



# REGIONAL COBALT TARGETS IDENTIFIED ON WOLLOGORANG PROJECT

- Review of historical exploration data reported anomalous cobalt within rock chip and stream sediment sampling, Wollogorang Cobalt Project, NT
- Historical rock chips up to 0.23% cobalt identified at newly defined regional targets
- Regional exploration has commenced in conjunction the 15,000m drilling program currently commencing at the Stanton Deposit

## **Cobalt Potential of Wollogorang Project Area**

Northern Cobalt Limited (**Northern Cobalt** or **the Company, ASX: N27**) is pleased to provide an update on the cobalt potential of the Wollogorang Project in the Northern Territory.

Northern Cobalt was granted five tenements in January 2018 surrounding the Stanton Cobalt Deposit and on-ground exploration on these tenements has commenced. The Company has been reviewing historical exploration on these tenements and has outlined areas of interest for cobalt.

Managing Director, Michael Schwarz said "The regional potential of cobalt is exciting and is only just being realised in the Wollogorang Project area. Previous explorers were focussed on other commodities at a time when cobalt was not in high demand and did not assess the regions significant cobalt potential."



#### **CAPITAL STRUCTURE**

Ordinary Shares Issued 50.2 M

Options Listed 7.0M @ 20c Unlisted 12.3 M @ 25c **Performance Shares** Class A 9.6 M Class B 3.6 M

Last Capital Raise 24 April 2018 - SPP \$0.6M @ 35c

## **BOARD**

Len Dean - Chair Michael Schwarz - MD Duncan Chessell - Exec Dir Andrew Shearer - NED Jarek Kopias - Co Sec



Historic exploration on the Wollogorang project area has reported anomalous cobalt within rock chip samples and stream sediment samples. Northern Cobalt has previously reported anomalous cobalt within rock chip and drilling at the Selby prospect (ASX Release "New Cobalt Targets Identified at Selby" - 16 January 2018) with cobalt up to 0.14% reported from historic drilling

Historical exploration on the Wollogorang project area was not focussed on cobalt, instead copper, uranium, diamonds, phosphate and manganese were the main commodities of interest. Previous stream sediment sampling has highlighted up to four areas of interest (see Figure 2).

A northwest trending zone of anomalous cobalt is located within Exploration Licence (EL) 31550 and EL31546 with stream sediment results up to 92ppm cobalt. This area also reports highly anomalous cobalt in rock chips up to 0.23% cobalt (Figure 3). The highly anomalous cobalt samples also showed elevated copper, zinc, silver and manganese (see table 1 below).

Sample	Easting	Northing	Cu	Pb	Zn	Ag	As	Co	Ni	Fe	Mn
US038	754295	8151179	2825	192	809	17	15	1014	182	178,073	74,950
US039	754295	8151179	2788	279	751	27	13	1432	157	147,560	85,206
US041	754295	8151179	4612	68	2270	45	35	1413	170	51,965	99,572
US042	752934	8151361	2310	256	2094	33	52	2363	825	34,630	94,396

Table 1. Samples assayed at NT Laboratories. Elements determined by ICP-AES using a mixed nitric/hydrochloric/perchloric acid digest. All values in parts per million (ppm)

Coordinates - WGS84 Zone 53

Northern Cobalt is planning to resample these sites as well as inspect other sites reporting anomalous cobalt within this prospective area.

Other areas of interest include the Karns prospect located on EL 30946 and the "Barra Anomaly" located within the northern part of EL 31546 (Figure 1). The Karns prospect is a significant radiometric anomaly related to elevated uranium within the phosphatic Karns Dolomite. Cobalt up to 45ppm is reported from stream sediment sampling in the Karns area.

The "Barra Anomaly" was originally outlined by elevated copper up to 175ppm in stream sediment sampling. Rawlings (2006) whist undertaking geological mapping within this area noted unusual circular features which he termed the 'Pungalina Pipes'. Rawlings (2006) interpreted these structures as the surface expression of pipe-shaped collapse structures. Northern Cobalt is planning to undertake a program of detailed geological mapping and sampling within this area.

