



## Early Success with Babel Extension Drilling

### HIGHLIGHTS

- **Significant mineralisation intersected in first resource extension hole**
- **Nickel and copper mineralisation observed in core, results pending**
- **Probable offset of the Startmeup Shoot & extension to Babel Deposit**
- **EM indicates mineralisation may extend over 300m**
- **Significant new addition to the Babel open pit or underground opportunity**

Cassini Resources Limited (ASX:CZI) (“Cassini” or the “Company”) is pleased to announce early success from extension drilling at the Babel Deposit, part of 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 with a concurrent regional exploration program.

The metallurgical drill program is now finished and the two diamond core rigs have been tasked with extensional drilling at Nebo-Babel and the regional exploration program. Two additional RC rigs are continuing through the resource infill program at Nebo and Babel.

### The H-T Lode

Diamond drillhole CZD0077 is the first hole to test resource extension targets at Nebo and Babel. The hole has intersected a 34m wide zone of gabbronorite, the host rock to mineralisation, with a 30m wide zone of disseminated to matrix sulphide mineralisation containing pentlandite (nickel sulphide), chalcopyrite (copper sulphide) and pyrrhotite (barren iron sulphide) from 317m downhole (Figure 1).

CZD0077 was targeting a strong Moving Loop Electromagnetic (MLEM) and coincident Down Hole Electromagnetic (DHEM) conductor known as BW3, which had previously only been tested by a single hole (WMN4049) returning 25.1m @ 0.94% Ni & 0.94% Cu from 311.6m.

This mineralised zone has been dubbed the “H-T Lode” and appears to be the faulted extension of the Startmeup Shoot which demonstrates a similar style of mineralisation and geometry (Figure 2).

The drill core is currently being logged and cut on site before samples are expedited through the assay laboratory in Perth.



Figure 1. Example of mineralisation from CZD0077.

