

## Drilling progress report on the Wollogorang Cobalt Project

### Northern Cobalt Ltd

ACN 617 789 732

### ASX Code(s)

Fully Paid Shares: **N27**

Options:

**N27O**

### Share Price

\$AUD 0.22

### Market Capitalisation

\$AUD 7.87 M

### Capital Structure

#### Ordinary Shares

Issued 35.8 M

#### Options

Listed 10.5 M @20c

Unlisted 12.3 M @25c

#### Performance Shares

Class A 9.6 M

Class B 3.6 M

### Substantial Holder(s)

13.7% Coolabah Group

5.8% PAC Partners

### Last Capital Raise

20 Sept 2017

\$4.2M @ 20c (IPO)

### Board

**Len Dean** - Chair

**Michael Schwarz** - MD

**Duncan Chessell** -

NED

**Andrew Shearer** - NED

**Jarek Kopias** - Co Sec

### Address

67 Goodwood Road

Wayville SA 5034

(South Australia)

### Contact

Michael Schwarz

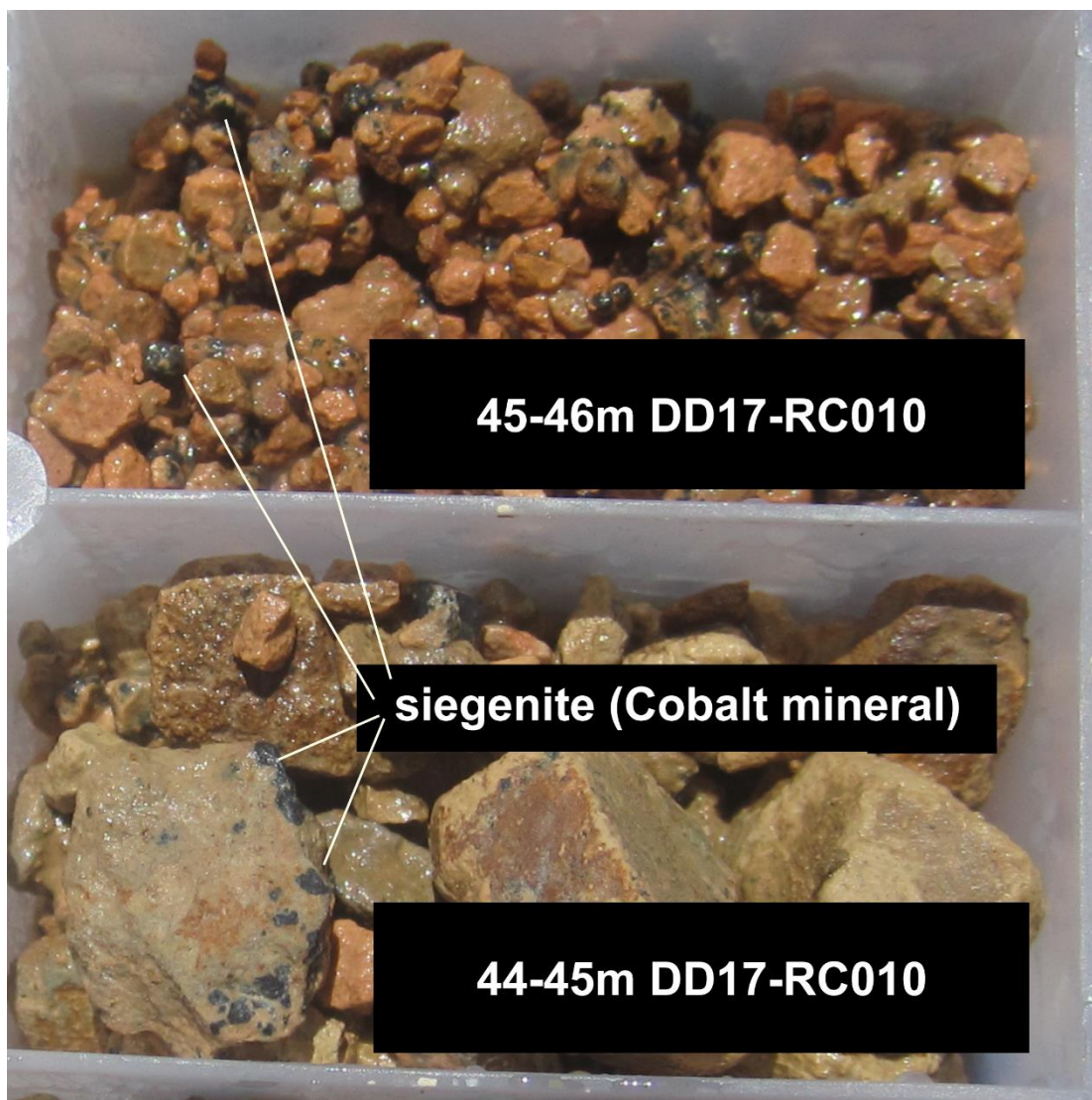
0402 101 790

Managing Director

### Website

[northerncobalt.com.au](http://northerncobalt.com.au)

- **Second drilling rig has commenced drilling on site**
- **Third drill rig due in two weeks to commence a six-hole diamond drill core program**
- **23 of 44 drill holes completed at the Stanton Cobalt Deposit, Northern Territory**
- **First batch of geochemistry samples has been submitted for analysis**



***Cobalt mineralisation occurs as black spots of siegenite, a Co-Ni sulphide, in sandstone and siltstone layers – Photo is from drill hole DD17RC010 44-46m.***

## **Second Drill Rig Commenced Drilling**

A second drill rig has arrived on site and has commenced drilling today. This drill rig will assist with the resource drill out and will then test for extensions outside of the current resource boundary. Once completed both rigs will move on to test the 21 "Stanton look-a-like" targets near the deposit.

Northern Cobalt Ltd has the 100% owned Stanton Cobalt Deposit in the Northern Territory, and has embarked on a planned 20,000m drilling program, scheduled to be completed before the end of 2017. Initial drilling is focussing on upgrading the current JORC 2012 resource with 23 of 44 planned drill holes completed to date within the current resource.

The first batch of geochemical samples from drilling have been submitted for analysis with results expected in approximately 4 weeks. Further batches will be dispatched weekly from site.

A **third drill rig** is due to arrive on site within the next two weeks to commence six-hole diamond drilling program within the Stanton resource to obtain samples for metallurgical test work.



***Chalcopyrite mineralisation in drill hole DDRC011 from 73-75m. The abundance is estimated at ~5-10% chalcopyrite.***



Cobalt mineralisation is observed as fine grained black disseminations primarily in sandstone and siltstone layers. Historical petrology and metallurgy has confirmed the main cobalt mineral as siegenite, a Co-Ni sulphide, below the main zone of weathering and as cobalt oxide within the weathering zone.

The company considers that the reporting of visually determined intersections of cobalt sulphide mineralisation is not practical for several reasons.

