, and RC holes as 2m composites.
	For all sample types, the nature, quality and appropriateness of the sample preparation technique.	The sub-sampling techniques and sample preparation methodologies have been undertaken using standard industry practices current at the time. These are considered to be appropriate for use in the ongoing assessment and development of the project.
	Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.	Half diamond drillcore was crushed by jaw crusher and a 3 kilogram split was pulverized to 70% passing -75 microns. Reverse circulation drill samples of less than 4 kilograms were pulverised entirely to 70% passing -75 micron in an LM5 pulverizer. Samples greater than 4 kilograms were sub split and half the sample was pulverized.
	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.	No records as to the use of duplicate and check sampling protocols and activities are evident in the Goldminco database.
	Whether sample sizes are appropriate to the grain size of the material being sampled	The sample sizes are appropriate to the porphyry and related styles of mineralisation.
Quality of assay data and laboratory tests	*The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total.*	Samples between 1 and 3.5kg were dried, crushed and milled by ALS Orange for analysis of Au by fire assay and AA26, and As, Bi, Cu, Fe, Mo, Ni, Pb, S, Zn by ICP42, and OG49 where elements are above normal detection limits. Goldfields standards were submitted every 50 samples for quality assurance and control. Goldminco samples were analysed for Au by fire assay with AAS finish (FAA505) at SGS West Wyalong. Repeats and second splits were analysed every twenty or so samples. A separate small subsample was sent to the SGS laboratory in Townsville for Cu, Pb, Zn, As, Ag, Mo and S analysis by ICP40Q using 4 acid digestion and ICP21Q for when elements are above normal detection limits.
	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.	No geophysical tools were used to analyse the drilling products
	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.	A program of external quality control (QC) and quality assurance (QA) has been applied by Goldminco for the Temora Project to check for contamination, accuracy and precision. Certified standards were inserted in the sample stream prior to the samples leaving site for every 50 samples submitted for assay. The standards used comprise historic in-house (uncertified) standards and more recently certified standards supplied by Ore Research and Exploration.
Verification of sampling and assaying	*The verification of significant intersections by either independent or alternative company personnel.*	The available QAQC assay data for the project was reviewed with respect to QAQC performance. From a total of 104 gold and 34 copper QAQC samples submitted, 3 gold and 1 copper sample were identified as exceeding the sample variance limits (3SD). The number of errors found is not considered significant and could largely be explained by sample switches. The standards used comprise historic in-house (uncertified) standards and more recently certified standards supplied by Ore Research and Exploration. Overall, the standards have performed well and indicate the sample data is of an acceptable standard. The drill core from 1 diamond drill hole, ESD005 which intersected significant mineralisation were checked the Competent Person.

Criteria	JORC Code Explanation	Commentary
	The use of twinned holes.	There are no known twinned holes drilled for the Mineral Resource.
	Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.	Results for QAQC samples are assessed on a batch by batch manner, at the time of uploading drill sample assays to the Acquire database. The Acquire database reports on the performance of the QAQC samples against the expected result and within tolerance limits. If the QAQC samples fail the batch report, the Geologist investigates the occurrence and actions either a) acceptance of the result into the database or b) reject the result and organised a re-assay of the sample with the laboratory.
	Discuss any adjustment to assay data.	No adjustment was made to the raw 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.*	Collar surveys, where disclosed, were undertaken using GPS technology. Downhole surveys were varyingly undertaken using a variety of technologies including single and multi-shot, gyroscopic and north seeking gyroscopic instruments.
	Specification of the grid system used.	Collar and down hole azimuths used for the Estoril Resource interpretation and estimation is based on AGD 66, Zone 55 datum. This was selected as all historical survey data were stored in AGD 66.
	Quality and adequacy of topographic control.	The drill hole collars were surveyed using GPS technology and these were used to build the topographic surface which is relatively flat.
Data spacing and distribution	*Data spacing for reporting of Exploration Results.*	The holes used for the resource estimation were drilled over approximately 600 metres strike length to a maximum vertical depth of 300 metres. The drill sections are spaced at approximately100 metre centres along strike with each section having 2 or more holes.
	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.	Resource definition drill spacing and distribution of exploration results is sufficient to support Mineral Resource Estimation procedures.
	Whether sample compositing has been applied.	No sample compositing has been applied to the exploration results.
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.*	The range in declination of the drilling has been inclined at 60 degrees (11 holes) and vertically (50 holes). 11 of the moderate to steeply inclined holes were drilled towards the ENE (66 degrees) relative to AMG north. Consequently, the majority of the inclined holes are drilled orthogonally to the strike of the Estoril mineralized zone and intercept it obliquely at depth.
	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 the drilling was oriented perpendicular to the general strike of the Estoril deposit and it is considered that no sampling bias has been introduced.
Sample security	*The measures taken to ensure sample security.*	Sample storage undertaken by the previous owner of the project (Goldminco) was as follows: Half core diamond drill holes are stored on site in covered, plastic trays to minimise oxidation due to open air storage and weather. Crush rejects are stored for a short time at the laboratory before being flagged for disposal following acceptance of QAQC for the drill hole results. Pulps are disposed when the QAQC results of the drill hole are accepted, and the geology department has deemed there to be no further use for the pulps.
Audits or reviews	*The results of any audits or reviews of sampling techniques and data.*	A program of external quality control (QC) and quality assurance (QA) was applied by Goldminco to check for contamination, accuracy and precision. Cube Consulting was supplied by Goldminco with up to date graphs summarising the results of historic (in house) and current certified standards and laboratory duplicates. Blanks were not inserted externally by Goldminco but the results of internal laboratory blanks are made available to Goldminco. A visual inspection of these results did not appear show any significant sample contamination issues.

Criteria	JORC Code Explanation	Commentary
		For drilling undertaken by Goldminco, a certified standard was inserted in the sample stream prior to the samples leaving site for every 50 samples submitted for assay. The available QAQC assay data for the project to the end of June was reviewed with respect to QAQC performance. From a total of 104 gold and 34 copper QAQC samples submitted, 3 gold and 1 copper sample were identified as exceeding the sample variance limits (3SD). The number of errors found is not considered significant and could largely be explained by sample switches. The standards used comprise historic in-house (uncertified) standards and more recently certified standards supplied by Ore Research and Exploration. Overall, the standards have performed well and indicate the sample data is of an acceptable standard. A further assessment of the database was undertaken by the Competent Person. No significant errors were found and it is considered that the data management processes in place are robust and adequate and believes that the database is an accurate representation of the project drilling data.

Section 2: Reporting of Exploration Results

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 Estoril deposit is located 2km west of the Reefton locality and rail siding, and 4km south along a NNW-SSE strike from the Cullingerai deposit in central New South Wales, Australia. It falls completely within the confines of Exploration License EL6845 held by Sandfire Resources NL. The title is for Group 1 minerals and was granted on 03 August 2007. The expiry date is 03 August 2016 and renewal of the license has been sought. In addition to the statutory royalties payable to the New South Wales Department of Primary Industries for the right to extract and use the State's mineral resources, a portion of EL6845 (referred to as EL 2151) has an equitable 12.5% net profit interest royalty agreement with Lachlan Resources Pty Ltd, a wholly owned subsidiary of Barrick Gold Corporation. This area includes the Mandamah, Cullingerai and Estoril deposits.
	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.	There are no obvious impediments known to exist at this stage of exploration to obtaining a license to operate in this area.
Exploration done by other parties	*Acknowledgment and appraisal of exploration by other parties.*	The Estoril deposit was highlighted as having anomalous Cu and Au from aircore drilling in 2002-2002 by Goldfields Exploration /Aurion Gold Exploration in previous tenements EL2151 and EL5845. These ELs were farmed out to Goldminco Corporation in 2004. In 2007, EL2151 and EL5845 were grouped with the other Temora project ELs into a new single EL6845. Sandfire Resources NL acquired the project and EL6845 from Goldminco (then a wholly owned subsidiary of Straits Resources Limited) in October 2015.
Geology	*Deposit type, geological setting and style of mineralisation.*	The Temora project area is located in the highly prospective late Ordovician Gidginbung Volcanics, which form a north-north west trending belt from Temora to West Wyalong. The Gidginbung Volcanics, and to a lesser extent, the surrounding Silurian sediments are a very well mineralised group of rocks with numerous Au and Cu occurrences distributed throughout the entire belt. Mineralisation styles can be broadly grouped into three main types: • High sulphidation epithermal Au; Gidginbung; • Porphyry Cu-Au-Mo. Yiddah, Mandamah, Cullingerai, Estoril, The Dam; and • Mesothermal vein Au; Reefton, Barmedman. The main targets in the Temora project area are porphyry Cu-Au and high or low sulphidation epithermal Au deposits.

Criteria	JORC Code Explanation	Commentary
		The Estoril prospect has basic to intermediate rocks of the Gidginbung Volcanics, intruded by tonalite (herein named diorite), hornblende gabbro and finally high-K micro- monzodiorite porphyry. Fracturing, veining and hydrothermal alteration related to a porphyry-type Cu (-Au) mineralising system is recognised at this project, with zones of potassic, propylitic, transitional propylitic to phyllic, and argyllic alteration.
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; and* • *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 have been reported in this release.
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 results have been reported in this release.
	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.	No exploration results have been reported in this release.
	The assumptions used for any reporting of metal equivalent values should be clearly stated.	No exploration results have been reported in this release.
Relationship between mineralisation widths and intercept lengths	*These relationships are particularly important in the reporting of Exploration Results.*	No exploration results have been reported in this release.
	If the geometry of the mineralisation with respect to the drill-hole angle is known, its nature should be reported.	No exploration results have been reported in this release.
	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').	No exploration results have been 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.*	Location map shown in Figure 1 of this release. Other diagrams are appended to the end of this Table 1 document.
Balanced reporting	*Where comprehensive reporting of all Exploration Results is not practicable, representative reporting of both low and high grades and/or widths should be practiced to avoid misleading reporting of Exploration Results.*	No exploration results have been reported in this release.

Criteria	JORC Code Explanation	Commentary
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.*	Preliminary metallurgical test work for five deposits from the Temora area, including Estoril, was completed by AMMTEC, Perth, during the period September 2008 to January 2009. Composites were prepared from single drillholes from each of the five deposits. Grinding tests on the composites were within the range seen for porphyry deposits in Arizona (USA and British Columbia (Canada). Due to a wide range of alteration styles across the Temora deposits, resulting in differences in sample hardness, a wide variation in grind time was necessary to achieve this size range across individual deposits. Flotation testing on the composites clearly demonstrated that at the right grind and reagent regime, copper recoveries of over 90% could be achieved at marketable concentrate grades of over 20%Cu and in all cases the copper floated exceedingly quickly.
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.*	• Continue infill drilling within the currently modeled resource outlines in order to increase the confidence in the geological and weathering models as well as establish grade continuity; • Continue with resource definition drilling to test strike potential; • Continue with district exploration incorporating current understanding of geological, structural and mineralisation controls at the existing Temora Prospects; • Expand and maintain an auditable quality assurance system for all ongoing data collection; • Continue with collection of SG measurements; and • Additional metallurgical test work to be undertaken as a routine part of exploration.

Section 3: Estimation and Reporting of Mineral Resources

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 database used for the Estoril resource modelling and estimation was extracted from the Goldminco Datashed database which is a professional relational SQL database management package. Datashed is an industry recognized data management system that utilizes rigorous data validation procedures during data entry along with enhanced security and flexible reporting to protect the exploration records.
	Data validation procedures used.	For the Mineral Resource, data tables were exported from the SQL database as comma separated files (CSV's) using export tools embedded with the database management system. These CSV files were then imported into a standalone Access database for the sole purpose of the estimation. The project records extracted from the master database have been checked and validated by an independent expert who found the database to be clean, consistent and free of obvious errors.
Site Visits	*Comment on any site visits undertaken by the Competent Person and the outcome of those visits.*	The current resource estimate for the Estoril deposit was estimated by Cube Consulting in 2008 and signed off under the JORC 2004 code in 2011 by Mr. Byron Dumpleton who was the Mineral Resource Manager for Straits Resources. Mr Dumpleton had visited the project site and had a good understanding of the project geology based on a detailed review of the mineralization in drill core and surface outcrop exposures. A project site visit was undertaken in March 2017 by the Competent Person to verify grade intersections were consistent with a visual inspection of mineralisation in the core.
	If no site visits have been undertaken indicate why this is the case.	Site visit was undertaken by an independent expert as outlined above.
Geological interpretation	*Confidence in (or conversely, the uncertainty of) the geological interpretation of the mineral deposit.*	The mineralised domain at Estoril has been broadly defined using a combination of geological and low grade cut-off criteria based on available drillhole information. A lower nominal cut-off grade of 0.1% Cu which typically coincided with a 0.1 g/t Au cut-off (effectively the mineralised alteration halo) was applied. Some proportion of lower grade material is inevitably included as internal dilution in order to preserve overall continuity of the mineralised zones. The mineralisation interpretation used in this estimate was an attempt to encompass the complete mineralised distribution and produce a model that reduces the risk of conditional bias often introduced where the constraining interpretation and data selection is based on a significantly

Criteria	JORC Code Explanation	Commentary
		higher grade than the natural geological cut-off. Criteria used in defining the mineralised domain can be summarised as follows: • Determine a nominal low grade “geological“ cut-off to assist in defining mineralised outlines; • Incorporate lithology, alteration, veining and mineralisation characteristics where available; • No minimum width or downhole length criteria to be applied; and • No internal dilution or edge dilution criteria to be applied.
	Nature of the data used and of any assumptions made.	Univariate statistical analysis was carried out on 5 metre composites for copper, gold, copper, zinc and lead to evaluate the population distribution for the mineralised domain and to determine whether a high grade assay cuts were required. The coefficient of variance for Estoril is 0.56 indicating a population having low variability. This was used to support the use of Ordinary Kriging as an appropriate method of estimation of a global resource in the absence of the consideration of mining selectivity issues.
	The effect, if any, of alternative interpretations on Mineral Resource estimation.	The nature and extent of the mineralised domain comprising the Estoril project is consistent with the geological models for the other projects comprising the Temora Project Area. Consequently, no alternative interpretations have been considered.
	The use of geology in guiding and controlling Mineral Resource estimation.	Lithological, structural, alteration and weathering parameters along with a mineralizing indicator grade were used to define a single wireframe that encapsulated the known extents of the mineralization. This wireframe was used to constrain the interpolation of the various elements.
	The factors affecting continuity both of grade and geology.	The nature, extent and intensity of porphyry-related alteration and proximity to the brittle-ductile structures comprising the Gilmore Fault Zone have a dominant influence on the mineralization grade and geology.
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 mineralized domain at Estoril is a steeply inclined tabular-shaped body measuring 750 metres along strike, 110 metres in width (plan) and extends 250 metres vertically beneath the surface.

<table>
<tr><th>Criteria</th><th>JORC Code Explanation</th><th>Commentary</th></tr>
<tr><td rowspan="4">Estimation and modelling techniques</td><td>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.</td><td>Variography has been used to analyse the spatial continuity within the mineralised zone and to determine appropriate estimation inputs to the interpolation process.
All variogram modelling was conducted in Surpac 6.0.3.
Variography was calculated for copper, gold and molybdenum for The Dam, Mandamah and Yiddah prospects. Due to the lower number of composite data for Cullingerai and Estoril, it was decided more appropriate to adopt the variography for Mandamah for these two prospects. This was considered suitable given the close proximity and similar statistical properties of the three prospects. It was considered to be more appropriate to adopt a robust generalised variogram model rather than use a series of varying unstable models due to low numbers of sparsely spaced composites.
Grade interpolation was carried out using Ordinary Kriging (OK) for the mineralised domain using the uniquely coded 5m downhole composite data specific to that domain.
Estimation search parameters are summarised in the table below.
<table>
<tr><th>Prospect</th><th>Estoril Cu</th><th>Estoril Au</th></tr>
<tr><td>Search Type</td><td>Ellipsoid</td><td>Ellipsoid</td></tr>
<tr><td>Max No, of Adj. Empty Octants</td><td>-</td><td>-</td></tr>
<tr><td>Min Number of Composites</td><td>3</td><td>3</td></tr>
<tr><td>Max Number of Composites</td><td>16</td><td>16</td></tr>
<tr><td>Search Distance Major Axis (m)</td><td>250</td><td>250</td></tr>
<tr><td>Bearing of Major Axis</td><td>170</td><td>170</td></tr>
<tr><td>Plunge of Major Axis</td><td>0</td><td>0</td></tr>
<tr><td>Dip of Semi-Major Axis</td><td>-57</td><td>-57</td></tr>
<tr><td>Major / Semi-Major Axis Ratio</td><td>1.5</td><td>1.5</td></tr>
<tr><td>Major / Minor Axis Ratio</td><td>1.5</td><td>1.5</td></tr>
<tr><td>No. of X Discretisation</td><td>4</td><td>4</td></tr>
<tr><td>No. of Y Discretisation</td><td>5</td><td>5</td></tr>
<tr><td>No. of Z Discretisation</td><td>2</td><td>2</td></tr>
</table></td></tr>
<tr><td>The availability of check estimates, previous estimates and/or mine production records and whether the Mineral Resource estimate takes appropriate account of such data.</td><td>The 2008 Mineral Resource estimate was the first estimate for the Estoril deposit.</td></tr>
<tr><td>The assumptions made regarding recovery of by-products.</td><td>No assumptions were made regarding the recovery of by-products.</td></tr>
<tr><td>Estimation of deleterious elements or other non-grade variables of economic significance (e.g. sulphur for acid mine drainage characterisation).</td><td>No estimation of potentially deleterious elements was undertaken.</td></tr>
</table>

