



CASSINI
RESOURCES LIMITED

ASX Release (CZI)
19 December 2019

West Musgrave Project Exploration Update

HIGHLIGHTS

- **Exploration programs for 2019 completed**

One Tree Hill

- **Significantly improved geological and structural interpretation following high resolution aeromagnetics and step out drilling**
- **Priority target zone defined in interpreted fold-hinge**

Succoth

- **Infill drilling supports new geological interpretation more favourable for open-pit mining**
- **Evaluation of potential mineralisation extensions continuing**

Cassini Resources Limited (ASX:CZI) ("Cassini" or the "Company") is pleased to announce results from recent drilling at the One Tree Hill Prospect and Succoth Deposit within the West Musgrave Project ("WMP" or the "Project") in Western Australia. The exploration program is funded as part of the 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 in conjunction with a regional exploration program across the WMP.

One Tree Hill Prospect

Since the last update in June, activities at One Tree Hill comprised a high-resolution aeromagnetic survey and two reverse circulation drill holes testing extensions to mineralisation east of CZD0099, together with geological and geophysical modelling.

The aeromagnetic survey was flown at 30m height and 40m line spacing, providing very high quality data. The new magnetic data has been critical in the latest structural and geological interpretation of the prospect, particularly given that the Giles Mineralised Intrusions and Giles Metagabbros appear to be clearly defined in the magnetic images. Furthermore, the latest geological and structural interpretation on long-section (Figure 1) correlates very closely with the interpretation of the magnetic data. This interpretation suggests that the mineralised intrusions at One Tree Hill are terminated against the Titan Fault to the southwest and are offset by the ENE trending Osborne Fault (Figure 2). Importantly, this indicates potential extensions of the Giles Mineralised Intrusions to the north of the existing drilling and to the south of the Osborne Fault, both of which remain untested.

Two RC drill holes have been completed for a total of 1,002m, stepping 200m east along strike from CZD0099 which returned several mineralised intercepts including **9m @ 2.56% Cu, 0.37% Ni, 0.06% Co & 1.32g/t PGE** from 344m within a broader disseminated zone of 40m @ 1.16% Cu from 343m.

The best result is 18m @ 0.35% Cu, 0.05% Ni & 0.38g/t PGE from only 52m in CZC0696, much closer to surface than previous intercepts, but correlating with "Zone A" in hole CZD0099 (see ASX announcement 18 June 2019). A full list of results can be found in Table 1.

