Market Update

27 Dec 2017

December 2017 – Highlights

Cobalt Blue Holdings Ltd

A Green Energy Exploration Company

ASX Code: **COB**

Commodity Exposure:
Cobalt & **Sulphur**

Directors & Management:

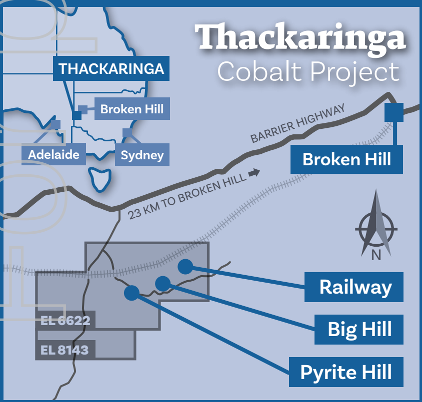
Robert Biancardi	Non-Exec Chairman
Hugh Keller	Non-Exec Director
Trangie Johnston	Non-Exec Director
Matt Hill	Non-Exec Director
Joe Kaderavek	CEO & Exec Director
Ian Morgan	Company Secretary

Capital Structure:

Ordinary Shares at 27/12/2017:	**106.4m**
Options (ASX Code: COBO):	**26.9m**
Market Cap (undiluted):	**$89m**

Share Price:

Share Price at 27/12/2017:	**$0.84**



Cobalt Blue Holdings Limited
ACN: 614 466 607
Address: Level 2, 66 Hunter St, Sydney NSW 2000
Ph: +61 2 9966 5629
Website: www.cobaltblueholdings.com
Email: info@cobaltblueholdings.com
Social: Cobalt.Blue.Energy
cobalt-blue-holdings

CobaltBlue
green energy technology

PFS – Bulk Metallurgical Testwork – Progress Update

- Cobalt Blue has now treated 40 kg of concentrate (out of 100 kg) through the calcine furnace, and 8 kg of calcine (out of 80 kg) through the leach circuit. Work is continuing into Q1 2018 to complete the testing of the calcine and leach unit operations.
- Recovery of elemental sulphur from the calcine furnace graded 97.5% sulphur, with no cobalt losses.
- Leach recoveries have typically ranged from ~70% to 96%, depending on the conditions employed. Further work is continuing to optimise the parameters.
- Recent funds raised by placement on 27 Nov 2017, has enabled the Company to double the quantity of cobalt ore being tested (additional 500–600 kg of ore at ~1000 ppm cobalt) in the current PFS program.

Pre-Feasibility Testwork Overview

The Thackaringa project is planning to mine ore from three surface deposits. The host rock (silica and feldspars) contains approximately 20% sulphides (mainly pyrite), with cobalt at 900–1000 ppm. Results for upgrading the ore to a sulphide concentrate were reported on 26th Oct 2017. This announcement presents recent results for processing of the sulphide concentrate to extract cobalt.

Diamond drill core samples were collected in late 2016 and used for testwork in the Scoping Study which was delivered on 30 Jun 2017. Approximately 820 kg of the ore, representing Railway Hill and Pyrite Hill deposits, was composited in August 2017, and is being used to test the preferred process for the Pre-Feasibility Study (PFS). The grade of the composite used in the testwork is only 607 ppm cobalt, which is lower than the average grade of the resource estimate of 910 ppm. The results should therefore be considered as establishing a baseline set of data, with higher grade ore giving better recoveries and lower capital and operating costs compared to the baseline.

Recently, funds were raised by the Company to expand the PFS testwork program. A second 500–600 kg ore composite sample from the 2017 diamond drilling program has now been sent for crushing studies prior to advancing through the process unit operations (concentrate, calcine, leaching, and product recovery). The grade of this composite is ~1000 ppm, and this sample represents a "typical" grade ore relative to the average resource estimate of 910 ppm. Thus, the two composites being tested cover the low-typical grade range for the resource. Results should be available to be reported in Q1 2018.

The PFS test work program is designed to deliver 'reliable and repeatable' results at a scale 10-50 times larger than the tests used in the Scoping Study (12 Jul 2017), where the 'proof-of-concept' was determined. The results will be used to conduct engineering studies and cost estimates for the PFS.

The PFS is examining the processing path shown below:

MINE → CONCENTRATE → CALCINE → LEACH → PRODUCT RECOVERY

There are four stages to the metallurgical test work (post mining):

A. **Concentrate**: Preparation of a sulphide concentrate from the ore
B. **Calcine**: Calcination (thermal treatment) of the concentrate
C. **Leaching**: Leaching of the calcine
D. **Product Recovery**: Purification of leach liquor, followed by crystallisation of cobalt sulphate

Processing – Concentrate

MINE → **CONCENTRATE** → CALCINE → LEACH → PRODUCT RECOVERY

Further work was conducted to evaluate the influence of ore crush size on gravity circuit recoveries. 2 kg portions of gravity tails were crushed to various sizes, and re-processed. The results indicated that varying the particle size from a p80 @ 900 µm to 425 µm, permitted a further 2% of cobalt from the head ore to be recovered into gravity concentrate (i.e increased recovery from 92% to 94% of cobalt from ore to concentrate). An engineering study will be used to assess the economic merits of finer crushing costs versus increased cobalt recoveries.

Processing – Calcine and Leach

MINE → CONCENTRATE → **CALCINE** → **LEACH** → PRODUCT RECOVERY

Approximately 100 kg of concentrate produced in November from the 820 kg ore composite, is being treated through the calcine and leach unit operations. Initially, the concentrate is thermally treated to remove some of the sulphur into the gas phase, which is subsequently cooled and condensed for recovery of elemental sulphur. The resulting solid calcine from the thermal treatment is leached in a separate unit operation to extract cobalt into solution.

To date approximately 40 kg of concentrate has been calcined, producing approximately 30 kg of calcine, using COB's proprietary processing system. Process conditions have been varied to determine the optimum parameters for selection as design criteria set-point for the PFS engineering design study. It is expected that the remaining concentrate will be fully processed in Q1 2018.

A photo of the laboratory-scale furnace and elemental sulphur condenser is shown. Photos of the feed concentrate, residual calcine and collected elemental sulphur are also shown.

Typical recovery of sulphur from the thermal treatment has been 35% of the head sulphur. No losses of cobalt were observed into the gas phase, with all of the cobalt deporting the furnace in the calcine residue. Improved engineering design of the off-gas handling is expected to reduce the contaminant carry over into the sulphur product. The average elemental analysis of the ore, concentrate, calcine and elemental sulphur are shown below.

Source: Cobalt Blue Holdings

Sample	Description	Co ppm	Fe %	S %	SiO_2 %
Ore composite	820 kg ore composite	607	7.94	7.58	59.84
Concentrate	144 kg produced from ore composite	3326	36.03	40.20	14.53
Calcine	Average data from four runs (12 kg feed) at 3 kg per run	4500	45.70	32.38	13.63
Sulphur	Average data from sulphur collected from four runs	<5	0.5	97.5	1.5

The result is close to the ideal ratio found in the mineral pyrrhotite (Fe_7S_8). Confirmation of the transformation of pyrite into artificial pyrrhotite (Fe_xS_y) was obtained using x-ray diffraction, which showed that typically 90–95% of the pyrite had been transformed into pyrrhotite.

To date 25 leach tests have been conducted systematically varying temperature, liquor composition, solids density, residence time, particle size, and oxygen uptake. As expected, leach recoveries have ranged up to 96% cobalt (p80 100 µm) in line with the variation in leach parameters. Once the process optimisation stage is complete, the remaining calcine will be leached under fixed conditions to obtained a reliable and repeatable leach extraction of cobalt for engineering design.

The key outcomes to date are:

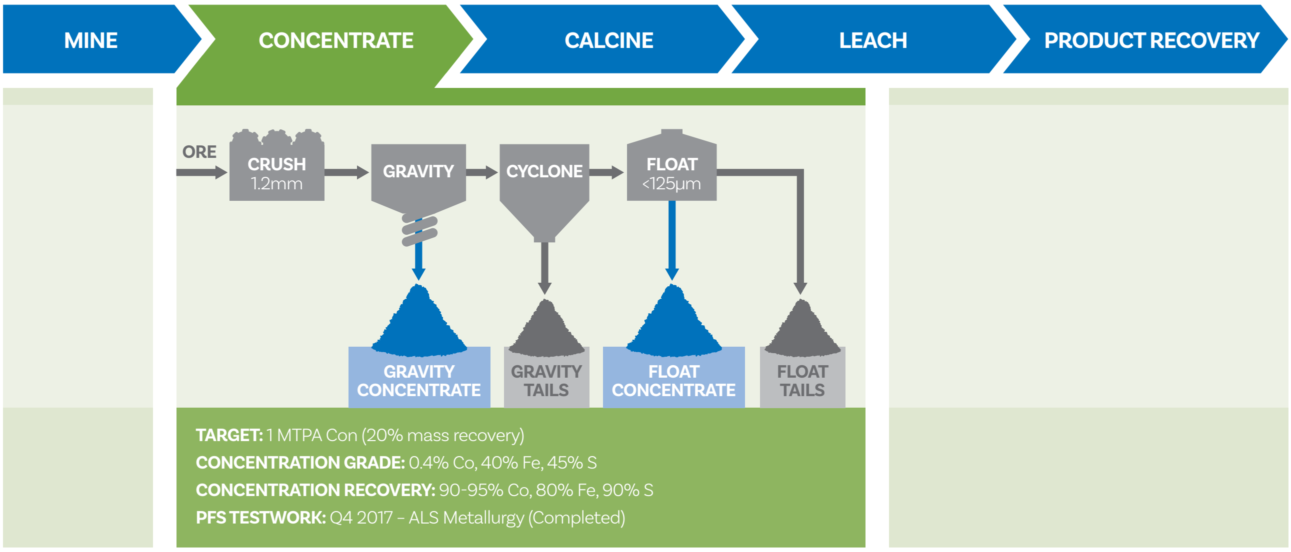
- Calcining the gravity concentrate typically removes ~35% of the sulphur from the pyrite.
- The resulting elemental sulphur condensed from the gas phases averaged 97.5% sulphur with 1.5% silica as the main contaminant. Improved engineering design of the off-gas handling is expected to improve the quality of the sulphur in future testwork.
- There are no losses of cobalt to the gas phases in the thermal treatment step.
- Leaching of the calcine achieved cobalt recoveries ranging from ~70% to 96%. The leach parameters are still being optimised.

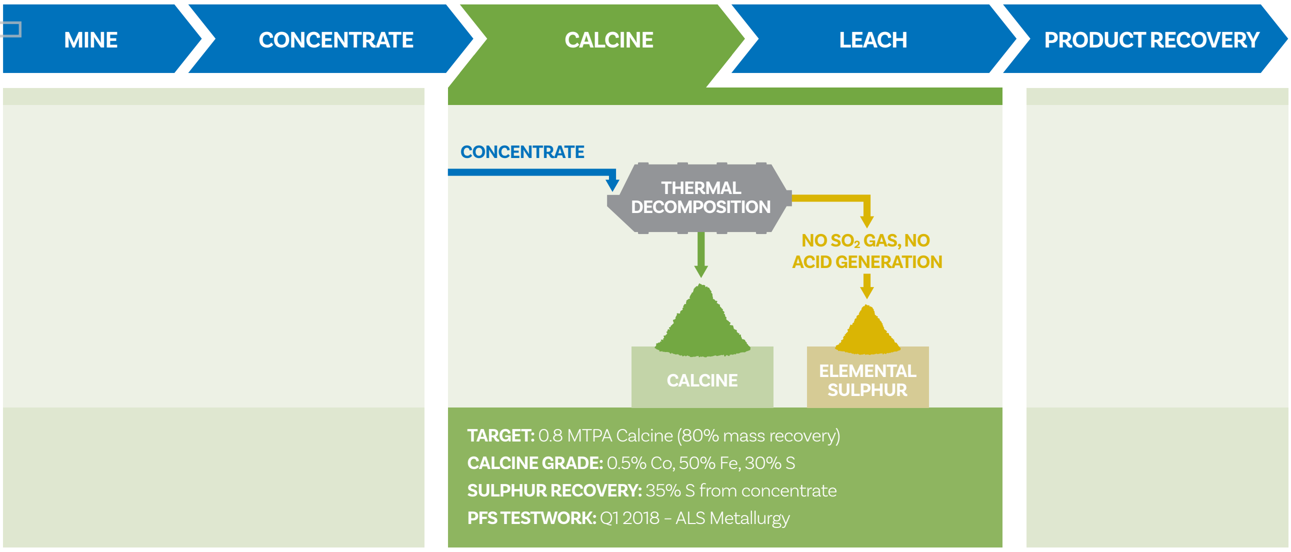
Cobalt Blue's PFS Manager, Dr Andrew Tong said:

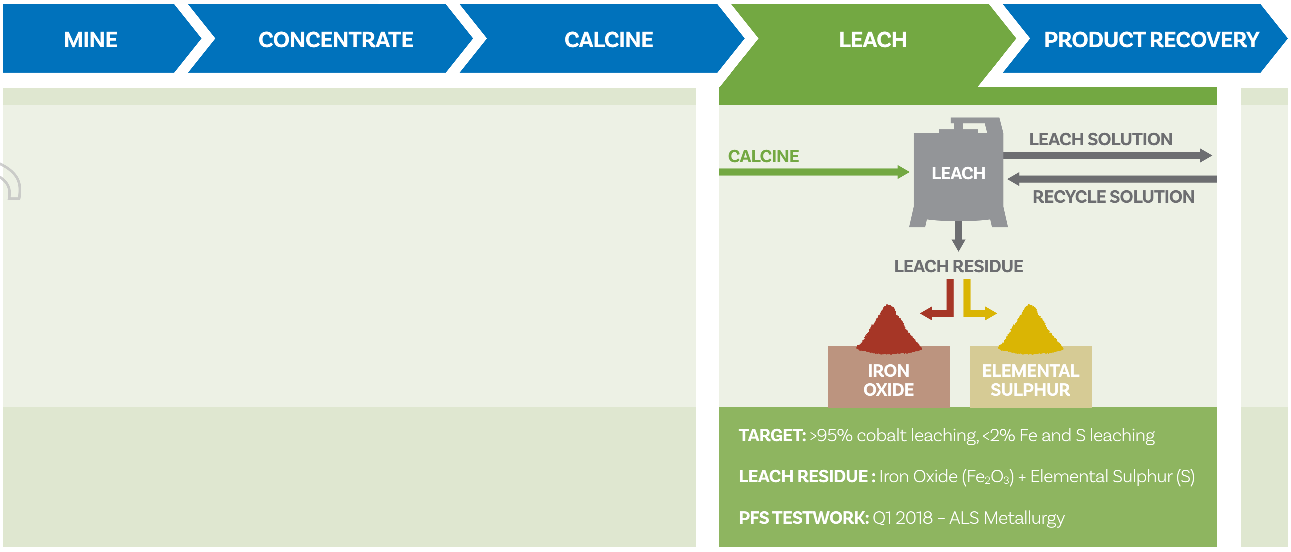
"Early stage testwork on kilograms of material, using the Cobalt Blue proprietary process, is confirming cobalt extraction from the concentrate without by-production of acid, as would be the case for a roasting process. Also, high temperature and pressure conditions are not required for leaching the calcine (artificial pyrrhotite) as is practised for extracting cobalt using the common HPAL process for laterites."

