

11 October 2012

## QUARTERLY PRODUCTION REPORT 30 SEPTEMBER 2012

### OVERVIEW

- Iluka's combined production of zircon, rutile and synthetic rutile in the September quarter was materially lower than the same quarter in 2011. This reflects the outcome of measures previously indicated by the company to exercise production flexibility, and produce at lower run rates during 2012, in light of weaker global market demand conditions. This is particularly the case for zircon, where the company has the ability to exercise production flexibility at its Jacinth-Ambrosia mining operation in the Eucla Basin of South Australia. On a year-to-date basis, zircon production is down 36.7 per cent relative to the same period in 2011.
- Combined zircon, rutile and synthetic rutile (Z/R/SR) production for the September quarter of 202.1 thousand tonnes, represents a 34.8 per cent decline from the September quarter 2011. On a year-to-date basis, Z/R/SR production was 645.9 thousand tonnes, compared with 885.4 thousand tonnes for the same period in 2011, a 27.0 per cent decline.
- Mineral sands sales revenue for the three months to 30 September 2012 was \$224.5 million a 57.8 per cent decline compared with the three months to September 2011. The lower sales revenue reflects appreciably lower demand for zircon and high grade titanium dioxide products, which has been a feature of 2012, despite higher prices year-to-date compared with 2011 across the main products. September quarter sales volume and revenues were impacted, in particular, by the northern summer holiday period, which is associated with a number of customers, especially in Europe, closing their production facilities for extended periods; the attempt by pigment producers to reduce inventories, which has resulted in lower demand for Iluka's high grade feedstocks, as pigment producers have been able to achieve operational outcomes at lower utilisation rates by the use of lower grade feedstocks, as well as deferment in purchasing until early September and a reduction in selling prices for zircon, for reasons outlined on page 2.
- Mineral sands revenue on a year-to-date basis was \$887.3 million, compared with \$1,102.7 million in the same period in 2011, a 19.5 per cent decline, reflecting materially lower sales offset partially by higher received weighted average prices for 2012.

	Sep-11 Quarter	Jun-12 Quarter	Sep-12 Quarter	Sep-12 YTD	Sep-11 YTD	Sep-12 YTD vs Sep-11 YTD
	kt	kt	kt	kt	kt	%
<b>Production</b>						
Zircon	167.3	93.3	77.7	286.7	453.0	(36.7)
Rutile	78.6	52.9	60.0	163.6	215.4	(24.0)
Synthetic Rutile	64.0	80.6	64.4	195.6	217.0	(9.9)
<b>Total Z/R/SR Production</b>	<b>309.9</b>	<b>226.8</b>	<b>202.1</b>	<b>645.9</b>	<b>885.4</b>	<b>(27.0)</b>
Saleable Ilmenite	118.9	91.1	104.2	318.9	347.8	(8.3)
<b>Total Mineral Sands Production<sup>1</sup></b>	<b>428.8</b>	<b>317.9</b>	<b>306.3</b>	<b>964.8</b>	<b>1,233.2</b>	<b>(21.8)</b>
Upgradeable Ilmenite	53.6	75.8	91.2	239.4	141.5	69.2
<b>Mineral Sands Revenue<sup>2</sup> A\$ million</b>	<b>532.5</b>	<b>466.5</b>	<b>224.5</b>	<b>887.3</b>	<b>1,102.7</b>	<b>(19.5)</b>
<b>Average AUD:USD cents</b>	<b>105.1</b>	<b>101.0</b>	<b>103.8</b>	<b>103.5</b>	<b>103.9</b>	<b>(0.4)</b>

<sup>1</sup> Total mineral sands production excludes upgradeable ilmenite as this is used in the manufacture of synthetic rutile.

<sup>2</sup> Mineral sands revenues include revenues derived from other materials not included in production volumes, including activated carbon products and iron oxide.

## **PRODUCTION**

Zircon production for the three months to 30 September 2012 was 77.7 thousand tonnes, compared with 167.3 thousand tonnes for the September quarter of 2011. The lower production reflects Iluka's actions to reduce production in the context of lower global demand.

Rutile production for the three months to 30 September was 60.0 thousand tonnes, compared with 78.6 thousand tonnes for the September quarter of 2011. The production was lower than the previous corresponding period reflecting production from one mining operation at the Woorinack, Rownack and Pirro group of deposits in the Murray Basin in the quarter, compared with three separate mining operations (Douglas, Kulwin and Echo) last year. Relative to the June quarter, rutile production increased reflecting steady state operations at the WRP operation, following commissioning in May 2012.

Synthetic rutile production for the three months to 30 September was 64.4 thousand tonnes, compared with 64.0 thousand tonnes for the September quarter of 2011. Production was in line with last year, with a scheduled kiln maintenance outage for SR kiln 3 in the Mid West which occurred in September to November 2011. September 2012 quarter production was appreciably lower than the immediately preceding quarter reflecting the operation of Iluka's largest kiln, SR 2, at 60 per cent of usual throughput. This operating approach is associated with Iluka's efforts to attempt to match production more closely with lower demand in the second half of 2012 and is expected to continue in the December quarter.