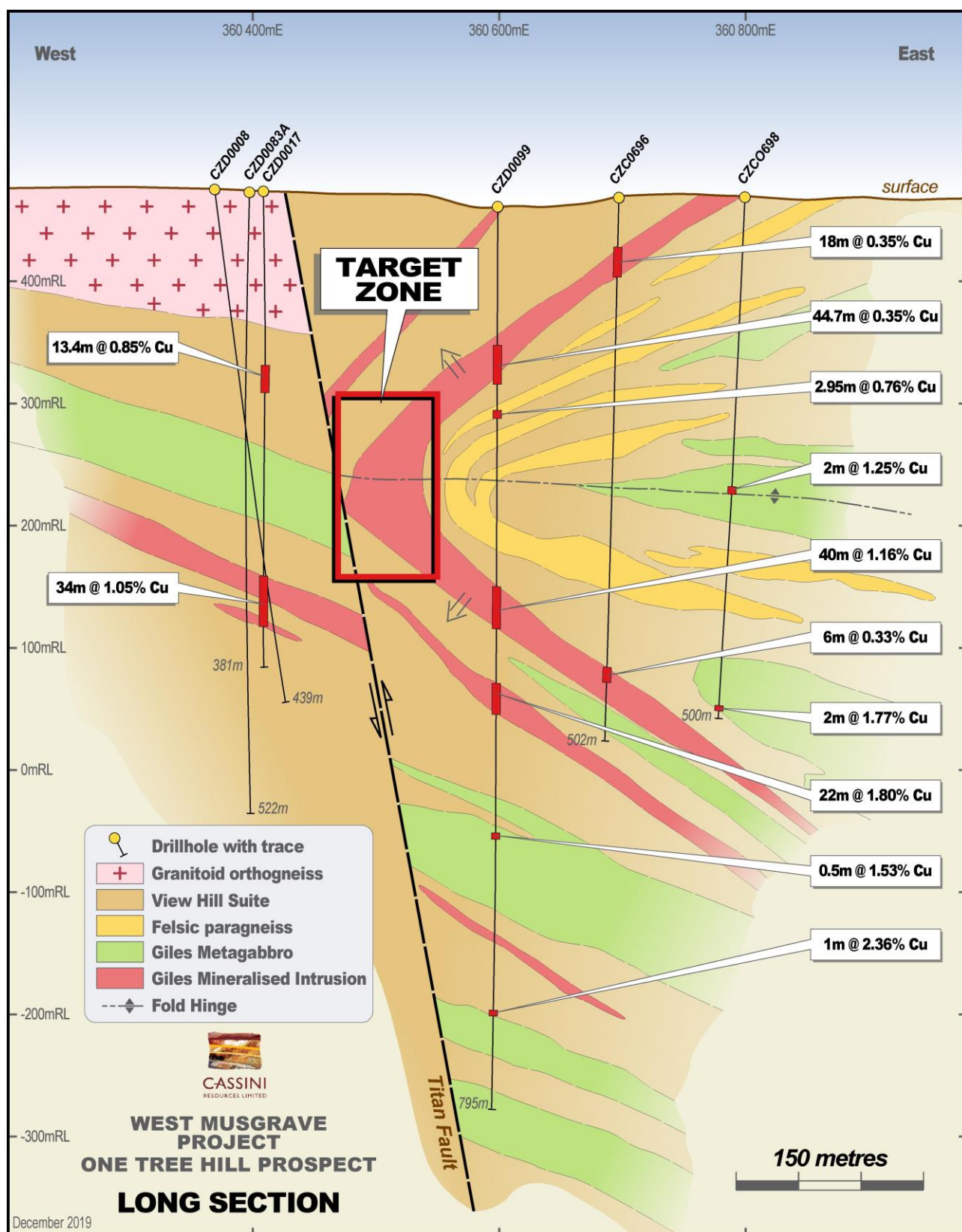


Figure 1. Long section of the One Tree Hill Prospect, showing significant intercepts and fold hinge target zone. Note the section is tilted into the plane of CZD0099.

The latest geological and geochemical interpretation suggests the mineralised intrusions and country rock are folded along an east-west trending fold plane. The interpreted position of the fold hinge is approximately 100m to the west of CZD0099 and associated with a magnetic anomaly that is plausibly

due to a higher abundance of magnetite and pyrrhotite within the mineralised units (Figure 2). Fold hinge zones are recognised as preferential positions within which massive sulphides may have accumulated and/or been preserved in metamorphosed and structurally complex mineralised systems. An interpreted fold hinge, west of CZD0099 therefore represents a priority target for further drill testing in 2020.