PFS – Conceptual Plant Description

Conceptual schematics of the commercial plant circuits are shown in the following graphics. The aim is to treat 5 MTPA of ore and produce 1 MTPA of concentrate, with a cobalt recovery of ~90%. The concentrate is then thermally treated, with removal of ~35% of the sulphur as elemental sulphur. The resulting calcine (~0.8 MTPA) is then treated in the leach circuit to extract cobalt.







PFS testwork – looking forward

Overall COB is delighted with test work results to date, and is looking forward to completing the program in Q1 2018. Further progress updates on the testwork will be the subject of separate market announcements. COB remains focused on proving up the processing and economics of our unique ore. Our goal is to prove a long life mining operation capable of operating at cobalt cycle troughs.

Due to high work load in the commercial laboratories as a result of increasing activity in the minerals sector, we have experienced some small delays during Q4 2017. Testwork is on track to produce cobalt sulphate in early Q1 2018 for preliminary customer acceptance testing. A schedule is shown below for the first 820 kg ore sample. The second 500–600 kg sample will be processed during Q1 2018.

PFS – Metallurgical Testwork Breakdown/Schedule

Unit Operation	Scoping Study Options Tested	Pre-Feasibility Study Selected Process Testing	Schedule 2017–2018
Concentration	▪ 50–100 kg ore ▪ Flotation ▪ Gravity ▪ Magnetics	▪ 800 kg ore ▪ Gravity, followed by scavenger float	October 2017 complete
Thermal Treatment	▪ 2 kg concentrate ▪ Roasting (SO_2 for acid) ▪ Decomposition (no acid) – elemental sulphur	▪ 100 kg concentrate ▪ Decomposition (no SO_2) – elemental sulphur	Q1 2018
Leaching	▪ 2 kg concentrate ▪ High temp POX Atmospheric leach ▪ 1 kg calcine ▪ Low temp POX Atmospheric leach	▪ 80 kg calcine ▪ Low temp POX / Atmospheric leach	Q1 2018
Product Recovery	Not tested	▪ IX + crystallisation ▪ 0.5 kg of cobalt	Q1 2018

COMPLETED

Source: Cobalt Blue Holdings

Thackaringa Project timetable

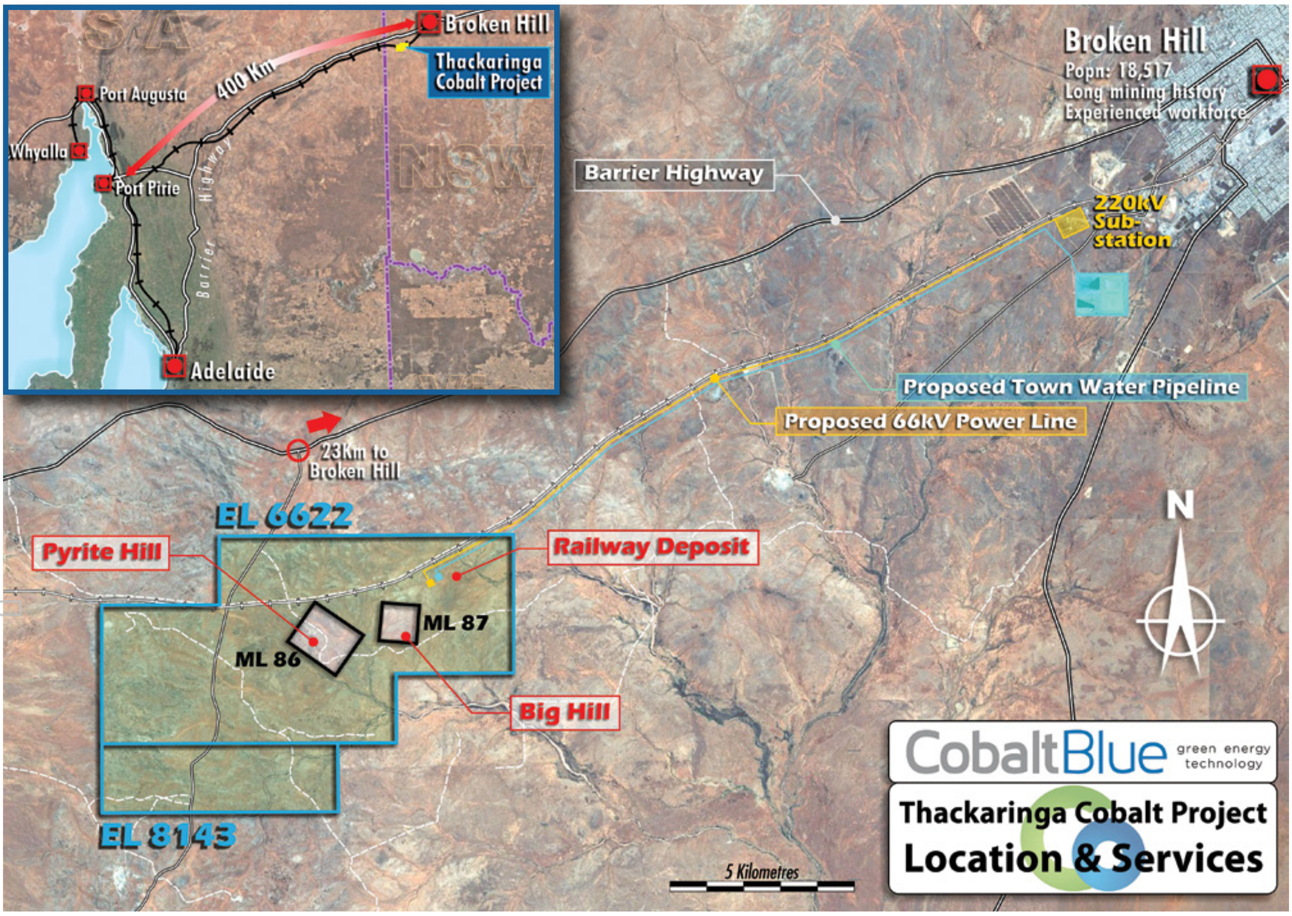
Results to date continue to justify proceeding further along the pathway towards commercial development of the Thackaringa cobalt project. The overall company timeline is shown below.

Aug 2016 – Feb 2017	1 April 2018	30 June 2018	30 June 2019	
Complete	Stage One	Stage Two	Stage Three	Stage Four
Cobalt Blue formed JV & Farm-in JORC 2012 upgrade Cobalt Blue listed	A$2.0m expenditure in the ground delivered. Delivered: • Inferred Resource Upgrade • Scoping Study Deliver: • Indicated Resource Upgrade • Aerial Geophysical Program Target Date: 1 April 2018	A$2.5m expenditure in ground – Indicated Resource Target Deliver: Preliminary Feasibility Study Target Date: 30 June 2018	A$5.0m expenditure in ground – Measured Resource + Reserves Target Deliver: Bankable Feasibility Study + Project Approvals Target Date: 30 June 2019	Decision to Mine Project Finance

Source: Cobalt Blue Holdings

The Thackaringa Cobalt Project site and potential services are shown below. The site is situated close to Broken Hill, and is well connected to existing transport routes including the Barrier Highway and the Intercontinental Railway. Availability of water and power supplies further support positive project economics.

Thackaringa Cobalt Project – Location and Potential Services



Source: Cobalt Blue Holdings

CobaltBlue

Cobalt Blue Background

Cobalt Blue ("COB") is an exploration company focussed on green energy technology and strategic development to upgrade its mineral resource at the Thackaringa Cobalt Project in New South Wales from Inferred to Indicated status. This strategic metal is in strong demand for new generation batteries, particularly lithium-ion batteries now being widely used in clean energy systems.

COB is undertaking exploration and development programs on the Thackaringa Cobalt Project pursuant to a farm-in joint venture agreement entered into with Broken Hill Prospecting Limited ("BPL"). Subject to the achievement of milestones, COB will be entitled to acquire 100% of the Thackaringa Cobalt Project.

The Thackaringa Project, 23 km west of Broken Hill and 400km by rail from Port Pirie consists of four granted tenements (EL6622, EL8143, ML86 and ML87) with total area of 63 km^2. The main targets for exploration are well known and document large-tonnage cobalt-bearing pyrite deposits. The project area is under-explored, with the vast majority of historical exploration directed at or around the outcropping pyritic cobalt deposits at Pyrite Hill and Big Hill.

Potential to extend the Mineral Resource at Pyrite Hill, Big Hill, Railway and the other prospects is high. Numerous other prospects within COB's tenement package are at an early stage and under-explored.

Looking forward, we would like our shareholders to keep in touch with COB updates and related news items, which we will post on our website, the ASX announcements platform, as well as social media such as Facebook (f) and LinkedIn (in). Please don't hesitate to join the 'COB friends' on social media and also to join our newsletter mailing list at our website.

Joe Kaderavek
Chief Executive Officer
info@cobaltblueholdings.com
P: (02) 9966 5629

Competent Person's Statement

The information in this report that relates to exploration results, Mineral Resources and Targets is based on information compiled by Mr Anthony Johnston, BSc (Hons), who is a Member of the Australian Institute of Mining and Metallurgy, a non-executive director of Cobalt Blue Holdings Limited and the Chief Executive Officer of Broken Hill Prospecting Limited. Mr Johnston has sufficient experience which is relevant to the style of mineralisation and type of deposits under consideration and to the activity which he is undertaking to qualify as a Competent Person as defined in the 2004 & 2012 Edition of the "Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves". Mr Johnston consents to the inclusion in the announcement of the matters based on his information in the form and context that the information appears.

Previously Released Information

This ASX announcement refers to information extracted from the following reports, which are available for viewing on COB's website http://www.cobaltblueholdings.com

- 26 October 2017: Bulk Metallurgical Testwork – Strong Concentration Results
- 27 September 2017: CEO's Letter to Shareholders – September 2017
- 12 July 2017: Scoping Study update – Strong Potential for Commercialisation after Processing Testwork
- 5 June 2017: Significant resource upgrade for the Thackaringa Cobalt Project
- 25 May 2017: Stage One Drilling Program delivers robust results – resource upgrade to follow
- 4 May 2017: 2017 Update – Strong Drilling Results Continue
- 27 March 2017: Assays confirm Thackaringa as a Significant Cobalt-Pyrite Project

COB confirms it is not aware of any new information or data that materially affects the information included in the original market announcement, and, in the case of estimates of Mineral Resources, that all material assumptions and technical parameters under-pinning the estimates in the relevant market announcements continue to apply and have not materially changed. COB confirms that the form and context in which the Competent Person's findings presented have not been materially modified from the original market announcement.

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Appendix – JORC Code, 2012 Edition – Table 1

Section 1 – Sampling Techniques and Data
(Criteria in this section apply to all succeeding sections.)

Criteria	JORC Code Explanation	Commentary

Sampling techniques	▪ *Nature and quality of sampling (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 (DDH)
		Pre-1990
		▪ Diamond drilling was used to obtain core from which irregular intervals, reflecting visual mineralisation and geological logging were hand-split or sawn. Samples were submitted for analysis using a mixed acid digestion and AAS methodology.
		Post-1990
		▪ Diamond drilling (one drill hole) was used to obtain core from which irregular intervals, reflecting visual mineralisation and geological logging were sawn (quarter core for HQ). Samples were submitted for analysis using a mixed acid digestion and ICP-OES methodology.
		2016 Metallurgical Drilling
		▪ Eight HQ diameter diamond drill holes (DDH) were drilled at the Thackaringa project in late 2016. They will be used as metallurgical reference holes and to twin some of the previous reverse circulation percussion (RC) holes for QA/QC and assay comparison between DDH and RC. There were two holes drilled at Pyrite Hill, two at Big Hill and four at Railway:
		▪ Diamond drilling was used to obtain core from which regular (one-metre) intervals were sawn with:
		  ▪ one half core dispatched for analysis using a four acid digestion and ICP-AES/MS methodology;
		  ▪ the other half was further sawn such that one quarter-core was sent for metallurgical test work and the other quarter-core retained for archival purposes.
		Historical Reverse Circulation Drilling
		▪ RC drilling was used to obtain a representative sample by means of riffle splitting with samples submitted for analysis using the above-mentioned methodologies.
		▪ Pre-2000 drill samples were assayed for a small and variable suite of elements (sometimes only cobalt). The post-2000 drill samples (5,095 samples) were assayed by a mixed acid digestion and ICP-AES/MS method for a suite of 33 elements.
		2017 Diamond Drilling Program
		▪ Fourteen HQ diameter diamond drill holes (DDH) were assayed at the Thackaringa project. They will be used as metallurgical reference holes and to twin some of the previous reverse circulation percussion (RC) holes for QA/QC and assay comparison between DDH and RC. There were four holes drilled at Pyrite Hill, two at Big Hill and 8 at Railway:
		  ▪ Diamond drilling (17THD01-03) was used to obtain core from which regular (one-metre) intervals were sawn with:
		    ▪ one half core dispatched for analysis using a four acid digestion and ICP-AES/MS methodology (47 elements);
		    ▪ the other half was retained for future metallurgical test work and archival purposes.
		  ▪ Diamond drilling (17THD04-14) was used to obtain core from which regular (one-metre) intervals were sawn with:
		    ▪ one quarter core dispatched for analysis using a four acid digestion and ICP-AES/MS methodology (47 elements);
		    ▪ the other three quarters was retained for future metallurgical test work and archival purposes.