Northern Cobalt believes that the Karns and Barra Anomaly areas together with the Selby prospect may have potential to host cobalt and base metal deposits, beneath the overlying sandstone. The presence of prominent circular features, particularly at the Barra Anomaly, highlights the perceived prospectivity of this region, and apart from the Selby prospect, remain untested by drilling.



Other areas of interest are located within the Gold Creek Volcanics to the north and south of the Stanton deposit and these areas will be mapped and sampled in the upcoming months. Elevated stream sediment samples south of Stanton (see Figure 2) and rock chips north of Stanton (see Figure 3) highlight the prospectivity of these areas, which have not been previously explored for cobalt.

Another area of interest is located within the southeast corner of EL 31550 near the GC2 prospect outlined by Redbank Copper Limited (ASX:RCP) on EL 25624. RCP reported anomalous copper and cobalt in rock chips from the GC2 prospect within the Gold Creek Volcanics, the host unit for the Stanton Cobalt Deposit (RCP ASX releases 28 February, 2018 and 26 November, 2009). The area on Northern Cobalt's EL 31550 is underexplored for cobalt with no record of any sampling. This area is a high priority area for cobalt exploration and the Company will undertake a program of detailed geological mapping and sampling within the coming weeks. A review of detailed aerial photography has shown numerous circular features within the area, which will be inspected and sampled.

Northern Cobalt is undertaking a detailed heli-mag survey due to commence in the coming weeks and this will include this area on EL 31550 as well as the areas north and south of the Stanton deposit.

The Company has two tenement applications located in Queensland. Elevated cobalt up to 860ppm and copper up to 4.5% has been reported from these tenements. These two tenements are still applications and exploration will commence upon grant of these tenements which is expected in late 2018.

#### Reference:

Rawlings, D.J., 2006. ROBINSON RIVER 1:250,000 Geological Map and Explanatory Notes. Northern Territory Geological Survey, Darwin.