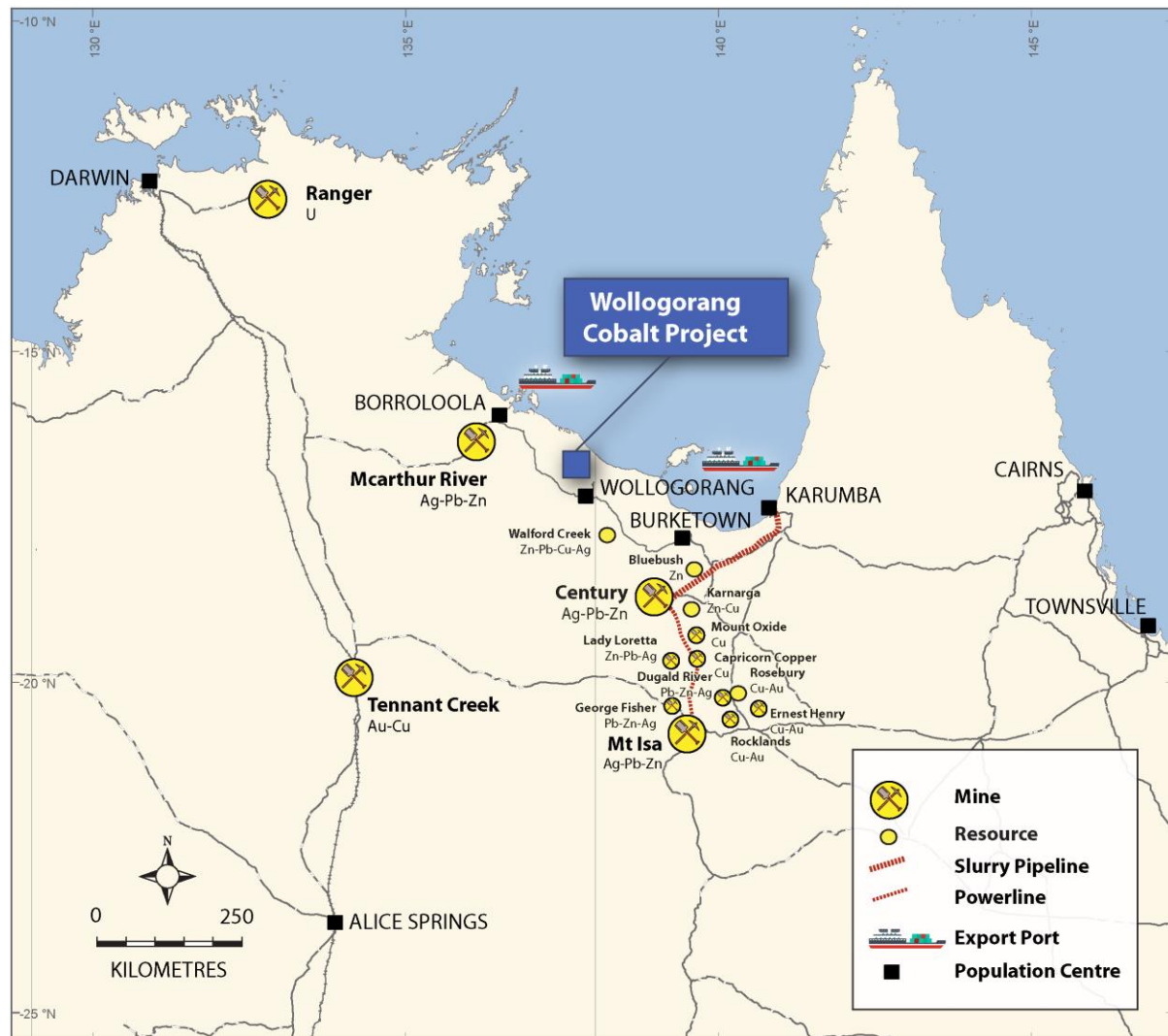
- The cobalt sulphide mineral (siegenite) can be very fine grained and black in colour and indistinguishable from the host rocks in places.
- It is only readily identifiable visually when coarse grained and the host rock is light in colour.
- Because the drilling method consists of RC drill chips the distribution (massive, vein, disseminated) of mineralisation is difficult to determine.

Therefore, any attempt to quantify the length and concentration of sulphide mineralisation is problematic. Geochemical assays are required to undertake a quantitative analysis.

In addition to cobalt mineralisation, copper mineralisation has been observed as malachite (copper-oxide) within the weathered zone and chalcopyrite (copper sulphide) in fresh rock. The main chalcopyrite intersection of significance occurs in DDRC011 from 73-75m. The abundance is estimated at ~5-10% chalcopyrite over this interval.

