



# Australian Securities Exchange Notice

16 November 2011

## **ORE RESERVE INCREASES**

Iluka Resources Limited (Iluka) announces Ore Reserve increases, as part of its Ore Reserve and Mineral Resource process, which derives from a review of changes to the key modifying factors and work from the enhanced production project.

In the context of supply/demand forecasts for the company's higher value products of zircon, rutile and synthetic rutile, together with associated medium term product price expectations, the company is evaluating multiple production enhancement options within its portfolio. Initial results from this work will be outlined by Iluka in a presentation to the investment market planned for the 17 November 2011, and will be subject to separate ASX disclosure.

The Ore Reserves for which increases have been assessed at this stage, relate to Iluka's Jacinth-Ambrosia mining operation in South Australia; to the Eneabba mining deposits (currently being re-activated) in Western Australia, and to the Cataby deposit (currently subject to a pre-feasibility study), in Western Australia.

The Ore Reserves disclosures in this ASX release relate to a subset of Iluka's Ore Reserves and Mineral Resources. Subject to further evaluative work on other deposits in the Iluka portfolio, further changes in Ore Reserves and Mineral Resources may be disclosed in the company's annual Ore Reserves and Mineral Resources statement, as contained within its Annual Report, or through separate ASX disclosures as work progresses to a stage of necessary confidence levels.

### **Jacinth-Ambrosia, South Australia**

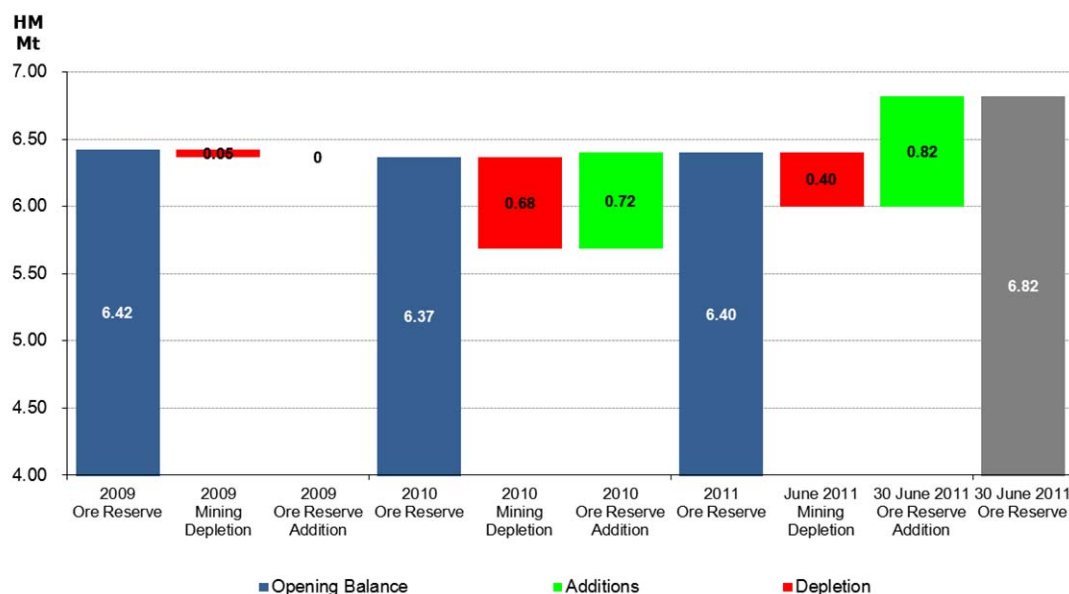
The new Ore Reserve for Jacinth-Ambrosia is 6.82 million tonnes of Heavy Mineral (HM), with contained zircon of 3.42 million tonnes, an increase of 0.42 million tonnes of HM from 6.40 million tonnes of HM. This represents a 7 per cent increase in Ore Reserves and is net of mining depletion of 0.40 million tonnes of HM for the six months to 30 June 2011.

The Jacinth-Ambrosia operation has added Ore Reserves since mining commenced in 2009 due to improvements in key modifying factors, including increases in mineral prices. The original, pre-mining Jacinth-Ambrosia Ore Reserve<sup>1</sup> was 6.42 million tonnes of HM with contained zircon of 3.24 million tonnes.