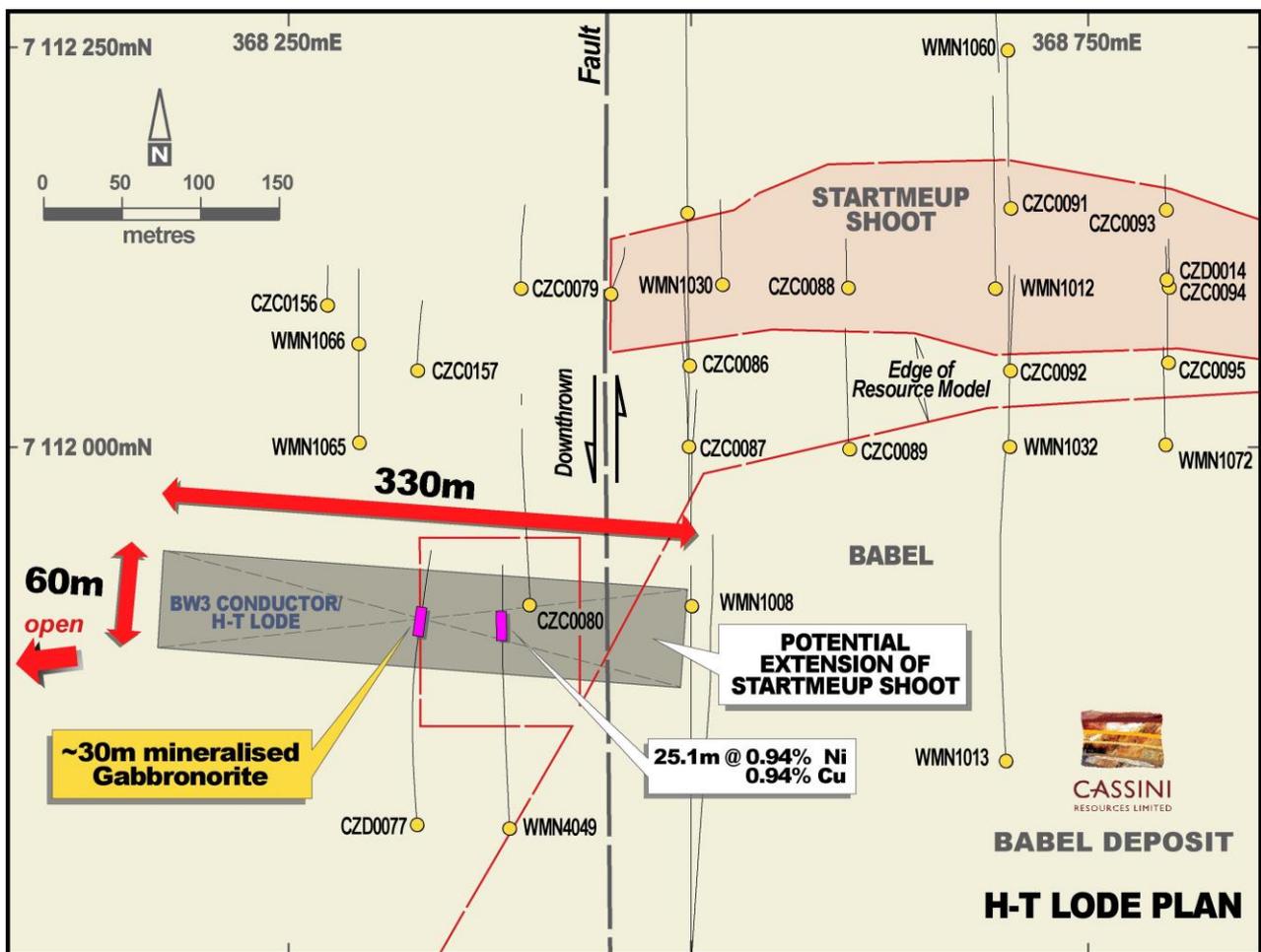


Figure 2. H-T Lode Plan showing location of CZD0077 and WMN4049.

The JV Partners are delighted with this early success to the resource extension program which demonstrates the up-side to the Nebo-Babel resource. The H T now represents a significant new target as an extension to the existing Babel open pit design either by cut-back or through underground mining.

A second follow-up hole will now be undertaken to further test mineralisation along strike, following completion of DHEM.

Meanwhile, drilling is progressing steadily at the Yappsu Prospect where a diamond rig is testing a series of DHEM conductors as released to the ASX on 5 June 2018. The hole is expected to reach target depth in the coming days.

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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 world-class asset which currently has over 1.0 million tonnes of contained nickel and 2.0 million tonnes of contained copper in Resource. 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 3 April 2014, 1 May 2017, 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 Babel 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>	Samples are currently being prepared and will comprise half core to lengths no longer than 1m and separated by geological boundaries where appropriate. Portable XRF has been used to confirm the presence of nickel and copper mineralisation but is not considered suitable for public release.
	<i>Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.</i>	Drill hole locations were surveyed by handheld GPS units. Sampling has been carried out under Cassini protocols and QAQC procedures as per industry best practice.
	<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. The level of understanding is considered sufficient to include in future resource estimates
	<i>Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc) photography.</i>	Logging at the West Musgrave Project 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>	The drillhole will be logged in full.
Sub-sampling techniques and sample preparation	<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 core taken.
	<i>For all sample types, the nature, quality and</i>	The sample preparation of diamond samples at Babel

Criteria	JORC Code explanation	Commentary
	<i>appropriateness of the sample preparation technique.</i>	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 sulphides), the thickness and consistency of the intersections, the sampling methodology and percent value assay ranges for the primary elements at Babel.
<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 fused bead XRF for base metals and all other major and trace elements of interest. Gold, Pt and Pd were determined by FA/AAS finish (40 gram).
	<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>	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.  Certified reference materials, having a good range of values, are inserted blindly and randomly.  Repeat or duplicate analysis for samples will be reviewed.
<b>Verification of sampling and assaying</b>	<i>The verification of significant intersections by either independent or alternative company personnel.</i>	Core has been viewed by contract and Cassini geology staff.
	<i>The use of twinned holes.</i>	The reported drill hole has not been twinned.
	<i>Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.</i>	Primary data collected for the West Musgrave Project 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 assay data is currently available
<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>	Reported holes have been located with a Garmin hand-held GPS and are assumed to be accurate to ±5m. This is considered appropriate for exploration drill holes.  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 the West Musgraves Project is MGA_GDA95, Zone 52.
	<i>Quality and adequacy of topographic control.</i>	The tenement package exhibits subdued relief with

