



CASSINI
RESOURCES LIMITED

ASX Release (CZI)

14 January 2020

New mineralised prospect discovered at Yarawindah

Highlights:

- **Maiden drill testing intersects Ni and Cu-bearing sulphides, hosted by mafic rocks, over 50m wide intervals**
- **New discovery named “*Brassica Prospect*”; located 4km from closest previously known mineralisation in the project area**
- **Results confirm multiple, separate mineralised intrusions within the Project**
- **Diamond drilling has re-commenced after the Christmas break**

Cassini Resources Limited (ASX:CZI) (“Cassini” or the “Company”) is pleased to announce encouraging early results from drilling at the Yarawindah Brook Project located 130km northeast of Perth, on agricultural land near the township of New Norcia in Western Australia. The Company has a 80% beneficial interest in the project which is prospective for nickel, copper, cobalt and PGE’s. Kalgoorlie-based prospector, Mr Scott Wilson, retains a 20% interest in the Project.

The Company is undertaking a diamond drilling program targeting multiple electromagnetic conductors identified following an airborne and ground electromagnetic surveys in 2018. The current program is the Company’s first-ever drilling at the Project.

Brassica Prospect

The Company has had immediate success with the first two drill holes intersecting over 50m thick sequences of metagabbro’s containing trace to minor pentlandite and chalcopyrite (Figure 1). Drilling has targeted the XC05 Conductor, now re-named the “Brassica Prospect” located approximately 4km to the southwest of the main Yarawindah Prospect. The XC05 Conductor has been modelled as three distinct electromagnetic conductors extending over a strike length of 300m, with modelled plate conductance of up to 2,400S, consistent with sulphide accumulations.

Assay results include promising intercepts of 1.1m @ 0.50% Ni, 0.10% Cu & 0.08% Co from 92.9m in YAD0002 and 0.7m @ 0.09% Ni, 1.46% Cu & 0.02% Co from 71.4m in YAD0001 (Figure 2). The metagabbro’s are strongly anomalous in Ni and Cu (approx. 500ppm) throughout. Full assay details are provided in Table 1 below.

Regional Context

The Yarawindah Brook project area was targeted by the company because it represents a mafic-ultramafic intrusive complex, located at a major regional-scale structural intersection of the Darling Fault and the Meckering structural zone. Such tectonic intersections are a first-order control on the formation of major Ni-Cu-PGE sulphide deposits. Several phases of previous exploration have confirmed the presence of Ni-Cu-PGE magmatic sulphides, associated with mafic and ultramafic intrusive rocks. The Brassica Prospect is a new discovery by Cassini that has never been previously drilled. It is located 4km southwest of the main Yarawindah Prospect. Historical drilling was only conducted at the main Yarawindah Prospect and was primarily targeting shallow, supergene platinum and palladium

mineralisation. The current exploration program is targeting massive/matrix sulphide bodies and accumulations associated with the mafic-ultramafic intrusions.

The first two drill holes have both intersected over 50m thick sequences of metagabbro's which have intruded into and are intercalated with strongly foliated, deformed and locally pyrrhotite- and pyrite-bearing mafic and felsic country rock gneisses. Metagabbro's contain pyrrhotite and pyrite disseminations throughout and trace pentlandite and chalcopyrite. Locally, predominantly pyrrhotite-rich massive sulphides and chalcopyrite-rich veinlets are also present within the metagabbro's and country rocks.

Although the mineralisation identified so far is not economic, the company considers these results very encouraging for a completely new target area at a very early stage of exploration. The results to date have already demonstrated the Project's potential to host multiple magmatic nickel and copper deposits



Figure 1. Left: Chalcopyrite and pyrrhotite mineralisation in YAD0001.
Right: Massive pyrrhotite mineralisation with minor pentlandite in drill hole YAD0002.