Since the commencement of mining, there has been an addition of 1.53 million tonnes of HM with contained zircon of 0.77 million tonnes, an increase of approximately 24 per cent for both HM and contained zircon tonnes. Ore Reserves depleted due to mining have been 1.13 million tonnes of HM, with contained zircon of 0.58 million tonnes. Refer Figure 1 for Jacinth-Ambrosia Ore Reserves since 2009.

<sup>1</sup> As reported in the 2008 Iluka Annual Report

**Figure 1 Jacinth-Ambrosia Heavy Mineral Ore Reserve Changes – Project To Date**



Dependent on depletion levels, and/or production rates over the life of mining operations and other key modifying factors, this represents a material extension to the economic life of the Jacinth-Ambrosia deposit.

### Eneabba, Western Australia

The Eneabba mining operation was idled in 2010 associated with the commencement of mining operations from Jacinth-Ambrosia. Iluka is currently in the process of reactivating mining operations at Eneabba (refer Iluka ASX Release dated 26 July 2011). Based on revised pricing forecasts, market supply conditions and commercial arrangements pertaining to the reactivation of the company’s synthetic rutile kiln 3, Iluka plans to recommence mining operations in early 2012. The new Ore Reserve for the Eneabba deposits - Depot Hill East and North, IPL North and Twin Hills - are 4.61 million tonnes HM, an increase for these deposits of 3.54 million tonnes HM from 1.07 million tonnes HM, or 331 per cent.

### Catoby, Western Australia

The Catoby deposit is situated north of Perth in Western Australia. The deposit was initially discovered by Renison Goldfields Consolidated (a precursor company to the formation of Iluka) in the 1970s. Iluka has conducted numerous drilling campaigns and baseline studies on the Catoby deposit since 2000. Currently, a further pre-feasibility study (PFS) is being undertaken. It is planned to complete this study mid 2012 and, dependent on the outcome and internal approvals, Iluka plans to commence mining the deposit in 2014. Catoby is expected to be a major ilmenite supply for Iluka’s synthetic rutile capacity, as well as providing a zircon production stream. Further details on the project, subject to approvals, will be subject to separate ASX disclosure.

The new Ore Reserve for Catoby is 7.45 million tonnes HM, an increase of 1.82 million tonnes HM from 5.63 million tonnes HM, or an increase of 32 per cent.

## Ore Reserve Details

Ore Reserves reported in Table 1 have been prepared by Iluka using high confidence mining and mineral processing costs, mineral recoveries and pricing forecasts prepared by Iluka. Iluka does not disclose pricing assumptions.

The Ore Reserves presented in Table 1 are reported in accordance with the guidelines set out in the 2004 Edition of the Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves (JORC Code).

**Table 1: Statement of Ore Reserves at 30 June 2011**

Ore Reserves by Region, Deposit and JORC Category												
Summary of Ore Reserves <sup>(1,2)</sup>			31 December 2010		30 June 2011		Difference	HM Assemblage <sup>(3)</sup>				
Region	Deposit	Ore Reserve Category	Ore Tonnes Millions	HM Tonnes Millions	Ore Tonnes Millions	HM Tonnes Millions	HM Tonnes Millions	HM Grade (%)	Clay Grade (%)	Ilmenite Grade (%)	Zircon Grade (%)	Rutile Grade (%)
Eucla Basin	Ambrosia	Proved	33.6	1.53	51.3	1.86	0.33	3.6	14	24	53	5
		Probable	0.9	0.02	2.5	0.06	0.03	2.3	10	21	49	5
	Jacinth <sup>(4)</sup>	Proved	65.9	4.57	93.0	4.87	0.30	5.2	11	31	49	4
		Probable	6.7	0.27	1.5	0.03	(0.24)	2.3	13	20	58	3
Perth Basin	Depot Hill East	Probable	10.5	0.29	20.9	0.42	0.13	2.0	13	53	16	11
	Depot Hill North	Probable	-	-	31.5	0.77	0.77	2.4	13	57	9	7
	IPL North	Probable	7.1	0.78	33.5	2.78	2.00	8.3	19	42	7	7
	Twin Hills	Probable	-	-	19.9	0.64	0.64	3.2	13	55	11	10
	Cataby	Probable	92.0	5.63	156.8	7.45	1.82	4.8	13	59	9	4
		<b>Proved Total</b>	<b>99.5</b>	<b>6.10</b>	<b>144.3</b>	<b>6.73</b>	<b>0.63</b>	<b>4.7</b>	<b>12</b>	<b>29</b>	<b>50</b>	<b>4</b>
		<b>Probable Total</b>	<b>117.3</b>	<b>6.99</b>	<b>266.5</b>	<b>12.14</b>	<b>5.16</b>	<b>4.6</b>	<b>14</b>	<b>54</b>	<b>9</b>	<b>6</b>
		<b>Grand Total</b>	<b>216.8</b>	<b>13.09</b>	<b>410.8</b>	<b>18.88</b>	<b>5.78</b>	<b>4.6</b>	<b>13</b>	<b>45</b>	<b>24</b>	<b>5</b>