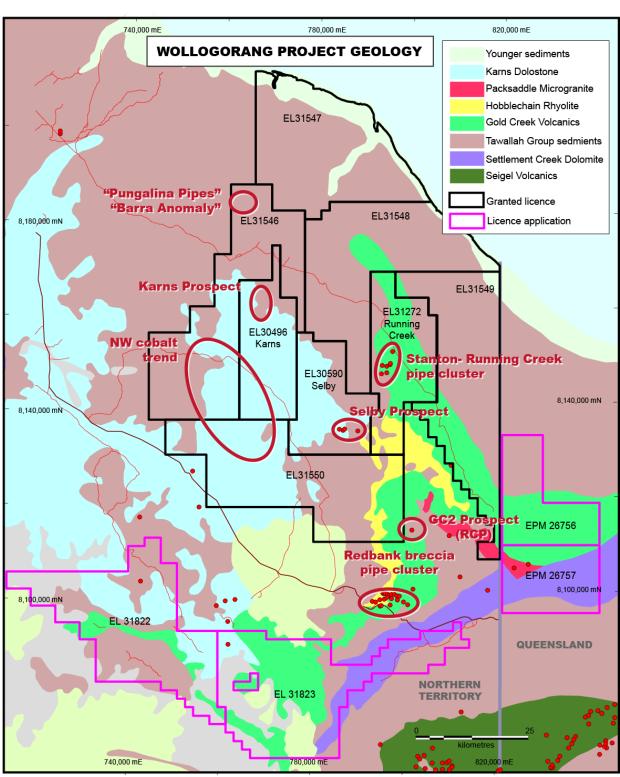


Figure 1. Northern Cobalt Wollogorang project location

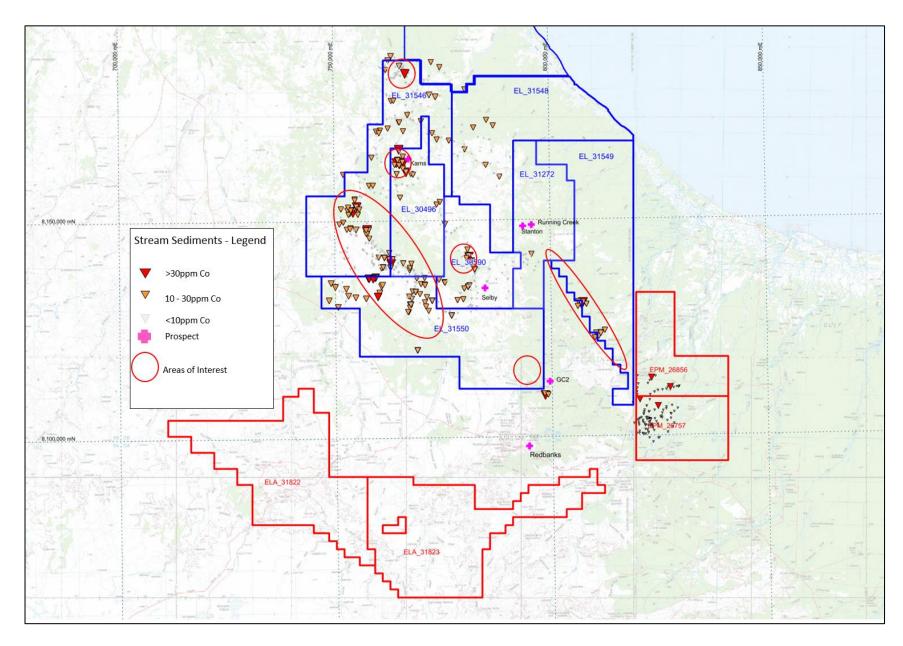


Figure 2. Location of anomalous historical cobalt within stream sediment samples – Wollogorang Project

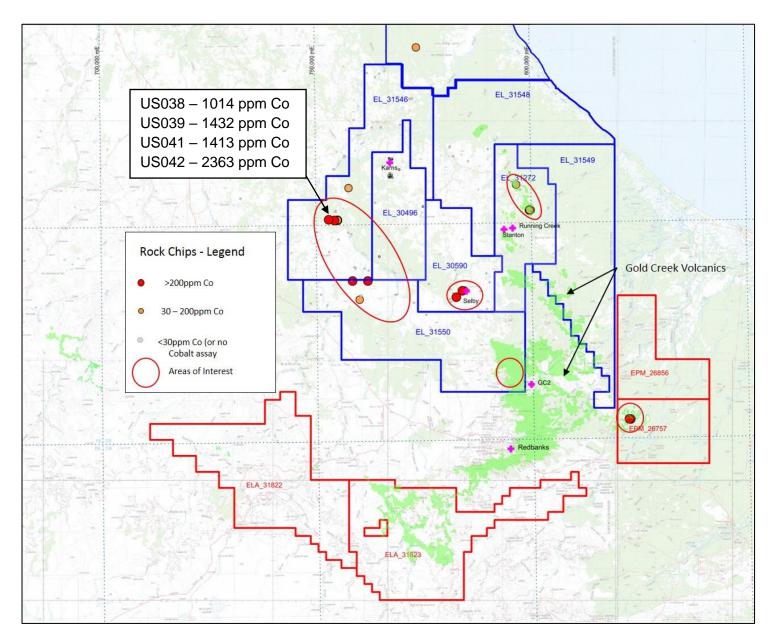
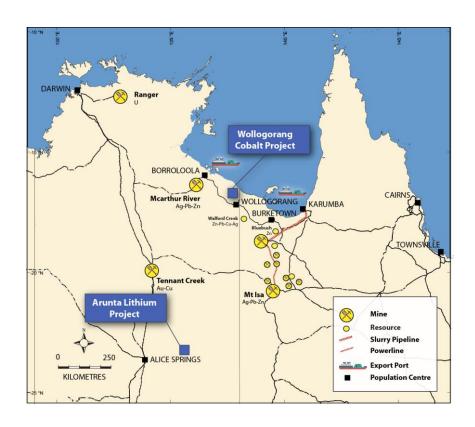