Criteria	JORC Code explanation	Commentary
		undulating hills and topographic representation is sufficiently controlled.
<b>Data spacing and distribution</b>	<i>Data spacing for reporting of Exploration Results.</i>	The holes drilled were for exploration purposes and have not been drilled on a grid pattern. Drill hole spacing is considered appropriate for exploration purposes.
	<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>	The mineralised domains for both Nebo and Babel have demonstrated sufficient continuity in both geological and grade continuity to support the definition of Mineral Resources and Reserves, and the classifications applied under the 2012 JORC Code.
	<i>Whether sample compositing has been applied.</i>	No compositing was applied.
<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 and northwest at -70° dip to intersect the mineralised zones at a close to perpendicular relationship for the bulk of the target conductor. The orientation of sampling is considered to be unbiased.
	<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>	The orientation of drilling and key mineralised structure is not considered to have introduced 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 Musgraves 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.
<b>Audits or reviews</b>	<i>The results of any audits or reviews of sampling techniques and data.</i>	No reviews have been carried out to date.

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

<b>Criteria</b>	<b>JORC Code explanation</b>	<b>Commentary</b>										
<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>	Babel is located within Mining Leases M69/0072 and M69/0073. Through wholly owned subsidiary Wirraway Metals and Mining Pty Ltd, Cassini holds 100% of the leases comprising the West Musgrave Project (granted licences M69/0074, M69/0075, E69/1505, E69/1530, E69/2201, E69/2313, E69/3137, E69/3163, E69/3164, E69/3165, E69/3168, E69/3169) over which the previous operator retains a 2% NSR. The tenement sits within Crown Reserve 17614.										
	<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 an 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 and WMC. 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 (1068Ma) that has intruded into amphibolite facies orthogneiss country rock. Mineralisation is hosted within tubular chonolithic gabbro-norite bodies and are expressed primarily as broad zones of disseminated sulphide and comagmatic or potentially remobilised accumulations of stronger mineralised, 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>	<p>CZD0077 collar information:</p> <table border="1"> <thead> <tr> <th><i>East</i></th> <th><i>North</i></th> <th><i>RL</i></th> <th><i>Azi</i></th> <th><i>Dip</i></th> </tr> </thead> <tbody> <tr> <td>368330</td> <td>7111760</td> <td>470</td> <td>360</td> <td>-66</td> </tr> </tbody> </table> <p>The hole was drilled to a depth of</p>	<i>East</i>	<i>North</i>	<i>RL</i>	<i>Azi</i>	<i>Dip</i>	368330	7111760	470	360	-66
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368330	7111760	470	360	-66								
	<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>	Not applicable, all information is included.										
<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>	No results have been reported										
	<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</i>	No results have been reported										

<b>Criteria</b>	<b>JORC Code explanation</b>	<b>Commentary</b>
	<i>such aggregations should be shown in detail.</i>	
	<i>The assumptions used for any reporting of metal equivalent values should be clearly stated.</i>	Metal equivalent values are not reported.
<b>Relationship between mineralisation widths and intercept lengths</b>	<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 Babel is a flat-lying, south-westerly plunging body of variably mineralised mafic rock. Mineralisation is generally intersected with approximate true-width down-hole lengths.
<b>Diagrams</b>	<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 text.
<b>Balanced reporting</b>	<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>	No results have been reported
<b>Other substantive exploration data</b>	<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 is shown on figures, in text and Annexure 1.
<b>Further work</b>	<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 and its partner OZ Minerals are currently undertaking advanced scoping study work at the West Musgrave Project. Further resource definition drilling is likely to be conducted during a pre-feasibility study in conjunction with regional exploration programs including reconnaissance drilling and geophysics.  All relevant diagrams and inferences have been illustrated in this report.