**Notes:**

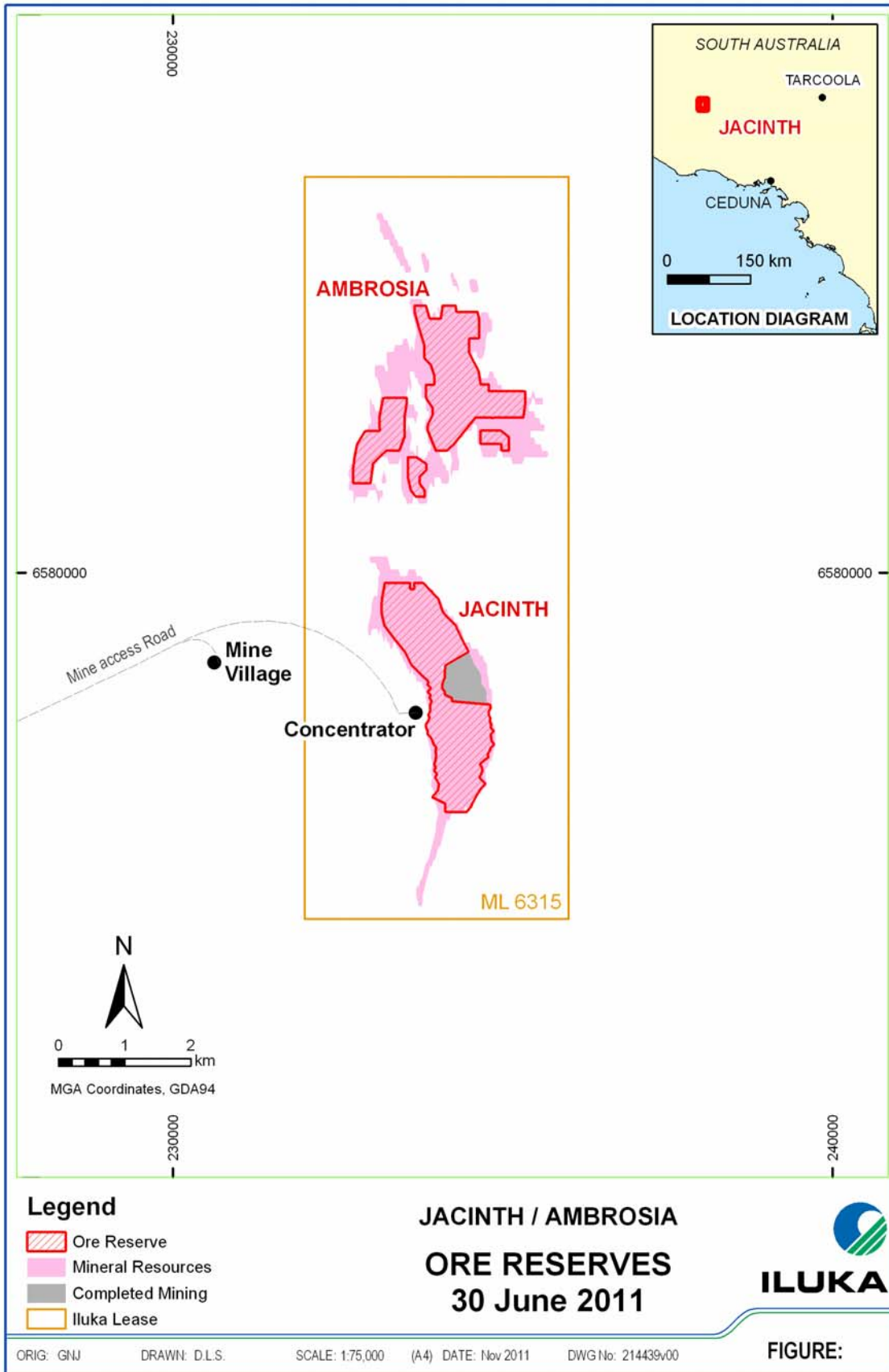
- (1) Ore Reserves are a sub-set of Mineral Resources.
- (2) Rounding may generate differences in last decimal place.
- (3) Mineral assemblage is reported as a percentage of in situ HM content.
- (4) Includes mining depletion of 0.4Mt HM to 30 June 2011.