Criteria	JORC Code Explanation	Commentary
	In the case of block model interpolation, the block size in relation to the average sample spacing and the search employed.	Data spacing was the primary consideration taken into account when selecting an appropriate estimation block size. The most common drillhole spacing is approximately 100 metres (north-south) x 50 metres (east-west) but is variable and can range from less than 40 metres and up to 200 metres. The metrics defining the Estoril block model are tabulated below. <table><tr><th>Type</th><th>Y</th><th>X</th><th>Z</th></tr><tr><td>Minimum Coordinates</td><td>6210000</td><td>537700</td><td>-200</td></tr><tr><td>Maximum Coordinates</td><td>6211000</td><td>538500</td><td>300</td></tr><tr><td>User Block Size</td><td>50</td><td>20</td><td>10</td></tr><tr><td>Min. Block Size</td><td>25</td><td>10</td><td>5</td></tr><tr><td>Rotation</td><td>0</td><td>0</td><td>0</td></tr></table>
	Any assumptions behind modelling of selective mining units.	Modelling was not reported to take into account the dimensions of selective mining units.
	Any assumptions about correlation between variables.	No correlation analysis was undertaken and consequently, no correlation relationships were used in the Resource estimation.
	Description of how the geological interpretation was used to control the resource estimates.	Lithological, structural, alteration and weathering parameters along with a mineralizing indicator grade were used to define a single wireframe that encapsulated the known extents of the mineralization. This wireframe was used to constrain the interpolation of the various elements.
	Discussion of basis for using or not using grade cutting or capping.	Tabulated statistics and probability plots were examined and no potential outliers were found for the Estoril project. Consequently, no grade cutting or capping was undertaken.
	The process of validation, the checking process used, the comparison of model data to drill hole data, and use of reconciliation data if available.	The modelled estimates were compared to composite grades in order to detect any significant biases within the resulting block model.
Moisture	*Whether the tonnages are estimated on a dry basis or with natural moisture, and the method of determination of the moisture content.*	The tonnages have been estimated on a dry basis.
Cut-off parameters	*The basis of the adopted cut-off grade(s) or quality parameters applied.*	In March 2012, an Inferred Estoril Resource (JORC 2004) was announced to the market by Straits Resources using a 0.3% Cu Equivalent cut-off using a Cu price of USD$7,900 and gold price of USD$1,765 per oz. No metal recoveries were used in the CuEq calculation. In order to comply with the JORC 2012 Code, the metal prices were adjusted to current prices and metallurgical recoveries were used based on the metallurgical testwork undertaken in 2008. A Cu Equivalent cut-off of 0.3% was chosen to model the overall extents of the copper and gold mineralisation at Estoril reflecting the large scale generally low grade disseminated porphyry style mineralisation. The copper equivalent values are calculated according to the following formula and assumed metal prices and recoveries: Ceq = Cu % + Au g/t ((PAu* RecAu)/ (PCu* RecCu)) Cu price = 3.53 AUD$/lb Au Price = 1,600 AUD$/oz Cu Recovery = 90% Au Recovery = 75%

Criteria	JORC Code Explanation	Commentary
		Therefore, the value to be used is: Ceq = Cu % + Au g/t ((1600 / 31.1035 * 0.75) / (3.53 * 22.04 * 0.90)) Ceq = Cu % + (Au g/t * 0.55)
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.*	The Resource for Estoril has been reported assuming open pit mining techniques would be implemented in the event the project is shown to be economically viable on a combined or standalone basis.
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.*	No metallurgical factors or assumptions (e.g. recoveries) have been incorporated into the resource estimate but have been included in the Cu Equivalent calculation used for reporting of the Mineral Resource. In 2008, a suite of drill core samples from the Yiddah, Mandamah, Dam, Cullingerai and Estoril Porphyry Copper-Gold deposits were sent for metallurgical testwork at AMMTEC laboratories in Perth. Samples were divided into high grade and low grade. An additional low grade bulk sample was also tested. Flotation testing demonstrated that copper recoveries of over 90% could be achieved at marketable concentrate grades over 20% Cu and in all cases the copper floated exceedingly quickly. The Estoril deposit copper recoveries for low grade material were 64.8% and 55.2% for Au.
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.*	No environmental factors or assumptions (e.g. acid mine drainage considerations) have been incorporated into the resource estimate.
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.*	Specific gravity values have been based on measurements of individual core samples conducted by on site personnel using the Archimedes Principle.
	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.	The procedure used is suitable for non-porous or very low porosity samples, which can be quickly weighed in water before saturation occurs.
	Discuss assumptions for bulk density estimates used in the evaluation process of the different materials.	The assigned density value represent the mean value for the given data set was assigned to be 2.72 for Estoril (fresh).
Classification	*The basis for the classification of the Mineral Resources into varying confidence categories.*	The resource classification criteria used for the June 2011 Mandamah resource model is based on drill spacing and geological knowledge and confidence. The classification also considers the likely potential for economic development of the project using open cut mining methods by constraining the resource inside a Whittle optimized pit shell generated using optimistic input parameters and the pit shell with a revenue factor of 2 (see figure below).
	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).	The criteria used to determine the classification are considered by the Competent Person to have been reasonably applied.

Criteria	JORC Code Explanation	Commentary
	Whether the result appropriately reflects the Competent Person's view of the deposit.	The Mineral Resource has been classified into the confidence category of Inferred according primarily to sample density and geological confidence, and reflects the Competent Person's view on the deposit.
Audits or reviews	*The results of any audits or reviews of Mineral Resource estimates.*	An audit of the resource estimate was undertaken by the Competent Person who is an independent consultant and is a Competent Person as defined by the JORC Code, 2012 Edition, having five years' experience that is relevant to the style of mineralisation and type of deposit described in the Report and to the activity for which he is accepting responsibility. It was concluded that the model is a reasonable reflection of the current understanding of the geological and structural controls of the mineralisation in the project area and copper and gold grades based on the available drill hole assay data
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 Mineral Resources has been reported in accordance with the guidelines of the 2012 edition of the Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves and reflects the relative accuracy of the Mineral Resources estimates.
	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.	The statement relates to a global estimate of tonnes and grade.
	These statements of relative accuracy and confidence of the estimate should be compared with production data, where available.	No mining activities have been undertaken at Estoril and consequently, it is not possible to reconcile production data against the Mineral Resource Estimate.

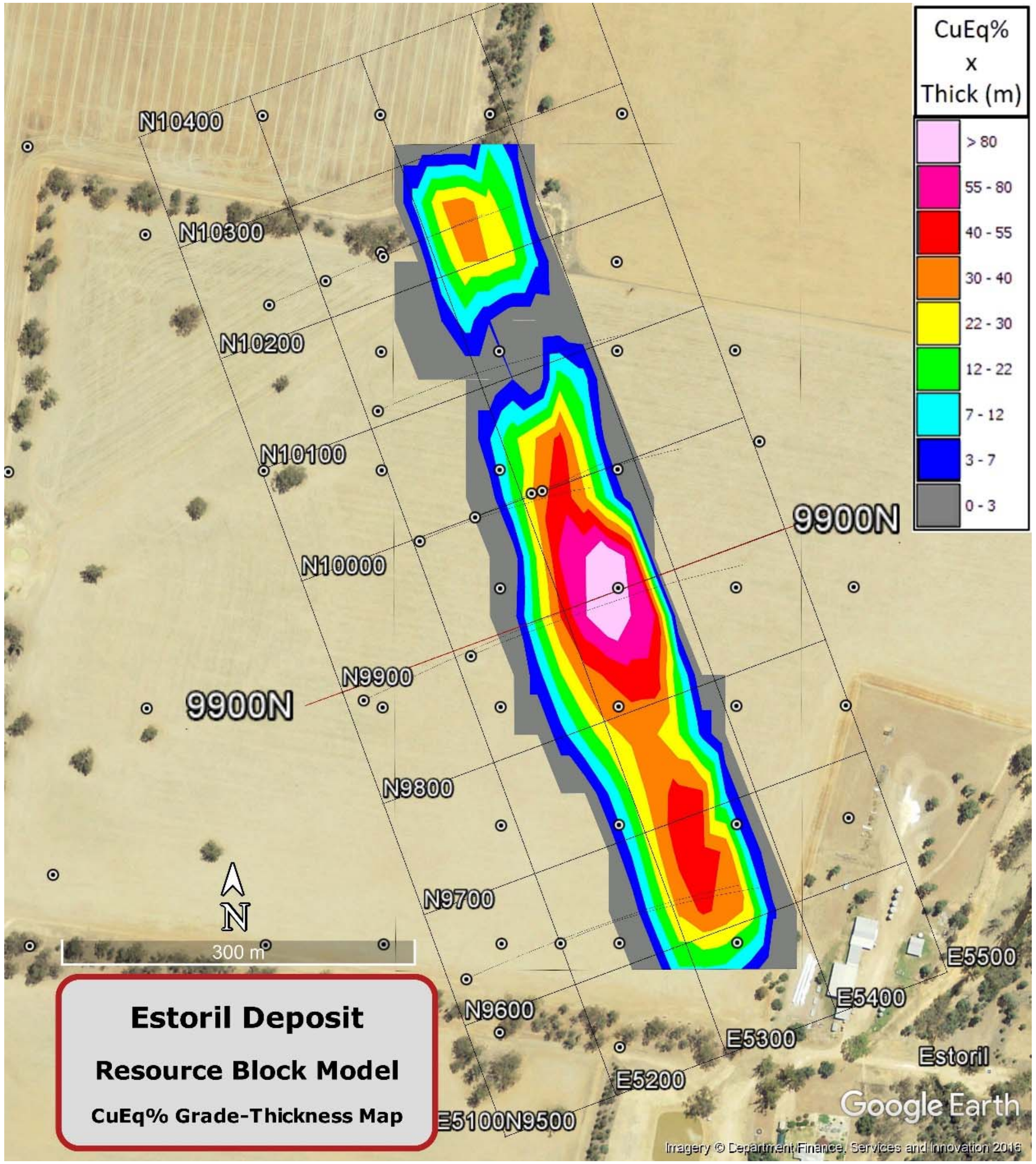


Figure: Plan view of drillhole locations and CuEq% Grade – Thickness Map.

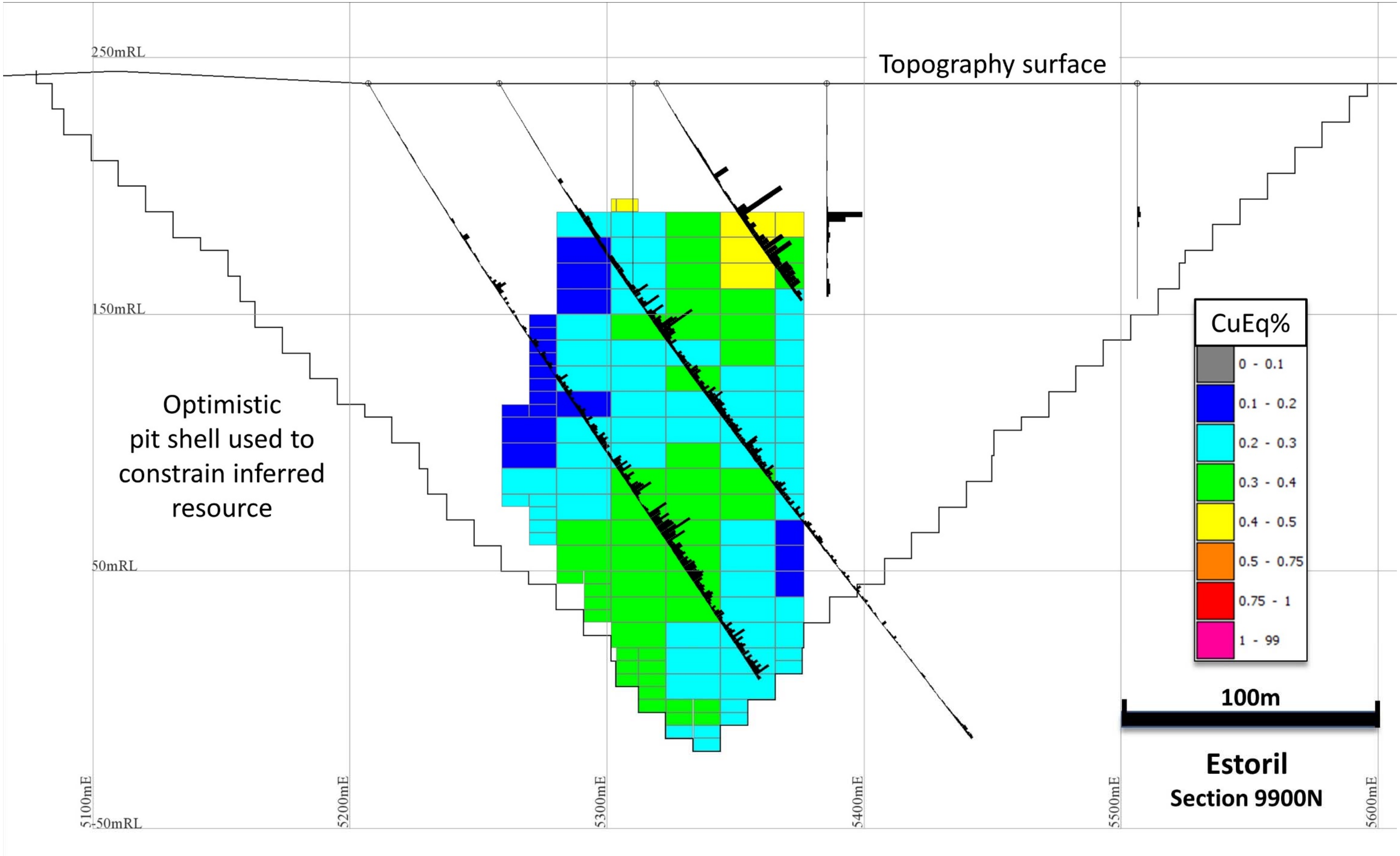


Figure: Cross Section showing optimistic pit shell.

Appendix 1 (continued) - JORC 2012 TABLE 1 MINERAL RESOURCE PARAMETERS – TEMORA PROJECT – Mandamah Project

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.*	Sampling techniques undertaken by previous owners include core sampling of NQ, HQ and HQ3 Diamond Drill (DDH) core; Reverse Circulation (RC) face sampling, air-core (AC) and rotary air blast (RAB) chip samples.
	Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.	Sampling techniques undertaken by previous owners include half core sampling of DDH core; RC samples collected by riffle splitter for single metre samples or sampling spear for composite samples; AC and RAB samples collected using riffles splitters or a sampling spear. Sampling was undertaken by the then current owner's protocols and QAQC procedures as per the prevailing industry standards.
	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.*	Diamond drilling was used to obtain 3,792 two metre; 2,086 one metre and 352 four metre samples along with significantly lesser quantities of other sample intervals varying from 3 metres to 0.4 metres. These samples comprised half core along with pulverized and riffle split half core products to achieve acceptable (representative) sample weights for analytical assay. RC drilling was used to obtain 1,186 two metre samples and 84 eighty-three point six metre samples with significantly lesser quantities of other sample intervals varying from 4 metres to 1 metres. RAB drilling was used to obtain 171 three metre samples along with significantly lesser quantities of other sample intervals varying from 9 metres to 0.5 metre. AC drilling was used to obtain 9,784 four metre and 1,646 two metre samples along with significantly lesser quantities of other sample intervals varying from 3 metres to 1 metre. ACD drilling was used to obtain 593 one metre along with significantly lesser quantities of other sample intervals varying from 1.3 metres to 0.7 metre.
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).*	The drilling database for the Mandamah project comprises the results from 130 air core (AC) holes totalling 11,680 metres; 4 air core with diamond tails (ACD) holes totalling 1,446 metres; 17 diamond drill holes (DDH) totalling 6,358.84 metres consisting of HQ-size (92.6 metres), HQ3-size (1,687.2 metres) and NQ size (384 metres) with size of the remaining meterage not recorded in the database; 32 rotary air blast (RAB) holes totalling 2,132.3 metres and 7 reverse circulation (RC) holes totalling 1,327.2 metres. A total of 66 air core (AC), 4 reverse circulation (RC) and 19 diamond (DDH, ACD, RCD) holes were used as part of the resource estimate.
Drill sample recovery	*Method of recording and assessing core and chip sample recoveries and results assessed.*	There are no documentation of core and chip recoveries within the Goldminco database for the Mandamah project.
	Measures taken to maximise sample recovery and ensure representative nature of the samples.	It is assumed that appropriate measures were taken by Goldminco to maximise sample recovery, however documentation is incomplete.
	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.	It is assumed that appropriate measures were taken by Goldminco to maximise sample recovery, however documentation is incomplete.
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.*	Project database records contain varyingly detailed geological logs of all drilling products describing regolith, colour, weathering, texture, grain size, principal and secondary lithologies along with qualitative and quantitative assessments of alteration, sulphide minerals, veining, non-sulphide minerals and remarks. The level of detail logged complies with the Inferred Mineral Resource classification for this project.

Criteria	JORC Code Explanation	Commentary
	Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc) photography.	The drilling products have been logged both qualitatively and quantitatively according to the particular attribute being assessed.
	The total length and percentage of the relevant intersections logged.	177 of the 190 or 93% of the holes drilled have been logged. Similarly, 13,354 metres from a total of 22,944.34 metres or approximately 58% of the metres drilled have been logged.
Sub-sampling techniques and sample preparation	*If core, whether cut or sawn and whether quarter, half or all core taken.*	Diamond drillcore of both NQ, HQ and HQ3 size from drilling by Placer and Gold Mines of Australia and Goldminco was sawn in half by a diamond bladed core saw and half core was submitted for assay.
	If non-core, whether riffled, tube sampled, rotary split, etc and whether sampled wet or dry.	Reverse circulation drilling samples were split by riffle splitters with a sample of between 3 and 5 kilograms submitted to the laboratory.
	For all sample types, the nature, quality and appropriateness of the sample preparation technique.	The sub-sampling techniques and sample preparation methodologies have been undertaken using standard industry practices current at the time. These are considered to be appropriate for use in the ongoing assessment and development of the project.
	Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.	Half diamond drillcore was crushed by jaw crusher and a 3 kilogram split was pulverized to 70% passing -75 microns. Reverse circulation drill samples of less than 4 kilograms were pulverised entirely to 70% passing -75 micron in an LM5 pulverizer. Samples greater than 4 kilograms were sub split and half the sample was pulverized.
	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.	No records as to the use of duplicate and check sampling protocols and activities are evident in the Goldminco database.
	Whether sample sizes are appropriate to the grain size of the material being sampled	The sample sizes are appropriate to the porphyry and related styles of mineralisation.
Quality of assay data and laboratory tests	*The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total.*	Goldmines of Australia submitted their diamond and aircore samples to ALS for Gold analysis by fire assay (FAEX), base metal suite analysis by (A100); and Amdel for Gold analysis by fire assay (FA3), and base metal analysis by IC2E. Placer submitted all of their samples to ALS for Gold analysis by fire assay (PM209) and base metal analysis by ICP (IC580). Goldfields/AurionGold submitted all their samples to ALS for Gold analysis by fire assay (PM209) and base metal analysis by ICP (IC581). Goldminco Corporation submitted all their samples to SGS for Gold analysis by fire assay (FAA505) and base metal analysis by ICPAES (ICP21R).
	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.	No geophysical tools were used to analyse the drilling products
	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.	A program of external quality control (QC) and quality assurance (QA) has been applied by Goldminco for the Temora Project to check for contamination, accuracy and precision. Certified standards were inserted in the sample stream prior to the samples leaving site for every 50 samples submitted for assay. The standards used comprise historic in-house (uncertified) standards and more recently certified standards supplied by Ore Research and Exploration.
Verification of sampling and assaying	*The verification of significant intersections by either independent or alternative company personnel.*	The available QAQC assay data for the project was reviewed with respect to QAQC performance. From a total of 104 gold and 34 copper QAQC samples submitted, 3 gold and 1 copper sample were identified as exceeding the sample variance limits (3SD). The number of errors found is not considered significant and could largely be explained by sample switches. The standards used comprise historic in-house (uncertified) standards and more recently certified standards supplied by Ore Research and Exploration. Overall, the standards have performed well and indicate the

Criteria	JORC Code Explanation	Commentary
		sample data is of an acceptable standard. The drill core from 1 diamond drill hole, MHACD228 which intersected significant mineralisation was checked by the Competent Person.
	The use of twinned holes.	There are no known twinned holes drilled for the Mineral Resource.
	Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.	Results for QAQC samples are assessed on a batch by batch manner, at the time of uploading drill sample assays to the Acquire database. The Acquire database reports on the performance of the QAQC samples against the expected result and within tolerance limits. If the QAQC samples fail the batch report, the Geologist investigates the occurrence and actions either a) acceptance of the result into the database or b) reject the result and organised a re-assay of the sample with the laboratory.
	Discuss any adjustment to assay data.	No adjustment was made to the raw 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.*	Collar surveys, where disclosed, were undertaken using GPS technology. Downhole surveys were varyingly undertaken using a variety of technologies including single- and multi-shot, gyroscopic and north seeking gyroscopic instruments.
	Specification of the grid system used.	Collar and down hole azimuths used for the Mandamah Resource interpretation and estimation is based on AGD 66, Zone 55 datum. This was selected as all historical survey data were stored in AGD 66.
	Quality and adequacy of topographic control.	The drill hole collars were surveyed using GPS technology and these were used to build the topographic surface which is relatively flat.
Data spacing and distribution	*Data spacing for reporting of Exploration Results.*	The holes used for the resource estimation were drilled over approximately 600 metres strike length to a maximum vertical depth of 550 metres. The drill sections are spaced approximately 100m apart with each section having 2 or more holes.
	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.	Resource definition drill spacing and distribution of exploration results is sufficient to support Mineral Resource Estimation procedures.
	Whether sample compositing has been applied.	No sample compositing has been applied to the exploration results.
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.*	The range in declination of the drilling has been inclined between 55 and 65 (125 holes) and 85 to 90 (64). 26 of the moderate to steeply inclined holes were drilled towards the ENE (69 degrees) and 90 were drilled towards the WSW (248 degrees) relative to AMG north. Consequently, the majority of the inclined holes are drilled orthogonally to the strike of the Mandamah mineralized zone and intercept it obliquely at depth.
	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 the drilling was oriented perpendicular to the general strike of the Mandamah deposit and it is considered that no sampling bias has been introduced.
Sample security	*The measures taken to ensure sample security.*	Sample storage undertaken by the previous owner of the project (Goldminco) was as follows: Half core diamond drill holes are stored on site in covered, plastic trays to minimise oxidation due to open air storage and weather. A number of early diamond drill holes are stored at the Londonderry Core farm. Crush rejects are stored for a short time at the laboratory before being flagged for disposal following acceptance of QAQC for the drill hole results. Pulps are disposed when the QAQC results of the drill hole are accepted, and the geology department has deemed there to be no further use for the pulps.

