

# Coziron Resources Limited

The Company Announcements Office ASX Limited via E-Lodgement

26th April 2017

# Yarraloola Project – Robe Mesa Resource Upgrade from 2016 Robe East Extension Drilling

## **HIGHLIGHTS**

- ➢ Robe East RC drilling adds an inferred resource of 4.4 Mt @ 52% Fe (equivalent calcined iron, Fe<sub>Ca</sub> of 58.2%) + 9.7% SiO<sub>2</sub> + 3.8% Al<sub>2</sub>O<sub>3</sub> + 0.1% P + 10.9% LOI above a cut-off grade of 50% Fe (Fe<sub>Ca</sub>>55%) of Lower Zone material as a contiguous extension to the Robe Mesa Deposit.
- ➤ Total Robe Mesa Resource of 89.1 Mt now reports as 65.7 Mt of Indicated Resource and 23.4 Mt of Inferred Resource @ 53.7% Fe (equivalent calcined iron, Fe<sub>Ca</sub> of 60.1%) + 8.3% SiO<sub>2</sub> + 3.5% Al<sub>2</sub>O<sub>3</sub> + 0.05% P + 10.7% LOI above a cut-off grade of 50% Fe (Fe<sub>Ca</sub>>55%).
- Resource includes a higher grade component of 19.5 Mt @ Fe>55% of Indicated Resource + 5.2 Mt of Inferred Resource for a Total Resource of 24.7 Mt @ 56% Fe (equivalent calcined iron, Fe<sub>Ca</sub> of 62.7%) + 5.9% SiO<sub>2</sub> + 2.7% Al<sub>2</sub>O<sub>3</sub> + 0.04% P + 10.7% LOI
- Final results increased the inferred resource and the total tonnage in the Robe Mesa deposit by 5%.
- > The resource model is open to the north.
- ➤ The results from this small-scale drilling programme represent another successful addition to the resource-base at Robe Mesa, located within the Company's Yarraloola project.

**ASX Code: CZR** 

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## **Yarraloola Project**

## **Background**

The Robe Mesa hosts a deposit of pisolitic iron-stone (CID-type iron-ore) with a detrital origin that underlies an elevated region at the southern end of the Yarraloola project area on the Company's tenements E08/1060 and E08/1686 (Fig 3). The Robe Mesa has a total length of about 2.5 kilometres and a width of between 400 to 600 metres. RC drilling has established that an upper outcropping zone of pisolitic iron-stone, which is approximately 20 metres thick, is separated from a lower zone of pisolitic iron-stone, also about 20 metres thick, by an interval of 15 to 20 metres of fluvial sands and silts. The deposit is hosted within the Tertiary-age palaeo-channel, which hosts RioTinto operated mines at Warramboo, Mesa A and Mesa J.

In November 2014, the Company completed an initial total of 25 vertical holes for 1,562 metres along about 1 kilometre of the Robe Mesa on an approximately 200 metre grid (Fig 1). The results produced a maiden inferred resource which was reported fully to the ASX on 3<sup>th</sup> February 2015. In 2015, the grid was infilled and extended with an additional 53 vertical RC holes for 3,374 metres to an approximately 100 metre spacing (Fig 1). This increased the volume by 15% and converted 78% of the inferred to indicated resource. The results were fully reported to the ASX on 8<sup>th</sup> February 2017.

Subsequent mapping outlined an area of contiguous outcrop to the east of the drilled-grid at a lower elevation and across more undulating terrain that appeared to represent an extension to the lower zone of pisolitic ironstone. In November 2016, the Robe East Extension prospect was RC drilled with a total of 42 vertical holes for 1077 metres on an approximately 100 metre grid (Fig 1, Table 4). From this programme, 28 drill-holes representing a total of 346 metres contained intercepts that contribute to a resource model that extends the lower zone of the Robe Mesa resource to the east (Fig 2, Table 5). This announcement reports a JORC-compliant inferred resource generated from the 2016 drilling for the Robe East Extension and this is summarised in Table 1 and fully described in Appendix 1. This extension is contiguous with the Robe Mesa Deposit and the additional material is summarised into the overall Robe Mesa resource at Fe cut-offs of 50 and 55% in Tables 2 and Tables 3.

#### **Mineral Resource Commentary**

For completeness, the JORC-tables in Appendix 1 attached to this announcement are summarised and commented on as follows.

The Robe Mesa deposit on E08/1060 and E08/1686 is represents a portion of the pisolitic iron-stone that was deposited under alluvial conditions in the large-scale river palaeo Robe River system (Fig 3, Fig 2). The vitreous and powdery goethite mineralisation in the Robe Mesa deposit is modelled as an upper and lower zone. These represent two depositional cycles of flat-lying pisolitic iron-stone that are separated by ferruginous silts and sands within a meandering palaeo-channel. The Robe East extension represents an outcropping portion of the lower zone of pisolitic iron-stone. A representative schematic geological cross-section is included to provide guidance on the interpreted relationships of the reported intercepts between the drill-holes and potential for lateral continuity (Figs 3).

The Robe East Extension was drilled with 42 vertical RC holes for 1077 metres on a 100 metre grid. Drill-holes are only stopped when the underlying basement of Proterozoic-age schist is detected. The reverse circulation rig used a face sampling hammer and the chips passed over a stationary cone-splitter attached to the rig to recover 2-3 kilograms on 1 metre down-hole intervals.



Approximately 20% of the total samples analysed represent field duplicates along with blanks and reference standards that were supplied from an independent laboratory.

Labelled samples were bagged and packed in bulka-bags and dispatched from site to Bureau Veritas Laboratories in Perth for basic iron-ore suite XRF analysis on fused disks with loss on ignition (LOI) determined by thermo-gravimetric analysis (TGA). The assay results received by electronic dispatch at Coziron were added to a project database which integrates all the spatial, geological and geochemical data for the deposit. The calcined-iron content (Fe<sub>ca</sub>) which represents Fe-content after the loss of volatiles (mostly water) is calculated using the formula (Fe%/(100-LOI))\*100.

Following the receipt of all results from the Robe East Extension drilling, the geological model and the assay database was provided to Payne Geological Services Pty Ltd (PayneGeo) for an independent assessment of grade and tonnage. Intervals with a calcined cut-off of Fe>50% are interpreted as true-thickness intercepts of pisolitic iron-stone. These intervals have been wire-framed to calculate volume and grade interpolated between drill-holes using ordinary kriging and is converted to tonnages using an industry-standard bulk density of 2.6. The inferred resource reported for the Robe East Extension is reported in Table 1.