*The information in this report that relates to Ore Reserves is based on information compiled by Mr Chris Lee who is a Member of the Australasian Institute of Mining and Metallurgy. Mr Lee is a full time employee of Iluka and has sufficient experience which is relevant to the style of mineralisation and the type of deposits 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" (JORC Code). Mr Lee consents to the inclusion in this report of the matters based on their information in the form and context in which it appears.*

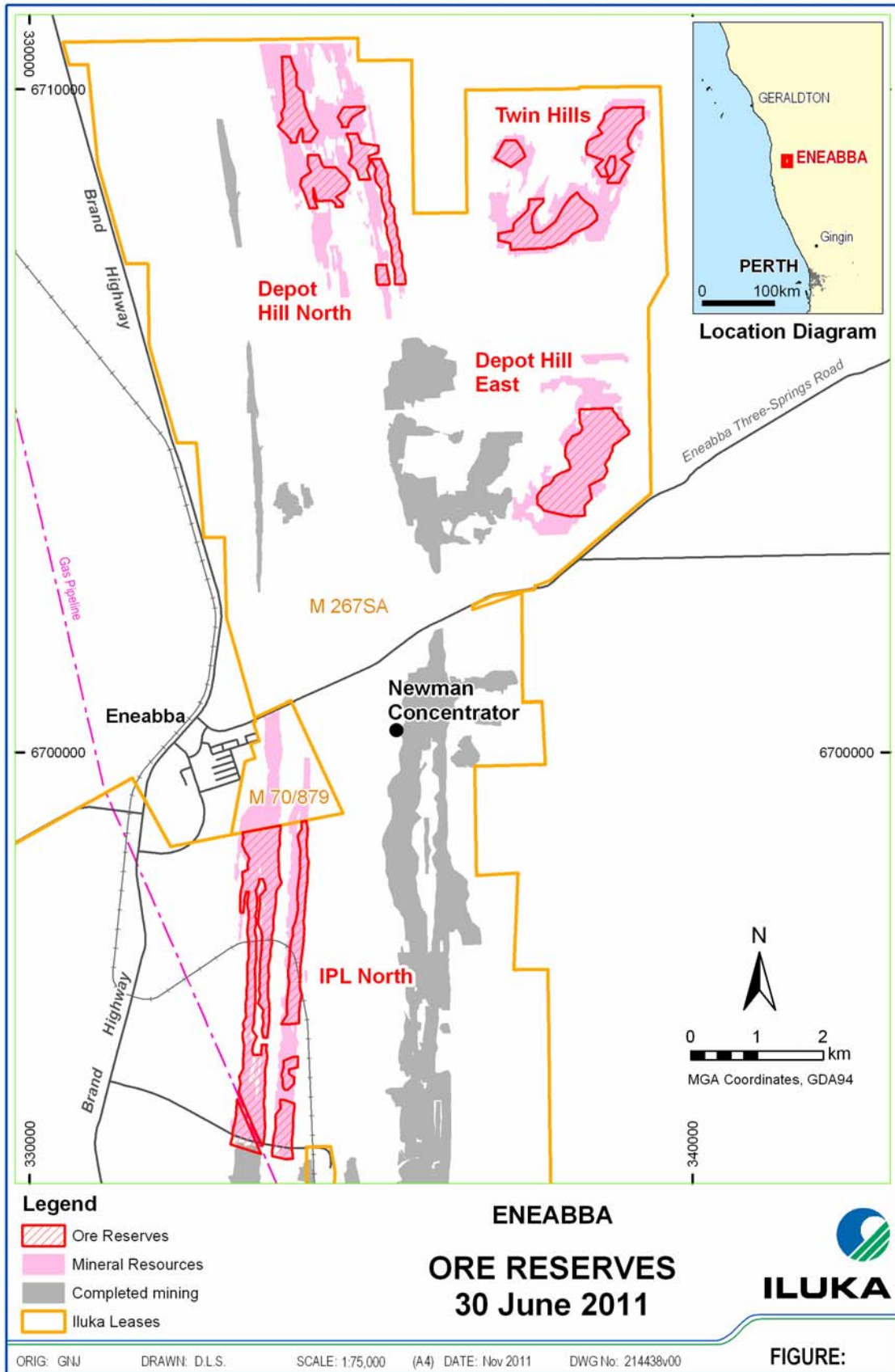
**Investment Market and Media Enquiries:**