Figure 3. Location of anomalous historical cobalt rock chips – Wollogorang Project





### **Project Location**

The Wollogorang Cobalt Project is located in the far north-eastern corner of the Northern Territory, a mining friendly authority. 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.

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#### **Competent Persons Statement**

The information in this report that relates to historical exploration results, 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'. The Exploration Results are based on, and fairly represent, information and supporting documentation prepared by Mr Schwarz. Mr Michael Schwarz consents to the inclusion in the report of the matters based on his information in the form in which it is appears.

Appendix 1. The following tables are provided to ensure compliance with the JORC Code (2012) requirements for the reporting of historical exploration data for regional historical exploration on the Wollogorang project

### **Section 1 Sampling Techniques and Data**

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

#### Criteria JORC Code explanation Commentary Sampling Nature and quality of sampling (eg cut Rock chip samples that are referred channels, random chips, or specific to in this release are historical techniques specialised industry standard samples and it is assumed they were measurement tools appropriate to the collected by a geologist at sites of minerals under investigation, such as interest. Rock chip samples down hole gamma sondes, or collected by CRA Exploration Pty Ltd handheld XRF instruments, etc). on EL 7964 were submitted to Amdel These examples should not be taken Laboratories. Darwin for assav by as limiting the broad meaning of the ICP method for Ag, As, Bi, Ca, Cd, Co, Cr, Cu, Fe, K, Mn, Mo, Na, sampling. P, Pb, V and Zn. Rock chip samples Include reference to measures taken were also reported by Territory to ensure sample representivity and the appropriate calibration of any Uranium Company on EL25397. measurement tools or systems used. Rock chip samples from EL 27304 (Universal Splendour Holding) were Aspects of the determination of submitted to NT Laboratories where mineralisation that are Material to the elements were determined by ICP-Public Report. AES using a mixed 3 acid digest • In cases where 'industry standard' method. work has been done this would be relatively simple (eg 'reverse Stream sediment samples referred circulation drilling was used to obtain 1 to in this release are historical. The m samples from which 3 kg was majority of stream sediments were pulverised to produce a 30 g charge collected by CRA Exploration Pty Ltd for fire assay'). In other cases more on EL7964 and 7314. Stream explanation may be required, such as sediment samples were collected at a density of one per 1.25km<sup>2</sup> where where there is coarse gold that has inherent sampling problems. Unusual drainage systems were developed. commodities or mineralisation types Samples were sieved to minus 80 (eg submarine nodules) may warrant mesh with approximately 100 grams disclosure of detailed information. of sample collected. Samples were submitted to ALS Townsville for

assay using the ICP method for Ag. As, Bi, Cd, Co, Cr, Cu, Hg, Fe, Mn, Mo, Ni, P, Pb, Sb and Zn. Follow-up stream sediment was undertaken to verify initial results and samples from this survey were submitted to Amdel, Darwin for assay using ICP method. Stream sediment samples were also collected by Ashton Mining on EL 8115. Three sample sizes (-80 mesh, -20 mesh and -10 mesh) were sieved in the field and analysed by ICPOES using both a aqua-regia

