# **BAUXITE RESOURCES LIMITED**



# DARLING RANGE BAUXITE TOTAL RESOURCE INCREASES TO 243.7Mt FELICITAS JV RESOURCE WITH YANKUANG INCREASES TO 147.9Mt

# **Highlights:**

- Bauxite resource of BRL in its own right and with its J V partners totals 243.7Mt
- Felicitas, BRL Yankuang JV total resource (unbeneficiated) increased to 147.9Mt @ 39.4% Al<sub>2</sub>O<sub>3</sub> (total), 30.1% Al<sub>2</sub>O<sub>3</sub> (available), 1.9% SiO<sub>2</sub> (reactive)
- Felicitas includes Measured Resource (unbeneficiated) of 35.3Mt @ 39.0% Al<sub>2</sub>O<sub>3</sub> (total), 30.5% Al<sub>2</sub>O<sub>3</sub> (available), 1.3% SiO<sub>2</sub> (reactive)
- All resources are in the Darling Ranges in Western Australia the world's largest bauxite mining and alumina refining region
- All resources are situated relatively close to existing rail lines and to established bulk port facilities
- Felicitas Resource has high available alumina to reactive silica ratios (above 15:1), considered desirable for alumina refining
- 90Mt condition precedent for Yankuang Alumina Refinery JV now satisfied at Felicitas with 100Mt in the indicated and measured categories

Bauxite Resources Limited (ASX: BAU) ("BRL" or "the Company") is pleased to announce a resource upgrade for the Felicitas bauxite deposit in the Darling Range Western Australia.

The Felicitas resource is contained within the Company's Bauxite Alumina Joint Ventures ("BAJV") with Yankuang Resources Ltd (Yankuang).

The resource is situated on a small number of large private landholdings located approximately 60km north east of Perth, and 10km from the town of Wundowie. The resource is less than 5 km from existing rail infrastructure providing a direct link to Fremantle/Kwinana Port being approximately 120 km away.

**Table 1: Total Felicitas Deposit Resource Classification** 

JORC classification	Quantity (Mt)	Al <sub>2</sub> O <sub>3</sub> % (total)	Al <sub>2</sub> O <sub>3</sub> % (available)	SiO <sub>2</sub> % (reactive)	Al <sub>2</sub> O <sub>3 (avail):</sub> SiO <sub>2 (react)</sub>
Measured	35.3	39.0	30.5	1.3	23.5
Indicated	65.3	39.8	30.4	1.8	16.9
Inferred	47.3	39.2	29.6	2.6	11.4
Total	147.9	39.4	30.1	1.9	15.8

<sup>\*</sup> Note - All grades are unbeneficiated

The BAJV has identified well in excess of 90 million tonnes of refinery grade bauxite at Felicitas, a critical milestone for the joint venture for the undertaking of a bankable feasibility study into the viability of an alumina refinery in Western Australia.

The costs of the feasibility study, when undertaken will be borne 90% by Yankuang, with BRL funding the remaining 10% BRL. Subject to the feasibility study results, BRL and Yankuang will design and build a refinery, with BRL funding 9% of construction costs and receiving 30% of the alumina end product.

**DATE: 28 May 2013** 

**ASX Code: BAU** 

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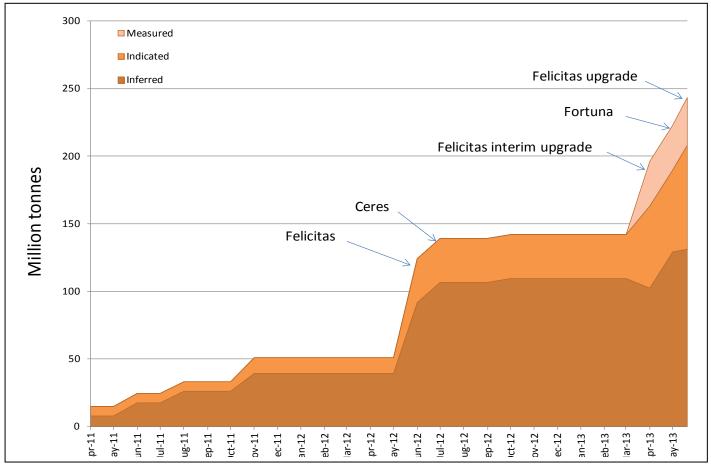
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Mr Peter Canterbury, Bauxite Resources new Chief Executive Officer, commented on the resource upgrade: "The Company's recent upgrades have now created a very large localised bauxite resource similar to the other bauxite deposits used to supply Alcoa's and BHP Billiton's Western Australian refineries, the largest Alumina producing region in the world. The very high alumina to reactive silica content and the ability to process this gibbsitic bauxite at low refining temperatures make it very efficient bauxite to refine and is why Darling Range alumina refineries are in the lowest quartile cost producers in the world"

"We believe the resources are now of a sufficient size, quality and location that they can support the development of increased alumina refining capacity in Western Australia as well as the development of plans for shipping of bauxite out through existing rail and port facilities."