The Surpac model also supports the geological interpretation indicating that the goethitic mineralization in the Robe East Extension is contiguous with the lower zone mineralisation in the previously drilled area of the Rob Mesa (Fig 3). Any future mining operation would be by open-pit and although metallurgical studies have yet to be undertaken on the Robe Mesa extension, the goethitic pisolitic iron-stone is widespread in the palaeo-drainage system and is mined along the system at the Warramboo, Mesa A and Mesa J deposits. No other modifying factors have been applied to the resource model.

Overall, the Robe East Extension resource estimate represents an addition to the Robe Mesa deposit and is summarised in Tables 2 and 3 at a cut-off grade of Fe>50% and Fe>55% respectively.

Table 1. Robe East Extension – Mineral Resource Estimate reported above a Fe (iron) cut-off grade of 50% from the 2016 RC drilling programme.

Category	Tonnes Mt	Fe %	SiO₂ %	Al <sub>2</sub> O <sub>3</sub> %	TiO₂ %	LOI %	P %	S %	Fe <sub>ca</sub>
Inferred	4.6	51.8	9.7	3.8	0.2	10.9	0.1	0.02	58.2
Total	4.6	51.8	9.7	3.8	0.2	10.9	0.1	0.02	58.2

Table 2. Robe Mesa – Updated Total Mineral Resource Estimate reported above a Fe (iron) cut-off grade of 50%.

Category	Tonnes Mt	Fe %	SiO <sub>2</sub>	Al <sub>2</sub> O <sub>3</sub> %	TiO <sub>2</sub>	LOI %	P %	S %	Fe <sub>ca</sub>
Indicated	23.4	53.4	8.5	3.49	0.15	10.75	0.06	0.02	59.9
Inferred	65.7	53.8	8.3	3.43	0.14	10.6	0.04	0.02	60.2
Total	89.1	53.7	8.3	3.45	0.14	1.66	0.5	0.02	60.12



Table 3. Robe Mesa – Mineral Resource Estimate for mineralization reported above a Fe cut-off grade of 55%.

Category	Tonnes Mt	Fe %	SiO <sub>2</sub>	Al <sub>2</sub> O <sub>3</sub> %	TiO₂ %	LOI %	P %	S %	Fe <sub>ca</sub>
Indicated	19.5	56.0	6.0	2.7	0.10	10.7	0.04	0.02	62.7
Inferred	5.2	56.0	5.8	2.8	0.10	10.7	0.05	0.02	62.7
Total	24.7	56.0	5.9	2.7	0.10	10.7	0.04	0.02	62.7

The outcome of the 2016 RC-drilling programme at Robe East has resulted in a first-pass delineation of an additional inferred resource which increases the total tonnage in the resource estimate for the Robe Mesa by about 5%. Infill drilling will be required to convert the *Inferred* to *Indicated Resource*. The resource models from Surpac also suggest there are the additional resources underlying mapped areas of mineralisation to the north of the drill grid.

## **Future Work**

Mapped extensions of pisolitic iron-stone that adjoin to the north of the Robe Mesa deposit have been outlined and are currently being evaluated for future drilling programs. The block model is also being reviewed and evaluated to identify either possible extensions to mineralisation or areas where infill drilling within the deposit can increase the confidence from Inferred to Indicated.

The Yarraloola Project also hosts a number of additional CID targets with pisolitic iron-stone mineralisation that are currently being evaluated for initial exploratory drilling.



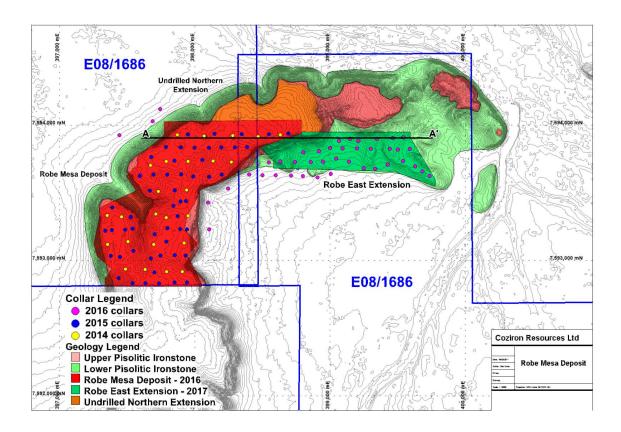


Fig 1. Geology and 1m interval elevation contours with the location of 2014 and 2015 RC drill-collars on the Robe Mesa Deposit and the 2016 RC-collars on the Robe East Extension from tenements E08/1060 and E08/1686.

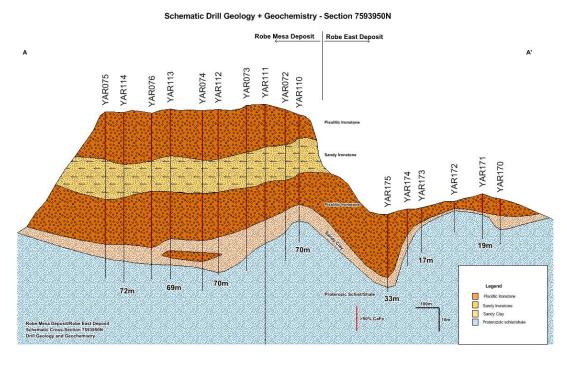


Fig 2. Interpreted geological cross-section on 75933950N (from Fig 1) with a 10 times vertical exaggeration showing the down-hole intervals from the 2014 and 2015 RC-drill-holes on the Robe Mesa deposit 2016 RC drill-holes on the Robe Mesa Extension reporting Fe>50% (calcined Fe>55%).

Table 4. Location of all 2016 RC drill-holes on the Robe Mesa as shown on Fig 1 (Easting and Northing in GDA, Zone 50).