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Criteria	JORC Code Explanation	Commentary
Sampling techniques *(continued)*		**2017 RC drilling Program** ▪ Thirty-eight (38) RC drill holes (DDH) were drilled & assayed at the Thackaringa project to infill historic holes and allow re-estimation of the existing Mineral Resources. There were 12 holes drilled at Pyrite Hill, three at Big Hill and 23 at Railway: ▪ RC drilling was used to obtain a representative sample by means of riffle splitting with samples submitted for analysis using the above-mentioned methodologies for a suite of 47 elements.
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 Thackaringa drilling database comprises a total of forty-eight (48) diamond drill holes and eighty-one (81) reverse circulation (RC) drill holes. Diamond drilling was predominantly completed with standard diameter, conventional HQ and NQ utilising RC and percussion pre-collars to an average 25 metres (see Drill hole Information for further details). Early (1960-1970) drill holes utilised HX – AX diameters dependent on drilling depth. Reverse circulation drilling utilised standard hole diameters (4.8”-5.5”) with a face sampling hammer. ▪ During 2013, a single diamond drill hole (13BED01) was completed at the Railway deposit using a triple tube system with a HQ3 diameter

Year	Drilling	Metres
1967	1 diamond drill hole	304.2
1970	4 diamond drill holes	496.6
1980	18 diamond and 1 RC drill hole	1711.23
1993	2 diamond drill holes	250
1998	11 RC drill holes	1093.25
2011	11 RC drill holes	1811
2012	20 RC drill holes	2874.25
2013	1 diamond drill hole	349.2
2016	8 diamond drill holes	1484.8
2017	14 diamond drill holes and 38 RC drill holes	6472.1
Total	**48 diamond and 81 RC drill holes**	**16,846.63**

▪ During 2016–2017, diamond drilling was completed using a triple tube system with a HQ3 diameter.Holes were drilled at angles between 40 and 60 degrees from horizontal and the resulting core was oriented as part of the logging process.

Criteria	JORC Code Explanation	Commentary
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.*	**Diamond Drilling** - Historical core recoveries were accurately quantified through measurement of actual core recovered versus drilled intervals. - Historical diamond drilling employed conventional drilling techniques while diamond drilling completed by Broken Hill Prospecting utilised a triple-tube system to maximise sample recovery. - Core recovery of 99.7% was achieved during completion of drill hole 13BED01. - Core recovery of 98% was achieved during the 2016 diamond drilling program. - Core recovery of 93.3% was achieved during the 2017 diamond drilling program. - No relationship between sample recovery and grade has been observed. **Reverse Circulation Drilling** - Reverse circulation sample recoveries were visually estimated during drilling programs. Where the estimated sample recovery was below 100% this was recorded in field logs by means of qualitative observation. - Reverse circulation drilling employed adequate air (using a compressor and booster) to maximise sample recovery. - No relationship between sample recovery and grade has been observed.

Criteria	JORC Code Explanation	Commentary

Logging

JORC Code Explanation

- *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.*

Commentary

- A qualified geoscientist has logged all reported drill holes in their entirety. This logging has been completed to a level of detail considered to accurately support Mineral Resource estimation and metallurgical studies. The parameters logged include lithology, alteration, mineralisation and oxidation. These parameters are both qualitative and quantitative in nature.
- Diamond drilling completed in 2017 by BPL has been subject to geotechnical logging with parameters recorded including rock-quality designation (RQD), fracture frequency and hardness.
- During 2013, a considerable amount of historical drilling was re-logged through review of available core stored at Broken Hill as well the re-interpretation of historical reports where core or percussion samples no longer exist. A total of eight (8) diamond drill holes and sixteen (16) diamond drill holes with pre-collars were re-logged as detailed below:

Hole ID	Deposit	Max Depth	Hole Type	Pre-Collar Depth (m)
67TH01	Pyrite Hill	304.2	DDH[1]	–
70TH02	Pyrite Hill	148.6	DDH[1]	–
70TH03	Pyrite Hill	141.4	DDH[1]	–
70BH01	Big Hill	102.7	DDH[1]	–
70BH02	Big Hill	103.9	DDH[1]	–
80PYH13	Pyrite Hill	77	DDH[1]	–
80PYH14	Pyrite Hill	300.3	DDH[1]	–
80BGH09	Big Hill	100.5	DDH[1]	–
80PYH01	Pyrite Hill	24.53	PDDH[2]	6
80PYH02	Pyrite Hill	51.3	PDDH[2]	33.58
80PYH04	Pyrite Hill	55	PDDH[2]	38.7
80PYH05	Pyrite Hill	93.6	PDDH[2]	18
80PYH06	Pyrite Hill	85.5	PDDH[2]	18
80PYH07	Pyrite Hill	94.5	PDDH[2]	12
80PYH08	Pyrite Hill	110	PDDH[2]	8
80PYH09	Pyrite Hill	100.5	PDDH[2]	8
80PYH10	Pyrite Hill	145.3	PDDH[2]	25.5
80PYH11	Pyrite Hill	103.1	PDDH[2]	18
80PYH12	Pyrite Hill	109.5	PDDH[2]	4.2
80BGH05	Big Hill	54.86	RCDDH[3]	45.5
80BGH06	Big Hill	68.04	RCDDH[3]	58
80BGH08	Big Hill	79.7	RCDDH[3]	69.9
93MGM01	Pyrite Hill	70	RDDH[4]	24
93MGM02	Pyrite Hill	180	RDDH[4]	48

1 Diamond drill hole
2 Diamond drill hole with percussion pre-collar
3 Diamond drill hole with reverse circulation pre-collar
4 Diamond drill hole with rotary air blast pre-collar

- Litho-geochemistry has been used to verify geological logging where available for drilling completed by Broken Hill Prospecting post 2010.
- Representative reference trays of chips from reverse circulation drilling completed post 2010 have been retained by Broken Hill Prospecting.

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.*	**Diamond Drilling (DDH)** **Pre-1990** ▪ Core samples were hand-split or sawn with re-logging of available historical core (see **Logging**) indicating a 70:30 (retained:assayed) split was typical. The variation of sample ratios noted are considered consistent with the sub-sampling technique (hand-splitting) ▪ No second half samples were submitted for analysis ▪ It is considered water used for core cutting is unprocessed and unlikely to have introduced sample contamination ▪ Procedures relating to the definition of the line of cutting or splitting are not available. It is expected that 'standard industry practice' for the period was applied to maximize sample representivity **Post-1990** ▪ NQ drilling core was sawn with half core submitted for assay ▪ HQ drilling core was sawn with quarter core submitted for assay ▪ No second half samples were submitted for analysis ▪ It is considered water used for core cutting is unprocessed and unlikely to have introduced sample contamination ▪ Procedures relating to the definition of the line of cutting or splitting are not available. It is expected that 'standard industry practice' for the period was applied to maximise sample representivity **2016 Metallurgical Drilling** ▪ All HQ drill core was sawn into halves, with each half then re-sawn to provide 4 lengths of quarter core for each interval. ▪ One half core was submitted for assay ▪ One quarter core was submitted for metallurgical test work ▪ One quarter core was retained for archive ▪ It is considered that the water used for core cutting is most unlikely to have introduced sample contamination ▪ Sample sawing and processing for test work were undertaken according to 'standard industry practice' to maximise sample representivity **2017 Diamond Drilling** ▪ All HQ drill core was sawn into halves, with each half then re-sawn to provide 4 lengths of quarter core for each interval. ▪ One quarter – one half core was submitted for assay. ▪ One quarter – three quarter core was retained for archive. ▪ It is considered that the water used for core cutting is most unlikely to have introduced sample contamination. ▪ Sample sawing and processing for test work were undertaken according to 'standard industry practice' to maximise sample representivity.

Criteria	JORC Code Explanation	Commentary
Sub-sampling techniques and sample preparation *(continued)*		**Historical Reverse Circulation Drilling** - Sub-sampling of reverse circulation/percussion chips was achieved using a cyclone with cone or riffle splitter - During drilling operations, the sample cyclone and splitter were regularly cleaned to prevent down hole sample contamination - Dry sampling was achieved with the use of adequate air, using a compressor and booster, where groundwater was encountered - During reverse circulation drilling completed by Broken Hill Prospecting, duplicate samples were collected at the time of drilling. These were obtained by spearing the bulk material held in the PVC sacks using a spear made of 40mm diameter PVC pipe; three samples were speared through the full depth of the bulk material and these were combined to form one sample - The Thackaringa drilling database includes a total of 139 field duplicates collected during reverse circulation drilling. This reflects a ratio of approximately one field duplicate in every 32 samples (3.1%) for drill holes where duplicates were collected (31 drill holes for 4469 metres) and an overall ratio of one field duplicate in every 42 samples (2.4%) for all reverse circulation drill holes (43 drill holes for 5801.5 metres). - Statistical analysis of field duplicates collected during drilling completed by Broken Hill Prospecting (119 duplicates representing 86% of all field duplicates) considered 18 elements of which only chromium, lanthanum and titanium show some bias in the duplicate samples. For cobalt, the confidence limits were evenly placed either side of zero and the duplicates are deemed to be representative of the original samples. **2017 Reverse Circulation Drilling** - Sub-sampling of reverse circulation/percussion chips was achieved using a riffle splitter. - During drilling operations, the splitter was regularly cleaned to prevent down hole sample contamination. - Dry sampling was achieved with the use of adequate air, using a compressor and booster, where groundwater was encountered. - During reverse circulation drilling completed by Broken Hill Prospecting, duplicate samples were collected at the time of drilling. These were obtained by riffle splitting the remnant bulk sample following collection of the primary split. - Field duplicate samples were collected regularly during drilling (for every 18th sample on average). - Assay results received to date include analysis of 201 field duplicate pairs from 38 RC drill holes. - A measure of the average precision of the sampling, sample preparation and assaying methods, given by the mean per cent difference (MPD) assay values of the duplicate pairs is summarised below.

RC Field Duplicate Pairs

Co Cut-Off	Count	Co MPD	S MPD	Fe MPD
All	201	10%	8%	9%

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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.* ▪ *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 nature and quality of all assaying and laboratory procedures employed for samples obtained through drilling (diamond and reverse circulation) are considered 'industry standard' for the respective periods ▪ The assay techniques employed for drilling (diamond and reverse circulation) include mixed acid digestion with ICP-OES and AAS finishes. These methods are considered appropriate for the targeted mineralisation and regarded as a 'near total' digestion technique with resistive phases not expected to affect cobalt analyses ▪ All samples have been processed at independent commercial laboratories including AMDEL, Australian Laboratory Services (ALS), Analabs and Genalysis ▪ All samples from drilling completed by Broken Hill Prospecting during 2011-2012 were assayed at ALS in Orange, New South Wales. All samples from drilling completed by Broken Hill Prospecting during 2016-2017 were assayed at ALS Adelaide, South Australia. ALS is a NATA Accredited Laboratory and qualifies for JAS/ANZ ISO9001:2008 quality systems. ALS maintains robust internal QAQC procedures (including analysis of standards, repeats and blanks). ▪ To monitor the accuracy of assay results from the 2017 Thackaringa drilling, CRM standards were included in the assay sample stream every 24 samples (on average) for RC chips and every 30 samples for diamond core. The CRM samples were purchased from Ore Research & Exploration Pty Ltd and the results are summarised below:

			Cobalt				Sulphur				Iron			
OREAS	**Standard**	**Count**	**1SD**	**2SD**	**3SD**	**+SD3**	**1SD**	**2SD**	**3SD**	**+SD3**	**1SD**	**2SD**	**3SD**	**+SD3**
160	Low S Blank (2.8ppm Co)	32	29	1	–	2	24	–	–	8	12	6	10	4
162	Med Grade (631ppm Co)	70	50	16	4	–	45	22	3	–	16	17	16	21
163	Low Grade (230ppm Co), mod S (10.4%)	57	44	11	2	1	11	35	10	2	3	4	4	47
165	High Grade (2445ppm Co)	37	30	7	–	–	21	13	3	–	5	9	10	13
166	High Grade (1970ppm Co)	60	48	11	–	1	50	8	–	2	11	5	8	36
		256	**201**	**46**	**6**	**4**	**151**	**78**	**16**	**12**	**47**	**41**	**48**	**121**
		PCT	79%	18%	2%	2%	59%	30%	6%	5%	18%	16%	19%	47%

Cobalt CRM Standards

Internal COB assay QA/QC protocols, cobalt performed well with 96% standard analyses falling within two standard deviations of the certified value; and 79% within one SD. No systematic out-of-specification trends were identified, and there was no discernible tendency for a particular Co standard to preferentially assay either higher or lower than the certified Co concentration.