Criteria	JORC Code Explanation	Commentary
Audits or reviews	*The results of any audits or reviews of sampling techniques and data.*	The database was provided to a reputable independent external consultant by Goldminco in July 2011 who identified a number of issues, including dubious or incorrect collar coordinates, incorrect or missing down hole surveys, and missing or incorrect assays. Assays below detection versus unassayed intervals was another significant issue determined by the consultant. Most holes have some negative values, which were initially assumed to be assays below detection limit (BDL). For gold, values of -0.01 and -0.001 were recorded, while the other elements had values generally between -1 and -6. However, a substantial number of holes had only negative values for some elements and checking by Goldminco revealed that generally these holes were not assayed for those elements. Therefore, the independent consultant set all values in holes with only negative values to being absent. There remains the possibility that holes with a mixture of positive and negative values may include unassayed intervals where negative values occur. It was assumed that the negative values were BDL and were therefore multiplied by -0.5 to convert them to positive values at half the detection limit. Another possibility is that the negative values represent some unknown code. It was determined that further validation is required to ensure that database is accurate and complete. A further assessment of the database was undertaken by the Competent Person. No significant errors were found and it is considered that the data management processes in place are robust and adequate and believes that the database is an accurate representation of the project drilling data.

Section 2: Reporting of Exploration Results

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 Mandamah deposit is located 4km south of the town of Barmedman in central New South Wales, Australia. It falls completely within the confines of Exploration License EL6845 held by Sandfire Resources NL. The title is for Group 1 minerals and was granted on 03 August 2007. The expiry date is 03 August 2016 and renewal of the license has been sought. In addition to the statutory royalties payable to the New South Wales Department of Primary Industries for the right to extract and use the State's mineral resources, a portion of EL6845 (referred to as EL 2151) has an equitable 12.5% net profit interest royalty agreement with Lachlan Resources Pty Ltd, a wholly owned subsidiary of Barrick Gold Corporation. This area includes the Mandamah, Cullingerai and Estoril deposits.
	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.	There are no obvious impediments known to exist at this stage of exploration to obtaining a license to operate in this area.
Exploration done by other parties	*Acknowledgment and appraisal of exploration by other parties.*	The Mandamah deposit was discovered by Gold Mines of Australia in 1995 in EL2151 by pattern aircore drilling over the prospect area, identifying a large supergene Au anomaly at the base of a transported clay horizon and basement Cu anomaly in the underlying upper saprolite zone. Further work in 1996 by joint venture partner Placer included a gradient array IP survey, downhole geophysics, petrology, and aircore, RC, and diamond drilling along 200m spaced drill sections. Intermittent and discontinuous results along strike downgraded the deposit according to Placer Exploration who withdrew from the joint venture in 1999. Gold Mines of Australia went into receivership in 2000, and Goldfields Exploration (and subsequently named Aurion Gold Exploration) acquired the tenement and drilled 4 diamond holes into the Mandamah prospect. EL2151 was farmed out to Goldminco Corporation in 2004, and in 2007 the EL was grouped with the other Temora project ELs into a new single EL6845. Since announcing a maiden resource estimate for the Mandamah porphyry Cu-Au deposit in June 2008, Goldminco Corporation completed a further two diamond core holes, TMHD001 & 002. TMHD001 tested for along strike continuations to porphyry grade copper and gold mineralization to the south of the 2008 resource. The hole was completed to a final depth of 503m. From 290 to 340m the hole intersected a package of classic porphyry quartz/magnetite/K-feldspar/chalcopyrite/molybdenite seam veins within a broad interval of

Criteria	JORC Code Explanation	Commentary
		less intense quartz/chalcopyrite/molybdenite seam veins from 270 to 370m hosted by an alternating sequence of andesitic volcanics and volcaniclastics intruded by diorite porphyry. Assay results indicated two low grade porphyry intersections with the upper zone hosting a higher grade core from 299m averaging 29m @ 0.38% Cu and 0.30g/t Au which correlates well with the "classic" porphyry seam veins. Interestingly, the lower porphyry intersection contains strongly elevated molybdenum. Sandfire Resources NL acquired the project and EL6845 from Goldminco (then a wholly owned subsidiary of Straits Resources Limited) in October 2015.
Geology	*Deposit type, geological setting and style of mineralisation.*	The Mandamah copper-gold porphyry deposit is covered by 50 metres of alluvium which overlies a 30m thick, partially eroded saprolite zone. Supergene gold- and copper- rich zones have formed at the alluvium/saprolite interface and at the base of oxidation. The initial mineralising event at Mandamah was a porphyry-type copper-gold system that probably formed in the Early Silurian and appears to be the same age as the host unit. The porphyry system consists of a zoned alteration system together with copper-gold bearing quartz-sulphide veins. This initial mineral system was overprinted and modified by later deformation resulting in the development of high grade copper zones.
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; and* • *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 have been reported in this release.
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 results have been reported in this release.
	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.	No exploration results have been reported in this release.
	The assumptions used for any reporting of metal equivalent values should be clearly stated.	No exploration results have been reported in this release.
Relationship between mineralisation widths and intercept lengths	*These relationships are particularly important in the reporting of Exploration Results.*	No exploration results have been reported in this release.
	If the geometry of the mineralisation with respect to the drill-hole angle is known, its nature should be reported.	No exploration results have been reported in this release.
	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').	No exploration results have been reported in this release.

Criteria	JORC Code Explanation	Commentary
Diagrams	*Appropriate maps and sections (with scales) and tabulations of intercepts should be included for any significant discovery being reported These should include, but not be limited to a plan view of drill hole collar locations and appropriate sectional views.*	Location map shown in Figure 1 of this release. Other diagrams are appended to the end of this Table 1 document.
Balanced reporting	*Where comprehensive reporting of all Exploration Results is not practicable, representative reporting of both low and high grades and/or widths should be practiced to avoid misleading reporting of Exploration Results.*	No exploration results have been 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.*	Preliminary metallurgical test work for five deposits from the Temora area, including Yiddah, was completed by AMMTEC, Perth, during the period September 2008 to January 2009. Composites were prepared from single drillholes from each of the five deposits. Grinding tests on the composites were within the range seen for porphyry deposits in Arizona (USA and British Columbia (Canada). Due to a wide range of alteration styles across the Temora deposits, resulting in differences in sample hardness, a wide variation in grind time was necessary to achieve this size range across individual deposits, with relatively soft ore from Yiddah requiring shorter grind times. Flotation testing on the composites clearly demonstrated that at the right grind and reagent regime, copper recoveries of over 90% could be achieved at marketable concentrate grades of over 20%Cu and in all cases the copper floated exceedingly quickly.
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.*	• Continue infill drilling within the currently modeled resource outlines in order to increase the confidence in the geological and weathering models as well as establish grade continuity; • Continue with resource definition drilling to test strike potential; • Continue with district exploration incorporating current understanding of geological, structural and mineralisation controls at the existing Temora Prospects; • Expand and maintain an auditable quality assurance system for all ongoing data collection. • Continue with collection of SG measurements; and • Additional metallurgical test work to be undertaken as a routine part of exploration

Section 3: Estimation and Reporting of Mineral Resources

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 database used for the Mandamah resource modelling and estimation was extracted from the Goldminco Datashed database which is a professional relational SQL database management package. Datashed is an industry recognized data management system that utilizes rigorous data validation procedures during data entry along with enhanced security and flexible reporting to protect the exploration records.
	Data validation procedures used.	For the Mineral Resource, data tables were exported from the SQL database as comma separated files (CSV's) using export tools embedded with the database management system. These CSV files were then imported into a standalone Access database for the sole purpose of the estimation. The project records extracted from the master database have been checked and validated by an independent expert who found the database to be clean, consistent and free of obvious errors.
Site Visits	*Comment on any site visits undertaken by the Competent Person and the outcome of those visits.*	The 2011 resource estimate for the Mandamah deposit was estimated by Mr. Byron Dumpleton who was the Mineral Resource Manager for Straits Resources. Mr Dumpleton had visited the project site and had a good understanding of the project geology based on a detailed review of the mineralization in drill core and surface outcrop exposures. A project site visit was undertaken in March 2017 by the Competent Person to verify grade intersections were consistent with a visual inspection of mineralisation in the core.

Criteria	JORC Code Explanation	Commentary
	If no site visits have been undertaken indicate why this is the case.	Site visit was undertaken by an independent expert as outlined above.
Geological interpretation	*Confidence in (or conversely, the uncertainty of) the geological interpretation of the mineral deposit.*	Fresh rock hosted porphyry copper-gold mineralization at Mandamah is concealed by Quaternary aged transported cover and insitu weathered basement to depths approaching 100m. The weathered bedrock horizon hosts supergene enriched copper and gold mineralization. Copper-gold mineralization occurs in all lithologies and alteration styles without a clear geological boundary within the fresh rock environment. Therefore, the interpretation methodology was to define the boundaries between the transported oxide, weathered basement oxide and fresh rock interfaces.
	Nature of the data used and of any assumptions made.	Three composite files were created: one for samples that were contained above the base of weathered bedrock; one for samples that were below the base of weathered bedrock, and a third for samples that were below the base of weathered bedrock and in addition, within the solid used to constrain the earlier (2011) resource estimate. Compositing was conducted down hole at 4 metre intervals for oxide and 2 metre intervals for fresh rock. 4 metre composites were used for the oxide as most holes were assayed in 4 metre intervals through this zone. Minimum composite length accepted was 2 metres for oxide and 1 metre for fresh. The composite string files contained all the elements that were estimated (Au, Cu, Mo, Zn, Pb).
	The effect, if any, of alternative interpretations on Mineral Resource estimation.	The nature and extent of the mineralised domain comprising the Mandamah project is consistent with the geological models for the other projects comprising the Temora Project Area. Consequently, no alternative interpretations have been considered.
	The use of geology in guiding and controlling Mineral Resource estimation.	Other than the base of transported overburden and the base of weathering, no other geological feature was used to constrain the resource
	The factors affecting continuity both of grade and geology.	The nature, extent and intensity of porphyry-related alteration and proximity to the brittle-ductile structures comprising the Gilmore Fault Zone have a dominant influence on the mineralization grade and geology.
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 mineralized domains at Mandamah are sub-horizontal tabular-shaped solids measuring 800 metres along strike, 250 metres in width (plan) and extends 350 metres vertically beneath the surface.
Estimation and modelling techniques	*The nature and appropriateness of the estimation technique(s) applied and key assumptions, including treatment of extreme grade values, domaining, interpolation parameters and maximum distance of extrapolation from data points. If a computer assisted estimation method was chosen include a description of computer software and parameters used.*	Ordinary kriging was the preferred method of estimation of copper and gold for the oxide and copper, gold and molybdenum for the fresh rock domains. Molybdenum, lead and zinc within the oxide domain was estimated by inverse distance squared as was the lead and zinc within the fresh rock domain. All modeling was conducted using Surpac Version 6.2.2 software. Histogram analysis followed by 3D spatial analysis were the primary methods used to determine whether high grade cuts were required. Variography was conducted on the composites for Au, Cu and Mo using the Surpac variogram mapping tool. The copper downhole variography within the oxide domain showed a nugget component of 7%. The maximum direction of continuity was observed to be in the along strike direction 0° towards 150°, with the across strike direction 0° towards 240° as the secondary direction of continuity. The gold downhole variography within the oxide domain showed a nugget component of 28%. The maximum direction of continuity was observed to be in the along strike direction 0° towards 160°, with the across strike direction 0° towards 250° as the secondary direction of continuity. The copper downhole variography for the sulphide domain indicated a nugget component of 3%. The maximum direction of continuity was observed to be in the along strike direction 0° towards 160°, with the secondary direction of continuity at -80°towards 250°.

Criteria	JORC Code Explanation	Commentary
		The gold downhole variography for the sulphide domain indicated a nugget component of 20%. The maximum direction of continuity was observed to be in the along strike direction 0° towards 160°, with the secondary direction of continuity at -80° towards 250°.
		The molybdenum downhole variography for the sulphide domain indicated a nugget component of 17%. The maximum direction of continuity was observed to be shallow plunging along strike to the south, -20° towards 160°, with the secondary direction of continuity at -80° towards 250°.
		The ordinary kriged search routine parameters used for the oxide and sulphide gold and copper ore and the sulphide molybdenum ore interpolation are tabulated below:

Domain	Oxide Au	Oxide Cu	Fresh Au	Fresh Cu	Fresh Mo
Search Type	Ellipsoid	Ellipsoid	Ellipsoid	Ellipsoid	Ellipsoid
Min No of Composites	4	4	4	4	4
Max No of Composites	32	32	32	32	32
Search Distance Major Axis (m)	100	200	150	150	150
Bearing of Major Axis	160	150	160	160	160
Plunge of Major Axis	0	0	0	0	-20
Dip of Semi-Major Axis	0	0	-80	-80	-80
Major / Semi-Major Axis Ratio	1.8	1.5	2.2	1.5	2.0
Major / Minor Axis Ratio	8.0	7.0	3.0	3.0	3.0

A second pass estimate for oxide and fresh gold was completed with the same parameters but with the major search distance set to 200 and 300 metres respectively. A second pass for fresh molybdenum was completed with the same parameters but with the major search distance set to 300 metres.

The inverse distance squared search routine parameters used for the oxide and sulphide lead and zinc ores and the oxide molybdenum ore interpolation are tabulated below:

Domain	Oxide Mo	Oxide Pb Zn	Fresh Pb Zn
Search Type	Ellipsoid	Ellipsoid	Ellipsoid
Min Number of Composites	3	3	3
Max Number of Composites	32	32	32
Search Distance Major Axis (m)	200	150	150
Bearing of Major Axis	150	160	160
Plunge of Major Axis	0	0	0
Dip of Semi-Major Axis	0	0	-80
Major / Semi-Major Axis Ratio	1.5	1.5	1.5
Major / Minor Axis Ratio	10	10	1.5

Criteria	JORC Code Explanation	Commentary
	The availability of check estimates, previous estimates and/or mine production records and whether the Mineral Resource estimate takes appropriate account of such data.	An Inferred Mineral Resource Estimate was completed by Cube Consulting in 2008 and reported at a 0.25% CuEq cut-off. A total of 28.4Mt at 0.35% Cu and 0.40g/t Au was estimated for the Mandamah deposit.
	The assumptions made regarding recovery of by-products.	No assumptions were made regarding the recovery of by-products.
	Estimation of deleterious elements or other non-grade variables of economic significance (e.g. sulphur for acid mine drainage characterisation).	No estimation of potentially deleterious elements was undertaken.
	In the case of block model interpolation, the block size in relation to the average sample spacing and the search employed.	Data spacing was the primary consideration taken into account when selecting an appropriate estimation block size. The most common drillhole spacing is approximately 100 metres (north-south) x 50 metres (east-west) but is variable and can range from less than 40 metres and up to 200 metres. The metrics used for the Mandamah block model are tabulated below: (see table below)
	Any assumptions behind modelling of selective mining units.	Modelling was not reported to take into account the dimensions of selective mining units.
	Any assumptions about correlation between variables.	No correlation analysis was undertaken and consequently, no correlation relationships were used in the Resource estimation.
	Description of how the geological interpretation was used to control the resource estimates.	Other than the base of weathered boundary, the estimates were unconstrained, due primarily as the mineralised system appears to be diffuse and lacking any obvious hard boundaries. Statistical analysis does not show any obvious natural cut-off grade to the mineralisation and arbitrary grade boundaries tend to produce conditionally biased estimates around the boundary threshold.
	Discussion of basis for using or not using grade cutting or capping.	Details of the top cuts used are tabulated below. (see table below)

Type	Y	X	Z
Minimum Coordinates	6216050	534900	-117
Maximum Coordinates	6217550	535700	233
User Block Size	50	20	10
Min. Block Size	25	10	5
Rotation	0	0	0

Domain	Attribute	High Grade cut (ppm)	No of samples cut
Oxide	Au	10	1
	Cu	10,000	2
	Pb	260	1
	Zn	350	1
Fresh	Cu	20,000	3
	Mo	300	3
	Zn	2500	1

Criteria	JORC Code Explanation	Commentary
	The process of validation, the checking process used, the comparison of model data to drill hole data, and use of reconciliation data if available.	Only visual sectional and flitch validation on computer screen was conducted along with the block model cell volume vs the solid volume percentage variance checks for the Yiddah model. No swath plots were constructed as the resource is still at a preliminary stage and was only classified as Inferred.
Moisture	*Whether the tonnages are estimated on a dry basis or with natural moisture, and the method of determination of the moisture content.*	The tonnages have been estimated on a dry basis.
Cut-off parameters	*The basis of the adopted cut-off grade(s) or quality parameters applied.*	In March 2012, an Inferred Mandamah Resource (JORC 2004) was announced to the market by Straits Resources using a 0.3% Cu Equivalent cut-off using a Cu price of USD$7,900 and gold price of USD$1,765 per oz. No metal recoveries were used in the CuEq calculation. In order to comply with the JORC 2012 Code, the metal prices were adjusted to current prices and metallurgical recoveries were used based on the metallurgical testwork undertaken in 2008. A Cu Equivalent cut-off of 0.3% was chosen to model the overall extents of the copper and gold mineralisation at Mandamah reflecting the large scale generally low grade disseminated porphyry style mineralisation. The copper equivalent values are calculated according to the following formula and assumed metal prices and recoveries: Ceq = Cu % + Au g/t ((PAu* RecAu)/ (PCu* RecCu)) Cu price = 3.53 AUD$/lb Au Price = 1,600 AUD$/oz Cu Recovery = 90% Au Recovery = 75% Therefore, the value to be used is: Ceq = Cu % + Au g/t ((1600 / 31.1035 * 0.75) / (3.53 * 22.04 * 0.90)) Ceq = Cu % + (Au g/t * 0.55)
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.*	The Resource for Mandamah has been reported assuming open pit mining techniques would be implemented in the event the project is shown to be economically viable on a combined or standalone basis.
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.*	No metallurgical factors or assumptions (e.g. recoveries) have been incorporated into the resource estimate but have been included in the Cu Equivalent calculation used for reporting of the Mineral Resource. In 2008, a suite of drill core samples from the Yiddah, Mandamah, Dam, Cullingerai and Estoril Porphyry Copper-Gold deposits were sent for metallurgical testwork at AMMTEC laboratories in Perth. Samples were divided into high grade and low grade. An additional low grade bulk sample was also tested. Flotation testing demonstrated that copper recoveries of over 90% could be achieved at marketable concentrate grades over 20% Cu and in all cases the copper floated exceedingly quickly. The Mandamah deposit reported recoveries for low grade material at 80.2% for Cu and 71.7% for Au and 87.9% and 72.5% for Au for high grade.