**BRL and Partners Resource Growth** 

## **Resource Location & Logistics**

The current Felicitas resource area extends across approximately 4,200Ha (42km²) of large private landholdings, 10km north of Wundowie and 60km north northeast of Perth (Figure 1).

The deposit is situated on a small number of large private landholdings readily accessible by road that have been cleared for farming and grazing, with the northern boundary of the resource within 5km of existing rail infrastructure and being approximately 120 kilometres by rail to the Kwinana port.

#### **Resource Details**

The previous BAJV resource stood at 127.5Mt, following an initial resource announcement in June 2012, and an upgrade in early May 2013 based on new specific gravity measurements, and an additional 729 drill holes. The current BAJV resource increase of 20.4Mt has resulted from the inclusion of an additional 1,421 drill holes, completed



on a nominal 80m x 80m grid pattern. The Felicitas BAJV resource now extends over a strike length of 16.5km. Mineralisation remains open to the south; with the potential for the resource to be further increased with samples from approximately 940 holes awaiting analysis (see Figure 2 for location of holes with assays pending).

Close spaced drilling (at 5m spacing) conducted at two locations across the deposit and twinned drill holes has verified the continuity of mineralisation. This, combined with the use of a bulk density determined from the deposit, has enabled a substantial portion of the resource to be classified as Measured Mineral Resource

The Felicitas deposit comprises a bauxite horizon up to 16m thickness that is typically covered by 0.5m to 2m of loose overburden. The resource model was completed by RungePincockMinarco (RPM), based on data from 6,947 vertical holes drilled for 47,610 metres on a nominal 80 x 80m drill pattern. The available alumina and reactive silica results quoted are unbeneficiated, and based on low temperature caustic digest analysis (143°C), to simulate extraction by the Bayer process. Drilling will continue to define the extent of mineralisation, with a further upgrade expected during the latter half of 2013.

The BAJV Felicitas resource now includes 100Mt in the measured and indicated category, considered to be a positive step in the advancement of the Joint Venture.

The BAJV Felicitas resource upgrade adds to the global resource base that BRL and its joint venture partners have defined within the Darling Range of Western Australia. Table 2 below provides a summary of the total bauxite resources and the bauxite resources that are attributable to the company in its own right or 100% and those resources it hold with its other JV partner HD Mining which is required to fund 100% of the exploration costs up to BFS and decision to mine .

For further company details please visit <a href="https://www.bauxiteresources.com.au">www.bauxiteresources.com.au</a> or contact:

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Figure 1: Bauxite Resources Ltd tenement holding showing Felicitas Resource location

