



**CASSINI**  
RESOURCES LIMITED

ASX Release (CZI)  
18 September 2018

## New Near-Mine Discovery At Nebo

### HIGHLIGHTS

- **Resource extension drilling targeting the eastern end of the Nebo deposit has discovered a significant new body of mineralisation, named as the Angie Lode**
- **Better results include 5.6m @ 2.68% Ni, 2.09% Cu, 0.09% Co & 0.33g/t PGE, within a broader zone of 50.35m @ 0.62% Ni, 0.54% Cu, 0.02% Co & 0.15g/t PGE**
- **The Angie Lode is located close to, but outside of, the current mine design and may extend over 550m of strike-length**
- **Follow-up resource delineation drilling now planned**
- **Further opportunities for the discovery of additional high-grade mineralisation with the potential to positively impact mine development**

Cassini Resources Limited (ASX:CZI) ("Cassini" or the "Company") is pleased to announce a successful program of resource extension drilling at the Nebo Deposit within the West Musgrave Project ("WMP" or the "Project") in Western Australia. The program is funded as part of the Earn-in/JV Agreement ("JV" or "the Agreement") with OZ Minerals Limited (ASX:OZL) ("OZ Minerals"). The JV Partners are currently undertaking a Pre-feasibility Study (PFS) on the Nebo-Babel Deposits as well as a regional exploration program.

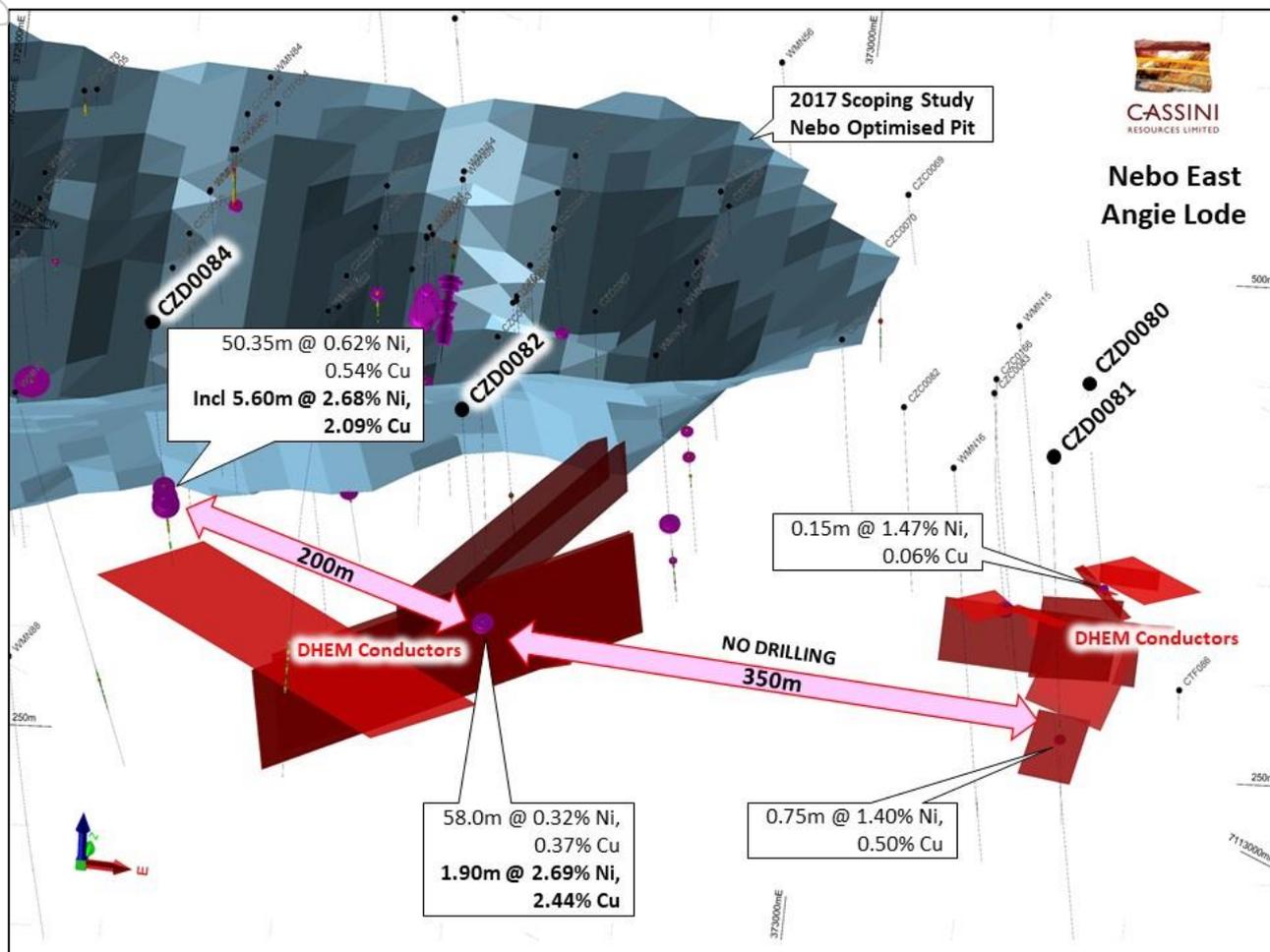
### New High-Grade Lode Position: Angie Lode