Hole Number	Easting	Northing	Depth
			m
YAR163	399736	7593625	25
YAR164	399685	7593659	25
YAR165	399631	7593695	25
YAR166	399540	7593735	25
YAR167	399592	7593827	25
YAR168	399500	7593820	19
YAR169	399442	7593826	19
YAR170	399543	7593910	19
YAR171	399468	7593905	19
YAR172	399348	7593899	13
YAR173	399211	7593885	19
YAR174	399150	7593901	24
YAR175	399067	7593883	33
YAR176	399001	7593830	25
YAR177	398919	7593806	29
YAR178	398804	7593798	25
YAR179	398634	7593733	37
YAR180	398742	7593727	43
YAR181	398859	7593727	49
YAR182	398947	7593731	37
YAR183	399045	7593754	37
YAR184	399142	7593730	43
YAR185	399249	7593683	28
YAR186	399335	7593678	31
YAR187	399426	7593709	20
YAR188	399302	7593826	19
YAR189	399200	7593828	25
YAR190	399093	7593829	31
YAR191	399006	7593641	19
YAR192	398908	7593613	37
YAR193	398800	7593625	31
YAR194	398712	7593628	25
YAR195	398600	7593630	19
YAR196	398550	7593725	25
YAR197	398500	7593631	19
YAR198	398402	7593634	19
YAR199	398246	7593531	19
YAR200	398100	7593430	19
YAR201	398108	7593230	19
YAR219	397442	7593926	19
YAR220	397690	7594030	19
YAR221	397745	7594119	19
		1	1



Table 5. 2016 RC drill-holes with intercepts that comprise the JORC inferred resource in the Robe East extension. (Drill-holes in Table 4 without an intercept in Table 5 represent holes that are either null or with an intercept that was not utilised in the resource model).

Hole Number	Depth From	Depth To	Interval	Fe%	SiO <sub>2</sub> %	Al₂O₃%	TiO₂%	LOI%	Р%	<b>S</b> %	Fe <sub>ca</sub> %
YAR163	0	13	13	48.64	8.38	3.79	0.19	13.56	0.04	0.04	56.24
YAR164	0	14	14	48.38	10.8	5.21	0.25	12.28	0.04	0.02	55.12
YAR165	0	9	9	51.75	7.09	3.49	0.17	12.68	0.04	0.02	59.25
YAR166	0	14	14	51.17	10.24	4.21	0.21	11.28	0.04	0.02	57.69
YAR167	0	19	19	47.96	13.34	4.94	0.23	11.25	0.04	0.03	54.06
YAR168	0	8	8	52.07	8.58	3.57	0.17	11.5	0.05	0.02	58.84
YAR169	0	11	11	49.77	11.38	4.44	0.24	11.44	0.05	0.04	56.2
YAR170	0	6	6	53.54	7.83	2.95	0.13	11.26	0.05	0.02	60.33
YAR171	0	7	7	52	9.23	3.24	0.17	11.21	0.05	0.01	58.57
YAR172	0	2	2	47.57	13.04	4.17	0.21	12.06	0.05	0.01	54.09
YAR173	0	5	5	49.91	13.28	3.37	0.24	10.69	0.04	0.02	55.89
YAR174	0	7	7	48.43	10.72	3.95	0.23	12.57	0.05	0.01	55.36
YAR175	0	14	14	51.41	10.17	4.64	0.2	10.64	0.05	0.01	57.55
	18	27	9	46.22	15.74	4.62	0.29	10.91	0.16	0.01	51.88
YAR176	0	15	15	46.12	13.73	4.66	0.3	12.1	0.05	0.02	52.4
	16	18	2	47.82	16.4	4.33	0.43	8.68	0.14	0.01	52.4
YAR177	0	20	20	51.11	9.74	4.23	0.2	11.18	0.05	0.02	57.53
	21	24	3	50.64	11.03	4.22	0.17	11.26	0.05	0.01	57.07
YAR178	0	14	14	50.95	10.64	4.21	0.16	10.87	0.05	0.01	57.17
	16	21	5	47.78	15.27	4.74	0.27	10.2	0.14	0.01	53.21
YAR179	0	8	8	51.71	9.72	3.3	0.15	11.04	0.07	0.01	58.13
YAR180	0	5	5	53.9	7.62	3.61	0.17	10.68	0.04	0.02	60.35
	20	23	3	49.51	12.75	4.21	0.2	11.04	0.1	0	55.66
YAR181	0	7	7	49.04	10.99	3.03	0.17	12.26	0.05	0.02	55.97
	23	27	4	49.91	12.04	4.11	0.18	11.1	0.14	0	56.15
YAR182	0	15	15	46.73	15.35	5.68	0.27	10.7	0.03	0.03	52.36
	19	24	5	45.59	17.6	5.12	0.24	10.71	0.08	0.01	51.06
YAR183	0	12	12	47.43	14.8	4.62	0.25	10.36	0.03	0.01	52.93
	14	16	2	46.64	17.77	4.18	0.27	10.15	0.06	0.01	51.9
YAR184	0	16	16	46.71	14.64	5.42	0.29	10.64	0.05	0.01	52.35
	19	26	7	50.81	11.73	3.92	0.19	10.53	0.07	0.01	56.79
YAR185	17	21	4	47.7	15.93	4.47	0.29	9.71	0.14	0.01	52.82
YAR186	0	6	6	45.1	12.83	4.36	0.22	12.46	0.04	0.03	51.28
YAR187	12	17	5	44.86	17.71	5.51	0.16	10.93	0.06	0	50.38
YAR188	0	8	8	50.36	10.47	3.99	0.22	11.79	0.04	0.03	57.09
YAR189	0	9	9	49.23	10.49	4.78	0.23	11.55	0.04	0.02	55.66
	11	12	1	47.44	16.05	2.29	0.12	11.41	0.04	0.01	53.55
YAR190	0	17	17	49.4	12.87	4.48	0.26	10.53	0.08	0.01	55.2
	18	24	6	47.92	15.89	4.17	0.38	9.41	0.16	0.01	52.94



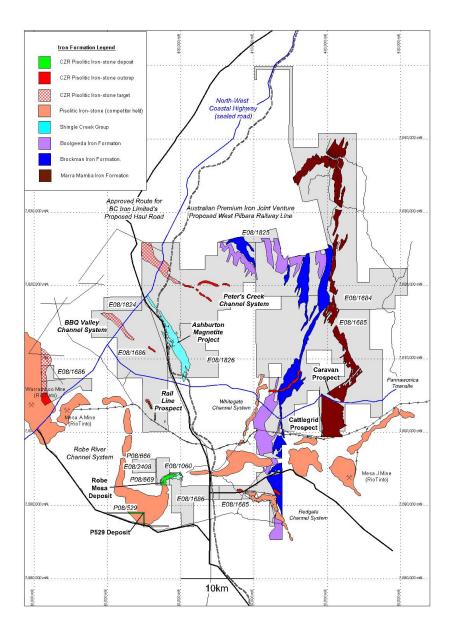


Fig 3. Yarraloola tenement package in the West Pilbara showing the location of the Robe Mesa pisolitic iron-stone deposit of E08/1060 and E08/1686 with the distribution infrastructure, banded iron-formations and other targets for CID mineralisation.