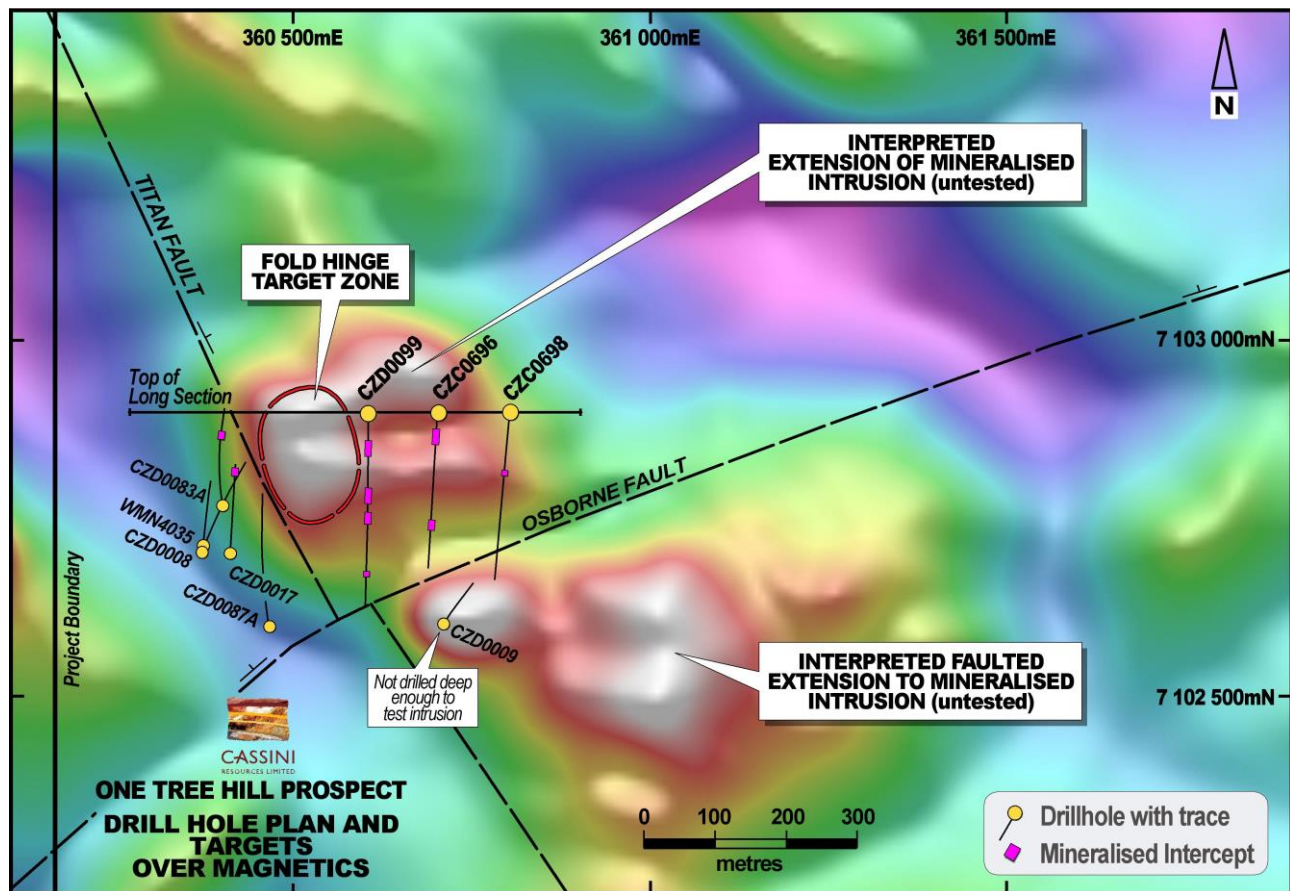


Figure 2. Plan view of One Tree Hill drill hole collars over Reduced to Pole magnetics.

Table 1. One Tree Hill Prospect Significant Drill Intercepts¹.

HOLE ID	East	North	RL	Dip	Azi	EOH (m)	INTERSECTIONS					
							From (m)	Width (m)	Cu %	Ni %	Co %	PGE g/t
CZC0696	360698	7102898	468	-60	180	502	52	18.0	0.35	0.05	0.01	0.38
							460	6.0	0.33	0.03	0.01	0.31
CZC0698	360800	7102898	468	-60	180	500	118	2	0.85	0.01	0.01	<0.01
							272	2	1.25	0.01	0.01	<0.01
							494	2	1.77	0.01	0.01	<0.01

Notes: 1. Widths are downhole width. There is insufficient drilling to determine true widths of the host intrusions or the higher-grade massive sulphides.

Succoth Deposit

Cassini reported a new geological interpretation at Succoth Deposit in February 2019 (see ASX announcement 18 February 2019) following completion of detailed infill drilling on a single geological section in the central part of the deposit. The new interpretation had significant positive implications for potential resource increases and mining economics, although additional drilling was required to validate this new interpretation beyond a single section line. The Company has now completed a further four diamond drill holes for 1,793m on two infill sections located 200m and 400m west of the first detailed infill section (Figure 3). The three sections (Figures 4-6) now cover 400m strike extent of the deposit with drill hole spacing on the section line at 50m to 100m, whereas the drill hole spacing on section across rest of the deposit is >200m. A full list of results can be found in Table 2.

Results from the latest drilling support the folded geometry model at Succoth. The latest geometry, if extrapolated across the currently defined strike extent of the deposit, has implications for the scale of the resource, resource extensions, potential mining strip ratio and further economic considerations. Mineralisation remains open laterally, as well as at depth, and between broad-spaced drill holes outside of the three main drill sections.