## **MARKET CONDITIONS**

### **Zircon**

Market conditions remained subdued throughout the September quarter, influenced by the European holiday period combined with no major changes in economic policy settings to influence customer confidence and sentiment in a positive manner.

Zircon ordering patterns typically remained on a "just in time" basis. Customers continued to maintain very low levels of stock and have replenished in smaller quantities than would be their usual practice. This has resulted in customers that would usually take bulk shipments requesting deliveries from Iluka's warehouses. Accordingly, under current market conditions, pricing durations have continued to evolve from the previous three month pattern to shorter dated or "spot" arrangements.

A typical significant source of supply, zircon extracted from concentrates imported from Indonesia, has not been available in China over the recent three months following the Indonesian Government's implementation of new laws controlling exports and the imposition of new mineral taxes.

Market conditions generally appear to have bottomed, with some positive lead indicators emerging, such as housing sales and prices in China and a progressive recovery in the US housing market. However, customer confidence levels typically remain weak.

The company maintains its approach to reduce production in a low demand environment.

It is not Iluka's practice to comment on sales volumes or prices outside of its half and full year reporting periods. The company does not provide price forecasts, nor a running commentary on transactions that often do not characterise the market as a whole.

However, some comment on two zircon sales auctions held in the quarter is believed warranted on this occasion, as the auctions reflect actions by significant industry participants and involve price/volume trade-offs which obviously are variable but which may influence broader sales outcomes while current depressed market conditions persist.

A major competitor auction held at the end of August incorporated a starting bid price requirement of greater than or equal to US\$2,000 per tonne – a level lower than prevailing prices in the market. An Iluka auction held contemporaneously could have delivered its target volume to Iluka at Iluka's target price but, in the circumstances and to protect its customer base, Iluka chose to sell additional volume at lower prices closer to the reported competitor outcomes.

## **Titanium Dioxide**

As Iluka advised previously in the July ASX release,<sup>1</sup> softer demand for pigment and associated pigment inventory build in the first half of the year caused some pigment customers to adjust downwards their second half high grade titanium dioxide ore volume and grade of feedstock requirements. This was reflected in Iluka's revised full year rutile and synthetic rutile sales volumes advised at the time.

Chloride pigment producers remained in a de-stocking mode through the September quarter, although recent indications, including comments from some pigment producers, suggest that this downward inventory adjustment is well advanced. During this process, pigment producers have had a preference to exhaust their lower priced, often legacy contract based, feedstock options before taking further volume from Iluka. Accordingly, ordering patterns from customers have been, essentially, on a cargo by cargo basis.

## **GROUP MINERAL SANDS PRODUCTION**

The following table details total Iluka production by product group, with the source of that production attributed to the regional operating mines and basins. Processing of final product occurs, in Australia, at one of two mineral separation plants, Hamilton in Victoria and Narngulu in Western Australia. All United States material is processed at the Stony Creek mineral separation plant in Virginia. A similar table showing a 12 month comparison is on page 5. Given the integrated nature of Iluka's Australian operations, heavy mineral concentrate is capable of being processed into final product at one or both of the Australian mineral processing facilities. Appendix 1 provides details of the physical data for operating mines.

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<sup>1</sup> ASX Release, Forecast Sales Volumes – Update 9 July 2012