For further information regarding this announcement please contact Adam Sierakowski on 08 6211 5099.

## **Competent Persons Statement**

The information in this report that relates to exploration results is based on information compiled by Dr Rob Ramsay (BSc Hons, MSc, PhD) who is a Member of the Australian Institute of Geoscientists. Dr Ramsay is a full-time Consultant Geologist for Coziron. The information that relates to the Mineral Resource Estimate has been compiled by Mr Graham de la Mare of PayneGeo Pty Ltd. who is a Member of the Australian Institute of Geoscientists.

Both Dr Ramsay and Mr de la Mare have sufficient experience which is relevant to the style of mineralisation and type of deposit under consideration and to the activities which they have undertaken to qualify as a Competent Persons as defined in the 2012 edition of the "Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves". Dr Ramsay and Mr de la Mare have given their consent to the inclusion in this report of the matters based on the information in the form and context in which it appears.



Appendix 1 – Reporting of exploration results and ore-resources from the Robe Mesa Eastern Extension in the Yarraloola Project - JORC 2012 requirements.

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

Criteria	JORC Code explanation	Commentary
Sampling techniques	<ul> <li>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.</li> <li>Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.</li> <li>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.</li> </ul>	<ul> <li>The results presented are derived from a 5.5" (140mm) reverse circulation drilling programme with continuous down-hole sampling.</li> <li>All drill cuttings were passed through a static cone splitter attached to the drill-rig and collected on 1m intervals. During the drilling of each metre, 2-3kg of drill chips were split off and collected in a labelled calico sample bag.</li> <li>The entire 2-3kg drill-chip sample was crushed, dried and pulverized at Bureau Veritas Laboratories in Perth. Western Australia. A sub sample was fused and the "basic iron-ore suite" of major oxide and selected trace-element analysis was obtained by XRF Spectrometry.</li> </ul>
Drilling techniques	Drill type (eg core, reverse circulation, openhole hammer, rotary air blast, auger, Bangka, sonic, etc) and details (eg core diameter, triple or standard tube, depth of diamond tails, facesampling bit or other type, whether core is oriented and if so, by what method, etc).	All drill holes were drilled by reverse circulation (RC) technique, using a 5.5" (140mm) face-sampling percussion hammer.
Drill sample recovery	<ul> <li>Method of recording and assessing core and chip sample recoveries and results assessed.</li> <li>Measures taken to maximise sample recovery and ensure representative nature of the samples.</li> <li>Whether a relationship exists between sample recovery and grade and whether sample bias may have occurred due to preferential loss/gain of fine/coarse material.</li> </ul>	<ul> <li>Sample size was monitored by geologists during the drilling programme. The volume of sample derived from each metre drilled was approximately equal.</li> <li>Standard RC sampling techniques were employed and deemed adequate for sample recovery. Some water was injected into the sample stream during drilling to minimise the loss of fine particles.</li> <li>The loss of fine material has been minimised during drilling. Sample recovery is regarded as being representative.</li> </ul>
Logging	<ul> <li>Whether core and chip samples have been geologically and geotechnically logged to a level of detail to support appropriate Mineral Resource estimation, mining studies and metallurgical studies.</li> <li>Whether logging is qualitative or quantitative</li> </ul>	<ul> <li>Each metre of reverse circulation chips is described geologically for mineralogy, colour and texture. Geological consistency in the drilling meant the logging was sufficient to support a mineral resource estimation.</li> <li>Logging is qualitative.</li> </ul>



Criteria	JORC Code explanation	Commentary
	<ul> <li>in nature. Core (or costean, channel, etc) photography.</li> <li>The total length and percentage of the relevant intersections logged.</li> </ul>	All drill holes were logged at 1m intervals, for the entire length of each hole.
Sub-sampling techniques and sample preparation	<ul> <li>If core, whether cut or sawn and whether quarter, half or all core taken.</li> <li>If non-core, whether riffled, tube sampled, rotary split, etc and whether sampled wet or dry.</li> <li>For all sample types, the nature, quality and appropriateness of the sample preparation technique.</li> <li>Quality control procedures adopted for all subsampling stages to maximise representivity of samples.</li> </ul>	<ul> <li>No core was collected for this study.</li> <li>Reverse circulation drill chip samples were collected dry and split by a static cone splitter attached to the drill-rig during drilling.</li> <li>Reverse circulation drilling is an appropriate method of recovering representative samples though the interval of mineralisation. The drilling contractor used suitable sample collection and handling procedures to maintain sample integrity</li> <li>Duplicate samples were simultaneously collected in mineralized intervals, using the static cone splitter attached to the drill-rig. Duplicate samples were taken at a ratio of 1:20 and analysed using the same technique</li> </ul>
	<ul> <li>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.</li> <li>Whether sample sizes are appropriate to the</li> </ul>	<ul> <li>as the interval sample.</li> <li>The reverse circulation method samples continuously and the cone-splitter selects a representative proportion of the sample, providing an indication of compositional variations associated with each lithology or mineralised interval.</li> <li>The 2-3kg of homogenised drill chips that was recovered for each sample is sufficient</li> </ul>
Quality of assay data and laboratory tests	<ul> <li>grain size of the material being sampled.</li> <li>The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total.</li> </ul>	to provide a representative indication of the material being sampled.  • All samples were analysed at Bureau Veritas Laboratories in Perth. A selected suite of major-element oxides and trace element oxides were determined by XRF analysis on fused disks. Loss on Ignition (LOI) was determined by thermogravimetric analysis at 1000° C
	<ul> <li>For geophysical tools, spectrometers, handheld XRF instruments, etc, the parameters used in determining the analysis including instrument make and model, reading times, calibrations factors applied and their derivation, etc.</li> <li>Nature of quality control procedures adopted</li> </ul>	No hand-held geophysical tools or hand- held analytical tools were used for the reported results.
	(eg standards, blanks, duplicates, external laboratory checks) and whether acceptable levels of accuracy (ie lack of bias) and precision have been established.	<ul> <li>During drilling Certified Reference Material packets were inserted amongst the samples at a ratio of 1:20.</li> <li>Laboratory QAQC involves the use of internal lab standards using certified reference material, blanks, splits and replicates as part of their in-house procedures. Results highlight that sample assay values are accurate and that contamination has been contained.</li> </ul>