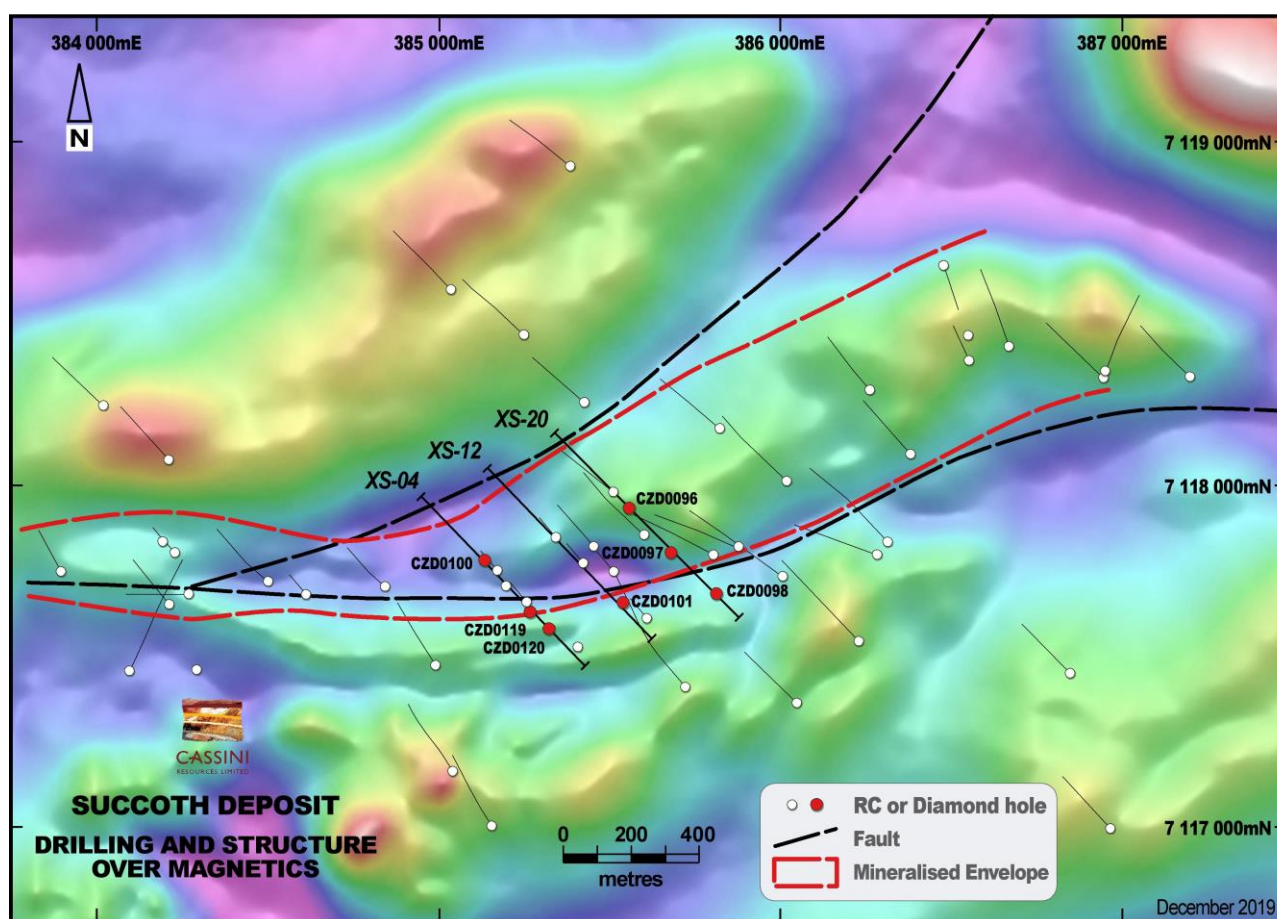


Figure 3. Succoth Drill hole location plan showing relationship between recent drilling, mineralisation and structure