Cobalt Blanks

A number of blanks were also submitted with the RC chip and diamond core samples — the OREAS160 CRM is essentially a low-sulfide blank with respect to cobalt (2.8ppm) and the results of assay of this standard are summarised above.

Based on the assay of standards and blanks with 96% of the Co results falling within two standard deviations of the certified value, it is concluded that the assay results for Co are likely to be representative for the material submitted with no additional source of inaccuracy or bias identified.

Sulfur CRM Standards

Sulfur was reasonably well-performed with 89% of the total 256 standard analyses falling within two standard deviations of the certified value and 96% within 3SD.

Iron CRM Standards

Iron analysis of standards showed poor accuracy with a tendency to assay low — 47% of the assays fall outside of 3 SD, typically, but not exclusively, lower than the certified value.

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.*	- Historical drilling intersections were internally verified by personnel employed by previous explorers including CRAE Pty Limited, Central Austin Pty Limited and Hunter Resources. Broken Hill Prospecting has completed a systematic review of the related data. - The Thackaringa drilling database exists in electronic form as a Microsoft Access database. Information related to individual drill holes is stored in digital files as extracted from historical reports (typically including location plan, section, logs, photos, surveys, assays and petrology). - Historical drilling data available in electronic form has been re-formatted and imported into the drilling database. - Quantitative historical drilling data, including assays, have been captured electronically during systematic data compilation and validation completed by Broken Hill Prospecting. - Samples returning assays below detection limits are assigned half detection limit values in the database. - All significant intersections are verified by the Company's Exploration Manager and independent geological consultant
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.*	- Historical drill collars have been relocated and surveyed using a differential GPS (DGPS). In the instances where no collar could be located the position has been derived from georeferenced historical plans. - During systematic data validation completed in 2016, three drill holes at Big Hill were found to be incorrectly located. One collar was located and surveyed by GPS and two were digitised from georeferenced historical plans (reported to the nearest metre) as the collars had been destroyed. These corrections were captured in the Big Hill Mineral Resource estimate. - Down hole surveys using digital cameras were completed on all post 2000 drilling. Down hole surveys for some earlier drilling were estimated from hole trace and section data where raw survey data was not reported. - All 2017 Thackaringa drill hole collars were located and surveyed with DGPS by an independent surveyor with reported accuracy of ±0.05m in horizontal and vertical measurement. - Downhole surveys using digital cameras were completed on all 2017 drill-holes. - All data is recorded in the GDA94 datum; UTM Zone 54 (MGA54). - 3D validation of drilling data has been completed by independent geological consultants to support detailed geological modelling in Micromine™ software. - The quality of topographic control is deemed adequate in consideration of the results presented in this release.
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 data density of existing drill holes at Thackaringa has been materially increased by the 2017 drilling program which was undertaken primarily to undertake infill drilling. - Detailed geological mapping supported by drill-hole data of sufficient spacing and distribution to establish a 3D geological model. - The level of geological and grade continuity is appropriate for the Mineral Resource estimation methodologies used and the classifications applied (being wholly Inferred Mineral Resources). Note that a recalculation of the Mineral Resource using 2017 drilling and assay data will commence in May 2017. - No sample compositing has been applied to reported intersections.

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 2017 drill holes at the Thackaringa project were typically angled at -40° or -60° to the horizontal and drilled perpendicular to the mineralised trend with drilling orientations adjusted along strike to accommodate folded geological sequences. - Mineralisation at the Big Hill and Railway prospects is steeply dipping and consequently mineralised intersections will be greater than true width. At Pyrite Hill mineralisation is gently dipping and mineralised intersections will be close to true width. - The drilling orientation is not considered to have introduced a sampling bias on assessment of the current geological interpretation.
Sample security	- *The measures taken to ensure sample security.*	- Sample security procedures are considered to be 'industry standard' for the respective periods. - Following recent drilling completed by BPL, samples were trucked by an independent courier directly from Broken Hill to ALS, Adelaide. - BPL consider that risks associated with sample security are limited given the nature of the targeted mineralisation.

Audits or reviews	- *The results of any audits or reviews of sampling techniques and data.*	- In late 2016 an independent validation of the Thackaringa drilling database was completed:
		  - The data validation process consisted of systematic review of drilling data (collars, assays and surveys) for identification of transcription errors
		  - Following review, historical drill hole locations were also validated against georeferenced historical maps to confirm their location
		  - Three (3) drill holes at Big Hill were found to be incorrectly located. One collar was located and surveyed by GPS and two were digitised from georeferenced historical plans (reported to the nearest metre) as the collars had been destroyed. These corrections were captured in the Big Hill Mineral Resource estimate
		  - Total depths for all holes were checked against original reports
		  - Final 3D validation of drilling data has been completed by independent geological consultants to support detailed geological modelling in Micromine™ software
		- Audits and reviews of QAQC results and procedures are further described in preceding sections of this table including **Quality of assay data and laboratory tests, Sub-sampling techniques and sample preparation** and **Logging.**

Section 2 Reporting of Exploration Results

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

<table>
<tr><th>Criteria</th><th>JORC Code Explanation</th><th>Commentary</th></tr>
<tr>
<td>Mineral tenement and land tenure status</td>
<td>

Type, reference name/number, location and ownership including agreements or material issues with third parties such as joint ventures, partnerships, overriding royalties, native title interests, historical sites, wilderness or national park and environmental settings.
The security of the tenure held at the time of reporting along with any known impediments to obtaining a licence to operate in the area.

</td>
<td>

The Thackaringa Cobalt project is located approximately 25 kilometres west-southwest of Broken Hill and comprises four tenements with a total area of 63 km^2:

<table>
<tr><th>Tenement</th><th>Registered & Beneficial Holder</th><th>Minerals</th><th>Grant Date</th><th>Expiry Date</th><th>Annual Expenditure Commit-ment</th></tr>
<tr><td>EL6622</td><td>Broken Hill Prospecting Limited (BPL)</td><td>Group 1</td><td>30/08/2006</td><td>29/08/2017</td><td>$47,000</td></tr>
<tr><td>EL 8143</td><td>BPL</td><td>Group 1</td><td>26/07/2013</td><td>26/07/2017</td><td>$14,000</td></tr>
<tr><td>ML86</td><td>BPL</td><td>Cobalt, iron, nickel, platinum, sulphur</td><td>05/11/1975</td><td>04/11/2017</td><td>$75,000</td></tr>
<tr><td>ML87</td><td>BPL</td><td>Cobalt, iron, nickel, platinum, sulphur</td><td>05/11/1975</td><td>04/11/2017</td><td>$75,000</td></tr>
</table>

The project tenure is subject to a Farm-In agreement between Cobalt Blue Holdings Limited (COB) and Broken Hill Prospecting Limited (BPL). The nature of this agreement is detailed in the COB Replacement Prospectus (as released 4 January 2017).
The nearest residence (Thackaringa Station) is located approximately three kilometres west of EL6622.
EL6622 is transected by the Transcontinental Railway; the Barrier Highway is located the north of the licence boundaries.
The majority of the project tenure is covered by Western Lands Lease which is considered to extinguish native title interest. However, Native Title Determination NC97/32 (Barkandji Traditional Owners 8) is current over the area and may be relevant to Crown Land parcels (e.g. public roads) within the project area.
The project tenure is more than 90 kilometres from the nearest National Park and or Wilderness Area (Kinchega National Park) and approximately 20 kilometres south of the nearest Water Supply Reserve (Umberumberka Reservoir Water Supply Reserve)
The Company is not aware of any impediments to obtaining a licence to operate in the area.

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</tr>
<tr>
<td>Exploration done by other parties</td>
<td>

Acknowledgment and appraisal of exploration by other parties.

</td>
<td>

A detailed and complete record of all exploration activities undertaken prior to the BPL 2016 drilling program is appended to the JORC Table 1 which forms part of the Cobalt Blue Prospectus Document, available on the COB website.

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</tr>
</table>

Criteria	JORC Code Explanation	Commentary

Geology	▪ *Deposit type, geological setting and style of mineralisation.*	**Regional Geological Setting**
		▪ The Thackaringa project is located in a deformed and metamorphosed Proterozoic supracrustal succession named the Willyama Supergroup, which crops out as several inliers in western New South Wales, including the Broken Hill Block (Willis, et al., 1982).
		▪ Exploration by BPL Limited has been focused on the discovery of cobaltiferous pyrite deposits and Broken Hill type base-metal mineralisation both of which are known from historical exploration in the district.
		▪ The project area covers portions of the Broken Hill and Thackaringa group successions which host the majority of mineralisation in the region, including the Broken Hill base-metal deposit. The Sundown Group suite is also present. The extensive sequence of quartz-albite-plagioclase rock that hosts the cobaltiferous pyrite mineralisation is interpreted as belonging to the Himalaya Formation, which is stratigraphically at the top of the Thackaringa Group.
		Local Geological Setting
		▪ The oldest rocks in the region belong to the Curnamona Craton which outcrops on the Broken Hill and Euriowie blocks.
		▪ The overlying Proterozoic rocks have been broadly subdivided into three major groupings, of which the oldest groups are the highly deformed metasediments and igneous derived rocks of the Thackaringa and Broken Hill groups. They comprise a major part of the Willyama Supergroup and host the giant Broken Hill massive Pb-Zn-Ag sulphide ore body. EL6622 is within the Broken Hill block of the Curnamona Craton.
		Mineralisation Style
		▪ The Thackaringa Mineral deposits (Pyrite Hill, Big Hill and Railway) are characterised by large tonnage cobaltiferous-pyrite mineralisation hosted within siliceous albitic gneisses and schists of the Himalaya Formation.
		▪ Cobalt mineralisation exists within stratabound pyritic horizons where cobalt is present within the pyrite lattice. Mineralogical studies have indicated the majority of cobalt (~85%) is found in solid solution with primary pyrite (Henley 1998).
		▪ A strong correlation between pyrite content and cobalt grade is observed.
		▪ The regional geological setting indicates additional mineralisation targets including:
		  ▪ Stratiform Broken Hill Type (BHT) Copper-Lead-Zinc-Silver deposits
		  ▪ Copper-rich BHT deposits
		  ▪ Stratiform to stratabound Copper-Cobalt-Gold deposits
		  ▪ Epigenetic Gold and Base metal deposits

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*
		▪ See drill holle summaries below:

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Drill hole summaries

Hole ID	Deposit	Max Depth (m)	NAT Grid ID	Easting	Northing	RL	Dip	Azimuth	Hole Type	Pre-Collar Depth
17THD01	Pyrite Hill	124.2	MGA54	518382	6449551	289.06	-40	222	DDH[1]	
17THD02	Pyrite Hill	149.7	MGA54	518475	6449445	290.54	-40	258	DDH[1]	
17THD03	Pyrite Hill	78.5	MGA54	518370	6449190	303.28	-40	285.1	DDH[1]	
17THD04	Big Hill	119.8	MGA54	521078	6449589	278.41	-45	155.1	DDH[1]	
17THD05	Big Hill	99.5	MGA54	521669	6449889	278.5	-40	131	DDH[1]	
17THD06	Railway	165.5	MGA54	521970	6450705	287.2	-45	128	DDH[1]	
17THD07	Railway	274.6	MGA54	522569	6451282	270.67	-45	156.5	DDH[1]	
17THD08	Railway	132.5	MGA54	522784	6451280	268.881	-45	326	DDH[1]	
17THD09	Railway	120.5	MGA54	522905	6451511	278.471	-40	152.5	DDH[1]	
17THD10	Railway	84.2	MGA54	522992	6451569	279.779	-45	130	DDH[1]	
17THD11	Railway	111.5	MGA54	523109	6451682	280.847	-40	160.5	DDH[1]	
17THD12	Railway	126.5	MGA54	522796	6451419	272.936	-40	140.75	DDH[1]	
17THD13	Railway	105.5	MGA54	522836	6451456	276.747	-40	138.5	DDH[1]	
17THD14	Pyrite Hill	99	MGA54	518375	6449089	294.25	-60	285	DDH[1]	
17THR001	Railway	156	MGA54	522615	6451277	267.561	-60	120	RC[5]	
17THR002	Railway	160	MGA54	522573	6451299	268.511	-60	120	RC[5]	
17THR003	Railway	96	MGA54	522124	6450868	277.39	-60	130	RC[5]	
17THR004	Railway	150	MGA54	522387	6451319	271.453	-60	120	RC[5]	
17THR005	Railway	72	MGA54	522024	6450783	282.154	-60	120	RC[5]	
17THR006	Railway	114	MGA54	522049	6450780	284.01	-58	125	RC[5]	
17THR007	Railway	180	MGA54	521965	6450699	286.585	-59	125	RC[5]	
17THR008	Railway	132	MGA54	521917	6450562	291.682	-56	105	RC[5]	
17THR009	Railway	120	MGA54	521906	6450496	292.751	-58	105	RC[5]	
17THR010	Railway	72	MGA54	521959	6450398	286.445	-56	285	RC[5]	
17THR011	Railway	126	MGA54	522302	6451169	276.812	-56	120	RC[5]	
17THR012	Railway	180	MGA54	522440	6451304	274.931	-58	173	RC[5]	
17THR013	Big Hill	102	MGA54	521750	6449942	284.89	-60	130.5	RC[5]	
17THR014	Big Hill	104	MGA54	521628	6449796	277.545	-53	130	RC[5]	
17THR015	Big Hill	108	MGA54	521793	6449918	284.847	-58	310	RC[5]	
17THR016	Pyrite Hill	138	MGA54	518446	6449209	290.391	-57	283	RC[5]	
17THR017	Pyrite Hill	120	MGA54	518449	6449263	293.147	-56	281.5	RC[5]	
17THR018	Pyrite Hill	78	MGA54	518027	6449806	289.567	-60	222	RC[5]	
17THR019	Pyrite Hill	72	MGA54	518105	6449754	287.701	-55	222	RC[5]	
17THR020	Pyrite Hill	66	MGA54	518166	6449695	288.685	-60	222	RC[5]	
17THR021	Pyrite Hill	78	MGA54	518183	6449717	286.007	-60	222	RC[5]	
17THR022	Pyrite Hill	156	MGA54	518510	6449306	286.82	-55	281	RC[5]	
17THR023	Pyrite Hill	150	MGA54	518506	6449377	289.481	-57	264.5	RC[5]	
17THR024	Pyrite Hill	150	MGA54	518457	6449498	288.137	-59.5	228.5	RC[5]	
17THR025	Pyrite Hill	114	MGA54	518311	6449609	287.463	-60	222	RC[5]	
17THR026	Pyrite Hill	114	MGA54	518268	6449681	284.164	-60	222	RC[5]	
17THR027	Pyrite Hill	72	MGA54	518243	6449646	287.176	-60	222	RC[5]	
17THR028	Railway	150	MGA54	522457	6451167	300.659	-60	350	RC[5]	
17THR029	Railway	162	MGA54	522482	6451084	295.964	-60	175	RC[5]	
17THR030	Railway	138	MGA54	522783	6451423	270.814	-55	140	RC[5]	
17THR031	Railway	120	MGA54	522945	6451566	276.19	-55	145	RC[5]	
17THR032	Railway	132	MGA54	522819	6451473	273.712	-53	140	RC[5]	
17THR033	Railway	120	MGA54	522501	6451315	269.63	-60	175	RC[5]	
17THR034	Railway	132	MGA54	522321	6451214	275.947	-55	127	RC[5]	
17THR035	Railway	156	MGA54	522259	6451120	275.749	-55.2	130	RC[5]	
17THR036	Railway	92	MGA54	522186	6450998	275.339	-61.2	130	RC[5]	
17THR037	Railway	126	MGA54	522148	6450941	274.202	-55	126	RC[5]	
17THR038	Railway	168	MGA54	521927	6450619	289.555	-55	108	RC[5]	