<table>
<tr><th>Criteria</th><th>JORC Code Explanation</th><th>Commentary</th></tr>
<tr><td>Environmental factors or assumptions</td><td>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.</td><td>No environmental factors or assumptions (e.g. acid mine drainage considerations) have been incorporated into the resource estimate.</td></tr>
<tr><td rowspan="3">Bulk density</td><td>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.</td><td>Specific gravity values have been based on measurements of individual core samples conducted by on site personnel using the Archimedes Principle. The assigned density values represent the mean value for the given data set except for Mandamah fresh which has been assigned a density of 2.75.</td></tr>
<tr><td>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.</td><td>The procedure used is suitable for non-porous or very low porosity samples, which can be quickly weighed in water before saturation occurs.</td></tr>
<tr><td>Discuss assumptions for bulk density estimates used in the evaluation process of the different materials.</td><td>The specific gravity values assigned to each domain are tabled below:
<table>
<tr><th>Prospect</th><th>Oxidation</th><th>density</th></tr>
<tr><td rowspan="3">Mandamah</td><td>Transported</td><td>2.1</td></tr>
<tr><td>Oxide</td><td>2.2</td></tr>
<tr><td>Fresh</td><td>2.75</td></tr>
</table></td></tr>
<tr><td rowspan="3">Classification</td><td>The basis for the classification of the Mineral Resources into varying confidence categories.</td><td>The resource classification criteria used for the June 2011 Mandamah resource model is based on drill spacing and geological knowledge and confidence. All material at Mandamah is classified as Inferred.
The classification also considers the likely potential for economic development of the project using open cut mining methods by constraining the resource inside a Whittle optimized pit shell generated using optimistic input parameters and the pit shell with a revenue factor of 2 (see figure below).</td></tr>
<tr><td>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).</td><td>The criteria used to determine the classification are considered by the Competent Person to have been reasonably applied.</td></tr>
<tr><td>Whether the result appropriately reflects the Competent Person's view of the deposit.</td><td>The Mineral Resource has been classified into the confidence category of Inferred according primarily to sample density and geological confidence, and reflects the Competent Person's view on the deposit.</td></tr>
<tr><td>Audits or reviews</td><td>The results of any audits or reviews of Mineral Resource estimates.</td><td>An audit of the resource estimate was undertaken by the Competent Person who is an independent consultant and is a Competent Person as defined by the JORC Code, 2012 Edition, having five years' experience that is relevant to the style of mineralisation and type of deposit described in the Report and to the activity for which he is accepting responsibility. It was concluded that the model is a reasonable reflection of the current understanding of the geological and structural controls of the mineralisation in the project area and copper and gold grades based on the available drill hole assay data.</td></tr>
</table>

Criteria	JORC Code Explanation	Commentary
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 Mineral Resources has been reported in accordance with the guidelines of the 2012 edition of the Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves and reflects the relative accuracy of the Mineral Resources estimates.
	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.	The statement relates to a global estimate of tonnes and grade.
	These statements of relative accuracy and confidence of the estimate should be compared with production data, where available.	No mining activities have been undertaken at Mandamah and consequently, it is not possible to reconcile production data against the Mineral Resource Estimate.

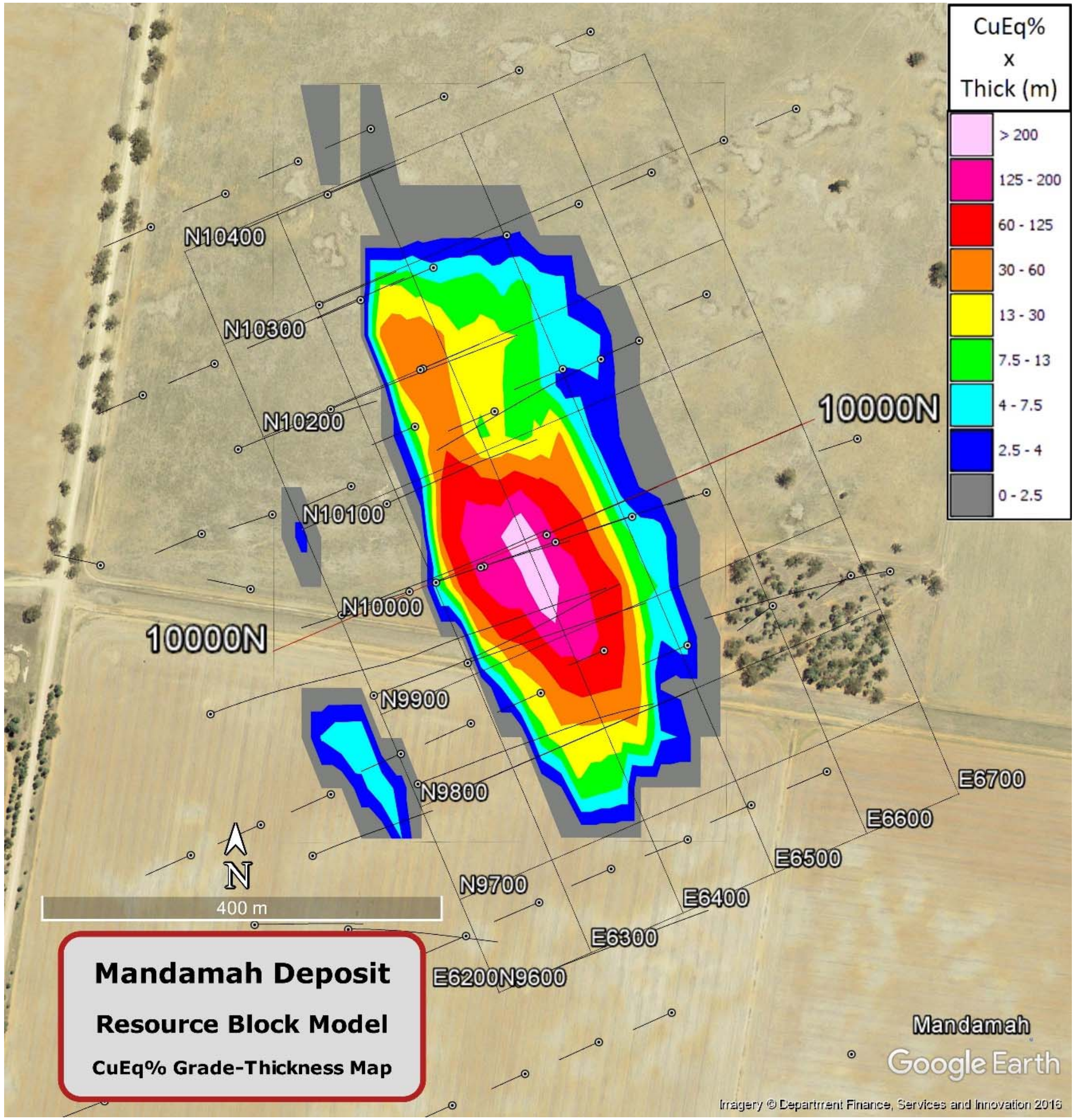


Figure: Plan view of drillhole locations and CuEq% Grade – Thickness Map.

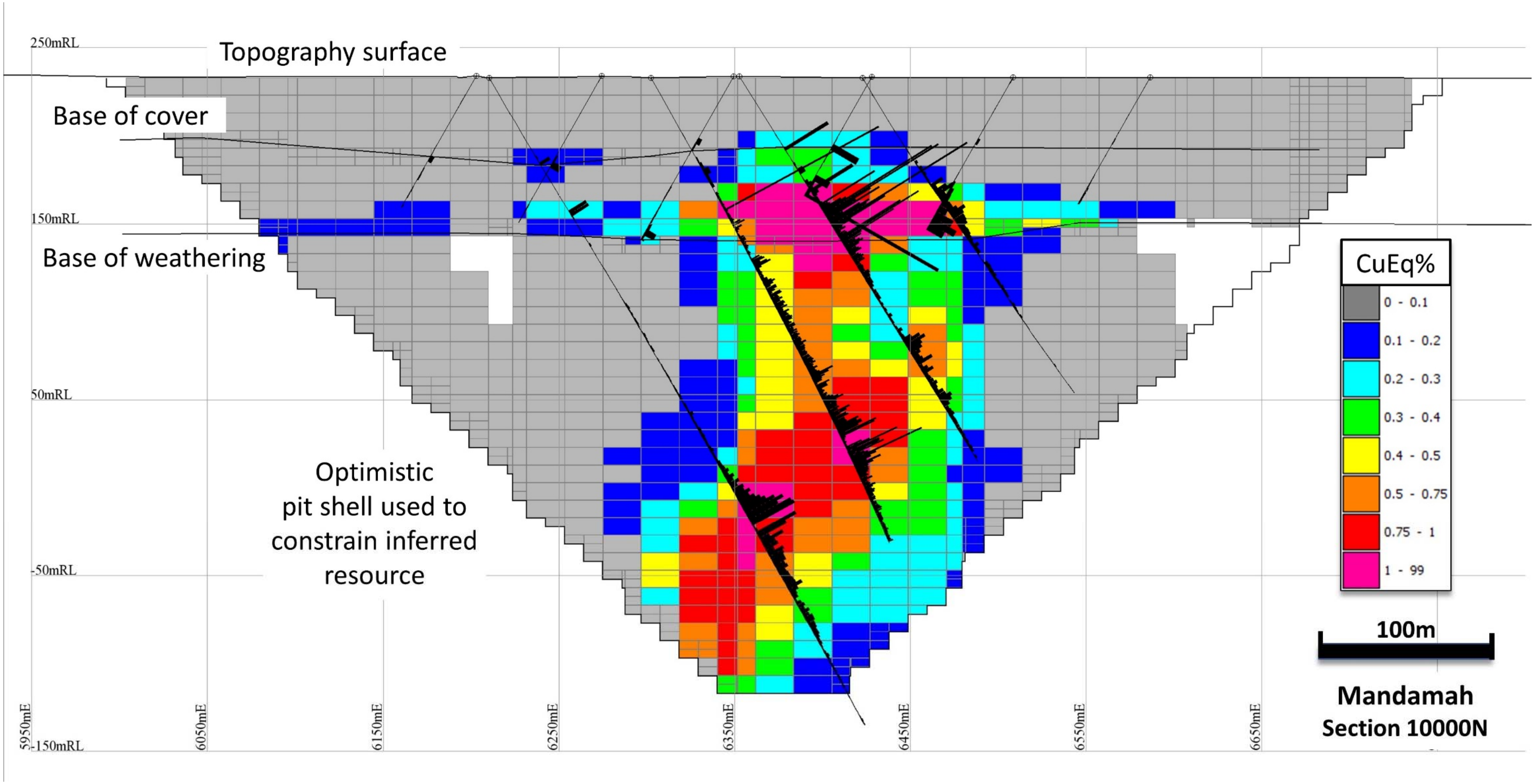


Figure: Cross Section showing optimistic pit shell.

Appendix 1 (continued) - JORC 2012 TABLE 1 MINERAL RESOURCE PARAMETERS – TEMORA PROJECT – Yiddah Project

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.*	Sampling techniques undertaken by previous owners include core sampling of NQ2 and/or NQ3 Diamond Drill (DDH) core; Reverse Circulation (RC) face sampling, Reverse Circulation face sampling with diamond tails (RCD), open-hole percussion (PER), air-core (AC) and rotary air blast (RAB) chip samples.
	Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.	Sampling techniques undertaken by previous owners include half core sampling of DDH core; RC samples collected by riffle splitter for single metre samples or sampling spear for composite samples; PER, AC and RAB samples collected using riffles splitters or a sampling spear. Sampling was undertaken by the then current owner's protocols and QAQC procedures as per the prevailing industry standards.
	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.*	Diamond drilling was used to obtain 3,373 one metre; 1,331 two metre and 90 one and a half metre samples along with significantly lesser quantities of other sample intervals varying from 3 metres to 0.4 metres. These samples comprised half core along with pulverized and riffle split half core products to achieve acceptable (representative) sample weights for analytical assay. RC drilling was used to obtain 1,206 two metre samples and 293 one metre samples. RCD drilling was used to obtain 1,084 one metre and 305 two metre samples along with significantly lesser quantities of other sample intervals varying from 2.3 metres to 0.4 metres. RAB drilling was used to obtain 150 three metre samples along with significantly lesser quantities of other sample intervals varying from 2.8 metres to 0.3 metre. AC drilling was used to obtain 2,508 two metre and 234 four metre samples along with significantly lesser quantities of other sample intervals varying from 3 metres to 1 metre. ACD drilling was used to obtain 3,163 one metre and 170 two metre samples along with significantly lesser quantities of other sample intervals varying from 4 metres to 0.3 metre.
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).*	The drilling database for the Yiddah project comprises the results from 85 air core (AC) holes totalling 6,516.5 metres; 32 rotary percussion (RP) holes totalling 3,499.5 metres; 16 diamond drill holes (DDH) totalling 6,374 metres consisting of HQ-size (331 metres), HQ3-size (3,961.2 metres), NQ size (932.6 metres) and NQ2-size (2,377.6 metres) with size of the remaining meterage not recorded in the database; 15 rotary air blast (RAB) holes totalling 1,155.2 metres; 18 reverse circulation (RC) holes totalling 4,409.6 metres; 8 air core (ACD) holes totalling 3,641.8 metres and 1 percussion (PER) hole totalling 109.7 metres. All available drilling results from 43 drillholes (current to 30 June 2012) were used for the Yiddah resource interpretation and estimation. These holes consisted of 22 DDH, 7 AC holes, and 14 RC holes. Of these, 15 diamond and 2 RC drill holes, of the "TYH" and "TYS" series, were drilled by Goldminco since 2007. Additionally, 7 AC holes, of the "TAC" series, were drilled by Goldminco between 2009 and 2010. The "YDH" series RC and diamond holes were drilled in 2000 by Goldfields/Aurion Gold. Historical percussion drillhole PB_1 was drilled by Endeavor Resources in 1981. Cyprus Amax drilled the "YHD/R" holes between 1997 and 1999, and the "1563" series holes (7 RC and 1 diamond) were drilled by Seltrust/Paragon/GMA during the early to mid-eighties.
Drill sample recovery	*Method of recording and assessing core and chip sample recoveries and results assessed.*	There are no documentation of core and chip recoveries within the Goldminco database for the Yiddah project.
	Measures taken to maximise sample recovery and ensure representative nature of the samples.	It is assumed that appropriate measures were taken by Goldminco to maximise sample recovery, however documentation is incomplete.

Criteria	JORC Code Explanation	Commentary
	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.	It is assumed that appropriate measures were taken by Goldminco to maximise sample recovery, however documentation is incomplete.
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.*	Project database records contain varyingly detailed geological logs of all drilling products describing regolith, colour, weathering, texture, grain size, principal and secondary lithologies along with qualitative and quantitative assessments of alteration, sulphide minerals, veining, non-sulphide minerals and remarks. The level of detail logged complies with the Inferred Mineral Resource classification for this project.
	Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc) photography.	The drilling products have been logged both qualitatively and quantitatively according to the particular attribute being assessed.
	The total length and percentage of the relevant intersections logged.	134 of the 175 or approximately 77% of the holes used for the resource modelling and estimation have been logged. Similarly, 21,713.67 metres from a total of 25,706.25 metres or approximately 84% of the metres drilled have been logged.
Sub-sampling techniques and sample preparation	*If core, whether cut or sawn and whether quarter, half or all core taken.*	Diamond drillcore of both NQ, NQ2, HQ and HQ3 size from drilling by Temora Goldfields was sawn in half by a diamond bladed core saw and half core was submitted for assay.
	If non-core, whether riffled, tube sampled, rotary split, etc and whether sampled wet or dry.	Reverse circulation drilling samples were split by riffle splitters with a sample of between 3 and 5 kilograms submitted to the laboratory.
	For all sample types, the nature, quality and appropriateness of the sample preparation technique.	The sub-sampling techniques and sample preparation methodologies have been undertaken using standard industry practices current at the time. These are considered to be appropriate for use in the ongoing assessment and development of the project.
	Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.	Half diamond drillcore was crushed by jaw crusher and a 3 kilogram split was pulverized to 70% passing -75 microns. Reverse circulation drill samples of less than 4 kilograms were pulverised entirely to 70% passing -75 micron in an LM5 pulverizer. Samples greater than 4 kilograms were sub split and half the sample was pulverized.
	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.	No records as to the use of duplicate and check sampling protocols and activities are evident in the Goldminco database.
	Whether sample sizes are appropriate to the grain size of the material being sampled	The sample sizes are appropriate to the porphyry and related styles of mineralisation.
Quality of assay data and laboratory tests	*The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total.*	PekoWallsend"s drilling of RC holes 1563H140, 141, 142 were sampled as 3m composites, and analysed by ALS Orange for Au by fire assay (PM209), and Cu, Pb, Zn, Ag AAS (G001) and As by AAS (G004). North drilling percussion holes 1563H143, 144 and RC hole 1563H145 were sampled every 2 metres and analysed by ALS Orange for Au by fire assay (PM209), and Cu and As by AAS (G001 and G004 respectively). North re-entered BP hole PY12, drilling diamond core which was cut in half and sampled as 2m composites, and was analysed by ALS Orange by AAS for Au by method FA50 and Cu, Pb, Zn, As, Ag by method D100. Yiddah RC holes YHR1-6 drilled by Cyprus were analysed by ALS Orange using techniques PM209 for Au and IC581 for Cu, Pb, Zn, Ag, As, Bi, Mo. Yiddah diamond core holes YHD7-9 drilled by Cyprus were analysed by ALS Orange using techniques PM209 for Au and IC581 for Cu, Pb, Zn, Ag, As, Bi, Mo, Sb, S. Samples from recent drilling by Goldminco were submitted to the SGS Laboratory at West Wyalong for analysis. Aircore and half core samples and standards every 50 samples were sent to the SGS laboratory in West Wyalong for analysis. Samples between 1 and 3.5kg are dried, crushed, milled to <75 microns, and split for Au analysed by fire assay with AAS finish (FAA505) at West Wyalong.