## **Competent Persons Statement**

The information in this report that relates to Exploration Targets, Exploration Results, Mineral Resources or Ore Reserves is based on information compiled by Mr Michael Schwarz who is a member of the Australian Institute of Geoscientists. Mr Michael Schwarz is a full-time employee of the company and has sufficient experience that is relevant to the style of mineralisation and type of deposit under consideration and to the activity being undertaken to qualify as a Competent Person as defined in the 2012 Edition of the 'Australian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves'. Mr Michael Schwarz consents to the inclusion in the report of the matters based on his information in the form in which it appears.



## Project Location

The Wologorang Cobalt Project occurs in the far north-eastern corner of the Northern Territory, a mining friendly jurisdiction. The Project area is 180 km to the south-east of the population centre of Borroloola. The capital city of Darwin is 870 km to the north-west and the McArthur River Mine is approximately 150 km to the west-northwest.

## About Northern Cobalt Ltd

Northern Cobalt Ltd is an emerging resource company engaged in the acquisition, exploration and development of cobalt mineral projects. The company is led by an experienced and diverse board of directors and management team with proven success in corporate finance, operational management, engineering and exploration project management. Their combined experience and commitment provides Northern Cobalt with the tools to capitalise on the growing demands of the cobalt and energy storage markets.

## Cobalt Sector

Cobalt is an important metal used in the production of batteries and is favoured in end uses such as electric vehicles and mobile phones. The price of Cobalt has doubled over the last 12 months (reference-[www.infomine.com](http://www.infomine.com)). Cobalt demand continues to be tipped as the driver for the cobalt sector as supply remains constrained.



For further information please contact:

Michael Schwarz,  
Managing Director, Northern Cobalt Ltd  
M: +61 402 101 790  
E: [mschwarz@northerncobalt.com.au](mailto:mschwarz@northerncobalt.com.au)

## Appendix 1. N27 drilling at the Stanton Cobalt Deposit

Hole_ID	Easting MGA94_Z53 (m)	Northing MGA94_Z53 (m)	Dip (degrees)	Azimuth (mag)	Max_Depth (m)
DD17RC001	793620	8148510	-90	0	100
DD17RC002	793620	8148490	-90	0	99
DD17RC003	793620	8148470	-90	0	100
DD17RC004	793620	8148450	-90	0	100
DD17RC005	793620	8148430	-90	0	100
DD17RC006	793620	8148410	-90	0	100
DD17RC007	793600	8148390	-90	0	91
DD17RC008	793600	8148410	-90	0	96
DD17RC009	793600	8148430	-90	0	100
DD17RC010	793600	8148450	-90	0	100
DD17RC011	793600	8148470	-90	0	100
DD17RC012	793600	8148490	-90	0	100
DD17RC013	793600	8148510	-90	0	100
DD17RC014	793580	8148470	-90	0	100
DD17RC015	793580	8148450	-90	0	100
DD17RC016	793580	8148430	-90	0	100
DD17RC017	793580	8148410	-90	0	100
DD17RC018	793640	8148410	-90	0	100
DD17RC019	793640	8148430	-90	0	100
DD17RC020	793640	8148450	-90	0	100
DD17RC021	793640	8148470	-90	0	100
DD17RC022	793640	8148490	-90	0	100
DD17RC023	793640	8148510	-90	0	100

## Appendix 2. The following tables are provided to ensure compliance with the JORC Code (2012) requirements for the reporting of the Exploration Target for the Wollogorang Cobalt Project