1 Diamond drill hole
2 Diamond drill hole with percussion pre-collar
3 Diamond drill hole with reverse circulation pre-collar
4 Diamond drill hole with rotary air blast pre-collar
5 Reverse Circulation drill hole

Historic down-hole information

Hole ID	Deposit	Max Depth (m)	NAT Grid ID	Easting	Northing	RL	Dip	Azimuth	Hole Type	Pre-Collar Depth
67TH01	Pyrite Hill	304.2	MGA94_54	518564.805	6449460.03	280.643	-55	260.6	DDH[1]	
70TH02	Pyrite Hill	148.6	MGA94_54	518272.42	6449680.54	284.08	-61	218.6	DDH[1]	
70TH03	Pyrite Hill	141.4	MGA94_54	518449.85	6449211.88	289.81	-62	283.6	DDH[1]	
70BH01	Big Hill	102.7	MGA94_54	520850.56	6449308.5	284.56	-47	318.6	DDH[1]	
70BH02	Big Hill	103.9	MGA94_54	520786.12	6449264.4	280.1	-50	318.6	DDH[1]	
80PYH13	Pyrite Hill	77	MGA94_54	518358.2	6449037.7	290.35	-50	280.7	DDH[1]	
80PYH14	Pyrite Hill	300.3	MGA94_54	518661.18	6449287.62	277.96	-60	280.7	DDH[1]	
80PYH03	Pyrite Hill	35	MGA94_54	518251.5	6449569.9	299.4	-60	220.7	PDDH[2]	22
80BGH09	Big Hill	100.5	MGA94_54	520657.43	6449292.52	272.80	-50	144.7	DDH[1]	
80PYH01	Pyrite Hill	24.53	MGA94_54	518246.2	6449565.7	301.1	-60	202.7	PDDH[2]	6
80PYH02	Pyrite Hill	51.3	MGA94_54	518260.7	6449574.2	297.6	-60	220.7	PDDH[2]	33.58
80PYH04	Pyrite Hill	55	MGA94_54	518366.55	6449231.74	308.34	-60	295.7	PDDH[2]	38.7
80PYH05	Pyrite Hill	93.6	MGA94_54	518226.97	6449678.19	285.18	-49	222.7	PDDH[2]	18
80PYH06	Pyrite Hill	85.5	MGA94_54	518163.48	6449757.3	283.73	-54.4	222.7	PDDH[2]	18
80PYH07	Pyrite Hill	94.5	MGA94_54	518084.06	6449818.36	285.16	-55	222.7	PDDH[2]	12
80PYH08	Pyrite Hill	110	MGA94_54	518009.54	6449885.43	286.14	-60	222.7	PDDH[2]	8
80PYH09	Pyrite Hill	100.5	MGA94_54	517917.4	6449931.76	286.55	-48.5	222.7	PDDH[2]	8
80PYH10	Pyrite Hill	145.3	MGA94_54	518392.96	6449565.96	285.53	-50	222.7	PDDH[2]	25.5
80PYH11	Pyrite Hill	103.1	MGA94_54	518440.96	6449329.52	297.25	-50	280.7	PDDH[2]	18
80PYH12	Pyrite Hill	109.5	MGA94_54	518407.28	6449137.31	292.63	-50	280.7	PDDH[2]	4.2
80BGH05	Big Hill	54.86	MGA94_54	520955.35	6449534.41	288.93	-60	163.7	RCDDH[3]	45.5
98TC01	Railway	100	MGA94_54	522750.06	6451339.73	267.27	-60	158.9	RC[5]	
98TC02	Railway	100	MGA94_54	522392.41	6451386.83	266.78	-60	140.9	RC[5]	
98TC03	Big Hill	84	MGA94_54	520816.45	6449369.39	313.05	-60	135.9	RC[5]	
98TC04	Big Hill	138.25	MGA94_54	520860.05	6449450.85	304.09	-60	140.9	RC[5]	
98TC05	Big Hill	70	MGA94_54	520728	6449328.07	288.63	-50	122.9	RC[5]	
98TC06	Big Hill	108	MGA94_54	520715	6449343	285.13	-60	125.9	RC[5]	
98TC07	Big Hill	120	MGA94_54	520785.97	6449388.21	299.22	-50	133.9	RC[5]	
98TC08	Big Hill	90	MGA94_54	520801.95	6449477.81	291.01	-60	150.9	RC[5]	
98TC09	Big Hill	114	MGA94_54	520822.21	6449460.79	296.25	-60	133.9	RC[5]	
98TC10	Big Hill	134	MGA94_54	521018	6449576	281.5	-50	172.9	RC[5]	
98TC11	Railway	35	MGA94_54	522411.2	6451373.96	267.01	-60	132.9	RC[5]	
80BGH06	Big Hill	68.04	MGA94_54	520880	6449472	299	-60	170.7	RCDDH[3]	58
80BGH08	Big Hill	79.7	MGA94_54	520768.79	6449390.93	296.29	-60	126.7	RCDDH[3]	69.9
80BGH07	Big Hill	23	MGA94_54	521136.56	6449599	274.11	-60	177.7	RC[5]	
93MGM01	Pyrite Hill	70	MGA94_54	518185.44	6449713.77	286.28	-60	222.8	RDDH[4]	24
93MGM02	Pyrite Hill	180	MGA94_54	518515.45	6449454.67	284.79	-60	258.8	RDDH[4]	48
11PHR01	Pyrite Hill	150	MGA94_54	518435.47	6449072.76	285.34	-60	279.06	RC[5]	
11PHR02	Pyrite Hill	198	MGA94_54	518499.92	6449159.31	283.79	-60	279.06	RC[5]	
11PHR03	Pyrite Hill	240	MGA94_54	518560.3	6449189.61	280.26	-60	279.06	RC[5]	
11PHR04	Pyrite Hill	186	MGA94_54	518528.63	6449257	284.03	-60	279.06	RC[5]	
11PHR05	Pyrite Hill	234	MGA94_54	518584.25	6449397.62	280.22	-60	259.06	RC[5]	
11PHR06	Pyrite Hill	180	MGA94_54	518490.9	6449522.59	284.02	-60	234.06	RC[5]	
11PHR07	Pyrite Hill	174	MGA94_54	518413.47	6449592.9	282.86	-60	219.06	RC[5]	
11PHR08	Pyrite Hill	180	MGA94_54	518342.74	6449655.85	282.88	-60	218.06	RC[5]	
11PSR01	Pyrite Hill	59	MGA94_54	518742.73	6448864	268.38	-60	258.06	RC[5]	
11PSR02	Pyrite Hill	132	MGA94_54	518719.38	6448960.01	270.41	-60	255.06	RC[5]	
11PSR03	Pyrite Hill	78	MGA94_54	518686.99	6449055.35	272.79	-60	255.06	RC[5]	
12BER01	Railway	157	MGA94_54	521667.31	6449893.23	277.69	-60	141	RC[5]	
12BER02	Railway	132	MGA94_54	521212.67	6449690.67	273.53	-60	162	RC[5]	
12BER03	Railway	151	MGA94_54	521879.01	6450435.47	288.59	-60	102	RC[5]	

1 Diamond drill hole
2 Diamond drill hole with percussion pre-collar
3 Diamond drill hole with reverse circulation pre-collar
4 Diamond drill hole with rotary air blast pre-collar
5 Reverse Circulation drill hole

Historic down-hole information *(continued)*

Hole ID	Deposit	Max Depth (m)	NAT Grid ID	Easting	Northing	RL	Dip	Azimuth	Hole Type	Pre-Collar Depth
12BER04	Railway	148	MGA94_54	522353.92	6451268.35	274.35	-60	131	RC[5]	
12BER05	Railway	145	MGA94_54	522439.47	6451167.84	299.73	-60	124	RC[5]	
12BER06	Railway	169	MGA94_54	522481.37	6451091.35	295.95	-60	118	RC[5]	
12BER07	Railway	115	MGA94_54	522323.72	6450748.75	277.91	-60	144	RC[5]	
12BER08	Railway	193	MGA94_54	522220.79	6450811.8	273.16	-60	129	RC[5]	
12BER09	Railway	139.75	MGA94_54	522101.25	6450881.44	275.91	-60	129	RC[5]	
12BER10	Railway	151	MGA94_54	521953.45	6450716.18	284.49	-60	129	RC[5]	
12BER11	Railway	193	MGA94_54	522737.22	6451376.61	265.83	-60	153	RC[5]	
12BER12	Railway	111	MGA94_54	522909.73	6451516.76	277.36	-60	153	RC[5]	
12BER13	Railway	205	MGA94_54	522883.81	6451557.54	271.03	-60	156	RC[5]	
12BER14	Railway	151	MGA94_54	523124.83	6451637.07	288.36	-60	152	RC[5]	
12BER15	Railway	109	MGA94_54	523311.3	6451841.7	283.95	-60	154	RC[5]	
12BER16	Railway	115	MGA94_54	522994.08	6451591.99	275.95	-60	156	RC[5]	
12BER17	Railway	115.5	MGA94_54	522516.5	6451314.94	269.1	-60	153	RC[5]	
12BER18	Railway	157	MGA94_54	522332.75	6451281.31	272.29	-60	129	RC[5]	
12BER19	Railway	97	MGA94_54	522240.55	6451067.15	276.16	-60	135	RC[5]	
12BER20	Railway	120	MGA94_54	521291.69	6449733.63	276.95	-60	165	RC[5]	
13BED01	Railway	349.2	MGA94_54	522480.21	6451092.43	296.01	-60	300.7	DDH[1]	
16DM01	Pyrite Hill	161.6	MGA94_54	518411.38	6449593.89	282.69	-60	215.5	DDH[1]	
16DM02	Pyrite Hill	183.4	MGA94_54	518526.62	6449261.58	284.18	-60	285.0	DDH[1]	
16DM03	Big Hill	126.5	MGA94_54	521037.1	6449567.49	283.01	-60	158.5	DDH[1]	
16DM04	Big Hill	105.4	MGA94_54	520814.74	6449464.4	296.18	-55	128.5	DDH[1]	
16DM05	Railway	246.5	MGA94_54	522103.7	6450881.87	276.62	-60	128.5	DDH[1]	
16DM06	Railway	160.4	MGA94_54	522911.57	6451519.13	278.5	-60	152.5	DDH[1]	
16DM07	Railway	242.5	MGA94_54	522995.26	6451598.26	276.36	-60	156.1	DDH[1]	
16DM08	Railway	258.5	MGA94_54	522351.45	6451273.07	273.85	-60	130.9	DDH[1]	

1 Diamond drill hole
2 Diamond drill hole with percussion pre-collar
3 Diamond drill hole with reverse circulation pre-collar
4 Diamond drill hole with rotary air blast pre-collar
5 Reverse Circulation drill hole