**Dr Robert Porter General Manager, Investor Relations**  
**Phone: +61 (0) 3 9600 0807**  
**Mobile: +61 (0) 407 391 829**  
**Email: [robert.porter@iluka.com](mailto:robert.porter@iluka.com)**

**Figure 2 Location of Jacinth-Ambrosia, Eucla Basin, South Australia**

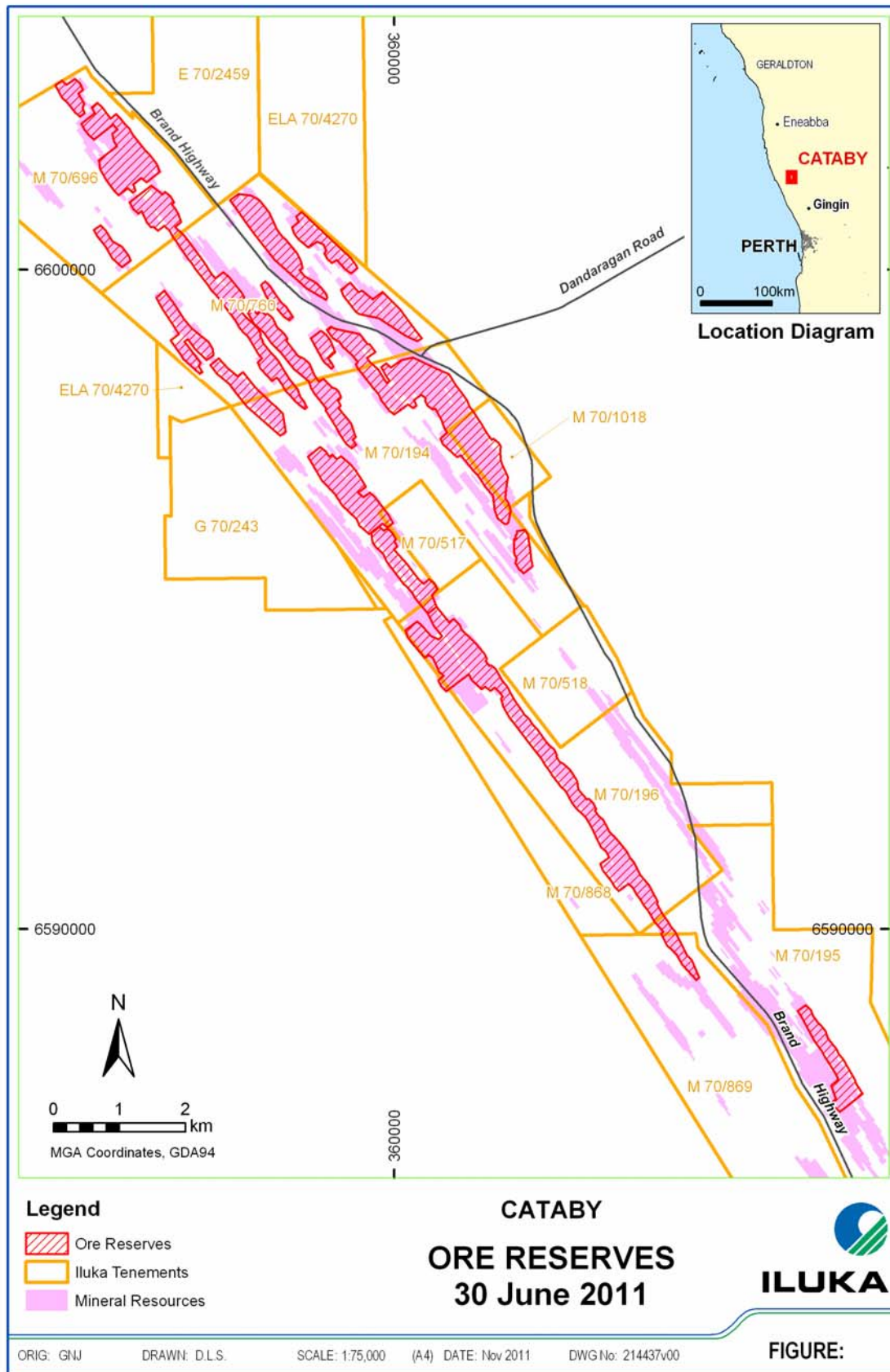


**Figure 3 Location of Eneabba Deposits, Perth Basin, Western Australia**





**Figure 4** Location of Cataby Deposit, Perth Basin, Western Australia



## Attachment 1 - Ore Reserve Estimation Assumptions

### Background

All Ore Reserve estimates were based on Measured and Indicated Resource estimates.

The following criteria from Table 1 in the 2004 JORC Code were used to prepare the Ore Reserves in this report in conjunction with the Modifying Factors outlined in Figure 1 of the 2004 JORC Code.

Estimation and Reporting of Ore Reserves	
Mineral Resource estimate for conversion to Ore Reserves	No constraint was applied to the Mineral Resources used in the preparation of the Ore Reserves. No assumed conversion ratio or cut-off-grade was used. All Ore Reserves are inclusive or a sub-set of Mineral Resources.
Study status	The Ore Reserves are either based on a minimum level of study, several levels of Preliminary Feasibility Studies (PFS) for Cataby and Definitive Feasibility Study (DFS) for Jacinth/Ambrosia coupled with considerable operating and planning experience at Eneabba and Jacinth. The updated Ore Reserves for Jacinth are currently in production and represent an expansion of existing production capability.
Cut-off parameters	Unconstrained geological block models were used which are then manipulated using Minemap optimisation software. Cutoff parameters are determined during the optimisation process utilising the Lerch - Grossman algorithm.
Bulk density	A standard Iluka Bulk Density calculation was used for the preparation of all Ore Reserves. This is based on testwork and operational experience in each of the regions and is consistently reconciled against production.
Classification	The classification of Ore Reserves is based on the Mineral Resources classification being Measured and Indicated.
Mining factors or assumptions	<p>The Ore Reserves have been prepared using optimisation via Mine Map mining software (which uses the Lerch-Grossman algorithm).</p> <p>Mining methods used in the Ore Reserve determination are based on existing dozer push methods in practice at Jacinth (and considered relevant for Ambrosia) and conventional loader to hopper and drive over truck and scraper dump ore mining methods which are applicable and have been successfully utilised at Eneabba and are also assumed to be relevant at Cataby, given similar expected mining conditions. Overburden removal is assumed to be by excavator and truck in all the above deposits.</p> <p>Costs for mining and processing are based on actual operating experience (including earthmoving contractor unit rates) and adjusted by first principles if it is considered necessary to better fit the mining method proposed.</p>