Criteria	JORC Code Explanation	Commentary
	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.	No geophysical tools were used to analyse the drilling products
	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.	Check repeats were done for Au and the base metals every ten or so samples for RC drilling undertaken by PekoWallsend. Check repeats for Au were done every 10 or so samples, and it is assumed that standards were used following normal industry practice for percussion holes drilled by North. Drilling undertaken by Cyprus used Standards, along with check assays which were done every ten or so samples on the Au, with duplicates analysed using technique PM209, and where Cu was greater than 1% the sample was re-assayed using technique A101. Repeats and second splits were analysed every twenty samples for drilling undertaken by Goldminco. In addition, a separate small subsample was sent to the SGS laboratory in Townsville for Cu, Pb, Zn, As, Ag, Mo and S analysis by ICP21R using 3 acid digestion and AAS22D for when elements are above normal detection limits.
Verification of sampling and assaying	*The verification of significant intersections by either independent or alternative company personnel.*	A program of external quality control (QC) and quality assurance (QA) has been applied by Goldminco to check for contamination, accuracy and precision. An Independent assessment of the results of historic (in house) and current certified standards and laboratory duplicates has been undertaken. Blanks are not currently inserted externally by Goldminco but the results of internal laboratory blanks are made available to Goldminco. A visual inspection of these results did not appear show any significant sample contamination issues. Goldminco inserted a certified standard for every 50 samples submitted for assay which was inserted in the sample stream prior to the samples leaving site. The available QAQC assay data for the project was reviewed with respect to QAQC performance. From a total of 104 gold and 34 copper QAQC samples submitted, 3 gold and 1 copper sample were identified as exceeding the sample variance limits (3SD). The number of errors found is not considered significant and could largely be explained by sample switches. The standards used comprise historic in-house (uncertified) standards and more recently certified standards supplied by Ore Research and Exploration. Overall, the standards have performed well and indicate the sample data is of an acceptable standard. The drill core from 3 diamond drill holes, TYHD002, TYSD005 and TYHD013 which intersected significant mineralisation were checked by the Competent Person.
	The use of twinned holes.	There are no known twinned holes drilled for the Mineral Resource.
	Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.	Results for QAQC samples are assessed on a batch by batch manner, at the time of uploading drill sample assays to the Acquire database. The Acquire database reports on the performance of the QAQC samples against the expected result and within tolerance limits. If the QAQC samples fail the batch report, the Geologist investigates the occurrence and actions either a) acceptance of the result into the database or b) reject the result and organised a re-assay of the sample with the laboratory.
	Discuss any adjustment to assay data.	No adjustment was made to the raw 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.*	Collar surveys, where disclosed, were undertaken using GPS technology. Downhole surveys were varyingly undertaken using a variety of technologies including single- and multi-shot, gyroscopic and north seeking gyroscopic instruments.
	Specification of the grid system used.	Collar and down hole azimuths used for the Yiddah Resource interpretation and estimation is based on AGD 66, Zone 55 datum. This was selected as all historical survey data were stored in AGD 66.

Criteria	JORC Code Explanation	Commentary
	Quality and adequacy of topographic control.	The drill hole collars were surveyed using GPS technology and these were used to build the topographic surface which is relatively flat.
Data spacing and distribution	*Data spacing for reporting of Exploration Results.*	The holes used for the resource estimation were drilled over approximately 1,500 metres strike length to a maximum vertical depth of 420 metres. The drill sections are spaced approximately 200m apart with each section having 2 or more holes.
	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.	Resource definition drill spacing and distribution of exploration results is sufficient to support Mineral Resource Estimation procedures.
	Whether sample compositing has been applied.	No sample compositing has been applied to the exploration results.
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.*	The range in declination of the drilling has been inclined between 59 and 65 (62 holes); 65 to 75 (17 holes); 75 to 85 (3) and 85 to 90 (93). All the moderate to steeply inclined holes are drilled towards 250 degrees relative to AMG north. Consequently, the majority of the inclined holes are drilled orthogonally to the strike of the Yiddah mineralized zone and intercept it obliquely at depth.
	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 the drilling was oriented perpendicular to the general strike of the Yiddah deposit and it is considered that no sampling bias has been introduced.
Sample security	*The measures taken to ensure sample security.*	Sample storage undertaken by the previous owner of the project (Goldminco) was as follows: • Half core diamond drill holes are stored on site in covered, plastic trays to minimise oxidation due to open air storage and weather; • A number of early diamond drill holes are stored at the Londonderry Core farm; • Crush rejects are stored for a short time at the laboratory before being flagged for disposal following acceptance of QAQC for the drill hole results; and • Pulps are disposed when the QAQC results of the drill hole are accepted, and the geology department has deemed there to be no further use for the pulps.
Audits or reviews	*The results of any audits or reviews of sampling techniques and data.*	The database was provided to a reputable independent external consultant by Goldminco in July 2011 who identified a number of issues, including dubious or incorrect collar coordinates, incorrect or missing down hole surveys, and missing or incorrect assays. Assays below detection versus unassayed intervals was another significant issue determined by the consultant. Most holes have some negative values, which were initially assumed to be assays below detection limit (BDL). For gold, values of -0.01 and -0.001 were recorded, while the other elements had values generally between -1 and -6. However, a substantial number of holes had only negative values for some elements and checking by Goldminco revealed that generally these holes were not assayed for those elements. Therefore, the independent consultant set all values in holes with only negative values to being absent. There remains the possibility that holes with a mixture of positive and negative values may include unassayed intervals where negative values occur. It was assumed that the negative values were BDL and were therefore multiplied by -0.5 to convert them to positive values at half the detection limit. Another possibility is that the negative values represent some unknown code. A further assessment of the database was undertaken by the Competent Person. No significant errors were found and it is considered that the data management processes in place are robust and adequate and believes that the database is an accurate representation of the project drilling data.

Section 2: Reporting of Exploration Results

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 Yiddah Project is located approximately 15 kilometres south of the town of West Wyalong in central New South Wales, Australia. It falls completely within the confines of Exploration License EL6845 held by Sandfire Resources NL. The title is for Group 1 minerals and was granted on 03 August 2007. The expiry date is 03 August 2016 and renewal of the license has been sought.
	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.	There are no obvious impediments known to exist at this stage of exploration to obtaining a license to operate in this area.
Exploration done by other parties	*Acknowledgment and appraisal of exploration by other parties.*	The Yiddah prospect was discovered in the mid-1970's by Le Nickel Exploration Pty Ltd using geological mapping, soil geochemistry and ground magnetic surveys. Between 1981 and 1983, Endeavour Resources and Base Resources geological mapped, rock chip sampled, geochemical surveyed, did geophysical IP and magnetic surveys, and drilled limited percussion and diamond drillholes. Seltrust Gold and Base Resources (1983-1985) rock chip sampled and mapped Yiddah, plus drilled 23 RC percussion holes and did 5 IP surveys. In 1985-1986, Paragon Gold and Base Resources collected more ground magnetic data and selectively re-assayed Endeavour Resources hole PB1. Between 1986 and 1990, Paragon Gold and Central Murchison Gold collected soil samples west of the Yiddah prospect. Between 1990 and 1994, Peko Wallsend and Paragon Gold geological mapped, rock chip sampled, flew an aeromagnetic survey at 200m flight height, drilled numerous RAB and RC and a diamond hole PY12, collected BLEG soil samples, and did ground magnetic traverses. Gold Mines of Australia and North Mining between 1994 and 1996 flew an aeromagnetic and radiometric survey at 50m line spacing and height, collected infill gravity data and additional soil samples, and petrology on drillcore from PY12, and summarised previous exploration. Cyprus Gold Australia between 1997 and 2000 soil sampled, collected ground magnetics, did two IP traverses, and drilled 6 RC holes and 3 diamond holes. Goldfields Exploration (and subsequently named Aurion Gold Exploration) purchased airborne EM data flown by government body AGSO, assayed AGSO drillholes, drilled 1 RC and 3 diamond holes, and to the west of Yiddah drilled 28 aircore holes. In 2004, EL5737 was farmed out to Goldminco Corporation, and in 2007 EL5737 was grouped with the other Temora tenements into a new single EL6845. Goldminco Corporation drilled 4 diamond holes at the Yiddah prospect in early 2008, and released a maiden resource estimate of 60Mt @ 0.35% Cu and 0.13g/t Au. Since 2008, extensive drilling has been undertaken at the Yiddah prospect, including 64 air core holes for a total of 5079m, 7 RC holes for 1396m, and 21 air core pre-collared diamond drillholes for a total of 7202.5m. Additionally, a 50m line-spaced ground magnetic survey and a regional gravity survey (250m station spacing) was undertaken over the Yiddah area during the 2009-2010 reporting period to improve geological understanding and aid in future targeting. Sandfire Resources NL acquired the project and EL6845 from Goldminco (then a wholly owned subsidiary of Straits Resources Limited) in October 2015.
Geology	*Deposit type, geological setting and style of mineralisation.*	Yiddah is hosted along the east margin of the Gidginbung volcanics, which are characterized as an attenuated sequence of altered andesite volcanics and volcaniclastics with some rare intrusives, consisting primarily of the Yiddah Monzodiorite and associated dykes and small stocks in the Yiddah area. The Yiddah Monzodiorite is a medium to coarse grained equigranular intrusive located west of Yiddah. It is interpreted to be equivalent to the Rain Hill Monzodiorite with gravity modelling suggesting the two are part of one continuous body at depth. The eastern contact of the Yiddah Monzodiorite dips steeply toward the east. The diorite/monzodiorite porphyries occur within the mineralized domain and dip moderately to steeply east. From south to north they progress from being dyke/sill-like to increasingly stock-like in appearance. Intense alteration and foliation development overprints the Yiddah system. An outer pervasive quartz, sericite, pyrite wash was intersected in drilling, producing low grade intercepts and broken core. The higher grades occur in the inner zone, which consists of intense chlorite, magnetite, sericite alteration with mineralised seam quartz-magnetite-chalcopyrite veins. Locally, shearing and associated alteration is

Criteria	JORC Code Explanation	Commentary
		interpreted to improve grade. Metal distribution at Yiddah suggests Cu-Mo dominant at the upper-western limit to increasingly gold rich and Mo poor to the east. The overall mineralized domain for Yiddah dips steeply east. Mineralisation consists predominantly of quartz vein hosted and disseminated, low grade copper-gold-molybdenite mineralisation, which typically occurs within the volcaniclastics on the margins of small diorite to monzodiorite porphyry stocks and dykes. A strong phyllic alteration zone, which post-dates Cu-Au-Mo mineralisation, bounds the hanging wall margin of the main porphyry system. Recent drilling has identified the eastern margin of the phyllic zone and scope remains for the detection of further Cu-Au-Mo mineralisation east of this 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; and* • *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 have been reported in this release.
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 results have been reported in this release.
	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.	No exploration results have been reported in this release.
	The assumptions used for any reporting of metal equivalent values should be clearly stated.	No exploration results have been reported in this release.
Relationship between mineralisation widths and intercept lengths	*These relationships are particularly important in the reporting of Exploration Results.*	No exploration results have been reported in this release.
	If the geometry of the mineralisation with respect to the drill-hole angle is known, its nature should be reported.	No exploration results have been reported in this release.
	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').	No exploration results have been 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.*	Location map shown in Figure 1 of this release. Other diagrams are appended to the end of this Table 1 document.
Balanced reporting	*Where comprehensive reporting of all Exploration Results is not practicable, representative reporting of both low and high grades and/or widths should be practiced to avoid misleading reporting of Exploration Results.*	No exploration results have been reported in this release.

Criteria	JORC Code Explanation	Commentary
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.*	Preliminary metallurgical test work for five deposits from the Temora area, including Yiddah, was completed by AMMTEC, Perth, during the period September 2008 to January 2009. Composites were prepared from single drillholes from each of the five deposits. Grinding tests on the composites were within the range seen for porphyry deposits in Arizona (USA and British Columbia (Canada). Due to a wide range of alteration styles across the Temora deposits, resulting in differences in sample hardness, a wide variation in grind time was necessary to achieve this size range across individual deposits, with relatively soft ore from Yiddah requiring shorter grind times. Flotation testing on the composites clearly demonstrated that at the right grind and reagent regime, copper recoveries of over 90% could be achieved at marketable concentrate grades of over 20%Cu and in all cases the copper floated exceedingly quickly.
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.*	Continue infill drilling within the currently modeled resource outlines in order to increase the confidence in the geological and weathering models as well as establish grade continuity; Continue with resource definition drilling to test strike potential; Continue with district exploration incorporating current understanding of geological, structural and mineralisation controls at the existing Temora Prospects; Expand and maintain an auditable quality assurance system for all ongoing data collection. Continue with collection of SG measurements; Additional metallurgical test work to be undertaken as a routine part of exploration

Section 3: Estimation and Reporting of Mineral Resources

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 database used for the Yiddah resource modelling and estimation was extracted from the Goldminco Datashed database which is a professional relational SQL database management package. Datashed is an industry recognized data management system that utilizes rigorous data validation procedures during data entry along with enhanced security and flexible reporting to protect the exploration records.
	Data validation procedures used.	For the Mineral Resource, data tables were exported from the SQL database as comma separated files (CSV's) using export tools embedded with the database management system. These CSV files were then imported into a standalone Access database for the sole purpose of the estimation. The project records extracted from the master database have been checked and validated by an independent expert who found the database to be clean, consistent and free of obvious errors.
Site Visits	*Comment on any site visits undertaken by the Competent Person and the outcome of those visits.*	The 2011 resource estimate for the Yiddah deposit was estimated by Mr. Byron Dumpleton who was the Mineral Resource Manager for Straits Resources. Mr Dumpleton had visited the project site and had a good understanding of the project geology based on a detailed review of the mineralization in drill core and surface outcrop exposures. A project site visit was undertaken in March 2017 by the Competent Person to verify grade intersections were consistent with a visual inspection of mineralisation in the core.
	If no site visits have been undertaken indicate why this is the case.	Site visit was undertaken by an independent expert as outlined above.
Geological interpretation	*Confidence in (or conversely, the uncertainty of) the geological interpretation of the mineral deposit.*	Porphyry copper-gold mineralisation at Yiddah is hosted in intensely altered and fractured rock in the hanging wall of a steeply east-dipping fault, which follows the margin of the Yiddah Monzodiorite, with higher grades associated with the sericite-chlorite-magnetite-bearing assemblage. The main emphasis of the interpretation methodology was to delineate a single solid defining the sericite-chlorite-magnetite alteration zone, and differentiate between the weathered oxide zone and the fresh rock below.

Criteria	JORC Code Explanation	Commentary
	Nature of the data used and of any assumptions made.	Two composite string files were created, one for samples that were contained within the sericite-chlorite-magnetite alteration zone, and one for "all" drillhole samples across the orebody. Compositing was conducted down hole at 2 metre intervals for the chlorite-magnetite zone and at 4 metres for the "all" file. Minimum composite length accepted was 1 metre within the chlorite-magnetite zone and 2 metres for "all" drillholes. The alteration composite string file contains composites for Au, Cu and Mo while the "all" composite string contains composites all elements to be estimated (Cu, Au, Mo, As, Zn, Pb, and S).
	The effect, if any, of alternative interpretations on Mineral Resource estimation.	The nature and extent of the mineralised domain comprising the Yiddah project is consistent with the geological models for the other projects comprising Temora Project Area. Consequently, no alternative interpretations have been considered.
	The use of geology in guiding and controlling Mineral Resource estimation.	As outlined above, lithology, alteration, veining and mineralisation characteristics, where available, were used to define the mineralized domain.
	The factors affecting continuity both of grade and geology.	The nature, extent and intensity of porphyry-related alteration and proximity to the brittle-ductile structures comprising the Gilmore Fault Zone have a dominant influence on the mineralisation grade and geology.
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 overall mineralised system at Yiddah extends for 3.8kms along strike with a maximum width of 550m and depth of 450m. The actual reported Mineral Resource using a CuEq cut-off of 0.3% extends for 2kms along strike with a maximum width of 250m and extends down to 430m below the surface.
Estimation and modelling techniques	*The nature and appropriateness of the estimation technique(s) applied and key assumptions, including treatment of extreme grade values, domaining, interpolation parameters and maximum distance of extrapolation from data points. If a computer assisted estimation method was chosen include a description of computer software and parameters used.*	Estimates were completed for Cu-Au-Mo-As-Pb-Zn and S within both the oxide and sulphide zones. Ordinary kriging was used to estimate oxide Au and sulphide Au-Cu-Mo while inverse distance weighting was used to estimate oxide Cu-Pb-Zn-S and sulphide Pb-Zn-S. All modeling was conducted using Surpac Version 6.2.2 software. No high grade cuts were applied to the Yiddah resource estimate. Variography was conducted on the composites for Au, Cu and Mo using the Surpac variogram mapping tool. Gold variography was completed for the chlorite-magnetite alteration zone. A lower and upper grade cut of 0.01 and 0.5g/t Au was applied. The downhole variography indicates a nugget component of 17%. The maximum direction of continuity was observed to be in the along strike direction 0° towards 160°, with the secondary direction of continuity at -80°towards 070°. The nugget and first structure account for approximately 50% of the total variance. Copper variography was completed for the chlorite-magnetite alteration zone. A lower and upper grade cut of 250 and 10,000ppm Cu was applied. The downhole variography indicates a nugget component of 6%. The maximum direction of continuity was observed to be in the along strike direction 0° towards 160°, with the secondary direction of continuity at -80°towards 070°. The nugget and first structure account for approximately two thirds of the total variance. The variography indicates similar ranges for both gold and copper in the along strike direction but higher levels of copper continuity in the down dip and across strike directions. The molybdenum mineralisation tends to form a halo around the copper and gold mineralization and therefore over laps the alteration domain. Therefore, molybdenum variography was completed using the "all" composite file. A lower and upper grade cut of 1 and 75ppm was applied. The downhole variography indicates a nugget component of 13%. The maximum direction of continuity was observed to be in the along strike direction 0° towards 160°, with the secondary direction of continuity at -60° towards 250°.