### Section 1 Sampling Techniques and Data

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

Criteria	JORC Code explanation	Commentary
<i>Sampling techniques</i>	<ul style="list-style-type: none"> <li>Nature and quality of sampling (eg cut channels, random chips, or specific specialised industry standard measurement tools appropriate to the minerals under investigation, such as down hole gamma sondes, or handheld XRF instruments, etc). These examples should not be taken as limiting the broad meaning of sampling.</li> <li>Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.</li> <li>Aspects of the determination of mineralisation that are Material to the Public Report.</li> <li>In cases where 'industry standard' work has been done this would be relatively simple (eg 'reverse circulation drilling was used to obtain 1 m samples from which 3 kg was pulverised to produce a 30 g charge for fire assay'). In other cases more explanation may be required, such as where there is coarse gold that has inherent sampling problems. Unusual commodities or mineralisation types (eg submarine nodules) may warrant disclosure of detailed information.</li> </ul>	<ul style="list-style-type: none"> <li>Reverse Circulation (RC) drilling using standard equipment.</li> <li>Sampling was undertaken at one metre intervals.</li> <li>Drilling designed to intersect the mineralised ore zone based historical drilling</li> </ul>
<i>Drilling techniques</i>	<ul style="list-style-type: none"> <li>Drill type (eg core, reverse circulation, open-hole hammer, rotary air blast, auger, Bangka, sonic, etc) and details (eg core diameter, triple or standard tube, depth of diamond tails, face-sampling bit or other type, whether core is oriented and if so, by what method, etc).</li> </ul>	<ul style="list-style-type: none"> <li>Reverse circulation percussion (RC)</li> </ul>
<i>Drill sample recovery</i>	<ul style="list-style-type: none"> <li>Method of recording and assessing core and chip sample recoveries and results assessed.</li> <li>Measures taken to maximise sample recovery and ensure representative nature of the samples.</li> <li>Whether a relationship exists between sample recovery and grade and whether sample bias may have occurred due to</li> </ul>	<ul style="list-style-type: none"> <li>Recovery generally good, with poor recovery in a small number of samples due to groundwater.</li> </ul>

Criteria	JORC Code explanation	Commentary
	<i>preferential loss/gain of fine/coarse material.</i>	
<i>Logging</i>	<ul style="list-style-type: none"> <li>• <i>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.</i></li> <li>• <i>Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc) photography.</i></li> <li>• <i>The total length and percentage of the relevant intersections logged.</i></li> </ul>	<ul style="list-style-type: none"> <li>• Drilling logged in detail on a metre by metre basis.</li> <li>• Lit</li> <li>• hology, alteration and oxidation logged qualitatively.</li> <li>• Sulphide content and type logged qualitatively.</li> </ul>
<i>Sub-sampling techniques and sample preparation</i>	<ul style="list-style-type: none"> <li>• <i>If core, whether cut or sawn and whether quarter, half or all core taken.</i></li> <li>• <i>If non-core, whether riffled, tube sampled, rotary split, etc and whether sampled wet or dry.</i></li> <li>• <i>For all sample types, the nature, quality and appropriateness of the sample preparation technique.</i></li> <li>• <i>Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.</i></li> <li>• <i>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.</i></li> <li>• <i>Whether sample sizes are appropriate to the grain size of the material being sampled.</i></li> </ul>	<ul style="list-style-type: none"> <li>• RC drill samples split using a rig mounted cone splitter.</li> <li>• Sample duplicates collected, and standards used to confirm representivity of sampling.</li> </ul>
<i>Quality of assay data and laboratory tests</i>	<ul style="list-style-type: none"> <li>• <i>The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total.</i></li> <li>• <i>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.</i></li> <li>• <i>Nature of quality control procedures adopted (eg standards, blanks, duplicates, external laboratory checks) and whether acceptable levels of accuracy (ie lack of bias) and precision have been established.</i></li> </ul>	<ul style="list-style-type: none"> <li>• No analyses have been undertaken yet</li> </ul>
<i>Verification of sampling and assaying</i>	<ul style="list-style-type: none"> <li>• <i>The verification of significant intersections by either independent or alternative company personnel.</i></li> <li>• <i>The use of twinned holes.</i></li> <li>• <i>Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.</i></li> </ul>	<ul style="list-style-type: none"> <li>• An electronic database containing collars, geological logging and assays is maintained by the Company</li> </ul>