Next Steps

Drilling has now re-commenced at Yarawindah following the Christmas-New Year break, with the third hole at Brassica underway. Following completion of this hole the rig will move to the main Yarawindah Prospect (Figure 3) to drill the AN01 & AN02 conductors which are believed to be extensions to previously identified mineralisation such as 7m @ 1.30% Ni and 0.22% Cu in YWRC0083. A further six holes are planned, subject to visual results. All holes will be surveyed by Downhole Electromagnetics (DHEM) to assist further targeting.

The sequence of drilling has been timed to accommodate crop harvest at each of the targets. The Company would like to acknowledge the owners of "Fauna Park" and "Arlunya" for their assistance with the current drilling program.

Meanwhile, the Pre-Feasibility Study on the Nebo-Babel Deposits (with our partner OZ Minerals) remains on track for completion in Q1 2020.

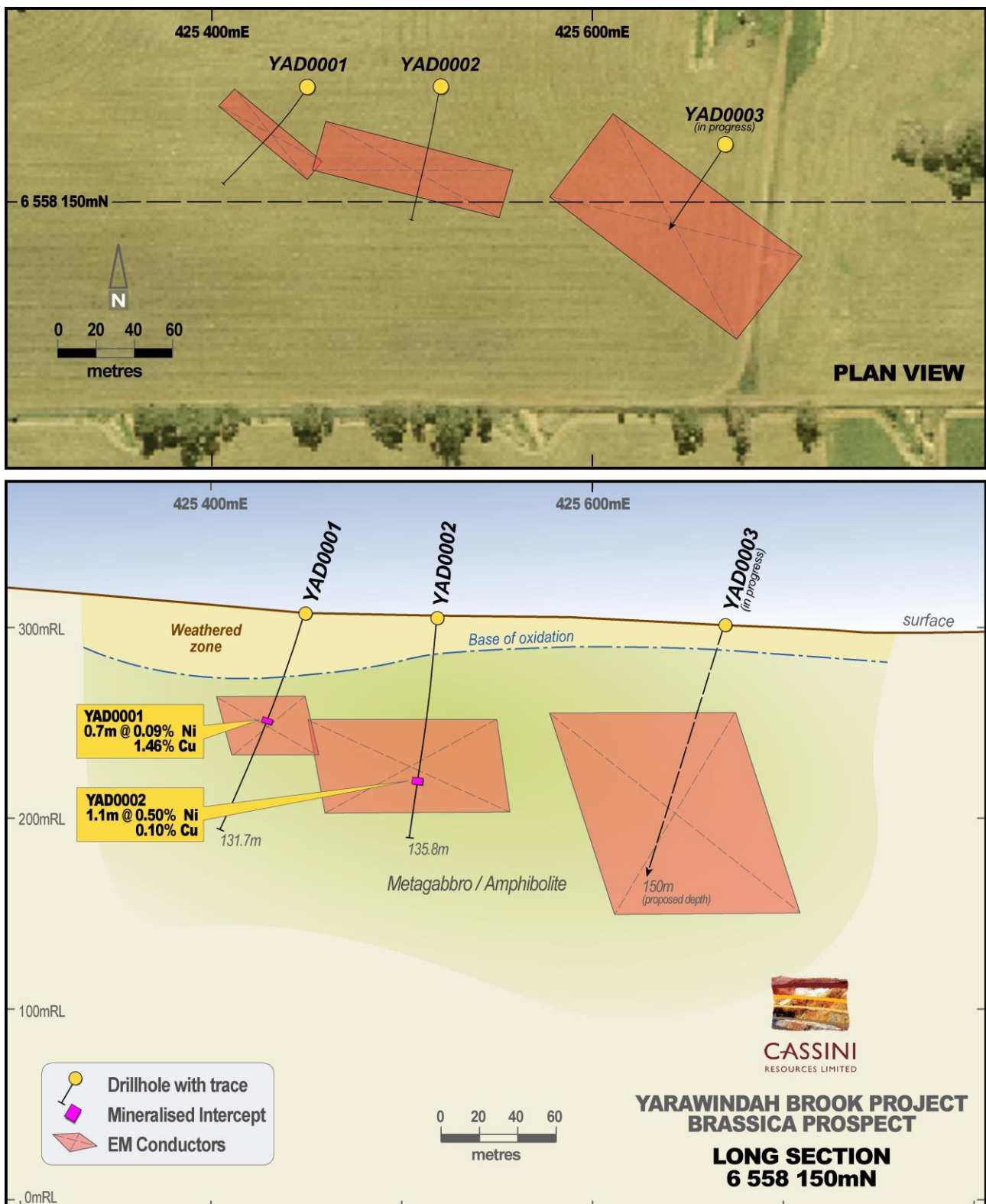


Figure 2. Long section and location plan of drilling at the Brassica Prospect.

Table 1. Brassica Prospect Drill Intercepts.

HOLE ID	East	North	RL	Dip	Azi	EOH (m)	INTERSECTIONS					
							From (m)	Width ² (m)	Ni %	Cu %	Co %	PGE g/t
YAD0001	425450	6558210	307	-60	217	131.7	71.4	2.3	0.05	0.59	0.01	0.02
						Incl	73.0	0.7	0.09	1.46	0.02	0.02
YAD0002	425520	6558210	305	-60	197	135.8	92.9	5.95	0.21	0.15	0.03	0.06
						Incl	95.7	1.1	0.50	0.10	0.08	0.09