Criteria	JORC Code Explanation	Commentary
		The ordinary kriged search routine parameters used for the sulphide gold and copper ore interpolation are tabulated below:

Estimate	Au1	Au2	Cu1	Cu2
Search Type	Ellipsoid	Ellipsoid	Ellipsoid	Ellipsoid
Min Number of Composites	4	4	4	4
Max Number of Composites	16	16	16	16
Search Distance Major Axis (m)	300	300	300	300
Bearing of Major Axis	160	160	160	160
Plunge of Major Axis	0	0	0	0
Dip of Semi-Major Axis	-80 to 070	-80 to 070	-80 to 070	-80 to 070
Major / Semi-Major Axis Ratio	2	2	2	2
Major / Minor Axis Ratio	4	4	4	4

The ordinary kriged search routine parameters used for the sulphide molybdenum ore interpolation are tabulated below:

Estimate	Sulphide Mo
Search Type	Ellipsoid
Min Number of Composites	4
Max Number of Composites	16
Search Distance Major Axis (m)	300
Bearing of Major Axis	160
Plunge of Major Axis	0
Dip of Semi-Major Axis	-60 to 250
Major / Semi-Major Axis Ratio	1.5
Major / Minor Axis Ratio	2

The inverse distance squared search routine parameters used for the sulphide ore interpolation of the remaining elements are tabulated below:

Estimate	Sulphide As-Pb-Zn-S
Search Type	Ellipsoid
Min Number of Composites	4
Max Number of Composites	16
Search Distance Major Axis (m)	300
Bearing of Major Axis	160

<table>
<tr><th>Criteria</th><th>JORC Code Explanation</th><th>Commentary</th></tr>
<tr><td></td><td></td><td>
<table>
<tr><td>Plunge of Major Axis</td><td>0</td></tr>
<tr><td>Dip of Semi-Major Axis</td><td>-80 to 070</td></tr>
<tr><td>Major / Semi-Major Axis Ratio</td><td>1.5</td></tr>
<tr><td>Major / Minor Axis Ratio</td><td>2</td></tr>
</table>
The inverse distance squared search routine parameters used for the oxide ore interpolation for all elements are tabulated below:
<table>
<tr><th>Estimate</th><th>Oxide Au-Cu-Mo-Pb-Zn-S</th></tr>
<tr><td>Search Type</td><td>Ellipsoid</td></tr>
<tr><td>Min Number of Composites</td><td>4</td></tr>
<tr><td>Max Number of Composites</td><td>16</td></tr>
<tr><td>Search Distance Major Axis (m)</td><td>300</td></tr>
<tr><td>Bearing of Major Axis</td><td>160</td></tr>
<tr><td>Plunge of Major Axis</td><td>0</td></tr>
<tr><td>Dip of Semi-Major Axis</td><td>0</td></tr>
<tr><td>Major / Semi-Major Axis Ratio</td><td>2</td></tr>
<tr><td>Major / Minor Axis Ratio</td><td>3</td></tr>
</table>
</td></tr>
<tr><td></td><td>The availability of check estimates, previous estimates and/or mine production records and whether the Mineral Resource estimate takes appropriate account of such data.</td><td>An Inferred Mineral Resource Estimate was completed by Cube Consulting in 2008 and reported at a 0.25% CuEq cut-off. A total of 61.2Mt at 0.35% Cu and 0.13g/t Au was estimated for the Yiddah deposit.</td></tr>
<tr><td></td><td>The assumptions made regarding recovery of by-products.</td><td>No assumptions were made regarding the recovery of by-products.</td></tr>
<tr><td></td><td>Estimation of deleterious elements or other non-grade variables of economic significance (e.g. sulphur for acid mine drainage characterisation).</td><td>The estimation of potentially deleterious elements was undertaken for sulphur.</td></tr>
<tr><td></td><td>In the case of block model interpolation, the block size in relation to the average sample spacing and the search employed.</td><td>Data spacing was the primary consideration taken into account when selecting an appropriate estimation block size. The most common drillhole spacing at Yiddah is approximately 200 metres (north-south) x 50 metres (east-west) but is variable and can range from less than 40 metres and up to 200 metres.
The metrics used for the Yiddah block model are tabulated below:
<table>
<tr><th>Type</th><th>Y</th><th>X</th><th>Z</th></tr>
<tr><td>Minimum Coordinates</td><td>6230200</td><td>529400</td><td>-200</td></tr>
<tr><td>Maximum Coordinates</td><td>6234000</td><td>531620</td><td>260</td></tr>
<tr><td>User Block Size</td><td>100</td><td>30</td><td>20</td></tr>
<tr><td>Min. Block Size</td><td>50</td><td>15</td><td>10</td></tr>
<tr><td>Rotation</td><td>0</td><td>0</td><td>0</td></tr>
</table>
</td></tr>
</table>

Criteria	JORC Code Explanation	Commentary
	Any assumptions behind modelling of selective mining units.	Modelling was not reported to take into account the dimensions of selective mining units.
	Any assumptions about correlation between variables.	No correlation analysis was undertaken and consequently, no correlation relationships were used in the Resource estimation.
	Description of how the geological interpretation was used to control the resource estimates.	A single solid defining the sericite-chlorite-magnetite alteration zone, and the boundary separating the weathered oxide zone from the fresh rock below were used to constrain the estimation.
	Discussion of basis for using or not using grade cutting or capping.	Rigorous statistical analysis of the individual elements modelled resulted in there being no need for 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.	Only visual sectional and flitch validation on computer screen was conducted along with the block model cell volume vs the solid volume percentage variance checks for the Yiddah model. No swath plots were constructed as the resource is still at a preliminary stage and was only classified as Inferred.
Moisture	*Whether the tonnages are estimated on a dry basis or with natural moisture, and the method of determination of the moisture content.*	The tonnages have been estimated on a dry basis.
Cut-off parameters	*The basis of the adopted cut-off grade(s) or quality parameters applied.*	In March 2012, an Inferred Yiddah Resource (JORC 2004) was announced to the market by Straits Resources using a 0.3% Cu Equivalent cut-off using a Cu price of USD$7,900 and gold price of USD$1,765 per oz. No metal recoveries were used in the CuEq calculation. In order to comply with the JORC 2012 Code, the metal prices were adjusted to current prices and metallurgical recoveries were used based on the metallurgical testwork undertaken in 2008. A Cu Equivalent cut-off of 0.3% was chosen to model the overall extents of the copper and gold mineralisation at Yiddah reflecting the large scale generally low grade disseminated porphyry style mineralisation. The copper equivalent values are calculated according to the following formula and assumed metal prices and recoveries: Ceq = Cu % + Au g/t ((PAu* RecAu)/ (PCu* RecCu)) Cu price = 3.53 AUD$/lb Au Price = 1,600 AUD$/oz Cu Recovery = 90% Au Recovery = 75% Therefore, the value to be used is: Ceq = Cu % + Au g/t ((1600 / 31.1035 * 0.75) / (3.53 * 22.04 * 0.90)) Ceq = Cu % + (Au g/t * 0.55)
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.*	The Resource for Yiddah has been reported assuming open pit mining techniques would be implemented in the event the project is shown to be economically viable on a combined or standalone basis.

Criteria	JORC Code Explanation	Commentary
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.*	No metallurgical factors or assumptions (e.g. recoveries) have been incorporated into the resource estimate but have been included in the Cu Equivalent calculation used for reporting of the Mineral Resource. In 2008, a suite of drill core samples from the Yiddah, Mandamah, Dam, Cullingerai and Estoril Porphyry Copper-Gold deposits were sent for metallurgical testwork at AMMTEC laboratories in Perth. Samples were divided into high grade and low grade. An additional low grade bulk sample was also tested. Flotation testing demonstrated that copper recoveries of over 90% could be achieved at marketable concentrate grades over 20% Cu and in all cases the copper floated exceedingly quickly. The Yiddah deposit was shown to be the best performing with copper recoveries for low grade material at 91.7% and 93.6% for high grade.
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.*	No environmental factors or assumptions (e.g. acid mine drainage considerations) have been incorporated into the resource estimate.
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.*	Specific gravity values have been based on measurements of individual core samples conducted by Goldminco site personnel using the Archimedes Principle. The assigned density values represent the mean value for the given data set. The model is divided into two density zones, which are defined as oxide from the surface to the base of weathering and fresh rock occurring below the base of weathering.
	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.	The procedure used is suitable for non-porous or very low porosity samples, which can be quickly weighed in water before saturation occurs.
	Discuss assumptions for bulk density estimates used in the evaluation process of the different materials.	Density values of 2.71 tonnes per cubic metre (t/m3) for fresh rock and 2.20 t/m3 for oxidized rock was used for the Yiddah resource model.
Classification	*The basis for the classification of the Mineral Resources into varying confidence categories.*	The resource classification criteria used for the June 2011 Yiddah resource model is based on drill spacing and geological knowledge and confidence. All material at Yiddah is classified as Inferred. The classification also considers the likely potential for economic development of the project using open cut mining methods by constraining the resource inside a Whittle optimized pit shell generated using optimistic input parameters and the pit shell with a revenue factor of 2 (Figure 2).
	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).	The criteria used to determine the classification are considered by the Competent Person to have been reasonably applied.
	Whether the result appropriately reflects the Competent Person's view of the deposit.	The Mineral Resource has been classified into the confidence category of Inferred according primarily to sample density and geological confidence, and reflects the Competent Person's view on the deposit.
Audits or reviews	*The results of any audits or reviews of Mineral Resource estimates.*	An audit of the resource estimate was undertaken by the Competent Person who is an independent consultant and is a Competent Person as defined by the JORC Code, 2012 Edition, having five years' experience that is relevant to the style of mineralisation and type of deposit described in the Report and to the activity for which he is accepting responsibility. It was concluded that the model is a reasonable reflection of the current understanding of the geological and structural controls of the mineralisation in the project area and copper and gold grades based on the available drill hole assay data.

Criteria	JORC Code Explanation	Commentary
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 Mineral Resources has been reported in accordance with the guidelines of the 2012 edition of the Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves and reflects the relative accuracy of the Mineral Resources estimates.
	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.	The statement relates to a global estimate of tonnes and grade.
	These statements of relative accuracy and confidence of the estimate should be compared with production data, where available.	No mining activities have been undertaken at Yiddah and consequently, it is not possible to reconcile production data against the Mineral Resource Estimate.

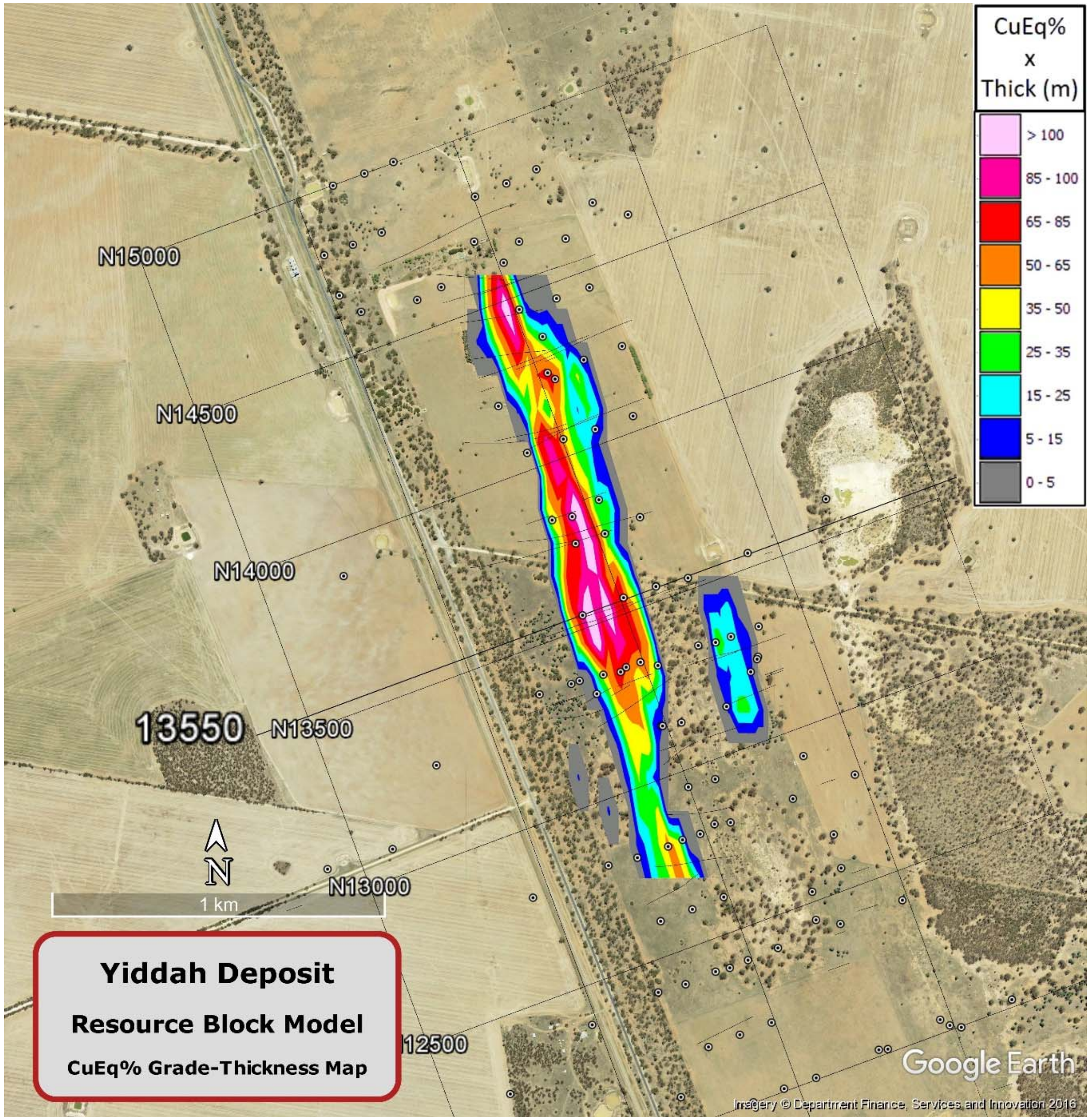


Figure: Plan view of drillhole locations and CuEq% Grade – Thickness Map

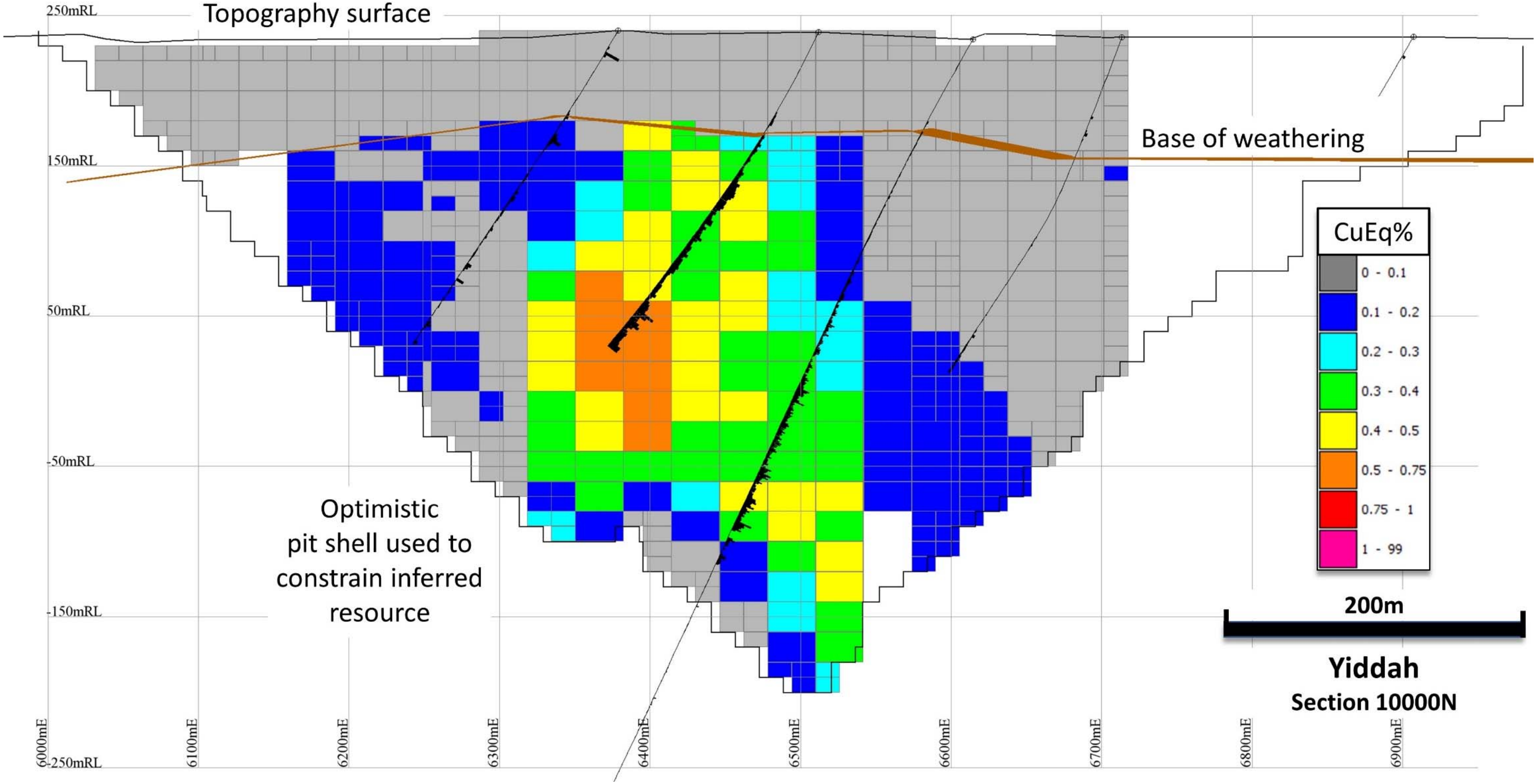


Figure 2: Cross Section showing optimistic pit shell

Appendix 1 (continued) - JORC 2012 TABLE 1 MINERAL RESOURCE PARAMETERS – TEMORA PROJECT – Gidginbung Project

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.*	Sampling techniques undertaken by previous owners include core sampling of NQ2 and/or NQ3 Diamond Drill (DDH) core; Reverse Circulation (RC) face sampling, Reverse Circulation face sampling with diamond tails (RCD), open-hole percussion (PER), air-core (AC) and rotary air blast (RAB) chip samples.
	Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.	Sampling techniques undertaken by previous owners include half core sampling of DDH core; RC samples collected by riffle splitter for single metre samples or sampling spear for composite samples; PER, AC and RAB samples collected using riffles splitters or a sampling spear. Sampling was undertaken by the then current owner's protocols and QAQC procedures as per the prevailing industry standards.
	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.*	Diamond drilling was used to obtain 2,411 one metre samples; 2,568 two metre samples, 428 three metre samples with significantly lesser quantities of other sample intervals. These samples comprised half core along with pulverized and riffle split half core products to achieve acceptable (representative) sample weights for analytical assay. RC drilling was used to obtain 17,277 two metre samples and 154 one metre samples with significantly lesser quantities of other sample intervals.
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).*	The drilling database for the Gidginbung Project comprises the results from 20 air core (AC) holes totalling 1,221.5 metres; 80 diamond drill holes (DDH) totalling 15,476.07 metres consisting of NQ3-size (2,231.2 metres) with size of the remaining meterage not recorded in the database; 75 rotary air blast (RAB) holes totalling 3,582.26 metres; 444 reverse circulation (RC) holes totalling 36,509.43 metres; 4 reverse circulation with diamond tail (RCD) holes totalling 1,530.45 metres and 2 percussion holes (PER) totalling 154 metres. Of these, the results from 528 drillholes were used for the Gidginbung resource interpretation and estimation. This drilling excluded the RAB, AC and PER holes and included 80 Diamond drill holes, 444 RC holes and 4 RCD holes. Historical holes TD, TP, TR and TS series were drilled by Paragon Gold between 1990 and 1993. The ACDGB, DDnnGB (where nn is a two digit number), and RCnnGB holes were drilled by CRAE between 1993 and 1997.
Drill sample recovery	*Method of recording and assessing core and chip sample recoveries and results assessed.*	There are no documentation of core and chip recoveries within the Goldminco database for the Gidginbung project.
	Measures taken to maximise sample recovery and ensure representative nature of the samples.	It is assumed that appropriate measures were taken by Goldminco to maximise sample recovery, however documentation is incomplete.
	Whether a relationship exists between sample recovery and grade and whether sample bias may have occurred due to preferential loss/gain of fine/coarse material.	No relationship between sample recovery and grade is known.
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.*	Project database records contain varyingly detailed geological logs of all drilling products describing regolith, colour, weathering, texture, grain size, principal and secondary lithologies along with qualitative and quantitative assessments of alteration, sulphide minerals, veining, non-sulphide minerals and remarks.