As part of the PFS resource infill drilling, a number of holes have been designed to target potential high-grade extensions of mineralisation on the peripheries of the current Nebo resource which may have a material impact on the development strategy. The Company has previously reported early success in this program at the H-T Lode at Babel with a significant intercept of 25.6m @ 0.63% Ni, 1.04% Cu (ASX release 17 July 2018).

The program has also targeted a number of positions on the eastern margins of the Nebo deposit with significant success from the first round of drilling. The most successful of these has been drill hole CZD0084 which intersected 50.35m @ 0.62% Ni, 0.54% Cu, 0.02% Co & 0.15g/t PGE from 170.85m including a high-grade core of **5.6m @ 2.68% Ni, 2.09% Cu, 0.09% Co & 0.33g/t PGE** from 186.95m. In addition, drill hole CZD0082 returned 58m @ 0.32% Ni, 0.37% Cu, 0.01% Co & 0.12g/t PGE including **1.9m @ 2.69% Ni, 2.44% Cu, 0.07% Co & 0.48g/t PGE** from 202m, together with a broad zone of medium grade disseminated mineralisation. Full assay details can be found in Table 1.

Nearby holes CZD0080 and CZD0081 returned narrow, but high-grade intercepts of 0.15m @ 1.47% Ni, 0.06% Cu, 0.06% Co & 0.11g/t PGE from 195.3m and 0.75m @ 1.40% Ni, 0.50% Cu, 0.05% Co & 0.23g/t PGE from 263.75m respectively, representing potential strike continuity of at least 550m from CZD0084 through to CZD0081.

There is a general paucity of drilling in the south-eastern and eastern margins of Nebo. The south-eastern area was targeted after detailed modelling of Downhole Electromagnetics (DHEM) from the 2017 drill program identified a number of conductive plates that had not been adequately tested by drilling. Subsequent DHEM surveys have shown clusters of conductive plates surrounding CZD0082 as well as CZD0080 and CZD0081. There is no drilling between these zones and it remains a priority target for further extensional and infill drilling (Figure 1). Geological interpretation work on mineralisation controls on the Angie Lode are continuing.



**FIGURE 1.** Nebo Deposit oblique view showing recent drill results and DHEM Conductors.

The high-grade Angie Lode results lie outside the current pit shell (Figure 2) and can be reasonably expected to have a positive impact on future resource estimate and open pit mine optimisation updates. Follow-up drilling will step 50m either side of CZD0082 testing the extensions of DHEM conductors along strike. Further drilling is also planned to follow-up CZD084 once DHEM is completed on this hole.

Table 1. Nebo Significant drill intercepts.

HOLE ID	East	North	RL	Dip	Azi	EOH (m)	From (m)	Width (m)	Intersection			PGE g/t
									Ni %	Cu %	Co %	
CZD0080	373152	7113040	470	-60	360	258.4	195.3	0.15	1.47	0.06	0.06	0.10
							199.25	1.75	0.32	0.28	0.01	0.09
CZD0081	373150	7112939	470	-60	360	345.5	263.75	1.80	0.71	0.35	0.03	0.13
							Incl	263.75	0.75	1.40	0.50	0.05
CZD0082	372799	7112895	472	-60	360	281.4	200.0	58.0	0.32	0.37	0.01	0.12
							Incl	<b>202.0</b>	<b>1.90</b>	<b>2.69</b>	<b>2.44</b>	<b>0.07</b>
CZD0084	372598	7112949	472	-60	360	258.6	170.85	50.35	0.62	0.54	0.02	0.15
							Incl	<b>186.95</b>	<b>5.60</b>	<b>2.68</b>	<b>2.09</b>	<b>0.09</b>