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

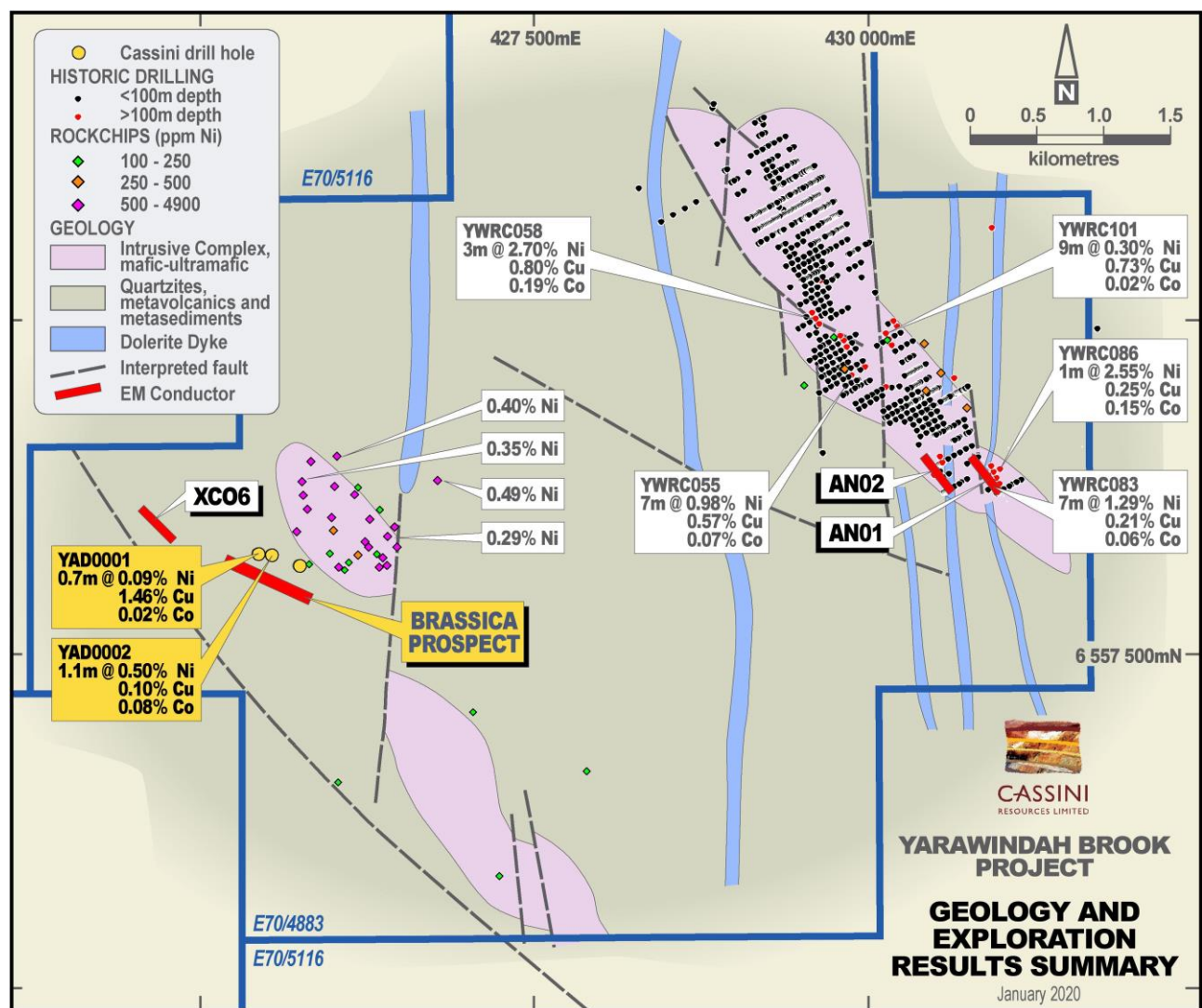


Figure 3. Yarawindah exploration target summary.

Project Background

The Yarawindah Brook Project is located 130km northeast of Perth, on agricultural land near the township of New Norcia. The Project has had limited nickel, copper and cobalt exploration, despite a favourable regional setting, prospective geology and near-surface occurrences of nickel and copper mineralisation. The Company views platinum and palladium enrichment in the regolith as “path-finders” for potential massive nickel - copper - cobalt sulphides which have been proven to exist through historic exploration. Confirming this, previous drilling in 2007 returned several significant intercepts of sulphide mineralisation such as 7m @ 1.30% Ni, 0.22% Cu, 0.06% Co and 432ppb Pd from 74m (YWRC0083). No follow-up drilling was conducted.

The Company completed an airborne electromagnetic survey (AEM) over the project in early 2018 identifying numerous conductors worthy of further investigation (see ASX Announcement 2 May 2018). A surface fixed loop electromagnetic (FLEM) survey was also completed over several of the higher priority AEM anomalies in order to confirm and better constrain the conductors prior to drilling. The FLEM reinforced the XC05 and XC06 anomalies as priority targets. Target depth is approximately 100m below surface. Only the XC05 conductor will be tested in this program due to access difficulties at XC06.

This is the first-ever drill testing in this area of the project, which is a distinctly different part of the belt which hosts the AN01 & AN02 conductors. Cassini has re-modelled surface and downhole electromagnetic (DHEM) data at AN01 & AN02 and identified multiple off-hole conductors which may represent extensions to recognised mineralisation in YWRC083. Target depths are a maximum of 120m below surface.



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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 (CZI 100%), and the Yarawindah Brook 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 29 January 2018, 19 February 2018 and 2 May 2018 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 Yarawindah Brook Project.

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 diamond 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, MnO, Na ₂ O, Nb, Ni, P ₂ O ₅ , Pb, S, SiO ₂ , Sn, Sr, TiO ₂ , V, Zn, ZrO ₂ and LOI. 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 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>	Not applicable as mineral resources are not reported.
	<i>Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc) photography.</i>	Logging at the Yarawindah Brook 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.
	<i>If core, whether cut or sawn and whether quarter, half or all core taken.</i>	Half core in HQ3 has been cut and used for all samples sent for analysis.