Criteria	JORC Code explanation	Commentary
	<ul style="list-style-type: none"> <li>Discuss any adjustment to assay data.</li> </ul>	
Location of data points	<ul style="list-style-type: none"> <li>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.</li> <li>Specification of the grid system used.</li> <li>Quality and adequacy of topographic control.</li> </ul>	<ul style="list-style-type: none"> <li>Holes have been surveyed using Differential GPS (DGPS).</li> <li>UTM grid MGA94 Zone 53 was used</li> <li>A majority of holes have had down hole surveys completed.</li> </ul>
Data spacing and distribution	<ul style="list-style-type: none"> <li>Data spacing for reporting of Exploration Results.</li> <li>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.</li> <li>Whether sample compositing has been applied.</li> </ul>	<ul style="list-style-type: none"> <li>Drill hole spacing approximately every 20m on a grid across the existing mineral resource.</li> <li>Spacing and distribution is considered to be appropriate.</li> </ul>
Orientation of data in relation to geological structure	<ul style="list-style-type: none"> <li>Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type.</li> <li>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.</li> </ul>	<ul style="list-style-type: none"> <li>Sample relationship to mineralisation and structure is unknown at this stage.</li> </ul>
Sample security	<ul style="list-style-type: none"> <li>The measures taken to ensure sample security.</li> </ul>	<ul style="list-style-type: none"> <li>Samples are bagged and sealed on pallets on site and transported to the analytical laboratories by commercial transport companies.</li> </ul>
Audits or reviews	<ul style="list-style-type: none"> <li>The results of any audits or reviews of sampling techniques and data.</li> </ul>	<ul style="list-style-type: none"> <li>No audits undertaken at this stage as the drilling program has only recently commenced.</li> </ul>

## Section 2 Reporting of Exploration Results

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

Criteria	JORC Code explanation	Commentary
Mineral tenement and land tenure status	<ul style="list-style-type: none"> <li>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.</li> <li>The security of the tenure held at the time of reporting along with any known impediments to obtaining a licence to</li> </ul>	<ul style="list-style-type: none"> <li>Wollogorang Cobalt Project exploration area occurs on EL 31272 which is 100% owned by Mangrove Resources Pty Ltd a wholly owned subsidiary to Northern Cobalt Ltd.</li> <li>The licence is currently in good standing with the relevant authorities.</li> </ul>

# ASX Release

27 October 2017



Criteria	JORC Code explanation	Commentary
	<i>operate in the area.</i>	
<i>Exploration done by other parties</i>	<ul style="list-style-type: none"> <li><i>Acknowledgment and appraisal of exploration by other parties.</i></li> </ul>	<ul style="list-style-type: none"> <li>The Stanton Cobalt deposit and surrounding prospects were discovered by CRA Exploration Pty Ltd in the period 1990-1996 period under a farm in arrangement with W J (Joe) Fisher.</li> </ul>
<i>Geology</i>	<ul style="list-style-type: none"> <li><i>Deposit type, geological setting and style of mineralisation.</i></li> </ul>	<ul style="list-style-type: none"> <li>The local geology is dominated by the Gold Creek Volcanics of the Tawallah Group. This formation is a series of basaltic lavas and shallow intrusives, interlayered with thin oxidised sandstone, carbonate and siltstone units. It is conformably underlain by reduced sedimentary facies of the Wollogorang Formation, which includes dolostones, sandstones and carbonaceous shales. A regional dolerite sill, the Settlement Creek Dolerite, was emplaced synchronous with effusion of the Gold Creek Volcanics. The Wollogorang Formation and Settlement Creek Dolerite do not outcrop on the Stanton prospect area, but are however intersected in a number of drill holes on the tenement. Within the district, the Gold Creek Volcanics are unconformably overlain by a felsic volcanic package that includes a rhyolitic rheoignimbrite sheet (Hobblechain Rhyolite), proximal epiclastics (Pungalina Member) and distal reworked clastics (Echo Sandstone).</li> <li>Mineralisation is interpreted to be largely controlled by stratigraphy within the flat lying interbedded sediment and volcanic rock units of the Proterozoic Gold Creek Volcanics. Brecciation and faulting has a strong control on the intensity and limits of mineralisation. In fresh rock the cobalt-nickel is located in disseminated siegenite (cobalt-nickel sulphide). Chalcocite and pyrite are also noted. Weathering to a variable depth of approximately 30m has resulted in cobalt oxide secondary mineralisation in a large proportion of the deposit.</li> </ul>
<i>Drill hole Information</i>	<ul style="list-style-type: none"> <li><i>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:</i> <ul style="list-style-type: none"> <li><i>easting and northing of the drill hole collar</i></li> <li><i>elevation or RL (Reduced Level –</i></li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>See Appendix 1.</li> </ul>