Down hole length and interception depth – 2017 holes

Hole ID	From (m)	To (m)	Interval (m)	Co (ppm)	S (%)	Fe (%)
17THD01	34	123	89	982	9.4	8.7
including	*35*	*41*	*6*	*1143*	*11.9*	*10.6*
and	*50*	*55*	*5*	*1311*	*13.1*	*11.5*
and	*81*	*122*	*41*	*1366*	*11.8*	*11*
17THD02	47	134	87	911	8.8	9.2
including	*48*	*77*	*29*	*1238*	*11.1*	*11.4*
and	*116*	*134*	*18*	*1199*	*11.0*	*11.1*
17THD03	40	63.5	23.5	894	11.6	10.8
including	*49*	*63*	*14*	*1076*	*14.3*	*12.4*
17THD04	20	29	9	1033	8.6	8
	72	96	24	703	8.8	8.1
17THD05	44	60	16	993	9.8	8.5
including	*44*	*56*	*12*	*1094*	*10.9*	*9.4*
	71	76	5	840	6.4	6.3
17THD06	39	85	46	1136	11.4	10.1
including	*40*	*70*	*30*	*1227*	*12.2*	*10.4*
and	*76*	*85*	*9*	*1148*	*10.7*	*10.0*
17THD07	15	128	113	879	8.1	8.8
including	*47*	*55*	*8*	*1048*	*11.7*	*10.3*
and	*61*	*102*	*41*	*1452*	*12.5*	*12.3*
	142	152	10	704	6	10.2
	199	204	5	706	4.9	6.5
17THR001	27	63	36	1075	10.6	10.4
including	*37*	*63*	*26*	*1280*	*11.9*	*11.5*
	75	84	9	755	9.1	13.9
17THR002	37	43	6	711	6.9	8.2
	91	136	45	983	9.8	10.5
including	*102*	*136*	*34*	*1190*	*11.7*	*11.8*
17THR003	4	59	55	937	9.3	9.4
including	*10*	*46*	*36*	*1212*	*11.6*	*11.0*
17THR004	49	146	97	888	10.2	10.2
including	*51*	*113*	*62*	*1051*	*11.4*	*11.3*
17THR005	52	72	20	1053	12.8	12.6
including	*53*	*63*	*10*	*1145*	*12.5*	*13.0*
17THR006	14	74	60	754	8.6	8.7
including	*17*	*44*	*27*	*1176*	*12.5*	*12.1*
17THR007	5	22	17	837	0	12.5
including	*12*	*19*	*7*	*1049*	*0*	*10.5*
	128	154	26	1034	11.4	11.5
including	*128*	*146*	*18*	*1321*	*14.4*	*14.3*
17THR008	37	78	41	1319	12.2	11.2
17THR009	29	65	36	957	9.4	9.2
including	*34*	*60*	*26*	*1150*	*11.1*	*10.2*
	100	105	5	833	12.9	12.7
17THR010	51	57	6	729	4.9	5.3
17THR011	30	83	53	1116	12	10.9
including	*31*	*62*	*31*	*1423*	*15.5*	*13.5*
17THR012	50	117	67	748	7.5	8.6
including	*59*	*67*	*8*	*1084*	*10.3*	*12.6*
and	*75*	*102*	*27*	*1120*	*11.0*	*11.3*
	172	177	5	725	6.4	6.4

Down hole length and interception depth – 2017 holes *(continued)*

Hole ID	From (m)	To (m)	Interval (m)	Co (ppm)	S (%)	Fe (%)
17THR013	19	73	54	888	5.4	5
including	*19*	*29*	*10*	*2576*	*8.8*	*7.7*
17THR014	12	45	33	749	8.1	7.4
including	*25*	*33*	*8*	*1148*	*11.3*	*9.4*
17THR015	40	48	8	995	8.9	8.1
17THR016	66	115	49	1096	12.9	13.4
including	*66*	*81*	*15*	*1184*	*14.2*	*13.9*
and	*89*	*114*	*25*	*1183*	*13.4*	*14.1*
17THR017	54	112	58	1383	13.2	12.8
including	*56*	*85*	*29*	*2042*	*18.3*	*15.8*
17THR018	47	63	16	1124	15.1	14.1
17THR019	42	59	17	1032	10.7	11.4
17THR020	29	49	20	1067	11.6	11.5
including	*29*	*36*	*7*	*1352*	*13.5*	*12.6*
17THR021	44	64	20	1204	13.1	12.7
17THR022	101	138	37	1152	10.7	12
17THR023	91	137	46	1271	13.9	13.3
including	*91*	*97*	*6*	*1953*	*18.7*	*16.6*
and	*114*	*125*	*11*	*2707*	*31.1*	*26.5*
17THR027	29	54	25	1176	12.6	11.8
including	*30*	*47*	*17*	*1382*	*14.1*	*12.5*
17THD08	19	103	84	1013	12.8	15.6
17THD09	19	65	46	1234	14.8	13.8
17THD10	24	58.8	34.8	1269	14.2	12.5
including	*32.1*	*43.5*	*11.4*	*1454*	*15.5*	*13.4*
and	*49.5*	*58.8*	*9.3*	*1777*	*20.9*	*16.7*
17THD11	69.1	85	15.9	911	12.9	13.2
including	*75*	*85*	*10*	*1116*	*15.5*	*14.8*
17THD12	19	63	44	956	10.7	10.9
including	*36*	*42*	*6*	*1064*	*13.6*	*12.9*
and	*43*	*63*	*20*	*1228*	*13.4*	*13.7*
17THD13	35.2	63.16	27.96	943	11.1	10.1
including	*35.2*	*55*	*19.8*	*1040*	*11.8*	*10.7*
17THD14	54	76.65	22.65	929	10.9	11.9
including	*54*	*65*	*11*	*1398*	*13.7*	*13.6*
17THR024	68	82	14	1436	12.1	12.3
	96	*139*	*43*	*1082*	*9.0*	*9.2*
including	*110*	*139*	*29*	*1363*	*10.5*	*10.5*
17THR025	59	103	44	956	10.8	12.4
including	*60*	*73*	*13*	*1493*	*15.4*	*14.0*
and	*92*	*103*	*11*	*1147*	*12.5*	*15.0*
17THR026	66	89	23	1122	11.5	11.6
17THR028	19	39	20	1163	8.1	7.5
including	*20*	*30*	*10*	*1578*	*11.1*	*9.9*
	78	138	60	831	8.2	7.8
including	*98*	*138*	*40*	*1012*	*9.6*	*8.7*
and	*98*	*113*	*15*	*1979*	*19.3*	*16.5*
17THR029	18	90	72	766	7.4	9.5
including	*43*	*75*	*32*	*1043*	*9.2*	*12.3*
17THR030	24	81	57	1097	11.9	12.6
17THR032	26	31	5	1323	9.0	8.0
	44	*97*	*53*	*1218*	*15.9*	*16.3*

Down hole length and interception depth – 2017 holes *(continued)*

Hole ID	From (m)	To (m)	Interval (m)	Co (ppm)	S (%)	Fe (%)
17THR033	**31**	**48**	**17**	**842**	**7.2**	**6.9**
including	*39*	*48*	*9*	*1223*	*10.1*	*9.2*
	97	*115*	*18*	*685*	*6.1*	*5.9*
17THR034	**38**	**94**	**56**	**1036**	**10.2**	**10.6**
including	*38*	*74*	*36*	*1217*	*12.1*	*11.5*
17THR035	**54**	**78**	**24**	**812**	**8.6**	**8.0**
Including	*58*	*69*	*11*	*1008*	*10.3*	*9.6*
	125	*131*	*6*	*771*	*6.3*	*6.6*
17THR036	**26**	**87**	**61**	**921**	**8.9**	**9.1**
including	*26*	*72*	*46*	*1115*	*10.6*	*10.2*
17THR037	**18**	**67**	**49**	**1094**	**11.0**	**10.5**
17THR038	**69**	**96**	**27**	**1237**	**12.3**	**11.4**

Down hole length and interception depth – historic holes

Hole ID	From (m)	To (m)	Interval (m)	Co (ppm)	S (%)	Fe (%)
11PHR02	74	114	40	875	10.8	11.6
11PHR03	150	162	12	750	8.3	9.6
11PHR03	163	190	27	732	10.6	11.9
11PHR03	206	227	21	988	11.7	13
11PHR04	124	172	48	1049	12.8	12.9
11PHR05	197	219	22	1138	10.7	13.3
11PHR06	104	135	31	854	8.3	11.5
11PHR06	155	171	16	1315	12	12.2
11PHR07	96	147	51	941	9.5	9.9
11PHR08	103	115	12	1417	13.9	14.8
11PHR08	126	144	18	1048	12.6	14.2
12BER01	115	139	24	768	7.2	7.4
12BER02	18	25	7	1062	10.3	9.3
12BER02	113	123	10	907	8.5	8.6
12BER04	41	90	49	1191	11.4	12.7
12BER04	121	126	5	1241	9	11.2
12BER05	33	39	6	1109	7.9	9.2
12BER05	65	76	11	721	6.3	6.6
12BER06	131	169	38	844	8.3	12.8
12BER07	38	43	5	704	10	10.1
12BER09	33	92	59	841	9	11.6
12BER11	31	62	31	738	8.4	12.6
12BER11	92	159	67	1061	10	13.1
12BER11	173	193	20	737	6.7	8.3
12BER12	27	81	54	1430	18.1	18.9
12BER13	21	42	21	761	7.4	9.1
12BER13	65	75	10	1882	20.4	21.6
12BER14	28	55	27	1013	12.5	12.9
12BER16	25	100	75	1008	10.6	10.7
12BER17	92	99	7	739	6	6.3
12BER18	117	157	40	1017	11.2	11.4
12BER19	34	56	22	1151	10.4	10.8
12BER19	68	75	7	780	6.1	6
12BER20	21	46	25	731	6.9	7.5
13BED01	266	291.5	25.5	872	8.5	7.8

Down hole length and interception depth – historic holes *(continued)*

Hole ID	From (m)	To (m)	Interval (m)	Co (ppm)	S (%)	Fe (%)
16DM01	96	147	51	851	9.1	8.6
16DM02	127	172	45	1118	13.8	13.6
16DM03	104	111	7	838	10.3	9
16DM04	91	99	8	887	9.1	8.4
16DM05	30	103	73	793	8.2	9
16DM05	199	211	12	830	25.1	22.1
16DM06	28	84	56	1280	16.2	16.7
16DM06	138	146	8	722	7.8	11.2
16DM07	35	60	25	1232	11.1	11.1
16DM07	71	104	33	1224	13.3	13.4
16DM08	76	100	24	1026	11	12
16DM08	165	177	12	921	12.2	12.6
17THD01	34	123	89	982	9.4	8.7
17THD02	47	134	87	911	8.8	9.2
17THD03	40	63.5	23.5	894	11.6	10.8
17THD04	20	29	9	1033	8.6	8
17THD04	72	96	24	703	8.8	8.1
17THD05	44	60	16	993	9.8	8.5
17THD05	71	76	5	840	6.4	6.3
17THD06	39	85	46	1136	11.4	10.1
17THD07	15	128	113	879	8.1	8.8
17THD07	142	152	10	704	6	10.2
17THD07	199	204	5	706	4.9	6.5
17THR001	27	63	36	1075	10.6	10.4
17THR001	75	84	9	755	9.1	13.9
17THR002	37	43	6	711	6.9	8.2
17THR002	91	136	45	983	9.8	10.5
17THR003	4	59	55	937	9.3	9.4
17THR004	49	146	97	888	10.2	10.2
17THR005	52	72	20	1053	12.8	12.6
17THR006	14	74	60	754	8.6	8.7
17THR007	5	22	17	837	0	12.5
17THR007	128	154	26	1034	11.4	11.5
17THR008	37	78	41	1319	12.2	11.2
17THR009	29	65	36	957	9.4	9.2
17THR009	100	105	5	833	12.9	12.7
17THR010	51	57	6	729	4.9	5.3
17THR011	30	83	53	1116	12	10.9
17THR012	50	117	67	748	7.5	8.6
17THR012	172	177	5	725	6.4	6.4
17THR013	19	73	54	888	5.4	5
17THR014	12	45	33	749	8.1	7.4
17THR015	40	48	8	995	8.9	8.1
17THR016	66	115	49	1096	12.9	13.4
17THR017	54	112	58	1383	13.2	12.8
17THR018	47	63	16	1124	15.1	14.1
17THR019	42	59	17	1032	3.2	11.4
17THR020	29	49	20	1067	11.6	11.5
17THR021	44	64	20	1204	13.1	12.7
17THR022	101	138	37	1152	10.7	12
17THR023	91	137	46	1271	13.9	13.3
17THR027	29	54	25	1176	12.6	11.8

Down hole length and interception depth – historic holes *(continued)*

Hole ID	From (m)	To (m)	Interval (m)	Co (ppm)	S (%)	Fe (%)
67TH01	123.44	200.01	76.57	979	0	0
70BH01	39.62	53.34	13.72	3323	3.1	0
70BH01	64.31	84.43	20.12	1203	9.5	0
70BH02	74.06	86.86	12.8	704	7.5	0
70TH02	78	84.1	6.1	1666	17.5	15.4
70TH02	87.1	102.1	15	1661	8	7.2
70TH03	77.7	129.5	51.8	1016	12.9	13.2
80BGH05	39	49	10	752	0	0
80BGH06	18	68.04	50.04	969	0	0
80BGH08	44	78.15	34.15	939	0	0
80PYH01	7.5	17	9.5	725	0	0
80PYH02	34.1	48.25	14.15	1121	0	0
80PYH03	23	35	12	711	0	0
80PYH04	39.75	55	15.25	735	0	0
80PYH05	36.7	65	28.3	1160	11.8	0
80PYH06	54	62	8	905	0	0
80PYH07	67	79.4	12.4	1113	12.5	0
80PYH10	48.45	137.4	88.95	831	8.6	0
80PYH11	34.6	46.5	11.9	916	8	0
80PYH11	57.2	91.05	33.85	1239	10.6	0
80PYH12	30.2	36.5	6.3	791	10.2	0
80PYH12	85.15	90.8	5.65	857	14.6	0
80PYH14	251.8	273.4	21.6	1252	13.1	0
93MGM02	85	160	75	941	8.5	0
98TC01	20	47	27	744	9.1	12.6
98TC01	48	71	23	917	11.9	16.4
98TC03	34	45	11	1480	5.5	6
98TC03	68	79	11	1095	4.3	4.2
98TC04	84	94	10	966	3.9	4
98TC04	107	133	26	771	7.7	8.2
98TC05	24	62	38	754	6.4	7
98TC06	66	72	6	727	10.4	11.1
98TC06	76	101	25	767	10.1	10.6
98TC07	35	46	11	1546	16.5	17.1
98TC07	61	82	21	728	9.1	9.4
98TC09	32	39	7	716	4.9	17.4
98TC09	82	107	25	732	6	6.7
98TC10	101	125	24	732	7.9	8

CobaltBlue

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.* ▪ *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.*	**Drilling** ▪ Drill hole intercept grades are typically reported as down-hole length-weighted averages with any non-recovered sample within the reported intervals treated as no grade. The cut-off used for selecting significant intersections is selected to reflect the overall tenor of mineralisation, in most cases 500ppm cobalt. ▪ No top cuts have been applied when calculating average grades for reported significant intersections. ▪ No metal equivalent values are reported.
Relationship between mineralis-ation 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 drillhole 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').*	▪ Drill holes at the Thackaringa project are typically angled at 50° or 60° and drilled perpendicular to the mineralised trend with drilling orientations adjusted along strike to accommodate folded geological sequences. ▪ Mineralisation at the Big Hill and Railway prospects is steeply dipping and consequently mineralised intersections will be greater than true width. At Pyrite Hill mineralisation is gently dipping and mineralised intersections will be close to true width. ▪ There is insufficient geological knowledge to accurately estimate true widths and as such all drill intersections are reported as down hole lengths.
Diagrams	▪ *Appropriate maps and sections (with scales) and tabulations of intercepts should be included for any significant discovery being reported These should include, but not be limited to a plan view of drill hole collar locations and appropriate sectional views.*	▪ Appropriate diagrams are presented in the accompanying ASX release.
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.*	▪ Only mineralised drill hole intersections regarded as highly anomalous and of economic interest are reported. The proportion of each hole represented by the reported intervals can be ascertained from the sum of the reported intervals divided by the total drill hole depth. ▪ All assay results for drill holes included in the various Mineral Resource estimates have been considered and comprise results not necessarily regarded as anomalous.