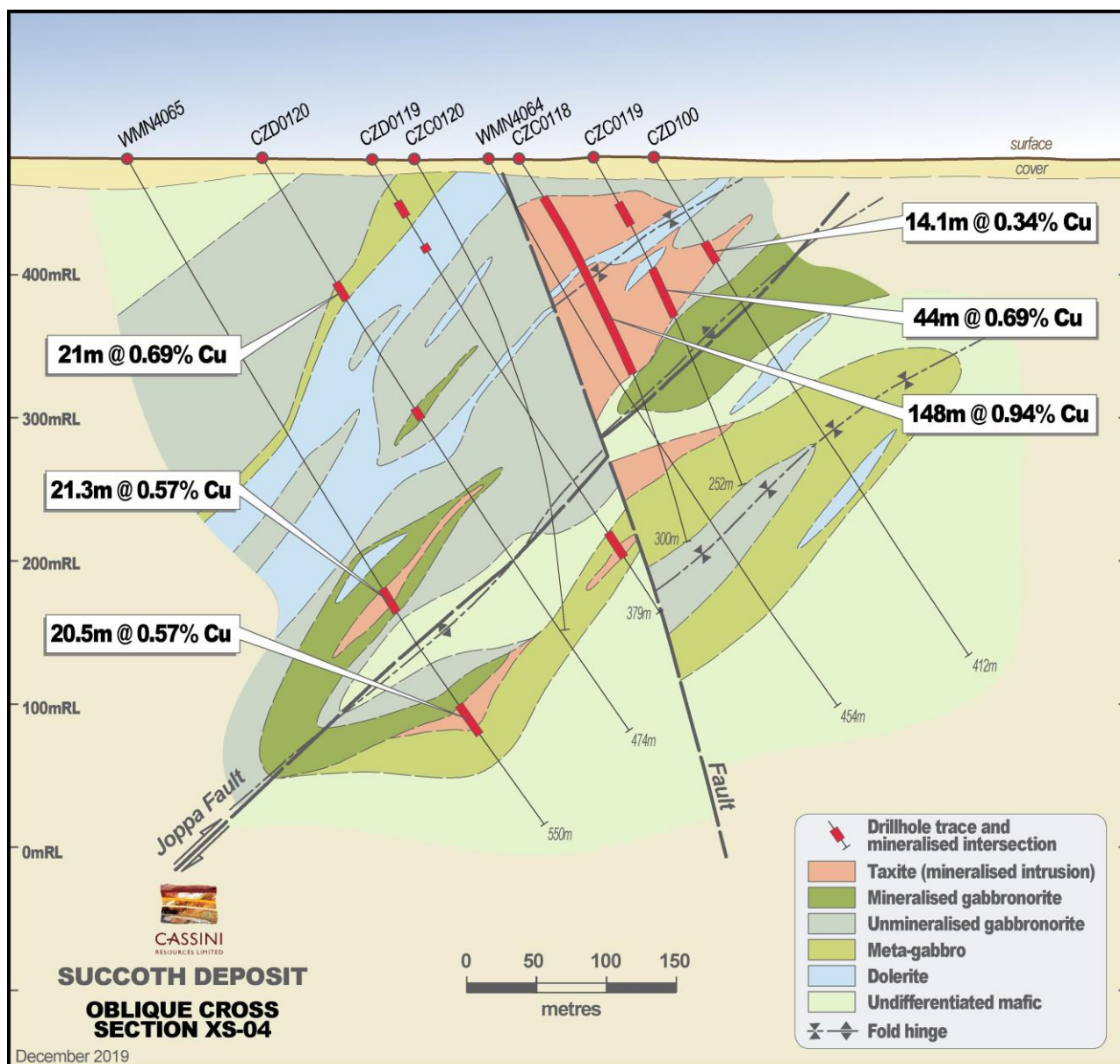


Figure 4. Succoth cross section (XS-04).

An aeromagnetic survey was also flown over a relatively small block covering Succoth Deposit to assist with geological interpretation and targeting. The new magnetic data has helped to delineate existing mineralisation within a fault-bounded package of relatively magnetic lithologies. The east-west trending fault at the southern extent of Succoth has been intersected in sections XS-04 and XS-12. Although, mineralisation on those sections is truncated by the fault, it is not necessarily closed-off as some drill holes have interested mineralisation across the fault to the south. Mineralisation at Succoth remains open along a broad northeast-southwest trending corridor and potentially laterally. Broad drill hole spacing in particular to the north-east, means that further infill and extensional drilling could delineate zones of disseminated mineralisation broadly similar to those on section XS-20.

The Company is continuing to evaluate the resource potential of Succoth and the impact it may have on Nebo-Babel development options.