Criteria	JORC Code explanation	Commentary
Verification of sampling and assaying	<ul> <li>The verification of significant intersections by either independent or alternative company personnel.</li> <li>The use of twinned holes.</li> <li>Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.</li> <li>Discuss any adjustment to assay data.</li> </ul>	<ul> <li>No independent of alternative company personnel were used to verify the intersections.</li> <li>No holes were twinned.</li> <li>Assay data was received electronically and uploaded into an access database. Printed copies of analysis results was also received by post and filed in Perth. All hand-held GPS locations were checked against the field logs and plotted using GIS software to verify locations.</li> <li>No adjustment or calibrations were made to any assay data presented.</li> </ul>
Location of data points	<ul> <li>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.</li> <li>Specification of the grid system used.</li> <li>Quality and adequacy of topographic control.</li> </ul>	<ul> <li>Drill hole locations were initially derived from a hand held Garmin 72h GPS units, with an accuracy of ±3m.</li> <li>The grid system is MGA GDA94, zone 50, all easting's and northing's are reported in MGA co-ordinates.</li> <li>Geolmage 1m DTM data is used to provide topographic control and is regarded as being adequate for early stage exploration.</li> </ul>
Data spacing and distribution	<ul> <li>Data spacing for reporting of Exploration Results.</li> <li>Whether the data spacing and distribution is sufficient to establish the degree of geological and grade continuity appropriate for the Mineral Resource and Ore Reserve estimation procedure(s) and classifications applied.</li> <li>Whether sample compositing has been applied.</li> </ul>	<ul> <li>The drilling is located on sites spaced approximately on a 100m grid over an area of outcropping mapped mineralisation.</li> <li>The 100m spaced drilling allowed the generation of an inferred resource.</li> <li>Sample results represent 1m interval reverse circulation drill-chips and samples have not been composited.</li> </ul>
Orientation of data in relation to geological structure	<ul> <li>Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type.</li> <li>If the relationship between the drilling orientation and the orientation of key mineralised structures is considered to have introduced a sampling bias, this should be assessed and reported if material.</li> </ul>	<ul> <li>Mineralisation is contained within a subhorizontal sheet and the vertical drill-holes and associated sampling collects representative material through the mineralised zone.</li> <li>The drill orientation was selected to minimise any sampling bias.</li> </ul>
Sample security	The measures taken to ensure sample security.	Samples are collected, labelled and transported by CZR Geologists to RGR Transport Depot in Karratha from where they are transported directly to Bureau Veritas laboratories in Perth.
Audits or reviews	The results of any audits or reviews of sampling techniques and data.	No audits or reviews of the sampling techniques and data have been obtained

## **Section 2 Reporting of Exploration Results**

Criteria	JORC Code explanation	Commentary				
Mineral tenement and land tenure status	<ul> <li>Type, reference name/number, location and ownership including agreements or material issues with third parties such as joint ventures, partnerships, overriding royalties, native title interests, historical sites, wilderness or national park and environmental settings.</li> </ul>	<ul> <li>All exploration licenses and prospecting licenses owned 85% by Zanthus Resources Ltd and 15% by ZanF Pty Ltd. The tenements are covered by the Kuruma Marthudunera Native Title Claim and relevant heritage agreements are in place.</li> </ul>				



Criteria	JORC Code explanation	Commentary				
Exploration done by other parties	<ul> <li>The security of the tenure held at the time of reporting along with any known impediments to obtaining a license to operate in the area.</li> <li>Acknowledgment and appraisal of exploration by other parties.</li> </ul>	<ul> <li>The tenements are in good standing and no known impediments exist.</li> <li>In 1990-1991, Aberfoyle Resources held tenements covering the Ashburton Trough which partially overlapped Yarraloola. They collected 26 rock-chip and 73 stream sediment samples for gold and base-metal exploration but encountered no significant results and surrendered the ground.</li> <li>In 1991-1992, Poseidon Exploration Ltd held exploration tenements covering the Ashburton Trough which partially overlapped Yarraloola for base-metals, gold and iron-ore. They collected 54 rock-chips, 236 soil samples, 492 stream sediment samples and completed 159 RAB holes for 2410m but encountered no significant mineralisation and surrendered the tenements.</li> <li>In 1997-1998, Sipa Resources NL held tenements over the Ashburton Trough that partially covered Yarraloola for gold and base-metals. A field trip after the interpretation of LANDSAT and air-photos collected six rock-chip samples which failed to detect mineralisation and the tenements were surrendered.</li> <li>In 2005-2009, Red Hill Iron Ltd held a tenement 15km northwest of Pannawonica which partially overlapped Yarraloola for gold and base-metal prospectivity. Following an aeromagnetic survey and air-photo interpretation, 16 rock-chips and 207 soil samples were collected but no targets were</li> </ul>				
Geology	Deposit type, geological setting and style of mineralisation.	<ul> <li>generated and the ground was surrendered.</li> <li>The deposit described in this report is a Channel Iron Deposit ("CID") - a flat-lying Tertiary-aged palaeochannel of pisolitic iron- stone (the Robe Pisolite).</li> </ul>				
Drill hole information	<ul> <li>A summary of all information material to the under-standing of the exploration results including a tabulation of the following information for all Material drill holes:         <ul> <li>easting and northing of the drill hole collar</li> <li>elevation or RL (elevation above sea level in metres) of the drill hole collar</li> <li>dip and azimuth of the hole</li> <li>down hole length and interception depth</li> <li>hole length</li> </ul> </li> <li>If the exclusion of this information is justified on the basis that the information is not Material and this exclusion does not detract from the understanding of the report, the Competent Person should clearly explain why this is the case.</li> </ul>	<ul> <li>Drill hole collar Eastings and Northings are reported using map projection GDA Zone50, entered into an Access database and the map locations have been checked by the competent person.</li> <li>Recorded eastings and northings were used to overlay the drill collars onto the 1m GeoImage DTM and RLs were assigned to each collar using GIS software.</li> <li>All holes are vertical.</li> <li>Down hole lengths and intercept depths are calculated from 1m interval samples that are progressively collected as the holes are drilled.</li> <li>Hole lengths are reported both on the geological and driller logs, entered into the access database and have been checked by a competent person.</li> </ul>				
Data aggregation methods	In reporting Exploration Results, weighting averaging techniques, maximum and/or minimum grade truncations (e.g. cutting of high grades) and cut-off grades are usually Material and should be stated.	Minimum intercept widths are defined as drill intervals greater than 5m with samples reporting calcined iron (CaFe)>50%. Some intercepts include a maximum of 2m of samples with CaFe<50%. Intercept values are numerical averages of the relevant 1m sample results. No cutting of high grades has				