Criteria	JORC Code Explanation	Commentary
		The level of detail logged complies with the Indicated and Inferred Mineral Resource classifications for this project.
	Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc) photography.	The drilling products have been logged both qualitatively and quantitatively according to the particular attribute being assessed.
	The total length and percentage of the relevant intersections logged.	10 of the 528 or approximately 2% of the holes used for the resource modelling and estimation have been logged. Similarly, 3,074.15 metres from a total of 53,515.95 metres or approximately 6% of the metres drilled have been logged.
Sub-sampling techniques and sample preparation	*If core, whether cut or sawn and whether quarter, half or all core taken.*	Diamond drillcore of both HQ and NQ size from drilling by Paragon Gold and CRAE was sawn in half by a diamond bladed core saw and half core was submitted for assay.
	If non-core, whether riffled, tube sampled, rotary split, etc and whether sampled wet or dry.	Reverse circulation drilling samples were split by riffle splitters with a sample of between 3 and 5 kilograms submitted to the laboratory.
	For all sample types, the nature, quality and appropriateness of the sample preparation technique.	The sub-sampling techniques and sample preparation methodologies have been undertaken using standard industry practices current at the time. These are considered to be appropriate for use in the ongoing assessment and development of the project.
	Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.	Half diamond drillcore was crushed by jaw crusher and a 3 kilogram split was pulverized to 70% passing -75 microns. Reverse circulation drill samples of less than 4 kilograms were pulverised entirely to 70% passing -75 micron in an LM5 pulverizer. Samples greater than 4 kilograms were sub split and half the sample was pulverized.
	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.	No records as to the use of duplicate and check sampling protocols and activities are evident in the Goldminco database.
	Whether sample sizes are appropriate to the grain size of the material being sampled	The sample sizes are appropriate to the style of mineralisation.
Quality of assay data and laboratory tests	*The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total.*	No relevant information on the assay techniques used by the analytical laboratories commissioned by Paragon was evident in the material provided. CRAE analysed for Au by 50g fire assay and Cu, Pb, Zn, Mo, Ag, As Mn, Fe by AAS. It is unknown what steps the exploration companies made to secure the samples.
	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.	No geophysical tools were used to analyse the drilling products
	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.	No records as to the use of quality control procedures including the use of standards, blanks, duplicates and external laboratory sampling protocols and activities undertaken on the Gidginbung Project are evident in the material provided.
Verification of sampling and assaying	*The verification of significant intersections by either independent or alternative company personnel.*	The drill core from 2 diamond drill holes, TD002 and TD008 which intersected significant mineralisation were checked by the Competent Person at the Londonderry Core Farm.
	The use of twinned holes.	There are no known twinned holes drilled for the Mineral Resource
	Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.	It is assumed that appropriate measures were taken to document the primary data and appropriate data entry procedures were undertaken. Historical reports are available from the Mines Department which show detailed drill logs and raw assay reports sheets.

Criteria	JORC Code Explanation	Commentary
	Discuss any adjustment to assay data.	No adjustment was made to the raw assay data.
Location of data points	*Accuracy and quality of surveys used to locate drill holes (collar and down-hole surveys), trenches, mine workings and other locations used in Mineral Resource estimation.*	All drill hole collars, surface workings and other locational data used in the Mineral Resource estimation were surveyed using industry standard practice methods at the time the work was undertaken. Downhole surveys were varyingly undertaken using a variety of technologies including single- and multi-shot and gyroscopic downhole survey instruments.
	Specification of the grid system used.	Collar coordinates and down hole azimuths used for the Gidginbung resource interpretation and estimation are based on AGD 66, Zone 55 datum.
	Quality and adequacy of topographic control.	The final open pit surveyed topographic surface was used to constrain the block model for reporting of unmined resources.
Data spacing and distribution	*Data spacing for reporting of Exploration Results.*	No exploration results have been reported in this release.
	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.	Resource definition drill spacing and distribution of exploration results is sufficient to support Mineral Resource Estimation procedures.
	Whether sample compositing has been applied.	No sample compositing has been applied to the exploration results.
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.*	The range in declination of the drilling has been inclined between 55 and 65 (124 holes); 65 to 75 (6 holes); 75 to 85 (3) and 85 to 90 (146). 11 of the moderate to steeply inclined holes were drilled towards ENE (61 degrees) and 124 were drilled towards WSW (243 degrees) relative to AMG north. Consequently, the majority of the inclined holes are drilled orthogonally to the north-northwest strike of The Dam mineralized zone and intercept it obliquely at depth.
	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 the drilling was oriented perpendicular to the general strike of the Gidginbung deposit and it is considered that no sampling bias has been introduced.
Sample security	*The measures taken to ensure sample security.*	Sample storage undertaken by the previous owner of the project (Goldminco) was as follows: • Half core diamond drill holes are stored on site in covered, plastic trays to minimise oxidation due to open air storage and weather; • A number of early diamond dill holes are stored at the Londonderry Core farm; • Crush rejects are stored for a short time at the laboratory before being flagged for disposal following acceptance of QAQC for the drill hole results; and • Pulps are disposed when the QAQC results of the drill hole are accepted, and the geology department has deemed there to be no further use for the pulps. Results for QAQC samples are assessed on a batch by batch manner, at the time of uploading drill sample assays to the Acquire database. The Acquire database reports on the performance of the QAQC samples against the expected result and within tolerance limits. If the QAQC samples fail the batch report, the Geologist investigates the occurrence and actions either: a) acceptance of the result into the database or; b) reject the result and organised a re-assay of the sample with the laboratory.
Audits or reviews	*The results of any audits or reviews of sampling techniques and data.*	The database was provided to a reputable independent external consultant by Goldminco in July 2011 who identified a number of issues, including dubious or incorrect collar coordinates, incorrect or missing down hole surveys, and missing or incorrect assays.

Criteria	JORC Code Explanation	Commentary
		Assays below detection versus unassayed intervals was another significant issue determined by the consultant. Most holes have some negative values, which were initially assumed to be assays below detection limit (BDL). For gold, values of -0.01 and -0.001 were recorded, while the other elements had values generally between -1 and -6. However, a substantial number of holes had only negative values for some elements and checking by Goldminco revealed that generally these holes were not assayed for those elements. Therefore, the independent consultant set all values in holes with only negative values to being absent. There remains the possibility that holes with a mixture of positive and negative values may include unassayed intervals where negative values occur. It was assumed that the negative values were BDL and were therefore multiplied by -0.5 to convert them to positive values at half the detection limit. Another possibility is that the negative values represent some unknown code. It was determined that further validation is required to ensure that database is accurate and complete. A further assessment of the database was made by the Competent Person and no significant errors were found.

Section 2: Reporting of Exploration Results

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 Gidginbung Project is located approximately 16 kilometres north-west of the town of Temora in central New South Wales, Australia. It falls entirely within the confines of Exploration License EL5864 which is 100% held by Sandfire Resources NL. The titles are for Group 1 minerals. EL5864 was granted on 29 May 2001 and the expiry date is 28 May 2022. EL5864 has a royalty agreement of 2% NSR (Net Smelter Return) to Newcrest Ltd, payable upon the commencement of mining.
	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.	There are no obvious impediments known to exist at this stage of exploration to obtaining a license to operate in this area.
Exploration done by other parties	*Acknowledgment and appraisal of exploration by other parties.*	Early exploration of the Gidginbung deposit was undertaken by BP Minerals in the 1980's. Paragon Gold undertook mining of the oxide resource over a 10 year period ending in April 1996. During this period, the mine produced 21.07t of gold with minor silver from 10.23Mt of ore between 1987 and the end of 1996. Approximately 677,572 ounces of gold were produced at an average grade of 2.1g/t Au. Sandfire Resources NL acquired the project and EL6845 from Goldminco (then a wholly owned subsidiary of Straits Resources Limited) in October 2015.
Geology	*Deposit type, geological setting and style of mineralisation.*	The Gidginbung deposit is located approximately four kilometres east of the Gilmore Fault Zone with the mineralisation hosted by altered units of Late Ordovician to Early Silurian Gidginbung Volcanics. The host rocks are andesitic in character and consist of probable flow units, dykes, shallow level intrusives, and fragmental units. Breccias are important at Gidginbung, with tectonic breccias, hydrothermal breccias and primary fragmental rocks having been recognised. The host sequence is described as relatively gently dipping interbedded primary breccias (mass flow units) and mudstones. South of the mine, conglomerates, sandstones, and siltstones of probable Late Devonian age overlie the host units. Alteration and mineralisation at Gidginbung is confined to the older Ordovician-Silurian rocks. The deposit is characterized by having: • A central core of silica – pyrite alteration, which passes outwards to quartz – alunite – pyrite, quartz-kaolinite-pyrite and quartz-illite pyrite, to surrounding propylitic alteration. • The silica alteration is cross cut by quartz-poor pyrophyllite dominant alteration.

Criteria	JORC Code Explanation	Commentary
		• The alteration zones, centered on the silica-pyrite, forms a tubular geometry that has a shallow southerly plunge. • The mineralization is hosted within the silica-pyrite zone, and is associated with dominantly pyrite and lesser enargite. • The mineralisation, as evidenced by level plans and Ken Laurie's AGSO mapping, appears to be truncated at the eastern margin of the pit by a fault. • Rocks in the vicinity of the Gidginbung mine are generally undeformed although an intense penetrative fabric has been recognized in discrete 50-400 metre wide northwest trending (shear) zones. However, within the open-cut, fabrics are characteristic of a low-strain environment and only the fine-grained rocks have been weakly cleaved. A number of faults in the pit area have been recognized, including a fault parallel to the eastern pit wall. This fault defines the contact between unmineralised pyrophyllite-dominant altered epiclastic grits to the east and a silica-pyrite altered bedded sequence of breccias and mudstones to the west. • Gold and copper mineralisation at Gidginbung occurs as widespread disseminated mineralisation associated with various alteration assemblages and in one of two types of sulphide □ barite veins (Allibone et al 1995). In the mine area significant low-grade gold and silver mineralisation is coincident with the silica-pyrite alteration zone, which in turn is preferentially developed within the mudstone-dominated breccias. Higher-grade gold zones correspond to the position of gold-bearing veins that cut the silica-pyrite and occasionally the quartz-alunite-pyrite alteration zones. • The alteration is concentrically zoned with a central silica-pyrite zone passing outward to a quartz-alunite-pyrite zone, a quartz-kaolinite-pyrite zone, a quartz-illite-pyrite zone and finally a propylitic alteration zone. The concentric zonation of the alteration suggests that fluids decreased in temperature and increased in pH away from a central zone, through which a higher temperature, more acidic fluid was channelled. Previous workers suggested that hydrothermal fluid flow was from depth to the south of the open cut and oblique upward to the north within the breccia package. This breccia package may have had enhanced permeability and/or enhanced chemical reactivity. In summary the principal ore deposit models for the Gidginbung deposit are: • A high sulphidation epithermal gold deposit that formed prior to deformation. • An orogenic or shear-hosted gold deposit that formed synchronous with or post deformation. • Timing of the copper-gold mineralising event at Gidginbung has been somewhat controversial, however work by Lawrie and co-workers has established that both the timing of the mineralising event and the timing of the emplacement of the host rocks is Early Silurian. Perkins et al (1995) proposed that K-Ar dates on illite from Gidginbung of around 423□5 and 413□4 Ma represent the most likely dates of deformation at Gidginbung and provide a minimum age to the mineralisation.
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; and* • *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 have been reported in this release.

Criteria	JORC Code Explanation	Commentary
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 results have been reported in this release.
	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.	No exploration results have been reported in this release.
	The assumptions used for any reporting of metal equivalent values should be clearly stated.	No exploration results have been reported in this release.
Relationship between mineralisation widths and intercept lengths	*These relationships are particularly important in the reporting of Exploration Results.*	No exploration results have been reported in this release.
	If the geometry of the mineralisation with respect to the drill-hole angle is known, its nature should be reported.	No exploration results have been reported in this release.
	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').	No exploration results have been 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.*	Location map shown in Figure 1 of this release. Other diagrams are appended to the end of this Table 1 document.
Balanced reporting	*Where comprehensive reporting of all Exploration Results is not practicable, representative reporting of both low and high grades and/or widths should be practiced to avoid misleading reporting of Exploration Results.*	No exploration results have been 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.*	No exploration has been reported in this release, therefore there are no drill hole intercepts to report.
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.*	• Continue infill drilling within the currently modeled resource outlines in order to increase the confidence in the geological and weathering models as well as establish grade continuity; • Continue with resource definition drilling to test strike potential; • Continue with district exploration incorporating current understanding of geological, structural and mineralisation controls at the existing Temora Prospects; • Expand and maintain an auditable quality assurance system for all ongoing data collection; • Continue with collection of SG measurements; and • Additional metallurgical test work to be undertaken as a routine part of exploration.

Section 3: Estimation and Reporting of Mineral Resources

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 database used for the Gidginbung resource modelling and estimation was extracted from the Goldminco Datashed database which is a professional relational SQL database management package. Datashed is an industry recognized data management system that utilizes rigorous data validation procedures during data entry along with enhanced security and flexible reporting to protect the exploration records.
	Data validation procedures used.	For the Mineral Resource, data tables were exported from the SQL database as comma separated files (CSV's) using export tools embedded with the database management system. These CSV files were then imported into a standalone Access database for the sole purpose of the estimation. The project records extracted from the master database have been checked and validated by an independent expert who found the database to be clean, consistent and free of obvious errors.
Site Visits	*Comment on any site visits undertaken by the Competent Person and the outcome of those visits.*	The current resource estimate for the Gidginbung was estimated by Resource Estimation Consulting Geologists Hellman & Schofield and was signed off in 2012 under the JORC 2004 code by Dr. Phillip Hellman. Straits Resources provided the drill hole database to Hellman & Schofield who accepted the data in good faith as being reliable, accurate and complete. A project site visit was undertaken in March 2017 by the Competent Person to verify grade intersections were consistent with a visual inspection of mineralisation in the core.
	If no site visits have been undertaken indicate why this is the case.	Site visit was undertaken by an independent expert as outlined above.
Geological interpretation	*Confidence in (or conversely, the uncertainty of) the geological interpretation of the mineral deposit.*	No constraining solid was used for the estimation due partly to the lack of geological information and partly as the mineralised system appears to be diffuse and lacking of any obvious hard boundaries.
	Nature of the data used and of any assumptions made.	Statistical analysis does not show any obvious natural cut off grade to the mineralization and arbitrary grade boundaries tend to produce conditionally biased estimates around the boundary threshold.
	The effect, if any, of alternative interpretations on Mineral Resource estimation.	No alternative interpretations have been considered
	The use of geology in guiding and controlling Mineral Resource estimation.	Variogram analysis showed there to be a mixture of horizontal and vertical components which was interpreted to be caused by the effects of oxidation/alteration(weathering) which has been superimposed over primary mineralisation. This was accommodated in the model by estimating all elements (except gold) horizontally above 180 metre elevation (mRL) and sub-vertically below this level.
	The factors affecting continuity both of grade and geology.	The nature, extent and intensity of porphyry-related alteration and proximity to the brittle-ductile structures comprising the Gilmore Fault Zone have a dominant influence on the mineralization grade and geology.
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 primary mineralization at Gidginbung is a steeply dipping (80 degrees towards 260 degrees) zone measuring 1150 metres along strike, 175 metres in width (plan) and extends 300 metres vertically beneath the surface. The shallow oxidized portion of the mineralisation is interpreted to be horizontal to depths less than 180mRL
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 Gidginbung Resource was estimated by the ordinary kriging method using Datamine software. Variogram analysis showed there to be a mixture of horizontal and vertical components which was interpreted to be caused by the effects of oxidation/alteration (weathering) which has been superimposed over primary mineralisation. The variogram models and search ellipsoids for gold and other elements below 180mRL were oriented at 80° towards 260° (dip/dip direction), while above 180mRL the search and variograms for the other elements were horizontal and unrotated.

Criteria	JORC Code Explanation	Commentary
		All variograms were fitted with 3 structured exponential models as tabulated below; variograms for all elements (except gold) were rotated 90 degrees around the Y axis for mineralisation below 180m elevation.