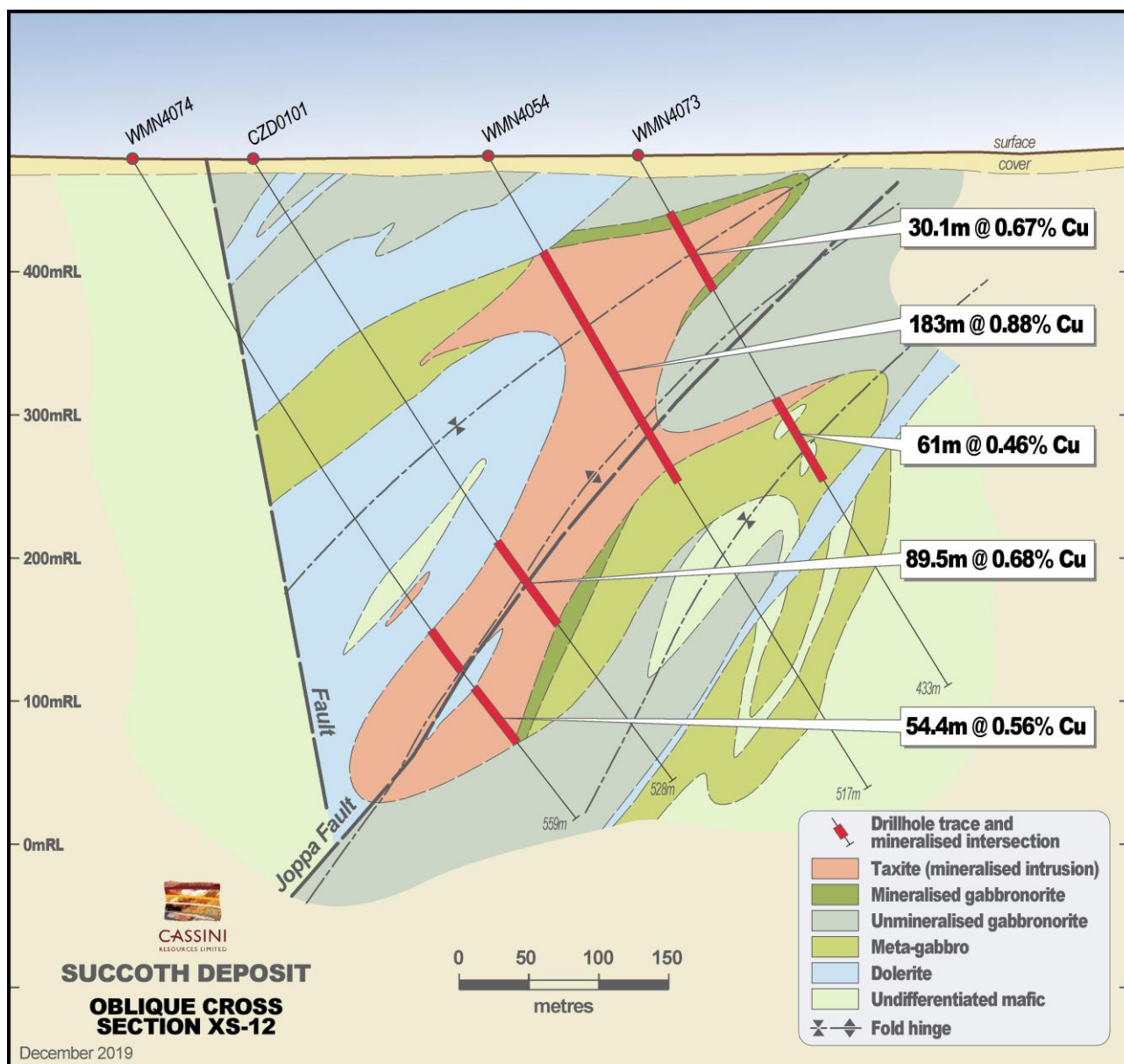


Figure 5. Succoth cross section (XS-12).