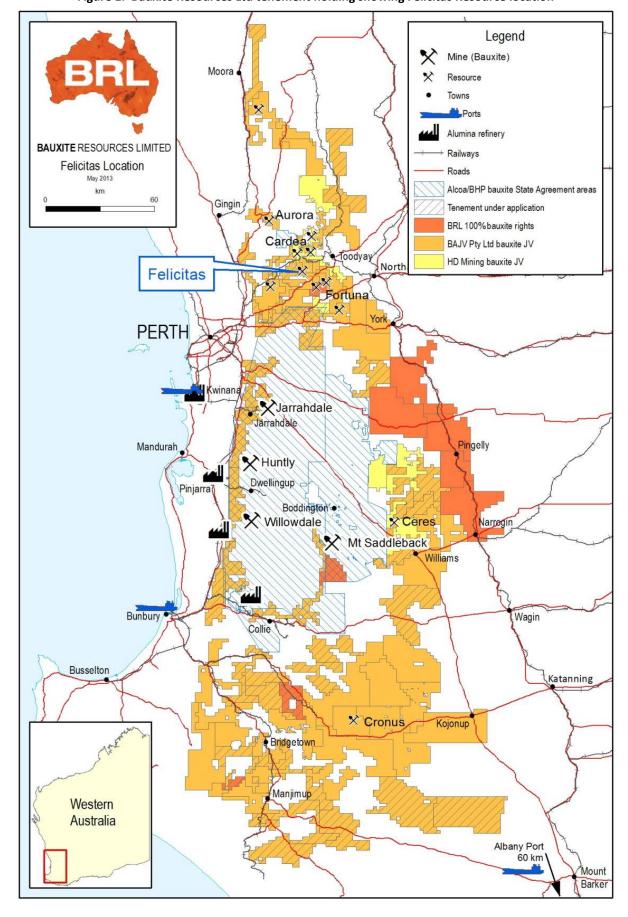




Figure 2: Felicitas Resource drill hole location map

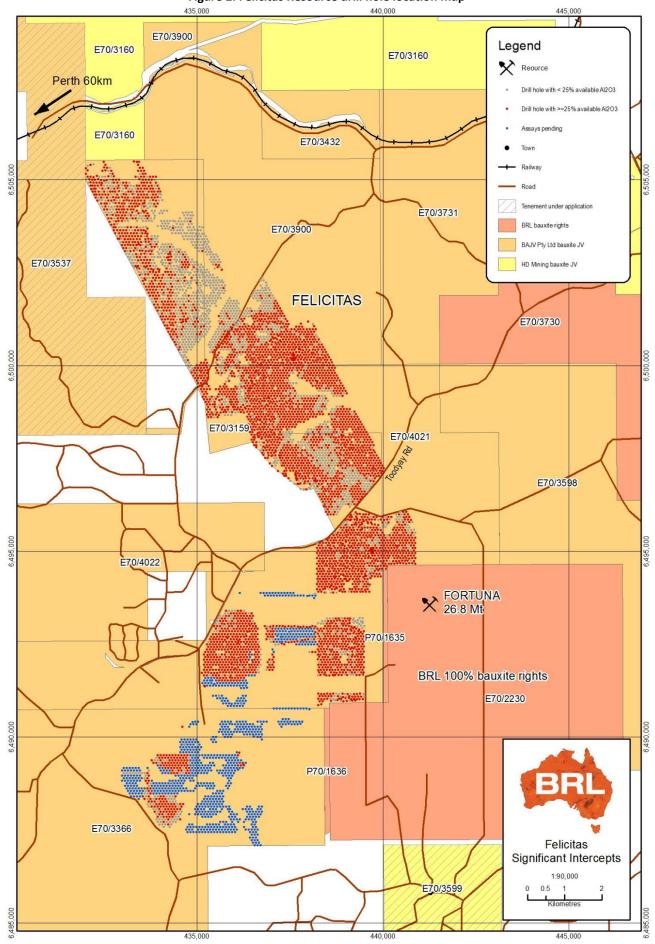




Table 2: BRL Bauxite Projects in south west Western Australia – Resource Summary Table

Deposit &	Size	Al <sub>2</sub> O <sub>3 (total)</sub>	Al <sub>2</sub> O <sub>3 (available)</sub>	SiO <sub>2 (reactive)</sub>	JV & Resource
Classification	Mt	%	% #	% #	Details
Fortuna					
Inferred	26.8	37.8	29.2	1.4	BRL (May 2013)
BRL 100% sub-total	26.8	37.8	29.2	1.4	
Felicitas					
Measured	35.3	39.0	30.5	1.3	BAJV (May 2013)
Indicated	65.3	39.8	30.4	1.8	BAJV (May 2013)
Inferred	47.3	39.2	29.6	2.6	BAJV (May 2013)
Cardea 3 (BAJV)					
Indicated	3.5	42.5	31.1	3.2	BAJV (Nov 2011)
Inferred	7.0	41.0	30.1	3.5	E70/3432
Minerva					
Inferred	2.2	38.7	28.9	3.9	BAJV (Aug 2011)
Aurora					
Indicated	7.0	43.5	33.0	3.1	BAJV (Apr 2011)
Inferred	4.4	41.3	30.2	4.0	
Rusina					
Inferred	3.7	40.3	29.1	5.3	BAJV (Apr 2011)
Juturna					
Inferred	8.2	40.2	29.9	3.9	BAJV (Jun 2011)
Vallonia					
Inferred	1.5	36.6	28.0	3.9	BAJV (Jun 2011)
Cronus					
Inferred	2.8	39.3	28.3	2.8	BAJV (Jul 2012)
BAJV sub-total	188.2	39.7	30.2	2.3	
Cardea (1&2)					
Inferred	6.4	41.8	29.3	4.3	HDMJV (Aug 2011)
Cardea 3 (HDM)					
Indicated	1.1	42.8	30.0	4.0	HDMJV (Nov 2011)
Inferred	6.2	40.3	28.9	4.4	E70/3160
Ceres					
Inferred	15.0	40.9	31.7	3.0	HDMJV (Jul 2012)
HDM sub-total	28.7	41.0	30.5	3.6	
Total Measured	35.3	39.2	30.5	1.3	May-13
Total Indicated	76.9	40.3	30.7	2.0	May-13
Total Inferred	131.5	39.5	29.7	2.9	May-13
South West WA	243.7	39.7	30.1	2.4	May-13
TOTAL Bauxite			(4.20)		resources were hased on lo