Criteria	JORC Code explanation	Commentary
		digest (partial extraction) and a mixed acid digest (total extraction) by Analabs Townsville for an extended range of elements. Stream sediment samples were also collected by Territory Uranium Company Limited on EL25397, but no description is provided on sample size etc.
Drilling techniques	Drill type (eg core, reverse circulation, open-hole hammer, rotary air blast, auger, Bangka, sonic, etc) and details (eg core diameter, triple or standard tube, depth of diamond tails, face-sampling bit or other type, whether core is oriented and if so, by what method, etc).	No drilling reported
Drill sample recovery	<ul> <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 preferential loss/gain of fine/coarse material.</li> </ul>	No new drilling reported in this release (details of previous drilling were reported in ASX Release 16 January 2018
Logging	<ul> <li>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.</li> <li>Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc) photography.</li> <li>The total length and percentage of the relevant intersections logged.</li> </ul>	No new drilling reported
Sub- sampling techniques and sample preparation	<ul> <li>If core, whether cut or sawn and whether quarter, half or all core taken.</li> <li>If non-core, whether riffled, tube sampled, rotary split, etc and whether sampled wet or dry.</li> <li>For all sample types, the nature, quality and appropriateness of the sample preparation technique.</li> <li>Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.</li> <li>Measures taken to ensure that the</li> </ul>	<ul> <li>No new drilling reported.</li> <li>Samples sizes are considered appropriate for material sampled.</li> </ul>

Criteria	JORC Code explanation	Commentary
	<ul> <li>material collected, including for instance results for field duplicate/second-half sampling.</li> <li>Whether sample sizes are appropriate to the grain size of the material being sampled.</li> </ul>	
Quality of assay data and laboratory tests	<ul> <li>The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total.</li> <li>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.</li> <li>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.</li> </ul>	<ul> <li>Rock chip samples that are referred to in this Release are historical samples and it is assumed they were collected by a geologist at sites of interest. Rock chip samples collected by CRA Exploration Pty Ltd on EL 7964 were submitted to Amdel Laboratories, Darwin for assay by the ICP method for Ag, As, Bi, Ca, Cd, Co, Cr, Cu, Fe, K, Mn, Mo, Na, P, Pb, V and Zn. Rock chip samples were also reported by Territory Uranium Company on EL25397. Rock chip samples from EL 27304 (Universal Splendour Holding) were submitted to NT Laboratories where elements were determined by ICP-AES using a mixed 3 acid digest method.</li> <li>Stream sediment samples referred to in this release are historical. The majority of stream sediments were collected by CRA Exploration Pty Ltd on EL7964 and 7314. Stream sediment samples were collected at a density of one per 1.25km² where drainage systems were developed. Samples were sieved to minus 80 mesh with approximately 100 grams of sample collected. Samples were submitted to ALS Townsville for assay using the ICP method for Ag, As, Bi, Cd, Co, Cr, Cu, Hg, Fe, Mn, Mo, Ni, P, Pb, Sb and Zn. Follow-up stream sediment was undertaken to verify initial results and samples from this survey were submitted to Amdel, Darwin for assay using ICP method. Stream sediment samples were also collected by Ashton Mining on EL 8115. Three sample sizes (-80 mesh, -20 mesh and -10 mesh) were sieved in the field and analysed by ICPOES using both a aqua-regia digest (partial extraction) and a mixed acid digest (total extraction) by Analabs Townsville for an extended range of elements.</li> </ul>

Criteria	JORC Code explanation	Commentary
		Stream sediment samples were also collected by Territory Uranium Company Limited on EL25397, but no description is provided on sample size etc.  The quality of the analyses are assumed to be reasonable given the sampling methodology and laboratories used.
Verification of sampling and assaying	<ul> <li>The verification of significant intersections by either independent or alternative company personnel.</li> <li>The use of twinned holes.</li> <li>Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.</li> <li>Discuss any adjustment to assay data.</li> </ul>	<ul> <li>No new drilling reported.</li> <li>No adjustment to assay data has been made.</li> </ul>
Location of data points	<ul> <li>Accuracy and quality of surveys used to locate drill holes (collar and downhole 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>	No new drilling reported
Data spacing and distribution	<ul> <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>	Data spacing and distribution is deemed appropriate for early exploration sampling.
Orientation of data in relation to geological structure	<ul> <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>	Sample relationship to mineralisation and structure is unknown at this stage.
Sample security	The measures taken to ensure sample security.	Not reported