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.*	■ Pre-Feasibility Study (PFS) Testwork: ■ A PFS was commenced in August 2017. ■ The first stage of the process is to prepare a concentrate from the ore. A composite of diamond drilling core samples from the 2016 program, was prepared using quarter core samples previously held in storage by ALS Metallurgy Burnie. The composite grade was 607 ppm which is about 300 ppm less than the average grade of the combined Thackaringa resources (Pyrite Hill, Railway Hill, and Big Hill). For clarity, the composite tested represents “low-grade” ore rather than the average grade ore. ■ The ore composite was crushed to 1.2 mm and passed through a gravity-flotation circuit. From the 820 kg of ore, 139 kg of concentrate was produced. The cobalt recovery was 92% to concentrate. The metal content in the ore and concentrate was determined using industry standard XRF and ICP methods by ALS. ■ To date 40 kg of concentrate has been thermally treated to yield ~30 kg of calcine with elemental sulphur collected from the off-gas. The elemental sulphur typically graded 97.5%. ■ 7 kg of the calcine has now been leached to extract cobalt into solution. ■ Further work is ongoing to process a further 60 kg of concentrate through the unit operations to produce a final product ■ A second ore composite from the 2017 diamond drilling program has been selected for testwork. This composite grades ~1000 ppm cobalt, and represents a more typical grade ore relative to the resource estimate average grade of 900 ppm (500 ppm Co cut-off). This sample will be the subject of ongoing testwork.
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 Company is undertaking a Pre-Feasibility Study to assess the merits of developing the Thackaringa Cobalt Project. This was announced in the CEO letter to shareholders 27 September 2017.

Section 3 Estimation and Reporting of Mineral Resources

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

Criteria	JORC Code Explanation	Commentary

Database Integrity	▪ *Measures taken to ensure that data has not been corrupted by, for example, transcription or keying errors, between its initial collection and its use for Mineral Resource estimation purposes.*
	▪ *Data validation procedures used.*
		▪ The Thackaringa drilling database exists in electronic form as a Microsoft Access database. Information related to individual drill holes is stored in digital files typically including location plan, section, logs, photos, surveys, assays and petrology (where available).
		▪ Historical drilling data available in electronic form has been re-formatted and imported into the drilling database.
		▪ Quantitative historical drilling data, including assays, have been captured electronically during systematic data compilation and validation completed by Broken Hill Prospecting ('BPL').
		▪ In late 2016 an independent validation of the Thackaringa drilling database was completed:
		  ▫ The data validation process consisted of systematic review of drilling data (collars, assays and surveys) for identification of transcription errors.
		  ▫ Following review, historical drill hole locations were also validated against georeferenced historical maps to confirm their location.
		  ▫ Total depths for all holes were checked against original reports.
		  ▫ Final 3D validation of drilling data has been completed by independent geological consultants to support detailed geological modeling in Micromine™ software.
		  ▫ The independent validation confirmed the database integrity for the two Mineral Resource Estimates, Pyrite Hill and Railway, completed prior to the audit.
		  ▫ Further, the validation identified incorrect collar locations for three (3) drill holes at Big Hill which were rectified prior to the now superseded Mineral Resource estimate completed by GEOS Mining. These corrections were preserved for the purposes of the Mineral Resource estimate completed by H&SC Consultants ('H&SC') and herein reported.
		▪ For the purposes of the Mineral Resource Estimates reported (Pyrite Hill, Railway & Big Hill):
		  ▫ Data was provided to H&SC as a series of Excel files that contained worksheets for drill-hole logs and assays; down hole surveys; collars; standards; sample repeats and summary intervals.
		  ▫ H&SC are not aware of the detailed procedures taken by BPL or Cobalt Blue Holdings (COB) to ensure that data has not been corrupted though it understands that an independent geologist specialising in geological databases was responsible for database assembly, QA/QC and data integrity. H&SC's work was on the basis that COB took responsibility for all provided data and that the data was accurate and representative.
		▪ Limited independent validation was conducted by H&SC to ensure the drill-hole database was internally consistent. H&SC loaded the supplied data into its own Access database undertaking checks for duplicate data, missing data and wrongly formatted data. A second set of checks including end of hole consistency, overlapping intervals and incorrect sample intervals was completed using the SURPAC database audit option. The minimum and maximum values of assays were checked to ensure values are within expected ranges.
		▪ COB supplied digital images of detailed surface mapping which were draped over topography to constrain the geological interpretation.
		▪ Assessment of the data confirms that it is suitable for resource estimation and appropriate for the reporting of Mineral Resource Estimates at the Indicated and Inferred level of confidence.

Criteria	JORC Code Explanation	Commentary
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.*	- A representative of H&SC completed a site visit in May 2011. Visual inspection of outcropping areas of the Pyrite Hill deposit were observed prior to the completion of the now superseded 2011 Mineral Resource estimates.
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*	**Pyrite Hill** - COB supplied a digital 3D solid of mineralization based on the downward extrapolation of the surface mapping along with a csv file containing mineral intercepts for each hole. Cross sections were constructed along the strike of the mineralisation complete with slicing of the mineral lode. The outlines were used to design simplified wireframes that were snapped to drillholes and triangulated as a 3D shape. Estimates were completed on blocks within or partially within the overall envelope using data from that volume. The cobalt mineralisation is clearly defined and occurs continuously over a 1.2km strike. The upper and lower contacts are easily identifiable from cobalt grades, logged lithology (including lithogeochemical signatures) with the mineralisation generally corresponding to a sharp transition from low grade intervals to those above 500 ppm. A surface representing the base of partial oxidation was used to restrict the reporting of the estimates where weathering is interpreted to have depleted the cobalt concentrations. - The mineralisation is stratabound, hosted within a pyritic quartz-albite gneiss. - The deposit is characterised by a well-defined mineralised envelope with variable disruption resulting from complex ductile deformation. Internal folding is evident and is considered to influence inferred thickening/thinning of the mineralised body in some areas. It is considered that this structural complexity will affect continuity of grade and geology however the current drilling density is insufficient to completely resolve these factors. - The classification of the Indicated and Inferred Resources is considered an appropriate reflection of the degree of certainty associated with the geological interpretation. - Alternative interpretations of this volume are possible but are unlikely to significantly change the resource estimate due to the enhanced cobalt grades within the main body of mineralisation compared with the foot-wall and hanging-wall rocks. **Railway** - COB supplied a digital 3D solid of mineralization based on the downward extrapolation of the surface mapping along with a csv file containing mineral intercepts for each hole. Cross sections were constructed along the strike of the mineralisation complete with slicing of the mineral lode. The outlines were used to design simplified wireframes that were snapped to drillholes and triangulated as a 3D shape. Estimates were completed on blocks within or partially within the overall envelope using data from that volume. The cobalt mineralisation is clearly defined and occurs continuously over a 1.9km strike. The upper and lower contacts are easily identifiable from cobalt grades, logged lithology (including lithogeochemical signatures) with the mineralisation generally corresponding to a sharp transition from low grade intervals to those above 500ppm. A surface representing the base of partial oxidation was used to restrict the reporting of the estimates where weathering is interpreted to have depleted the cobalt concentrations.

Criteria	JORC Code Explanation	Commentary
Geological interpretation *(continued)*		**Railway** *(continued)* ▪ The mineralisation is stratabound, hosted within a pyritic quartz-albite gneiss. ▪ The Railway deposit is defined by a broadly linear mineralised envelope with variable disruption resulting from complex ductile deformation. Internal folding is evident and is considered to influence inferred thickening/thinning of the mineralised body in some areas. It is considered that this structural complexity will affect continuity of grade and geology however the current drilling density is insufficient to completely resolve these factors. ▪ The classification of the Indicated and Inferred Resources is considered an appropriate reflection of the degree of certainty associated with the geological interpretation. ▪ Alternative interpretations of this volume are possible but are unlikely to significantly change the resource estimate due to the enhanced cobalt grades within the main body of mineralisation compared with the foot-wall and hanging-wall rocks. **Big Hill** ▪ COB supplied a digital 3D solid of mineralization based on the downward extrapolation of the surface mapping along with a csv file containing mineral intercepts for each hole. Cross sections were constructed along the strike of the mineralisation complete with slicing of the mineral lode. The outlines were used to design simplified wireframes that were snapped to drillholes and triangulated as a 3D shape. Estimates were completed on blocks within or partially within the overall envelope using data from that volume. The cobalt mineralisation is clearly defined and occurs continuously over a 1.5km strike. The upper and lower contacts are easily identifiable from cobalt grades, logged lithology (including lithogeochemical signatures) with the mineralisation generally corresponding to a sharp transition from low grade intervals to those above 500ppm. A surface representing the base of partial oxidation was used to restrict the reporting of estimates where weathering is interpreted to have depleted the cobalt concentrations. ▪ The mineralisation is stratabound, hosted within a pyritic quartz-albite gneiss. ▪ The Big Hill deposit is defined by a broadly linear mineralised envelope with variable disruption resulting from complex ductile deformation. Internal folding is evident and is considered to influence inferred thickening/thinning of the mineralised body in some areas. It is considered that this structural complexity will affect continuity of grade and geology however the current drilling density is insufficient to completely resolve these factors. ▪ The classification of the Indicated and Inferred Resources is considered an appropriate reflection of the degree of certainty associated with the geological interpretation. ▪ Alternative interpretations of this volume are possible but are unlikely to significantly change the resource estimate due to the enhanced cobalt grades within the main body of mineralisation compared with the foot-wall and hanging-wall rocks.

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.*	**Pyrite Hill** - The Pyrite Hill mineralised envelope extends over 1.2km and varies in thickness from approximately 10–60 metres. The estimates extend to between 100mRL–15mRL (approximately 160–300 metres below surface). A base of partial oxidation surface is generally between 10–15 metres below surface. **Railway** - The Railway mineralised envelope extends over 1.9km and varies in thickness from approximately 40–190 metres. The estimates extend to between 150mRL–25mRL (approximately 150–270 metres below surface). A base of partial oxidation surface is generally between 10–15 metres below surface. **Big Hill** - The main Big Hill mineralised envelope extends over 0.8km with a subsidiary, along strike body having 0.5km of strike. Thicknesses vary between approximately 20–80 metres. The estimates extend to between 130mRL–100mRL (approximately 170–200 metres below surface). A base of partial oxidation surface is generally between 10–15 metres below surface.

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 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.*	**Pyrite Hill** - H&SC estimated cobalt concentrations using Ordinary Kriging using GS3M™ software. Model validation and resource reporting was carried out using the Mining Software package SURPAC™. H&SC considers Ordinary Kriging to be an appropriate estimation technique for the type of mineralisation. - The relatively low coefficient variance and absence of extreme values precluded the need for top-cutting of any of the estimated concentrations. - One metre composites were created from 49 drillholes (RC and diamond) and estimates completed using the 1,876 data points occurring inside the Pyrite Hill mineralised envelope. - Elements modelled include cobalt, iron and sulphur. Cobalt shows a strong correlation with sulphur and iron. Missing iron and sulphur composite data from earlier drilling was generated by using the Conditional Expectation method to create regression equations for sulphur from cobalt composites and iron grades from sulphur composites. - H&SC used an 8 x 60 x 60m search with 12 to 32 data points and a minimum of 4 octants to estimate Indicated Resources. This was expanded to 15 x 120 x 120m with 6 to 32 data points and a minimum of 2 octants for Inferred Resources. A block size of 5 x 20 x 10 meters was used. Exploration potential size is based on a search of 20 x 150 x 150m designed to largely fill the modelled mineral wireframe with Co estimates. Search rotations are based on variation in the geological dip and strike. 2 modelling domains were used to reflect the change in strike of the mineralisation. - A check Inverse Distance Squared estimate using the supplied mineral wireframe showed comparable results. - Estimates were completed on blocks within or partly within the mineral shape using a partial percent volume adjustment. - A surface representing the base of partial oxidation was used as a soft boundary in the grade interpolation but as a hard boundary for constraining the reporting of estimates as weathering is interpreted to have depleted the cobalt concentrations. - There has been no historical production at the Pyrite Hill deposit. - The final H&SC block model was reviewed visually by H&SC and it was concluded that the block model fairly represents the grades observed in the drill holes. H&SC also validated the block model statistically using a variety of statistical plots and summary statistics. - Previous metallurgical test work has indicated the mineralisation may be amendable to gravity and or flotation processing to produce a pyrite concentrate containing the bulk of the cobalt. Further there are a variety of pyrometallurgical and hydrometallurgical processes of treating such a concentrate for the potential recovery of cobalt, sulphuric acid and high iron residue. Despite this, the Mineral Resource estimate does not consider the recovery of any potential by-products.