Criteria	JORC Code explanation	Commentary
	<p>elevation above sea level in metres) of the drill hole collar</p> <ul style="list-style-type: none"> <li>○ dip and azimuth of the hole</li> <li>○ down hole length and interception depth</li> <li>○ hole length.</li> </ul> <ul style="list-style-type: none"> <li>• If the exclusion of this information is justified on the basis that the information is not Material and this exclusion does not detract from the understanding of the report, the Competent Person should clearly explain why this is the case.</li> </ul>	
Data aggregation methods	<ul style="list-style-type: none"> <li>• In reporting Exploration Results, weighting averaging techniques, maximum and/or minimum grade truncations (eg cutting of high grades) and cut-off grades are usually Material and should be stated.</li> <li>• 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.</li> <li>• The assumptions used for any reporting of metal equivalent values should be clearly stated.</li> </ul>	<ul style="list-style-type: none"> <li>• Not relevant as only qualitative data reported.</li> </ul>
Relationship between mineralisation widths and intercept lengths	<ul style="list-style-type: none"> <li>• These relationships are particularly important in the reporting of Exploration Results.</li> <li>• If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported.</li> <li>• If it is not known and only the down hole lengths are reported, there should be a clear statement to this effect (eg 'down hole length, true width not known').</li> </ul>	<ul style="list-style-type: none"> <li>• Any observations made are down hole length and true width is not known.</li> </ul>
Diagrams	<ul style="list-style-type: none"> <li>• 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.</li> </ul>	<ul style="list-style-type: none"> <li>• Not relevant as drilling is within existing resource and only qualitative data reported.</li> </ul>
Balanced reporting	<ul style="list-style-type: none"> <li>• 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.</li> </ul>	<ul style="list-style-type: none"> <li>• The company considers that the reporting of downhole intersections of cobalt sulphide mineralisation is not practical for several reasons. <ul style="list-style-type: none"> <li>○ The cobalt sulphide mineral (siegenite) can be very fine grained and black in colour and indistinguishable from the host rocks in places.</li> <li>○ It is only readily identifiable visually</li> </ul> </li> </ul>

Criteria	JORC Code explanation	Commentary
		<p>when coarse grained and the host rock is light in colour.</p> <ul style="list-style-type: none"> <li>Therefore, any attempt to quantify the length and concentration of sulphide mineralisation is problematic.</li> <li>Because the drilling method consists of RC drill chips the distribution (massive, vein, disseminated) of mineralisation is difficult to determine.</li> </ul> <p>Therefore, any attempt to quantify the length and concentration of sulphide mineralisation is problematic. Geochemical assays are required to undertake a quantitative analysis.</p>
<i>Other substantive exploration data</i>	<ul style="list-style-type: none"> <li><i>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.</i></li> </ul>	<ul style="list-style-type: none"> <li>No other relevant data to report</li> </ul>
<i>Further work</i>	<ul style="list-style-type: none"> <li><i>The nature and scale of planned further work (eg tests for lateral extensions or depth extensions or large-scale step-out drilling).</i></li> <li><i>Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.</i></li> </ul>	<ul style="list-style-type: none"> <li>Planned further work detailed in this, and previous releases, and in figures. This work includes comprises drill testing along a significant portion of the surface geochemical anomaly.</li> </ul>