Criteria	JORC Code explanation	Commentary
Audits or reviews	<ul> <li>The results of any audits or reviews of sampling techniques and data.</li> </ul>	Not reported

# **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> <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 operate in the area.</li> </ul>	<ul> <li>The tenements discussed in this Release are 100% owned by Mangrove Resources Pty Ltd a wholly owned subsidiary to Northern Cobalt Ltd (map within Release provides tenement numbers).</li> <li>The licences are currently in good standing with the relevant authorities.</li> </ul>
Exploration done by other parties	Acknowledgment and appraisal of exploration by other parties.	<ul> <li>Many companies have undertaken exploration across the project area for a variety of commodities. The main sources of information for this release include:         <ul> <li>CRA reports for EL's 4166, 4077, 8413, 7175, 4155</li> <li>Legend International Holdings for EL's 22251, 26360, 22247 and 22246</li> <li>Territory Uranium/Carpentaria Minerals Pty Ltd for EL 25397;</li> <li>Universal Splendour Investments Pty Ltd for EL's 27311, 27960, 27304, 27310, 29275 and 27312</li> <li>Toro Energy – EL's 28567, 29636 and 27429</li> <li>Ashton Mining – EL 8115</li> </ul> </li> </ul>
	<ul> <li>Deposit type, geological setting and style of mineralisation.</li> </ul>	The Wollogorang Project occurs on the "Wearyan Shelf" of the Proterozoic McArthur Basin, a 12km thick unmetamorphosed sedimentary succession containing dolostone, sandstone and shale units with minor felsic and mafic volcanics. The McArthur Basin unconformably overlies various Palaeoproterozoic

Criteria	JORC Code explanation	Commentary
		terrains, such as the Pine Creek Orogen, and as outlined above, is highly endowed with world-class mineral deposits and is now the subject of exploration for hydrocarbons. The main geological units of interest in the project area are the Wollogorang Formation (carbonaceous shales and dolomite) and Gold Creek Volcanics (interlayered basalt lavas and sediments). In the west, these formations are overlain by the flat- lying 250m-thick Pungalina Member- Echo Sandstone couplet and, in turn, by the Karns Dolomite.
Drill hole Information	<ul> <li>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:         <ul> <li>easting and northing of the drill hole collar</li> <li>elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar</li> <li>dip and azimuth of the hole</li> <li>down hole length and interception depth</li> <li>hole length.</li> </ul> </li> <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>	No new drilling reported
Data aggregation methods	<ul> <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</li> </ul>	Not relevant as no data aggregation reported.

Criteria	JORC Code explanation	Commentary
	should be clearly stated.	
Relationship between mineralisati on widths and intercept lengths	<ul> <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>	No new drilling data reported
Diagrams	<ul> <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>	See report body
Balanced reporting	<ul> <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> <li>All relevant results have been incorporated into diagrams used within the release. Only results of economic interest have been reported in a tabular form to highlight their relevance.</li> </ul>
Other substantive exploration data	Other exploration data, if meaningful and material, should be reported including (but not limited to): geological observations; geophysical survey results; geochemical survey results; bulk samples – size and method of treatment; metallurgical test results; bulk density, groundwater, geotechnical and rock characteristics; potential deleterious or contaminating substances.	No other relevant data to report
Further work	<ul> <li>The nature and scale of planned further work (eg tests for lateral extensions or depth extensions or large-scale step-out drilling).</li> <li>Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.</li> </ul>	<ul> <li>Northern Cobalt is planning geological mapping and sampling to follow-up on encouraging historical results. Northern Cobalt is also undertaking a detailed heli-mag survey which will incorporate some of the areas described in this Release.</li> </ul>