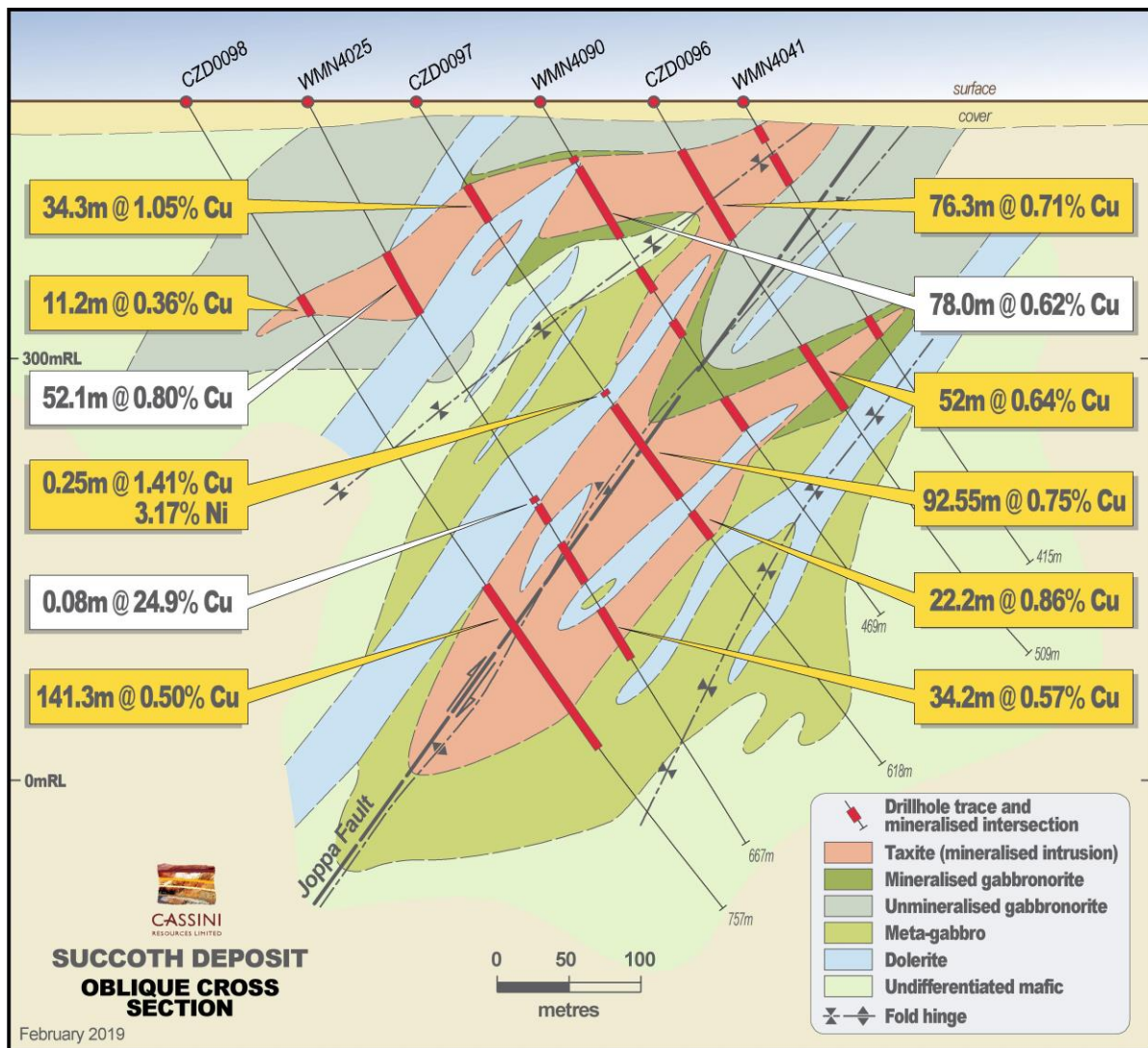


Figure 6. Succoth cross section (XS-20).

Table 2. Succoth Deposit Significant Drill Intercepts¹.

HOLE ID	East	North	RL	Dip	Azi	EOH (m)	INTERSECTIONS				
							From (m)	Width (m)	Cu %	Ni %	PGE g/t
CZD0100	385139	7117777	483	-60	315	411.8	151.15	14.1	0.34	0.03	0.09
							383.1	3.0	0.35	0.05	0.11
CZD0101	385543	7117657	481	-60	315	528.3	299.0	8.8	0.22	0.02	0.03
							319.0	89.5	0.68	0.07	0.16
CZD0119	385270	7117626	480	-60	315	379	40.0	2.0	0.46	0.03	0.09
							62.5	1.5	1.01	0.15	0.07
							72.0	9.4	0.51	0.07	0.10
							309.0	21.0	0.36	0.03	0.08
CZD0120	385328	7117576	481	-60	315	474.4	103.0	21.0	0.69	0.08	0.08
							202.15	9.5	0.43	0.05	0.11

Notes: 1. Widths are downhole width.