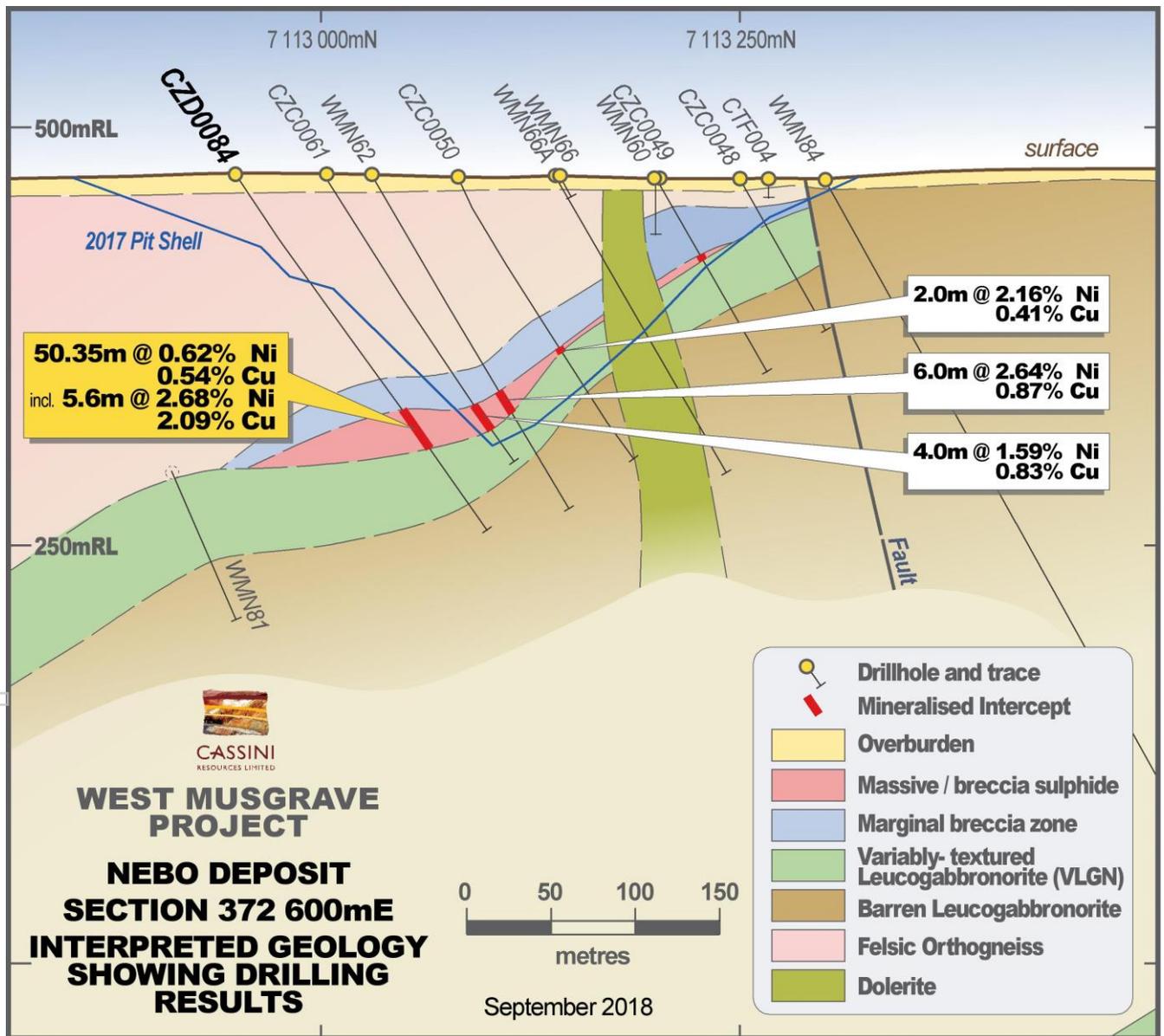


FIGURE 2. Nebo cross section 372600E showing CZD0084.

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### **About the Company**

Cassini Resources Limited (ASX: CZI) is a base and precious metals developer and explorer based in Perth. In April 2014, Cassini acquired its flagship West Musgrave Project (WMP), located in Western Australia. The Project is a new mining camp with three existing nickel and copper sulphide deposits and a number of other significant regional exploration targets already identified. The WMP is the largest undeveloped nickel - copper project in Australia.