Element	Structure	Variance	X Range	Y Range	Z Range
Au	Nugget	0.10	-	-	-
	Exp1	0.59	6.5	17.5	60
	Exp2	0.16	114	142	180
	Exp3	0.15	116	559	180
Cu	Nugget	0.10	-	-	-
	Exp1	0.31	10	25	2
	Exp2	0.45	25	25	20
	Exp3	0.14	185	400	80
Ag	Nugget	0.10	-	-	-
	Exp1	0.56	25	25	6
	Exp2	0.29	31	90	66
	Exp3	0.05	132	800	300
As	Nugget	0.10	-	-	-
	Exp1	0.6	26.5	25	8
	Exp2	0.12	27	225	42
	Exp3	0.18	205	225	300
Pb	Nugget	0.10	-	-	-
	Exp1	0.6	25	25	10
	Exp2	0.12	25	225	10
	Exp3	0.18	85	225	95
Zn	Nugget	0.10	-	-	-
	Exp1	0.6	25	25	7
	Exp2	0.12	25	225	7
	Exp3	0.18	85	225	70

<table>
<tr><th>Criteria</th><th>JORC Code Explanation</th><th>Commentary</th></tr>
<tr><td></td><td>The availability of check estimates, previous estimates and/or mine production records and whether the Mineral Resource estimate takes appropriate account of such data.</td><td>The new model was validated in a number of ways: by visual comparison of block and drill hole grades; by comparison with previous estimates, and through analysis of grade-tonnage data.
The estimated in-pit resources show broadly comparable contained ounces to the reported historical production of 540 Koz, which was achieved with a mill cutoff of 1g/t gold and a heap leach cutoff of 0.6g/t gold. (Note: production is ounces recovered from the pit, i.e. in-situ ounces, and not metal recovered through the mill.)
When the current (2011) block model is limited to a similar extent as the earlier (1994) model undertaken by Snowden and associates, the two estimates are quite similar at a 1.0g/t Au cutoff grade, despite other differences such as block size and estimation method.
<table>
<tr><th>Estimate</th><th>Mt</th><th>g/t Au</th><th>Ounces Koz Au</th></tr>
<tr><td>H&S 2011</td><td>5.06</td><td>1.54</td><td>250</td></tr>
<tr><td>Snowden 1994</td><td>4.30</td><td>1.60</td><td>221</td></tr>
<tr><td>Difference</td><td>0.76</td><td>-0.06</td><td>28.8</td></tr>
<tr><td>% Difference</td><td>118%</td><td>96%</td><td>113%</td></tr>
</table></td></tr>
<tr><td></td><td>The assumptions made regarding recovery of by-products.</td><td>No assumptions were made regarding the recovery of by-products.</td></tr>
<tr><td></td><td>Estimation of deleterious elements or other non-grade variables of economic significance (e.g. sulphur for acid mine drainage characterisation).</td><td>Arsenic was estimated, while Sulphur was not.</td></tr>
<tr><td></td><td>In the case of block model interpolation, the block size in relation to the average sample spacing and the search employed.</td><td>Data spacing was the primary consideration taken into account when selecting an appropriate estimation block size.
<table>
<tr><th>Model Extent</th><th>X</th><th>Y</th><th>Z</th></tr>
<tr><td>Origin</td><td>541,600</td><td>6,200,600</td><td>0</td></tr>
<tr><td>Maximum</td><td>542,300</td><td>6,202,000</td><td>320</td></tr>
<tr><td>Block Size</td><td>5</td><td>20</td><td>10</td></tr>
<tr><td>Number of blocks</td><td>140</td><td>70</td><td>32</td></tr>
<tr><td>Length</td><td>700</td><td>1,400</td><td>320</td></tr>
</table></td></tr>
<tr><td></td><td>Any assumptions behind modelling of selective mining units.</td><td>No selective mining unit assumptions were considered in determining the block size.</td></tr>
<tr><td></td><td>Any assumptions about correlation between variables.</td><td>No correlation analysis was undertaken and consequently, no correlation relationships were used in the Resource estimation.</td></tr>
<tr><td></td><td>Description of how the geological interpretation was used to control the resource estimates.</td><td>The variogram models and search ellipsoids for gold and other elements below 180mRL were oriented at 80° towards 260° (dip/dip direction), while above 180mRL the search and variograms for the other elements were horizontal and unrotated.</td></tr>
<tr><td></td><td>Discussion of basis for using or not using grade cutting or capping.</td><td>Univariate statistics and histograms of the elements of interest showed moderately skewed distributions so it was determined that grade cutting was not required.</td></tr>
<tr><td></td><td>The process of validation, the checking process used, the comparison of model data to drill hole data, and use of reconciliation data if available.</td><td>The new model was validated in a number of ways: by visual comparison of block and drill hole grades; by comparison with previous estimates, and through analysis of grade-tonnage data.
All comparisons independently suggest that the current model is reasonable.</td></tr>
</table>

<table>
<tr><th>Criteria</th><th>JORC Code Explanation</th><th>Commentary</th></tr>
<tr><td>Moisture</td><td>Whether the tonnages are estimated on a dry basis or with natural moisture, and the method of determination of the moisture content.</td><td>The tonnages have been estimated on a dry basis.</td></tr>
<tr><td>Cut-off parameters</td><td>The basis of the adopted cut-off grade(s) or quality parameters applied.</td><td>In March 2012, a Gidginbung Mineral Resource (JORC 2004) was announced to the market by Straits Resources using a 0.5 g/t Au cut-off.
<table>
<tr><th colspan="6">Table 5. Gidginbung Mineral Resource Classification > 0.5 g/t Au</th></tr>
<tr><th>Classification</th><th>Tonnes (Mt)</th><th>Au (g/t)</th><th>Ag (g/t)</th><th>Cu (%)</th><th>Au (kOz)</th></tr>
<tr><td>Indicated</td><td>11.1</td><td>1.0</td><td>2.3</td><td>0.1</td><td>369</td></tr>
<tr><td>Inferred</td><td>12.7</td><td>0.9</td><td>3.1</td><td>0.1</td><td>379</td></tr>
<tr><td>Total</td><td>23.8</td><td>1.0</td><td>2.7</td><td>0.1</td><td>748</td></tr>
</table>
A breakdown of the MRE by oxidation was provided which showed that the majority of the remaining resource is made up of primary material.
<table>
<tr><th colspan="6">Table 4. Gidginbung Indicated and Inferred Mineral Resource > 0.5 g/t Au</th></tr>
<tr><th>Domain</th><th>Tonnes (Mt)</th><th>Au (g/t)</th><th>Ag (g/t)</th><th>Cu (%)</th><th>Au (kOz)</th></tr>
<tr><td>Oxide</td><td>0.45</td><td>0.7</td><td>1.1</td><td>0.0</td><td>10</td></tr>
<tr><td>Transitional</td><td>2.50</td><td>0.9</td><td>2.1</td><td>0.0</td><td>71</td></tr>
<tr><td>Fresh</td><td>20.8</td><td>1.0</td><td>2.8</td><td>0.1</td><td>667</td></tr>
<tr><td>Total</td><td>23.8</td><td>1.0</td><td>2.7</td><td>0.1</td><td>748</td></tr>
</table>
Metallurgical testwork undertaken in 1994 by Hydrometallurgical Research laboratories indicated that gold recoveries of fresh rock via a conventional CIP process range from 25% to 50% so it is unlikely that this material could processed at 0.5 g/t cut-off and a more appropriate cut-off was used at 1g/t.</td></tr>
<tr><td>Mining factors or assumptions</td><td>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.</td><td>The Resources for Gidginbung have been reported assuming open pit mining techniques.</td></tr>
</table>

<table>
<tr><th>Criteria</th><th>JORC Code Explanation</th><th>Commentary</th></tr>
<tr><td>Metallurgical factors or assumptions</td><td>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.</td><td>Metallurgical testwork on primary material from the Gidginbung deposit was undertaken in 1994 by Hydrometallurgical Research Laboratories in Brisbane. The conventional CIP plant used to treat oxide and transitional material from Gidginbung open cut recovered up to 90% of the gold. However, the material becomes more refractory with increasing depth, and the recoveries fall dramatically to about 45% down to 90m below the pre-mining surface. At the pit floor, (about 95m depth), recovery by CIP process is approximately 30% and it diminishes to about 10% at 155m depth.
HRL proposed a process involving crushing and milling of sulphide material, flotation to produce a sulphide concentrate, oxidation of the concentrate, and then treatment of the oxidized concentrate in a CIP plant to recover the gold. Alternatively, a heap leach process using bacterial oxidation was suggested.</td></tr>
<tr><td>Environmental factors or assumptions</td><td>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.</td><td>No environmental factors or assumptions (e.g. acid mine drainage considerations) have been incorporated into the resource estimate.</td></tr>
<tr><td rowspan="3">Bulk density</td><td>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.</td><td>Densities were applied to the resource model based on the average depth of oxidation derived from an old set of BP Minerals cross-sections in the pit area. Density values are nominal; previously 2.30 was used for material <1g/t Au and 2.50 for material >1.0g/t Au (Snowden “in accordance with the mine’s practice”).</td></tr>
<tr><td>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.</td><td>The procedure used is suitable for non-porous or very low porosity samples, which can be quickly weighed in water before saturation occurs.</td></tr>
<tr><td>Discuss assumptions for bulk density estimates used in the evaluation process of the different materials.</td><td>The densities applied to the various depths are tabulated below:
<table>
<tr><th>Oxidation</th><th>Depth</th><th>Density</th></tr>
<tr><td>Oxide</td><td>0-20m</td><td>2.40</td></tr>
<tr><td>Transition</td><td>20-70m</td><td>2.50</td></tr>
<tr><td>Primary</td><td>>70m</td><td>2.60</td></tr>
</table></td></tr>
<tr><td>Classification</td><td>The basis for the classification of the Mineral Resources into varying confidence categories.</td><td>The 4 pass estimation search strategy for gold mineralisation below 180m elevation is outlined below and this served as the basis for the resource classification announced in March 2012 with passes 1 & 2 classified as Indicated and passes 3 & 4 as Inferred. For the other elements above 180m elevation, the X and Z axes were interchanged.
The resources based on the estimation passes are split almost equally into Indicated (Pass 1 & 2) and Inferred (Pass 3 & 4).
<table>
<tr><th></th><th colspan="3">Search Radii</th><th colspan="3">Samples</th></tr>
<tr><td>Pass</td><td>X</td><td>Y</td><td>Z</td><td>Min</td><td>Max</td><td>Octants</td></tr>
<tr><td>1</td><td>5</td><td>25</td><td>25</td><td>8</td><td>32</td><td>4</td></tr>
<tr><td>2</td><td>10</td><td>50</td><td>50</td><td>8</td><td>32</td><td>4</td></tr>
<tr><td>3&4</td><td>20</td><td>100</td><td>100</td><td>8</td><td>48</td><td>0</td></tr>
</table></td></tr>
</table>

Criteria	JORC Code Explanation	Commentary
		A visual inspection of the blocks categorized by the estimation pass was undertaken and any isolated blocks were removed from the resource. The classification also considers the likely potential for economic development of the project using open cut mining methods by constraining the resource inside a Whittle optimized pit shell generated using optimistic input parameters and the pit shell with a revenue factor of 2 (see figure below).
	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).	No resources are classified as Indicated or Measured at this stage for a number of reasons, including: • Lack of geological information, particularly relating to mineralisation and oxidation; • Little documented density data; • Issues of database accuracy and completeness; and • Lack of any QAQC data, including sample recovery and moisture, assay standards, blanks, duplicates, twinned holes. The criteria used to determine the classification are considered by the Competent Person to have been reasonably applied.
	Whether the result appropriately reflects the Competent Person's view of the deposit.	The Mineral Resource has been classified into the confidence categories of Inferred which reflects the Competent Person's view on the deposit.
Audits or reviews	*The results of any audits or reviews of Mineral Resource estimates.*	An audit of the resource estimate was undertaken by the Competent Person who is an independent consultant and is a Competent Person as defined by the JORC Code, 2012 Edition, having five years' experience that is relevant to the style of mineralisation and type of deposit described in the Report and to the activity for which he is accepting responsibility. It was concluded that the model is a reasonable reflection of the current understanding of the geological and structural controls of the mineralisation in the project area and copper and gold grades based on the available drill hole assay data.
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 Mineral Resources has been reported in accordance with the guidelines of the 2012 edition of the Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves and reflects the relative accuracy of the Mineral Resources estimates.
	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.	The statement relates to a global estimate of tonnes and grade.
	These statements of relative accuracy and confidence of the estimate should be compared with production data, where available.	The estimated in-pit resources show broadly comparable contained ounces to the reported historical production of 540 Koz, which was achieved with a mill cutoff of 1g/t gold and a heap leach cutoff of 0.6g/t gold. (Note: production is ounces recovered from the pit, i.e. in-situ ounces, and not metal recovered through the mill.)

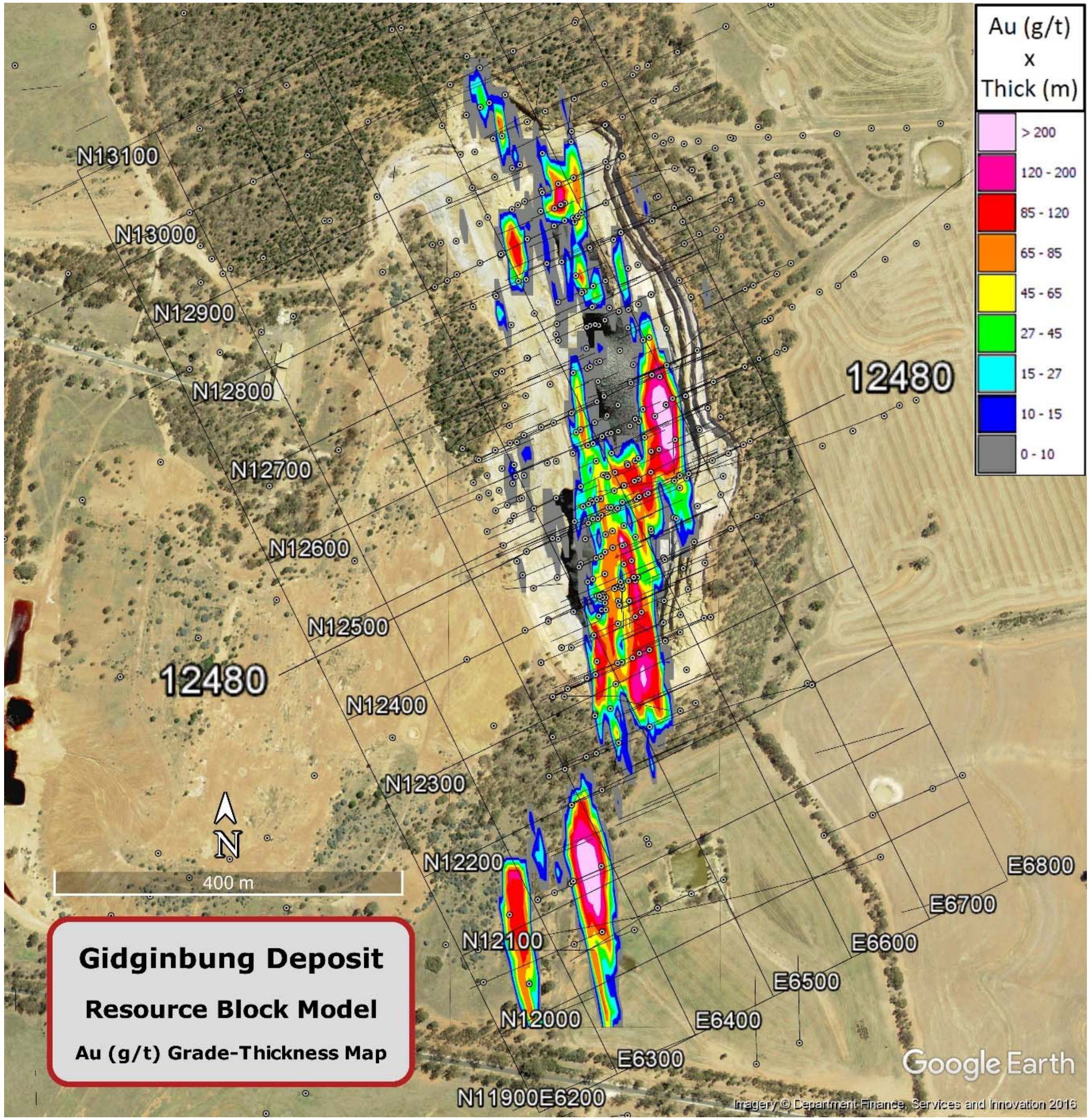


Figure: Plan view of drillhole locations and Au g/t Grade – Thickness Map.

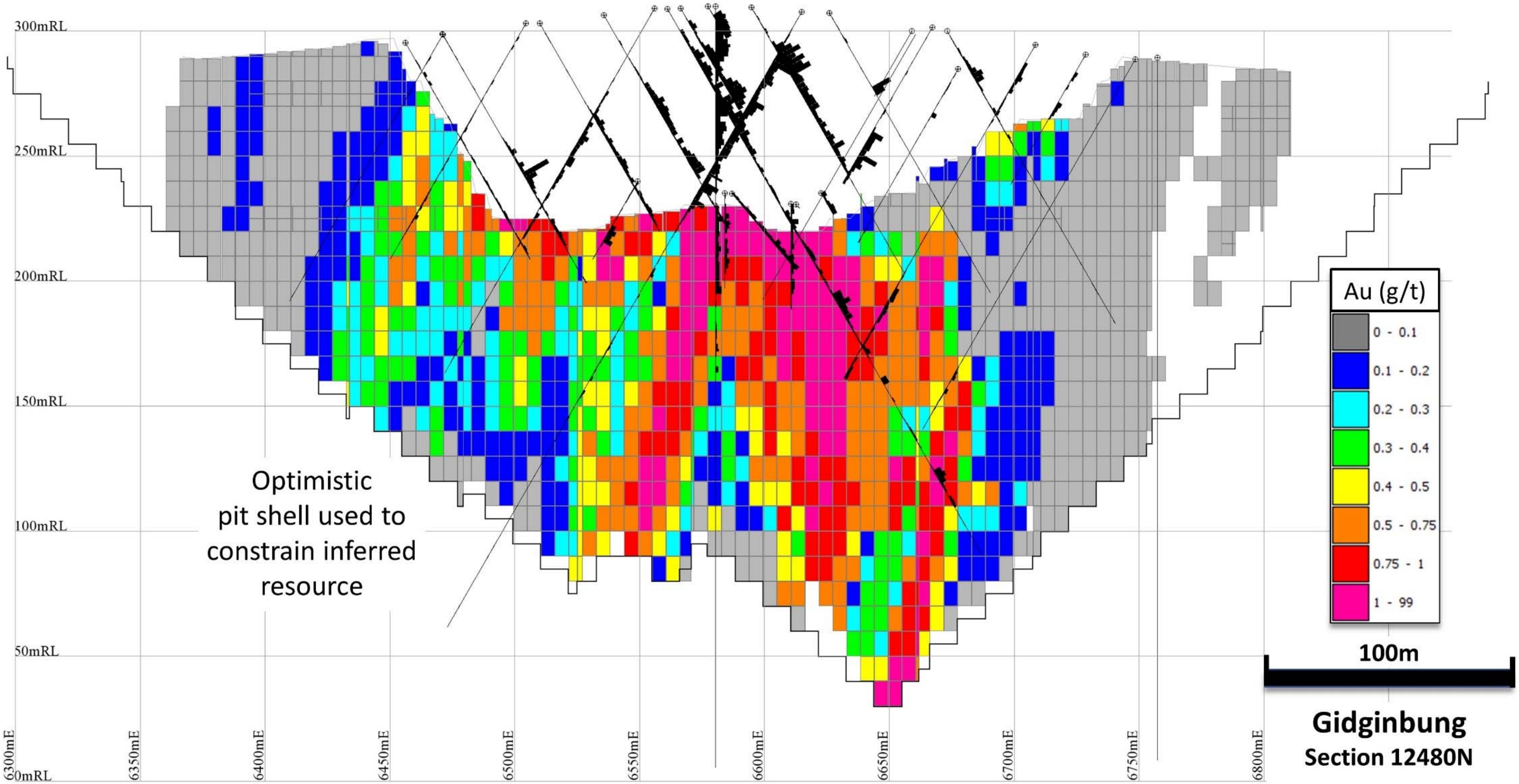


Figure: Cross Section showing optimistic pit shell.