	<p>Eneabba and Jacinth operating costs were applied to their respective areas and were also used to sense check the Cataby projected operating costs.</p> <p>Geotechnical parameters such as pit slope are based on current mining operating experience, geotechnical studies and test pit trials.</p> <p>Mining dilution factors, mining recovery factors, and minimum mining widths used are based on current operations and previous experience in similar deposit styles.</p>
<p>Metallurgical factors or assumptions</p>	<p>Each individual deposit metallurgical characteristics together with any quality constraints were applied where relevant, to modify the revenue generated by each mining block.</p> <p>In all cases, no metallurgical factors were determined to be critical issues in the development of the Ore Reserves.</p> <p>The metallurgical separation process utilises known technology where the performance and recovery of mineral products has been well established by the company. Recoveries were benchmarked from the company's relevant Mineral Separation Plant (MSP), Narngulu in the case of Eneabba and Jacinth-Ambrosia and Narngulu and Capel, in the case of Cataby.</p> <p>Where relevant, representative metallurgical testwork has also been utilised to modify metallurgical recovery factors.</p>
<p>Cost and revenue factors</p>	<p>Actual operational costs, including overheads, are used to benchmark those used in the optimisation process. In some instances, modification of these costs will be undertaken to reflect an anticipated change to the mining method or process. Revenue factors are used to establish pit sensitivities and to test for robustness of the Ore Reserve. All cost and revenue inputs are consistent with Iluka's corporate planning process.</p>
<p>Market assessment</p>	<p>The company's forward looking pricing forecasts are the basis of the product pricing used in the optimisation to determine Ore Reserves. These forecasts, based on Iluka's supply/demand analysis have been compared with those of TZMI – an independent mineral sands industry consultancy body - and found to be soundly based and supported by recent actual sales history.</p> <p>A long term exchange rate of parity with the US dollar has been used. All optimisations are undertaken in Australian dollars.</p> <p>Iluka establishes short, medium and long term contractual agreements with customers and these reflect the pricing forecasts adopted. Part of the Eneabba restart is underwritten by newly negotiated SR contracts.</p>



Other	<p>Approvals are considered critical to the development of an Ore Reserve.</p> <p>In respect to Jacinth-Ambrosia, the Ore Reserves are essentially contained within existing pits and are predominantly within current approvals.</p> <p>The Eneabba Ore Reserves that include Twin Hills, Depot Hill North and Depot Hill East are within currently approved footprints. The IPL North deposit will require further approvals and it is considered that an appropriate strategy can be put in place to give a reasonable assurance that these approvals can be secured.</p> <p>The expanded Cataby Ore Reserve contains contiguous mining areas (continuation along strike and new areas to the north east of the Brand Highway) which will require additional approvals above those which apply to the currently planned development. Development of the deposit is suited to a two staged approach with subsequent approvals being sought following development and establishment and confirmation of an appropriate operating strategy. Based on the company's experience with previous operations, it is considered reasonable to assume that further approvals will be able to be gained.</p>
Discussion of relative accuracy/confidence	<p>Iluka has considerable experience in reconciliation of its Mineral Resources and Ore Reserves. Actual results generally indicate very good agreement with the geological model and close reconciliation with HM tonnes, ore tonnes and HM percentage head grade. The risk of not achieving good physical Ore Reserve reconciliation is considered to be low.</p> <p>Operational metallurgical experience, relevant testwork and Iluka's experience supports the view that metallurgical risk is low.</p> <p>Revenue generation is impacted by pricing forecasts. The company's forward predictions are considered well balanced and supported by external forecasters. The Eneabba re-commencement Ore Reserves are underwritten by contract prices. As such, pricing risk is considered low. Jacinth- Ambrosia product pricing forecasts are considered robust and with a low pricing risk. Cataby has a considerable quantity of lower grade mineralisation that reverts back to overburden as price falls. Consequently, pricing risk is considered moderate.</p> <p>Mining methods selected are not novel and have been demonstrated in all cases, and are considered a low risk of impacting Ore Reserves.</p> <p>All costs used in the optimisation and Ore Reserve process are supported by an extended operational history and actual results. Risk of significant underestimation and effect of that underestimation is considered to be low in all cases.</p> <p>Ore Reserves for IPL North and Cataby may be impacted by subsequent approvals.</p>