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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 (100%), and the Yarawindah Nickel - Copper - Cobalt Project (CZI 80%), both 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 7 December 2015, 28 November 2018, 18 February 2019 and 18 June 2019 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 One Tree Hill Prospect and Succoth 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 comprise half core in HQ3 core and quarter core in PQ3 core. Sample lengths are nominally 1m to lengths no longer than 2m 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 which have an accuracy of ±5m. 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 (or smaller where appropriate) samples which have been crushed and from which approximately 3 kg is pulverised (total prep) to produce a sub sample for analysis. XRF fusion was used to determine Al ₂ O ₃ , As, BaO, CaO, Co, Cr, Cu, Fe ₂ O ₃ , K ₂ O, MgO, Na ₂ O, Nb, Ni, P ₂ O ₅ , Pb, S, SiO ₂ , Sn, Sr, TiO ₂ , V, Zn, ZrO ₂ . Other elements of interest have been determined by four acid digest with an ICP/MS finish. Au, Pt and Pd have been analysed by fire assay process (40 gm) and determined by ICP/MS.
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 has been 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>	All drillholes have been 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 in HQ3 and quarter core in PQ3 has been used for all samples sent for analysis.

Criteria	JORC Code explanation	Commentary
	<i>If non-core, whether riffled, tube sampled, rotary split, etc and whether sampled wet or dry.</i>	Not applicable.
	<i>For all sample types, the nature, quality and appropriateness of the sample preparation technique.</i>	The sample preparation of diamond samples at One Tree Hill follows industry best practice in sample preparation involving oven drying, followed by primary crushing of the whole sample, secondary crushing, riffle splitting to obtain a subsample for pulverisation (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 1:20 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 within the West Musgrave Project.
Quality of assay data and laboratory tests	<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. Au, Pt and Pd were determined by FA/AAS finish (40 gram). Mixed acid digest and ICP/MS finish for other elements of interest e.g. Ag, Mo.
	<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 results 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.
Verification of sampling and assaying	<i>The verification of significant intersections by either independent or alternative company personnel.</i>	Diamond core has been viewed by contract geologist, consultants/technical experts and Cassini staff.
	<i>The use of twinned holes.</i>	The reported drill holes have 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 has been adjusted.
Location of data points	<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.

Criteria	JORC Code explanation	Commentary
		Downhole surveys were completed using north-seeking gyroscopes after hole completion. Stated accuracy is $\pm 0.25^\circ$ in azimuth and $\pm 0.05^\circ$ 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 undulating hills and topographic representation is sufficiently controlled.
Data spacing and distribution	<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>	Data continuity is not sufficient at the current time to estimate resources.
	<i>Whether sample compositing has been applied.</i>	No compositing was applied.
Orientation of data in relation to geological structure	<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 south at -70° dip to intersect the mineralised zones at a close to perpendicular relationship for the bulk of the electromagnetic conductors.
	<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.
Sample security	<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.
Audits or reviews	<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)

Criteria	JORC Code explanation	Commentary
Mineral tenement and land tenure status	<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>	One Tree Hill is located within E69/1530. Through wholly owned subsidiary Wirraway Metals and Mining Pty Ltd, Cassini holds 30% of the leases comprising the West Musgrave Project (granted licences M69/0072, M69/0073, 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. OZ Minerals have earned 70% beneficial interest in the project having met the Stage 2 hurdle of their earn-in agreement. 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.
Exploration done by other parties	<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.

Criteria	JORC Code explanation	Commentary
Geology	<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.
Drill hole Information	<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"> • easting and northing of the drill hole collar • elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar • dip and azimuth of the hole • down hole length and interception depth • hole length. 	Collar information for CZD0099 is published in 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>	Not applicable, all information is included.
Data aggregation methods	<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 One Tree Hill mineralisation were calculated using parameters of a 0.25% Ni or Cu lower cut-off, no minimum reporting length, 6m maximum length of 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>	Metal equivalent values are not reported.
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 One Tree Hill is poorly defined and orientations are approximate. Mineralisation is generally intersected obliquely to true-width and approximations have been made based on geological interpretations.
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 text.
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 –</i>	All relevant exploration data is shown on figures, in text and Annexure 1.

Criteria	JORC Code explanation	Commentary
	<i>size and method of treatment; metallurgical test results; bulk density, groundwater, geotechnical and rock characteristics; potential deleterious or contaminating substances.</i>	
Further work	<p><i>The nature and scale of planned further work (eg tests for lateral extensions or depth extensions or large-scale step-out drilling).</i></p> <p><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></p>	<p>Cassini and its partner OZ Minerals are currently undertaking pre-feasibility study (PFS) work at the West Musgrave Project. Further resource definition drilling is likely to be conducted during a PFS in conjunction with regional exploration programs including reconnaissance drilling and geophysics.</p> <p>All relevant diagrams and inferences have been illustrated in this report.</p>