Criteria	JORC Code explanation	Commentary
Relationship between mineralisation widths and intercept lengths	<ul> <li>Where aggregate intercepts incorporate short lengths of high grade results and longer lengths of low grade results, the procedure used for such aggregation should be stated and some typical examples of such aggregations should be shown in detail.</li> <li>The assumptions used for any reporting of metal equivalent values should be clearly stated.</li> <li>These relationships are particularly important in the reporting of Exploration Results.</li> <li>If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported.</li> <li>If it is not known and only the down hole lengths are reported, there should be a clear statement to this effect (eg down hole length, true width not known').</li> </ul>	<ul> <li>been used.</li> <li>All sample intervals used to calculate the intercepts are of equal length.</li> <li>No metal equivalents are presented.</li> <li>The vertical drill-holes are designed to intercept the true widths of the horizontally-oriented sheets of pisolitic iron-stone mineralisation.</li> <li>The down-hole widths are regarded as true widths of the mineralisation.</li> </ul>
Diagrams	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.	Relevant diagrams have been included in previous ASX releases.
Balanced Reporting	<ul> <li>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.</li> <li>Where comprehensive reporting of all Exploration Results is not practicable, representative reporting of both low and high grades and/or widths should be practiced to avoid misleading reporting of Exploration Results.</li> </ul>	<ul> <li>Intervals of samples with Fe&gt;50% and the trace elements appropriate to the description of pisolitic iron-stone are reported.</li> <li>Most recent CZR drilling completed in 2016 located drill collars using a hand held GPS.</li> <li>Representative reporting of significant intersections from previous drilling has been included in previous CZR releases to the ASX. These reports are considered by CZR to be balanced and provided in context.</li> </ul>
Other substantive exploration data	Other exploration data, if meaningful and material, should be reported including (but not limited to): geological observations; geophysical survey results; geochemical survey results; bulk samples - size and method of treatment; metallurgical test results; bulk density, groundwater, geotechnical and rock characteristics; potential deleterious or contaminating substances.	<ul> <li>Ten rock chip samples, grading between 51% and 59% Fe, were collected by CZR in 2014 highlighting the area as a drill target. The sample results were submitted to the DMP as part of annual reporting obligations.</li> <li>Geological mapping, undertaken by CZR, was used to define the drill grid to delineate the Robe East deposit. The results of the geological mapping can be seen in the Robe Mesa Deposits Drill Hole Location plan provided in the accompanying report.</li> </ul>
Further work	<ul> <li>The nature and scale of planned further work (e.g. tests for lateral extensions or depth extensions or large- scale step-out drilling).</li> <li>Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.</li> </ul>	Infill, extensional and diamond drilling are being planned.



**Section 3 Estimation and Reporting of Mineral Resources** 

Criteria	JORC Code explanation	Commentary
Database integrity	<ul> <li>Measures taken to ensure that data has not been corrupted by, for example, transcription or keying errors, between its initial collection and its use for Mineral Resource estimation purposes.</li> <li>Data validation procedures used.</li> </ul>	The database is created and validated by Coziron Resources Limited.  PayneGeo performed data audits in Surpac and checked collar coordinates, down hole surveys and assay data for errors. No errors were found.
Site visits	<ul> <li>Comment on any site visits undertaken by the Competent Person and the outcome of those visits.</li> <li>If no site visits have been undertaken indicate why this is the case.</li> </ul>	No site visit has been conducted. The initial drill program is complete and all drill crews have been demobilised.
Geological interpretation	<ul> <li>Confidence in (or conversely, the uncertainty of) the geological interpretation of the mineral deposit.</li> <li>Nature of the data used and of any assumptions made.</li> <li>The effect, if any, of alternative interpretations on Mineral Resource estimation.</li> <li>The use of geology in guiding and controlling Mineral Resource estimation.</li> <li>The factors affecting continuity both of grade and geology.</li> </ul>	<ul> <li>The confidence in the geological interpretation is considered to be good. Mineralised iron ore is visible at surface and easily identified in drill samples.</li> <li>RC drill chips have been used to interpret the geology.</li> <li>The interpretation of the iron domains based on assay results, observation of RC chips, and the well-known regional geological setting, makes the current interpretations robust. Alternative interpretations are not likely to have any effect on the Mineral Resource estimation.</li> <li>Geological logging has been used to define oxide domains. No transitional or fresh material was intersected during recent drilling.</li> <li>The iron mineralisation is horizontal and follows the undulations in topography. The interpretation is based on geological logging</li> </ul>
Dimensions	The extent and variability of the Mineral Resource expressed as length (along strike or otherwise), plan width, and depth below surface to the upper and lower limits of the Mineral Resource.	<ul> <li>and assaying of RC chips.</li> <li>The mineralisation is flat lying and occurs from surface, following the natural undulations in the topographic surface over a width extent from east to west, of 1.1km and a NS extent of 300m. Mineralisation has been intersected to a vertical depth of 29m and has a maximum intersected width of 20m.</li> </ul>
Estimation and modeling techniques	The nature and appropriateness of the estimation technique(s) applied and key assumptions, including treatment of extreme grade values, domaining, interpolation parameters and maximum distance of extrapolation from data points. If a computer assisted estimation method was chosen include a description of computer software and parameters used.	<ul> <li>Using parameters derived from modelled variograms, Ordinary Kriging (OK) was used to estimate average block grades within the domains using Surpac software. The OK interpolation technique is suitable as it allows the measured spatial continuity to be incorporated into the estimate.</li> <li>Drill hole sample data was coded using mineralisation wireframes. Samples were composited to 1m as all sampling was undertaken at 1m intervals.</li> <li>Two estimation passes were used in the model. A first pass search of 100m was used (which is slightly less than the average modelled range of the first variogram structure) with a minimum of 10 samples and a maximum of 32 which resulted in 78% of the blocks being estimated. The search radius was increased to 200m for the second pass and the minimum number of samples reduced to 6 which resulted in the remaining 22% of blocks being estimated.</li> <li>The extrapolation distance from the end points was half the drill hole spacing. This distance was 40m at the margins of the</li> </ul>