Criteria	JORC Code Explanation	Commentary

Estimation and modelling techniques *(continued)*		**Pyrite Hill** *(continued)*
		▪ Previous estimates are summarised:
		  ▪ CRA Exploration Pty Ltd (CRAE) completed a grade tonnage estimate for the Pyrite Hill deposit in 1981, prior to the enactment of the JORC code. CRAE employed a polygonal longitudinal section methodology which considered a mineralised envelope extending from surface to approximately 200 metres depth. This estimate comprised 10.6Mt at 998ppm (2.2lb/t) Co at a 500ppm Co cut-off. In 2010, this estimate was reviewed by an independent Competent Person whom considered the estimate adequately satisfied requirements under the JORC2004 code for Inferred classification.
		  ▪ Hunter Exploration NL completed a grade tonnage estimate using a cross sectional polygonal methodology restricted using a simple conceptual pit shell assuming 50° pit walls and 100 metre total depth. The estimate allowed for near surface depletion and comprised 7.7Mt at 1089ppm (2.4lb/t) at a 500ppm Co cut-off. This estimate did not use categories defined under the current JORC code (2012).
		    ▪ These estimates completed by CRAE and Hunter Exploration (10.6Mt at 998ppm (2.2lb/t) Co at a 500ppm Co cut-off & 7.7Mt at 1089ppm (2.4lb/t) at a 500ppm Co cut-off) are historical estimates and are not reported in accordance with the JORC code. A competent person has not done sufficient work to classify the historical estimates in accordance with JORC 2012.
		  ▪ H&SC completed a Mineral Resource estimate in 2011 using Ordinary Kriging which was subsequently reported under the 2012 JORC Code & Guidelines. Estimates were derived from grade interpolation of 2m composites from within hanging wall and footwall surfaces cut to the base of oxidation. The estimate comprised 16.4Mt at 830ppm Co (at a 500ppm Co cut-off).
		  ▪ These historical estimates were superseded by the reported Mineral Resource estimate completed by H&SC in 2017 and reported herein. As such they bear no materiality and or relevance to the reporting entity.
		Railway
		▪ H&SC estimated cobalt concentrations using Ordinary Kriging using GS3M™ software. Model validation and resource reporting was carried out using the Mining Software package SURPAC™. H&SC considers Ordinary Kriging to be an appropriate estimation technique for the type of mineralisation.
		▪ The relatively low coefficient variance and absence of extreme values precluded the need for top-cutting of any of the estimated concentrations.
		▪ 4,183 one metre composites from 56 drillholes (RC & Diamond) were used to estimate Indicated and Inferred Resources for the Railway deposit.
		▪ Elements modelled include cobalt, iron and sulphur. Cobalt shows a strong correlation with sulphur and iron.
		▪ H&SC used a 60 x 8 x 60m search with 12 to 32 data points and a minimum of 4 octants to estimate Indicated Resources. This was expanded to 120 x 15 x 120m with 6 to 32 data points and a minimum of 2 octants. A block size of 20 x 5 x 10 meters was used. Exploration potential size is based on a search of 150 x 20 x 150m designed to largely fill the modelled mineralised volume with cobalt estimates. Search rotations are based on the dip and strike of the mineralisation. 4 modelling domains were used, that reflect the change in dip and strike of the mineralisation.

Criteria	JORC Code Explanation	Commentary
Estimation and modelling techniques *(continued)*		**Railway** *(continued)* ▪ Estimates were completed on blocks within or partly within the mineral shape using a partial percent volume adjustment. ▪ A check Inverse Distance Squared estimate using the supplied mineral wireframe showed comparable results. ▪ A surface representing the base of partial oxidation was used as a soft boundary in the grade interpolation but as a hard boundary for constraining the reporting of estimates as weathering is interpreted to have depleted the cobalt concentrations. ▪ The final H&SC block model was reviewed visually by H&SC and it was concluded that the block model fairly represents the grades observed in the drill holes. H&SC also validated the block model statistically using a variety of statistical plots and summary statistics. ▪ There has been no historical production at the Railway deposit. ▪ Previous metallurgical test work has indicated the mineralisation may be amendable to gravity and or flotation processing to produce a pyrite concentrate containing the bulk of the cobalt. Further there are a variety of pyrometallurgical and hydrometal-lurgical processes of treating such a concentrate for the potential recovery of cobalt, sulphuric acid and high iron residue. Despite this, the Mineral Resource estimate does not consider the recovery of any potential by-products. ▪ H&SC completed a Mineral Resource estimate in 2012 using Ordinary Kriging which was subsequently reported under the 2012 JORC Code & Guidelines. Estimates were derived from grade interpolation of 1m composites from within hanging wall and footwall surfaces cut to the base of oxidation. The estimate comprised 14.9Mt at 831ppm Co (at a 500ppm Co cut-off). This estimate is subsequently superseded by the Mineral Resource estimate completed in 2017 and reported herein. As such this preceding estimate bears no materiality and or relevance to the reporting entity. **Big Hill** ▪ H&SC estimated cobalt concentrations using Ordinary Kriging using GS3M™ software. Model validation and resource reporting was carried out using the Mining Software package SURPAC™. H&SC considers Ordinary Kriging to be an appropriate estimation technique for the type of mineralisation. ▪ The relatively low coefficient variance and absence of extreme values precluded the need for top-cutting of any of the estimated concentrations. ▪ 1,411 one metre composites from 25 drillholes (RC and diamond) were used to estimate Indicated and Inferred Resources for the Big Hill deposit. ▪ Elements modelled include cobalt, iron and sulphur. Cobalt shows a strong correlation with sulphur and iron. ▪ Missing iron and sulphur composite data from earlier drilling was generated by using the Conditional Expectation method to create regression equations for sulphur from cobalt composites and iron grades from sulphur composites. ▪ H&SC used a 60 x 8 x 60m search with 12 to 32 data points and a minimum of 4 octants to estimate Indicated Resources. This was expanded to 120 x 15 x 120m with 6 to 32 data points and a minimum of 2 octants. A block size of 20 x 5 x 10 meters was used. Exploration potential size is based on a search of 150 x 20 x 150m designed to largely fill the modelled mineralised volume with cobalt estimates. Search rotations are based on the dip and strike of the mineralisation. 2 modelling domains were used to reflect the change in strike of the mineralisation.

Criteria	JORC Code Explanation	Commentary

Estimation and modelling techniques *(continued)*		**Big Hill** *(continued)*
		• A check Inverse Distance Squared estimate using the supplied mineral wireframe showed comparable results.
		• Estimates were completed on blocks within or partially within the mineral shape using a partial percent volume adjustment.
		• A surface representing the base of partial oxidation was used as a soft boundary in the grade interpolation but as a hard boundary for constraining the reporting of estimates as weathering is interpreted to have depleted the cobalt concentrations.
		• The final H&SC block model was reviewed visually by H&SC and it was concluded that the block model fairly represents the grades observed in the drill holes. H&SC also validated the block model statistically using a variety of statistical plots and summary statistics.
		• There has been no historical production at the Big Hill deposit.
		• Previous metallurgical test work has indicated the mineralisation may be amendable to gravity and or flotation processing to produce a pyrite concentrate containing the bulk of the cobalt. Further there are a variety of pyrometallurgical and hydrometallurgical processes of treating such a concentrate for the potential recovery of cobalt, sulphuric acid and high iron residue. Despite this, the Mineral Resource estimate does not consider the recovery of any potential by-products.
		• Previous estimates are summarised:
		  – Hunter Exploration NL completed a grade tonnage estimate using a cross sectional polygonal methodology restricted using a simple conceptual pit shell assuming 50° pit walls and 100 metre total depth. The estimate comprised 4.4Mt at 910ppm (2.2lb/t) at a 500ppm Co cut-off. This estimate did not use categories defined under the current JORC code (2012).
		    – The estimate completed by Hunter Exploration (4.4Mt at 910ppm (2.2lb/t) at a 500ppm Co cut-off) is an historical estimate and is not reported in accordance with the JORC code. A competent person has not done sufficient work to classify the historical estimates in accordance with JORC 2012.
		  – The historical estimate was superseded by the Inferred Mineral Resource estimate completed by Geos Mining comprising 1.8Mt at 870ppm cobalt and 6% Sulphur (at a 500ppm Co cut-off).
		  – These historical estimates were superseded by the reported Mineral Resource estimate completed by H&SC in 2017 and reported herein. As such they bear no materiality and or relevance to the reporting entity.

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 weight basis; moisture contents are not known to have been determined, but are not expected to be significant for this primary ore type.
Cut-off parameters	• *The basis of the adopted cut-off grade(s) or quality parameters applied.*	• A 500ppm cobalt cut-off has been adopted for the reporting of the Mineral Resource estimates whereby this conforms with historical reports. Previous studies support this as a reasonable figure though future economic studies may determine a more appropriate cut-off grade as further information related to material assumptions affecting the Mineral Resources are determined. • A second constraint is the truncation of the mineral wireframe by the base of partial oxidation surface to produce a 'sulphide' wireframe from within which the resource estimates are reported using a partial percent volume adjustment factor.

Criteria	JORC Code Explanation	Commentary
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 shallow nature of mineralisation at the Pyrite Hill, Railway and Big Hill deposits is considered to make these resources amenable to an open pit mining method. ▪ All deposits form ridge lines that are topographically higher than the surrounding landscape. ▪ Further work is expected to comprise preliminary pit optimisation to enable reporting of resource blocks within a conceptual open pit.
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.*	▪ Previous metallurgical test work has indicated the mineralisation may be amendable to gravity and or flotation processing to produce a pyrite concentrate containing the bulk of the cobalt. Further there are a variety of pyrometallurgical and hydrometallurgical processes of treating such a concentrate for the potential recovery of cobalt, sulphuric acid and high iron residue. ▪ The results of preliminary metallurgical test work were not provided to H&SC. ▪ The Mineral Resource estimates do not consider the recovery of any potential by-products. ▪ It is considered water required for processing could potentially be provided by the NSW government's planned Murray River to Broken Hill pipeline.
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 potential environmental impacts of the project are not well advanced with preliminary considerations noting: ▪ The project is approximately 25 kilometres west-southwest of Broken Hill and more than 90 kilometres from the nearest National Park and or Wilderness Area (Kinchega National Park) and approximately 20 kilometres south of the nearest Water Supply Reserve (Umberumberka Reservoir Water Supply Reserve). ▪ Detailed cultural heritage, flora and fauna surveys are yet to be completed. ▪ It is considered that climatic conditions will assist in the management of wet residues whereby evaporation rates are expected to exceed precipitation. ▪ Studies related to the mine waste characterisation and appropriate storage have not yet been completed. ▪ The construction of a suitable tailings facility is assumed for processing waste. It is considered a portion of water from such a facility could be recovered for re-use as process water.

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 (vughs, porosity, etc.), moisture and differences between rock and alteration zones within the deposit.* - *Discuss assumptions for bulk density estimates used in the evaluation process of the different materials.*	- Density data comprised 755 samples of mineralisation and waste which were well spread throughout the three deposits. - The density measuring method was the weight in air & weight in water immersion method (Archimedes Principle). A substantial portion of these samples were 1m lengths containing several bits of core and represent quality data. Rock types including minerali-sation are generally non-porous with very limited permeability. - A review of 219 pyritic (>10% S) samples indicated that there was a very good correlation between sulphur and density such that Conditional Expectation could be used to generate a regression equation for density that was applicable to all three deposits. This meant that there was the same number of density composites as for cobalt. - Density grade interpolation was completed using Ordinary Kriging in the GS3M software using the same search parameters and modelling domains as for the cobalt grade interpolation. - Average density for resource estimates for the three deposits is 2.85t/m^3.
Classification	- *The basis for the classification of the Mineral Resources into varying confidence categories.* - *Whether appropriate account has been taken of all relevant factors (i.e. relative confidence in tonnage/grade estimations, reliability of input data, confi-dence 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 search pass category is used to allocate the resource classification to the blocks. - The decision on what pass relates to a resource classification is a subjective opinion of the Competent Person. - This classification considers all relevant factors including 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 classification appropriately reflects the Competent Person's view of the deposit.
Audits or reviews	- *The results of any audits or reviews of Mineral Resource estimates*	- No formal audits or check estimates of the Mineral Resources have been completed.

CobaltBlue

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 statement should specify whether it relates to global or local estimates, and, if local, state the relevant tonnages, which should be relevant to technical and economic evaluation. Documentation should include assumptions made and the procedures used.* ▪ *These statements of relative accuracy and confidence of the estimate should be compared with production data, where available.*	▪ The relative accuracy and confidence level in the Indicated and Inferred Mineral Resource estimates presented herein are considered to be in line with the generally accepted accuracy and confidence of Indicated and Inferred Mineral Resources of similar types of deposits and data quality. This has been determined on a qualitative, rather than quantitative, basis, and is based on the Competent Person's experience with similar data and mineralisation ▪ The Mineral Resource estimates are considered to be accurate globally, but there is some uncertainty in the local estimates due to the current drillhole spacing ▪ Work by H&SC was confined to resource estimation with BPL taking responsibility for drilling, sampling, data quality, QAQC, density values and choice of cut-off grades ▪ The geological nature of the deposit, composite/block grade comparison and the low coefficients of variation lend themselves to reasonable level of confidence in the resource estimates. The geological understanding has been substantially improved with the detailed surface mapping and the lithogeochemical interpretation ▪ No mining of the deposit has taken place so no production data is available for comparison.