In August 2016, Cassini entered into a three-stage \$36M Farm-in/Joint Venture Agreement with prominent Australian mining company OZ Minerals Ltd (ASX: OZL). The Joint Venture provides a clear pathway to a decision to mine and potential cash flow for Cassini.

Cassini is also progressing its Mt Squires Gold Project, an early stage zinc exploration project in the West Arunta region and also has an option to acquire 80% of the Yarawindah Nickel - Copper - Cobalt Project, all located in Western Australia.

### **Competent Persons Statement**

The information in this report that relates to Exploration Results is based on information compiled or reviewed by Mr Greg Miles, who is an employee of the company. Mr Miles is a Member of the Australian Institute of Geoscientists and has sufficient experience of relevance to the styles of mineralisation and the types of deposits under consideration, and to the activities undertaken, to qualify as a Competent Person as defined in the 2012 Edition of the Joint Ore Reserves Committee (JORC) Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves. Mr Miles consents to the inclusion in this report of the matters based on information in the form and context in which it appears.

The Company is not aware of any new information or data, other than that disclosed in this report, that materially affects the information included in this report and that all material assumptions and parameters underpinning Exploration Results, Mineral Resource Estimates and Production Targets as reported in the market announcements dated 14 November 2017 continue to apply and have not materially changed.

## ANNEXURE 1:

The following Tables are provided to ensure compliance with the JORC Code (2012) edition requirements for the reporting of the Exploration Results at the Nebo Deposit.

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

Criteria	JORC Code explanation	Commentary
Sampling techniques	<i>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.</i>	The diamond drill hole will be sampled on nominal 1m intervals. The hole was angled towards grid north (002° magnetic azimuth) at -60 degrees dip to optimally intersect the host lithologies.
	<i>Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.</i>	The drill hole location will be picked up by survey contractors at the completion of the drilling, the collar is currently surveyed by handheld GPS unit. Sampling will be carried out under Cassini protocols and QAQC procedures as per industry best practices.
	<i>Aspects of the determination of mineralisation that are Material to the Public Report. In cases where 'industry standard' work has been done this would be relatively simple (eg 'reverse circulation drilling was used to obtain 1 m samples from which 3 kg was pulverised to produce a 30 g charge for fire assay'). In other cases more explanation may be required, such as where there is coarse gold that has inherent sampling problems. Unusual commodities or mineralisation types (eg submarine nodules) may warrant disclosure of detailed information.</i>	Diamond drilling was used to obtain approximately 1m samples from which 3 kg will be pulverised (total prep) to produce a sub sample for analysis by four acid digest with an ICP/AES or ICP/MS finish (0.25 gram) for base metals or a FA/AAS finish (40 gram) for Au, Pt and Pd.
Drilling techniques	<i>Drill type (e.g. core, reverse circulation, open-hole hammer, rotary air blast, auger, Bangka, sonic etc) and details (e.g. core diameter, triple of standard tube, depth of diamond tails, face-sampling bit or other type, whether core is orientated and if so, by what method, etc).</i>	Diamond drilling accounts for 100% of the drilling completed by Cassini and comprises PQ3 and HQ3 diameter core samples..
Drill sample recovery	<i>Method of recording and assessing core and chip sample recoveries and results assessed.</i>	Overall core recoveries are >95% and there has been no significant sample recovery problems.
	<i>Measures taken to maximise sample recovery and ensure representative nature of the samples.</i>	Samples are routinely checked for recovery.
	<i>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.</i>	No sample bias has been observed
Logging	<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>	All core will be geologically logged and the level of understanding of geological variables increases with the maturity of the prospect.
	<i>Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc) photography.</i>	Logging at all prospecting in the West Musgrave Project routinely records lithology, mineralogy, mineralisation, weathering, colour and other relevant features of the samples. Logging of core is both qualitative (e.g. colour) and quantitative (e.g. mineral percentages).
	<i>The total length and percentage of the relevant intersections logged.</i>	All diamond core will be logged in full.