<sup>#</sup> Fortuna grades based on FTIR analysis with ~10% samples validated by low temperature (143°) caustic digest analysis. All other resources were based on low temperature (143°) caustic digest analysis. This method simulates the low temperature Bayer process.

BAJV - Bauxite Alumina Joint Venture area with Yankuang Resources Ltd where the BRL retains 30% beneficial interest in the bauxite rights.

HDMJV – Resources within joint venture with HD Mining & Investments Pty Ltd, the wholly owned subsidiary of Shandong Bureau No.1 Institute for Prospecting of Geology & Minerals. At the time of writing the Company retains 100% beneficial interest. HD Mining can earn up to 60 % of bauxite rights upon completion of certain milestones including completion of a BFS leading to a decision to mine.

BRL - BRL retain 100% beneficial interest in bauxite



#### COMPETENT PERSON STATEMENT

The information in this report that relates to Cardea1&2, Juturna, Minerva, Rusina and Vallonia Mineral Resources is based on information compiled by Peter Senini who is a Member of the Australian Institute of Geoscientists. Mr Senini has sufficient experience which is relevant to the style of mineralisation and type of deposit under consideration and to the activity which he is undertaking to qualify as a Competent Person as defined in the 2004 Edition of the Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves'. Mr Senini consents to the inclusion in the report of the matters based on his information in the form and context in which it appears.

The information in this report that relates to Felicitas, Cardea3, Aurora, Ceres, Cronus and Fortuna Mineral Resources is based on information compiled by Graham de la Mare who is a Member of the Australian Institute of Geoscientists. Mr de la Mare is employed by RungePincockMinarco (RPM). Mr de la Mare has sufficient experience which is relevant to the style of mineralisation and type of deposit under consideration and to the activity which he is undertaking to qualify as a Competent Person as defined in the 2004 Edition of the Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves'. Mr de la Mare consents to the inclusion in the report of the matters based on his information in the form and context in which it appears.

The information in this announcement that relates to Exploration results is based on information compiled by Mark Menzies, who is a member of the Australian Institute of Geoscientists. Mr Menzies is a qualified geologist and a full time employee, and has sufficient experience which is relevant to the style of mineralisation and type of deposit under consideration and to the activity which they are undertaking to qualify as a Competent Person as defined in the 2004 Edition of the "Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves". Mr Menzies has consented to the inclusion in this announcement of the Exploration Information in the form and context in which it appears.

#### **JORC Compliant Resource Statements**

02/05/2011

The following are Joint Ore Reserve Code (JORC) compliant Public Reports released to the ASX declaring the JORC resources referred to. These can be viewed on both the ASX and the Company websites, free of charge.

21/06/2011	Vallonia, Juturna: Progress Report - Resource Upgrade. 9.7Mt
22/08/2011	Cardea 1&2, Minerva: Resource Upgrade. 8.6Mt
02/11/2011	Cardea3: Resource Update. 17.8Mt
30/07/2012	Ceres: New Bauxite Resource at Williams Project Western Australia. 15.0Mt
26/10/2012	Cronus: Annual Report to Shareholders. 2.8Mt
02/05/2013	Felicitas: Upgrade of Darling Range Bauxite Resource, Felicitas. 127.5Mt
09/05/2013	Fortuna: 26.8Mt Bauxite Resource at BRL's Darling Range Fortuna Project. 26.8Mt