Any assumptions behind modelling of selective mining units.  Any assumptions about correlation between variables.  Any assumptions about correlation between variables.  Any assumptions about correlation between variables.  Page 14		<ul> <li>The availability of check estimates, previous estimates and/or mine production records and whether the Mineral Resource estimate takes appropriate account of such data.</li> <li>The assumptions made regarding recovery of by-products.</li> <li>Estimation of deleterious elements or other non-grade variables of economic significance (eg sulphur for acid mine drainage characterisation).</li> <li>In the case of block model interpolation, the block size in relation to the average sample spacing and the search employed.</li> </ul>	<ul> <li>deposit.</li> <li>No previous estimate has been completed at the deposit.</li> <li>No mining has occurred at the deposit.</li> <li>No assumptions have been made with regards to by-products.</li> <li>Non grade variables were not estimated. Only minerals of interest; Fe, SiO2, Al2O3, TiO2, LOI, P, and S were estimated.</li> <li>The parent block size was 40m NS by 40m EW by 1m vertical with sub-cells of 10m by 10m by 0.5m. The parent block size was selected on the basis of being approximately 50% of the average drill hole spacing. An orientated 'ellipsoid' search was used to select data and was based on parameters taken from the variography.</li> <li>Selective mining units were not modelled. The block size used in the Mineral Resource model was based on drill sample spacing</li> </ul>
Any assumptions about correlation between variables.      Any assumptions about correlation between variables.      Any assumptions about correlation between variables.      Any assumptions about correlation between lead 102 in the upper iron lode this correlation does not exist. There is also a much stronger correlation between Fe and 1702 in the upper lode, whereas this correlation is weak in the gravel lode.      The deposit mineralisation was constrained by wireframes constructed using down hole assay results and associated lithological logging. A nominal grade cut off of 50% CaFe was used for the mineralisation interpretations. The wireframes were used as hard boundaries in the interpolations at each deposit.      Discussion of basis for using or not using grade cuts, log-probability plots and histograms were generated. No outliers were noted, therefore no high grade cuts were applied to the composite data.  A three step process was used to validate the models. A qualitative assessment was completed by slicing sections through the block model in positions coincident with drilling. A quantitative assessment of the estimate was completed by comparing the average grades of the composite file input against the block model output for the mineralised domains. A trend analysis was completed by comparing the interpolated blocks to the sample composite data within the domains. This analysis was completed by comparing the interpolated blocks to the sample composite data within the domains. This analysis was completed for 80m cross sections and 5m bench heights. Validation plots showed good correlation between the composite grades and the block model grades.   Moisture  • Whether the tonnages are estimated on a dry basis or with natural moisture, and the method of determination of the moisture content.  Cut-off  • The basis of the adopted cut-off grade(s) or quality parameters applied.			SiO2 and Fe and Al2O3 for both lodes. It is noticeable that the geochemical characteristics of the basal gravel (lode 2)
Description of how the geological interpretation was used to control the resource estimates.      Discussion of basis for using or not using grade cutting or capping.      Discussion of basis for using or not using grade cutting or capping.      The process of validation, the checking process used, the comparison of model data to drill hole data, and use of reconciliation data if available.  Moisture  Description of how the geological interpretation was used to control the resource estimated on a dry basis or with natural moisture, and the method of determination of the moisture content.  deposit.  To assist in the selection of appropriate high grade cuts, log-probability plots and histograms were generated. No cutliers were applied to the composite data.  4 three step process was used to validate the models. A qualitative assessment was completed by slicing sections through the block model in positions coincident with drilling. A quantitative assessment of the estimate was completed by comparing the average grades of the composite file input against the block model output for the mineralised domains. A trend analysis was completed blocks to the sample composite data within the domains. This analysis was completed for 80m cross sections and 5m bench heights. Validation plots showed good correlation between the composite grades and the block model grades.  Moisture  Whether the tonnages are estimated on a dry basis or with natural moisture, and the method of determination of the moisture content.  Tonnages and grades were estimated on a dry in situ basis.			that sulphur is strongly correlated with SiO2, Fe, and Al2O3, whereas in the upper iron lode this correlation does not exist. There is also a much stronger correlation between Fe and TiO2 in the upper lode, whereas this correlation is weak in the gravel lode.  The deposit mineralisation was constrained by wireframes constructed using down hole assay results and associated lithological logging. A nominal grade cut-off of 50% CaFe was used for the mineralisation interpretations. The wireframes were used as
Discussion of basis for using or not using grade cutting or capping.  block model in positions coincident with drilling. A quantitative assessment of the estimate was completed by comparing the average grades of the composite file input against the block model output for the mineralised domains. A trend analysis was completed by comparing the interpolated blocks to the sample composite data within the domains. This analysis was completed for 80m cross sections and 5m bench heights. Validation plots showed good correlation between the composite grades and the block model grades.  Moisture  Whether the tonnages are estimated on a dry basis or with natural moisture, and the method of determination of the moisture content.  Cut-off The basis of the adopted cut-off grade(s) or quality parameters applied.  Mineralisation cut-off grades were based on observed changes in statistical plots of the		interpretation was used to control the resource	<ul> <li>deposit.</li> <li>To assist in the selection of appropriate high grade cuts, log-probability plots and histograms were generated. No outliers were noted, therefore no high grade cuts were applied to the composite data.</li> <li>A three step process was used to validate the models. A qualitative assessment was</li> </ul>
blocks to the sample composite data within the domains. This analysis was completed for 80m cross sections and 5m bench heights. Validation plots showed good correlation between the composite grades and the block model grades.  **Moisture**  **Whether the tonnages are estimated on a dry basis or with natural moisture, and the method of determination of the moisture content.**  **The basis of the adopted cut-off grade(s) or quality parameters applied.**  **Mineralisation cut-off grades were based on observed changes in statistical plots of the sample composite data within the domains. This analysis was completed for 80m cross sections and 5m bench heights. Validation plots showed good correlation between the composite grades and the block model grades.  **Tonnages and grades were estimated on a dry in situ basis.**  **Mineralisation cut-off grades were based on observed changes in statistical plots of the sample composite data within the domains. This analysis was completed for 80m cross sections and 5m bench heights. Validation plots showed good correlation between the composite grades and the block model grades.  **Tonnages and grades were estimated on a dry in situ basis.**			block model in positions coincident with drilling. A quantitative assessment of the estimate was completed by comparing the average grades of the composite file input against the block model output for the mineralised domains. A trend analysis was
<ul> <li>Whether the tonnages are estimated on a dry basis or with natural moisture, and the method of determination of the moisture content.</li> <li>The basis of the adopted cut-off grade(s) or quality parameters applied.</li> <li>The basis of the adopted cut-off grade(s) or observed changes in statistical plots of the</li> </ul>		used, the comparison of model data to drill hole data, and use of reconciliation data if	blocks to the sample composite data within the domains. This analysis was completed for 80m cross sections and 5m bench heights. Validation plots showed good correlation between the composite grades
parameters quality parameters applied. observed changes in statistical plots of the	Moisture	basis or with natural moisture, and the method	Tonnages and grades were estimated on a
The Mineral Resource has been reported at a			observed changes in statistical plots of the sample data.