<b>Criteria</b>	<b>JORC Code explanation</b>	<b>Commentary</b>
<b>Sub-sampling techniques and sample preparation</b>	<i>If core, whether cut or sawn and whether quarter, half or all core taken.</i>	Half core will be sampled.
	<i>If non-core, whether riffled, tube sampled, rotary split, etc and whether sampled wet or dry.</i>	Not applicable as not non-core.
	<i>For all sample types, the nature, quality and appropriateness of the sample preparation technique.</i>	The sample preparation of diamond samples at the West Musgrave Project follows industry best practice in sample preparation involving oven drying, followed by pulverisation of the entire sample (total prep) using Essa LM5 grinding mills to a grind size of 90% passing 75 micron.
	<i>Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.</i>	Field QC procedures involve the use of certified reference material (CRM) as assay standards and blanks along with field duplicates. The insertion rate of these will average 1:15 with an increased rate in mineralised zones.
	<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>	Quarter core duplicate sampling will be 1-2% of total sampling.
	<i>Whether sample sizes are appropriate to the grain size of the material being sampled.</i>	Sample sizes are considered appropriate for the rock type, style of mineralisation (massive and disseminated sulphides), the thickness and consistency of the intersections, the sampling methodology and percent value assay ranges for the primary elements at the West Musgrave Project.
<b>Quality of assay data and laboratory tests</b>	<i>The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total.</i>	The analytical techniques used are four acid digest multi element suite with ICP/AES or ICP/MS finish (25 gram) for base metals and a FA/AAS for previous metals. The acids used are hydrofluoric, nitric, perchloric and hydrochloric acids, suitable for silica based samples. Total sulphur is assayed by combustion furnace. These methods approach total dissolution of most minerals.
	<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>	Hand held assay devices have not been reported.
	<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>	<p>Sample preparation for fineness were carried by the laboratory as part of their internal procedures to ensure the grind size of 90% passing 75 micron was being attained. Laboratory QAQC involves the use of internal lab standards using certified reference material, blanks, splits and replicates as part of the in-house procedures.</p> <p>Certified reference materials, having a good range of values, were inserted blindly and randomly. Results highlight that sample assay values are accurate and that contamination has been contained.</p> <p>Repeat or duplicate analysis for samples reveals that precision of samples is within acceptable limits.</p>
<b>Verification of sampling and assaying</b>	<i>The verification of significant intersections by either independent or alternative company personnel.</i>	Both the Exploration Manager and Senior Project Geologists have inspected the core samples.

Criteria	JORC Code explanation	Commentary
	<i>The use of twinned holes.</i>	Twinned holes have been employed to provide sample for metallurgical testwork as part of the previous Scoping Study and current Pre-Feasibility Study. A review of assay data from these holes has been completed and found not to contain any sampling issues.
	<i>Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.</i>	Primary data is collected using a set of standard Field Marshal templates on laptop computers using lookup codes. The information was sent to Geobase Australia for validation and compilation into a SQL database server.
	<i>Discuss any adjustment to assay data.</i>	No adjustments or calibrations were made to any assay data.
<b>Location of data points</b>	<i>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.</i>	Holes drilled to date by Cassini have been located with a Garmin hand-held GPS and are assumed to be accurate to ±5m. This is considered appropriate for the drill hole spacing. At the completion of the drill program, survey contractors will be employed to complete differential GPS surveying.  Downhole surveys were completed every 5m using north-seeking gyroscopes after hole completion. Stated accuracy is ± 0.25° in azimuth and ± 0.05° in inclination.
	<i>Specification of the grid system used.</i>	The grid system for West Musgrave Project is MGA_GDA95, Zone 52.
	<i>Quality and adequacy of topographic control.</i>	The tenement package exhibits subdued relief with undulating hills and topographic representation is sufficiently controlled.
<b>Data spacing and distribution</b>	<i>Data spacing for reporting of Exploration Results.</i>	Drill hole spacing at Nebo is currently being infilled to 100m x 50m. Extension drilling has been conducted on variable spacings.
	<i>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.</i>	Drill hole spacing at Nebo & Babel has been sufficient to classify the resource estimate as a combination on Indicated and Inferred. This will be reviewed after completion of the infill drilling and extension program.
	<i>Whether sample compositing has been applied.</i>	No.
<b>Orientation of data in relation to geological structure</b>	<i>Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type.</i>	The drill holes are drilled towards local grid north at -60° dip to intersect the mineralised zones at a close to perpendicular relationship for the bulk of the conductor.
	<i>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.</i>	To date, orientation of mineralised zones has been favourable for perpendicular drilling and sample widths are not considered to have added a sampling bias.
<b>Sample security</b>	<i>The measures taken to ensure sample security.</i>	Sample chain of custody is managed by Cassini. Samples for the West Musgrave Project are stored on site and delivered to Perth by recognised freight service and then to the assay laboratory by a Perth-based courier service. Whilst in storage the samples are kept in a locked yard. Tracking sheets tracks the progress of batches of samples.
<b>Audits or reviews</b>	<i>The results of any audits or reviews of sampling techniques and data.</i>	Sampling techniques were reviewed prior to the latest resource update in November 2017. No

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Criteria	JORC Code explanation	Commentary
		issues were identified.