Aurora, Rusina: Progress Report - Resource Upgrade. 15.1Mt



Parameters for Felicit	tas resource estimate	
Sampling techniques	Vacuum samples were collected at 0.5m intervals. Samples weighing more than 2kg were passed through a twin riffle splitter at the rig.	
Drilling techniques	All vacuum drilling was undertaken using a tractor mounted vacuum drill rig utilising a 45mm drill bit. Diamond drilling used PQ size core.	
Drill sample recovery	Actual recoveries are not recorded but riffle split samples are weighed and should be approximately 1.5kg. This provides an indirect record of sample recovery. Geologists comment when recovery is poor or ground conditions are wet.	
Logging	All holes were field logged by company geologists. Lithology and weathering information is routinely recorded.	
Sub-sampling techniques	All sampling procedures are considered to be of an acceptable standard and adhere to industry standards.	
and sample preparation	0.5m vacuum samples collected at the rig using a riffle splitter to collect approximately 1.5kg samples in calico bags, with the remaining sample dropped onto the ground.	
	The original procedure for field duplicate sampling for vacuum drilling was to retain both riffle split samples at a rate of 1:100. Recently this has been increased to a rate of 1:25.	
Quality of assay data and	Estimates for principal bauxite components of alumina, silica, iron, titania, loss on ignition, and a suite of trace elements	
laboratory tests	analysed by FTIR, XRF, and BOM at Nagrom Laboratory in Perth.  Laboratory control measures include the use of four matrix matched standards, and determination of precision and	
	accuracy according to ISO standards (certified standards, blanks, check assay and duplicate sampling).  BAJV programs of QAQC have produced results which support the sampling and assaying procedures used at the site.	
Verification of sampling	No verification of intersections has been carried out at Felicitas	
and assaying	The majority of the drill halo yeard in the majority of the state of t	
Location of data points	The majority of the drill holes used in the resource estimate have been accurately surveyed. Down hole surveys have been taken as drill holes are all less than 25m in depth and drilled vertically through the predominantly flat lying la A total of 1,319 holes have yet to be surveyed.	
Data spacing and	The staggered drill spacing of 80m (along strike) by 80m (on section) is considered adequate to establish both	
distribution Orientation of data in	and grade continuity.  The orientation of the drilling (vertical) is approximately perpendicular to the sub-horizontal mineralisation and is unlikely	
relation to geological	to have introduced any significant sampling bias.	
structure	to have maroused any signment company state	
Audits or reviews.	Drilling and sampling techniques were viewed in the field.	
Database integrity	Data audits were undertaken in Surpac. No major errors were recorded. rOREdata validate the database before sending to BAJV.	
Geological interpretation	Geological logging of drill cuttings has confirmed the geometry of the mineralisation with a high degree of confidence Geochemical changes down hole have been used to determine the bauxite zone.	
Dimensions	The Felicitas resource area extends over a strike length of 16.5km (from 6,488,980mN – 6,505,500mN) and includes the 25m vertical interval from 358mRL to 333mRL.	
Estimation and modelling techniques	The deposit mineralisation was constrained by wireframes constructed using noted geochemical changes in available alumina and reactive silica downhole. The wireframes were applied as hard boundaries in the estimate.  The bauxite domain was constrained into 21 separate objects. A statistical analysis was conducted on these objects. Not high grade cuts were applied to the data. For this update, a geostatistical analysis was carried out on object 16 as this object had significantly more samples than in 2012, and object 28 which was a newly defined zone of bauxite mineralization. The resultant parameters were applied to adjacent smaller lodes. The geostatistical analysis on the other main lodes completed in 2012, and for object 10 in April 2013, remained unchanged due to the small number of extra holes within those objects.  Using parameters derived from modelled variograms, Ordinary Kriging was used to estimate average block grades in 3 passes using Surpac. Parent block size of 40m NS by 40m EW by 1m vertical with sub-cells of 20m by 20m by 0.5m. The parent block size was selected on the basis of being approximately 50% of the average drill hole spacing in the deposit. Validation of the model included detailed comparison of composite grades and block grades by northing and elevation	
	Validation plots showed good correlation between the composite grades and the block model grades.	
Moisture	Tonnages and grades were estimated on a dry in situ basis. No moisture values were reviewed	
Cut-off parameters	The Mineral Resource has been reported at a 25% Av Al2O3 cut-off and has been based on assumptions about economic cut-off grades for open pit mining.	
Mining factors and	The deposit has the potential to be mined using open pit techniques.	
assumptions		
Metallurgical assumptions	No assumptions have been made regarding metallurgy other than the material could be refined using the industry recognised Bayer Processing method.	
Bulk density	The in situ bulk density assignment was based on 89 measurements on diamond core samples taken from the current	
	BAJV drilling program The selected value of 2.17t/m3 represents the lower quartile value.	
	The previous 2012 estimate used a value of 1.6t/m3 which BAJV have verified was determined from measurements made	
	on loose bulk samples and not representative of in-situ bulk density.	
Classification	Mineral Resources were classified in accordance with the Australasian Code for the Reporting of Identified Minera	
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