Criteria	JORC Code explanation	Commentary
Sub-sampling techniques and sample preparation	<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 Yarawindah Brook Project 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 is 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, stringer and disseminated sulphides), the thickness and consistency of the intersections, the sampling methodology and percent value assay ranges for the primary elements within the Yarawindah Brook 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).
	<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>	<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, are inserted blindly and randomly.</p> <p>Repeat or duplicate analysis for samples will be reviewed.</p>
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 Cassini geologists and consultants/technical experts.
	<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 for the Yarawindah Brook Project was 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 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</i>	Reported holes have been located with a Garmin hand-held GPS and are assumed to be accurate to $\pm 5m$. This is considered appropriate for exploration drill

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	<i>Resource estimation.</i>	holes. Downhole surveys were completed using north-seeking Reflex Sprint-IQ™ gyroscope after hole completion. Stated accuracy is $\pm 1^\circ$ in azimuth and $\pm 0.3^\circ$ in dip.
	<i>Specification of the grid system used.</i>	The grid system for the Yarawindah Brook Project is GDA94 MGA Zone 50.
	<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 south and west at -60° dip to intersect modelled electromagnetic plates at a close to perpendicular relationship.
	<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 Yarawindah Brook Project are stored on site and delivered to the assay laboratory by Cassini. 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>	Yarawindah Brook Project is located approximately 15km SSE of New Norcia in the SW of Western Australia and comprises three granted Exploration Licence (E70/4883, E70/5166 and E70/5116). Tenements are held by Southwest Metals Pty Ltd of which Cassini Resources Limited has acquired 80%, and Mr Scott Wilson, retains a 20% interest. Cassini has entered into land access and compensation agreement with the property owners on which Yarawindah Brook and Brassica Prospects are situated.
	<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>	The Yarawindah Brook Project area has been explored for Ni-Cu-PGE mineralisation since the discovery of outcropping Ni-Cu gossans in 1974. A series of drill programmes conducted by various companies since

Criteria	JORC Code explanation	Commentary
		that time mainly focused on near-surface, laterite-hosted PGE mineralisation culminating in the definition of a (historical, non-JORC compliant) resource of 2.9 Mt at 0.79 g/t Pt+Pd (at 0.5 g/t cut-off) by Reynolds/AuDAX in 1989. Later drilling programmes and limited electromagnetic surveying was conducted by Washington Resources, resulting in intersections of massive Ni-Cu-PGE sulphides, however, on-ground exploration on the project area has been limited since the GFC in 2008. The work completed by previous operators is considered by Cassini to be of a high standard.
Geology	<i>Deposit type, geological setting and style of mineralisation.</i>	<p>The Yarawindah Brook Project is located within the Jimperding Metamorphic Belt hosted in the Lake Grace Terrane at the SW end of the Yilgarn Craton. In the area of the Yarawindah Brook, outcrop is poor with deep regolith development. Regionally, the lithological trend is NW, with moderate to steep dips to the NE.</p> <p>The western portion of the project area is dominated by metasediments and gneiss containing lenses of mafic and ultramafic rocks. It is these mafic-ultramafic lithologies that are the hosts to Ni-Cu- PGE sulphide mineralisation and have been the main targets for exploration.</p> <p>The Yarawindah Brook Project is considered prospective for accumulations of massive, matrix and disseminated Ni-Cu sulphides, both within the mafic-ultramafic complex and as remobilised bodies in the country rocks.</p>
Drill hole Information	<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"> • 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. 	Drill hole collar information for 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 Yarawindah Brook mineralisation were calculated using parameters of a 0.1% 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 0.1% 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 0.5% 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 0.5% 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</i>	Mineralisation at Brassica Prospect is poorly defined and orientations are approximate. Mineralisation is generally intersected obliquely to true-width and approximations have been made based on geological

Criteria	JORC Code explanation	Commentary
	<i>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>	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 – 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.
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).</i> <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>	A discussion of further exploration work is outlined in the body of the report. Further exploration work will be determined based on the ongoing drill results, further geophysical surveys and geological interpretations. All relevant diagrams and inferences have been illustrated in this report.