**Section 2: Reporting of Exploration Results** (Criteria listed in the preceding section also apply to this section)

Criteria	JORC Code explanation	Commentary
<b>Mineral tenement and land tenure status</b>	<i>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.</i>	This program has been conducted wholly within Mining Lease M69/0074. Cassini entered into an agreement to acquire 100% of the leases comprising the West Musgrave Project (M69/0072, M69/0073, M69/0074, M69/0075, E69/1505, E69/1530, E69/2201, E69/2069, E69/2070, E69/2313, E69/2338), over which the previous operator retains a 2% NSR. The tenement sits within Crown Reserve 17614. The Project area is subject to an earn-in and joint venture agreement with OZ Minerals Ltd.
	<i>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.</i>	All tenements are in good standing and have existing Aboriginal Heritage Access Agreements in place. No mining Agreement has been negotiated.
<b>Exploration done by other parties</b>	<i>Acknowledgment and appraisal of exploration by other parties.</i>	Previous exploration has been conducted by BHP Billiton, WMC and Cassini. The work completed by BHP Billiton and WMC is considered by Cassini to be of a high standard.
<b>Geology</b>	<i>Deposit type, geological setting and style of mineralisation.</i>	The project lies within the West Musgrave Province of Western Australia, which is part of an extensive Mesoproterozoic orogenic belt. The Nebo-Babel and Succoth deposits lie within mafic intrusions of the Giles Complex (ca. 1068Ma) that has intruded into amphibolite to granulite facies orthogneiss and mafic granulite country rocks. Mineralisation is hosted within tubular, chonolithic gabbro-norite bodies and are expressed primarily as broad zones of disseminated sulphide and co-magmatic or potentially remobilised accumulations of more rich, matrix to massive sulphides.
<b>Drill hole Information</b>	<p><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></p> <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 – elevation above sea level in metres) of the drill hole collar</i></li> <li>• <i>dip and azimuth of the hole</i></li> <li>• <i>down hole length and interception depth</i></li> <li>• <i>hole length.</i></li> </ul>	Full information regarding hole details are disclosed within the body of the report.
	<i>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.</i>	
<b>Data aggregation methods</b>	<i>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.</i>	Weighted averages for mineralisation were calculated using parameters of a 0.25% Ni or Cu lower cut-off, no minimum reporting length, a maximum length of 6m consecutive internal waste and the minimum grade for the final composite of 0.25% Ni or Cu.
	<i>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.</i>	Short lengths of high grade results use either a nominal 1% Ni or Cu lower cut-off or a geological boundary such as a massive sulphide interval, no minimum reporting length and 2m maximum interval dilution and the minimum grade of the final composite of 1% Ni or Cu
	<i>The assumptions used for any reporting of metal equivalent values should be clearly stated.</i>	Not applicable as no metal equivalent values are being stated.

Criteria	JORC Code explanation	Commentary
Relationship between mineralisation widths and intercept lengths	<i>These relationships are particularly important in the reporting of Exploration Results. If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported. If it is not known and only the down hole lengths are reported, there should be a clear statement to this effect (eg 'down hole length, true width not known').</i>	Mineralisation at Nebo-Babel is a shallow dipping, south-westerly plunging body of variably mineralised mafic rock. Mineralisation is generally intersected with close to true-width down-hole lengths.
Diagrams	<i>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.</i>	Refer to Figures in body of announcement .
Balanced reporting	<i>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.</i>	All results have been reported.
Other substantive exploration data	<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>	All relevant exploration data has been reported.
Further work	<i>The nature and scale of planned further work (eg. tests for lateral extensions or depth extensions or large-scale step-out drilling).  Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.</i>	Cassini aims to test the continuity of known higher grade zones of mineralisation at Nebo with the aim of finding additional mineralised zones to add to future resource estimate updates.  Figures have been included in body of announcement.