		50% Fe cut-off grade to reflect the underlying geological boundaries of the mineralisation.
Mining factors or assumptions	Assumptions made regarding possible mining methods, minimum mining dimensions and internal (or, if applicable, external) mining dilution. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider potential mining methods, but the assumptions made regarding mining methods and parameters when estimating Mineral Resources may not always be rigorous. Where this is the case, this should be reported with an explanation of the basis of the mining assumptions made.	Mining of the deposits is anticipated to be by open pit methods involving mechanised mining techniques. No other assumptions on mining methodology have been made.
Metallurgical factors or assumptions	The basis for assumptions or predictions regarding metallurgical amenability. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider potential metallurgical methods, but the assumptions regarding metallurgical treatment processes and parameters made when reporting Mineral Resources may not always be rigorous. Where this is the case, this should be reported with an explanation of the basis of the metallurgical assumptions made.	No metallurgical test work has been completed.
Environmental factors or assumptions	Assumptions made regarding possible waste and process residue disposal options. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider the potential environmental impacts of the mining and processing operation. While at this stage the determination of potential environmental impacts, particularly for a greenfields project, may not always be well advanced, the status of early consideration of these potential environmental impacts should be reported. Where these aspects have not been considered this should be reported with an explanation of the environmental assumptions made.	There are no known environmental factors which would prevent the eventual economic extraction of the deposits.
Bulk density	<ul> <li>Whether assumed or determined. If assumed, the basis for the assumptions. If determined, the method used, whether wet or dry, the frequency of the measurements, the nature, size and representativeness of the samples.</li> <li>The bulk density for bulk material must have been measured by methods that adequately account for void spaces (vugs, porosity, etc), moisture and differences between rock and alteration zones within the deposit</li> <li>Discuss assumptions for bulk density estimates used in the evaluation process of the different materials.</li> </ul>	Bulk density value was assumed and applied based on industry recommendations for this style of mineralisation. A value of 2.6t/m3 was applied to the model.
Classification	<ul> <li>The basis for the classification of the Mineral Resources into varying confidence categories.</li> <li>Whether appropriate account has been taken of all relevant factors (ie relative confidence in tonnage/grade estimations, reliability of input data, confidence in continuity of geology and metal values, quality, quantity and distribution of the data).</li> </ul>	Mineral Resources were classified in accordance with the Australasian Code for the Reporting of Exploration Results, Mineral Resources and Ore Reserves (JORC, 2012).     The Mineral Resource at Robe East was classified as Inferred Mineral Resource on the basis of data quality, sample spacing, and lode continuity across the undulating topography.     The input data adequately covers the mineralisation and does not favour or misrepresent in-situ mineralisation. The



		definition of mineralised zones at is based on a good geological understanding producing a robust model of continuous mineralised lodes. Validation of the block models show good correlation of the input data to the estimated grades.  The input data is considered reliable as CZR has implemented Quality Control measures which have confirmed the suitability of data for use in the Mineral Resource estimates.  The Mineral Resource estimate appropriately reflects the view of the Competent Person.
	Whether the result appropriately reflects the Competent Person's view of the deposit.	
Audits or reviews	The results of any audits or reviews of Mineral Resource estimates.	<ul> <li>Internal audits have been completed by PayneGeo which verified the technical inputs, methodology, parameters and results of the estimate.</li> </ul>
Discussion of relative accuracy/ confidence	<ul> <li>Where appropriate a statement of the relative accuracy and confidence level in the Mineral Resource estimate using an approach or procedure deemed appropriate by the Competent Person. For example, the application of statistical or geostatistical procedures to quantify the relative accuracy of the resource within stated confidence limits, or, if such an approach is not deemed appropriate, a qualitative discussion of the factors that could affect the relative accuracy and confidence of the estimate.</li> <li>The statement should specify whether it relates to global or local estimates, and, if local, state the relevant tonnages, which should be relevant to technical and economic evaluation. Documentation should include assumptions made and the procedures used.</li> <li>These statements of relative accuracy and confidence of the estimate should be compared with production data, where available.</li> </ul>	<ul> <li>The Robe East Mineral Resource estimate has been estimated with a high degree of confidence. The mineralisation geometry and continuity of the flat lying lodes, and marked stratigraphical mineralised zones is well understood in the area which is actively being mined by companies such as Rio Tinto.</li> <li>The data quality is good and the drill holes have detailed logs produced by qualified geologists. Recognised laboratories have been used routinely.</li> <li>The Mineral Resource statement relates to global estimates of tonnes and grade.</li> <li>No mining has taken place at the deposit so no production data is available.</li> </ul>