## Physical Production

	Sep-11 Quarter	Jun-12 Quarter	Sep-12 Quarter	Sep-12 YTD	Sep-11 YTD	Sep-12 Qtr vs Jun-12 Qtr	Sep-12 Qtr vs Sep-11 Qtr	Sep-12 YTD vs Sep-11 YTD
	kt	kt	kt	kt	kt	%	%	%
<b>Zircon<sup>1</sup></b>								
Eucla/Perth Basin (SA/WA)	93.2	42.9	32.9	143.0	250.3	(23.3)	(64.7)	(42.9)
Murray Basin (VIC)	57.8	36.5	31.9	103.2	159.0	(12.6)	(44.8)	(35.1)
<b>Australia</b>	<b>151.0</b>	<b>79.4</b>	<b>64.8</b>	<b>246.2</b>	<b>409.3</b>	<b>(18.4)</b>	<b>(57.1)</b>	<b>(39.8)</b>
<b>Virginia (USA)</b>	<b>16.3</b>	<b>13.9</b>	<b>12.9</b>	<b>40.5</b>	<b>43.7</b>	<b>(7.2)</b>	<b>(20.9)</b>	<b>(7.3)</b>
<b>Total Zircon Production</b>	<b>167.3</b>	<b>93.3</b>	<b>77.7</b>	<b>286.7</b>	<b>453.0</b>	<b>(16.7)</b>	<b>(53.6)</b>	<b>(36.7)</b>
<b>Rutile</b>								
Eucla/Perth Basin (SA/WA)	18.7	14.1	12.6	43.5	40.2	(10.6)	(32.6)	8.2
Murray Basin (VIC)	59.9	38.8	47.4	120.1	175.2	22.2	(20.9)	(31.4)
<b>Total Rutile Production</b>	<b>78.6</b>	<b>52.9</b>	<b>60.0</b>	<b>163.6</b>	<b>215.4</b>	<b>13.4</b>	<b>(23.7)</b>	<b>(24.0)</b>
<b>Synthetic Rutile (WA)</b>	<b>64.0</b>	<b>80.6</b>	<b>64.4</b>	<b>195.6</b>	<b>217.0</b>	<b>(20.1)</b>	<b>0.6</b>	<b>(9.9)</b>
<b>TOTAL Z/R/SR PRODUCTION</b>	<b>309.9</b>	<b>226.8</b>	<b>202.1</b>	<b>645.9</b>	<b>885.4</b>	<b>(10.9)</b>	<b>(34.8)</b>	<b>(27.0)</b>
<b>Ilmenite – Saleable</b>								
Eucla/Perth Basin (SA/WA)	46.3	21.1	7.9	75.0	128.8	(62.6)	(82.9)	(41.8)
Murray Basin (VIC)	-	16.0	34.3	86.8	-	114.4	-	-
<b>Australia</b>	<b>46.3</b>	<b>37.1</b>	<b>42.2</b>	<b>161.8</b>	<b>128.8</b>	<b>13.7</b>	<b>(8.9)</b>	<b>25.6</b>
<b>Virginia (USA)</b>	<b>72.6</b>	<b>54.0</b>	<b>62.0</b>	<b>157.1</b>	<b>219.0</b>	<b>14.8</b>	<b>(14.6)</b>	<b>(28.3)</b>
<b>Total Ilmenite – Saleable</b>	<b>118.9</b>	<b>91.1</b>	<b>104.2</b>	<b>318.9</b>	<b>347.8</b>	<b>14.4</b>	<b>(12.4)</b>	<b>(8.3)</b>
<b>TOTAL MINERAL SANDS PRODUCTION<sup>2</sup></b>	<b>428.8</b>	<b>317.9</b>	<b>306.3</b>	<b>964.8</b>	<b>1,233.2</b>	<b>(3.6)</b>	<b>(28.6)</b>	<b>(21.8)</b>
<b>Ilmenite – Upgradeable</b>								
Eucla/Perth Basin (SA/WA)	28.0	59.4	56.6	162.2	63.7	(4.7)	102.1	154.6
Murray Basin (VIC)	25.6	16.4	34.6	65.0	77.8	111.0	35.2	(16.5)
<b>Australia</b>	<b>53.6</b>	<b>75.8</b>	<b>91.2</b>	<b>227.2</b>	<b>141.5</b>	<b>20.3</b>	<b>70.1</b>	<b>60.6</b>
<b>Virginia (USA)</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>12.2</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>
<b>Total Ilmenite – Upgradeable</b>	<b>53.6</b>	<b>75.8</b>	<b>91.2</b>	<b>239.4</b>	<b>141.5</b>	<b>20.3</b>	<b>70.1</b>	<b>69.2</b>

<sup>1</sup> Iluka's zircon production figures include small volumes of zircon attributable to external processing arrangements.

<sup>2</sup> Total mineral sands production excludes upgradeable ilmenite as this is used in the manufacture of synthetic rutile.

## Physical Production – 12 Month Comparison

	12 mth to Sep-11	12 mth to Sep-12	12 mth Sep-12 vs 12 mth Sep-11
	kt	kt	%
<b>Zircon</b>			
Eucla/Perth Basin (SAWA)	311.1	215.8	(30.6)
Murray Basin (VIC)	206.3	162.4	(21.3)
<b>Australia</b>	<b>517.4</b>	<b>378.2</b>	<b>(26.9)</b>
<b>Virginia (USA)</b>	<b>59.1</b>	<b>57.0</b>	<b>(3.6)</b>
<b>Total Zircon Production</b>	<b>576.5</b>	<b>435.2</b>	<b>(24.5)</b>
<b>Rutile</b>			
Eucla/Perth Basin (SAWA)	46.5	59.7	28.4
Murray Basin (VIC)	232.7	169.8	(27.0)
<b>Total Rutile Production</b>	<b>279.2</b>	<b>229.5</b>	<b>(17.8)</b>
<b>Synthetic Rutile (WA)</b>	<b>304.3</b>	<b>264.3</b>	<b>(13.1)</b>
<b>TOTAL Z/R/SR PRODUCTION</b>	<b>1,160.0</b>	<b>929.0</b>	<b>(19.9)</b>
<b>Ilmenite – Saleable</b>			
Eucla/Perth Basin (SAWA)	173.4	117.8	(32.1)
Murray Basin (VIC)	26.2	86.8	231.3
<b>Australia</b>	<b>199.6</b>	<b>204.6</b>	<b>2.5</b>
<b>Virginia (USA)</b>	<b>290.1</b>	<b>226.1</b>	<b>(22.1)</b>
<b>Total Ilmenite – Saleable</b>	<b>489.7</b>	<b>430.7</b>	<b>(12.0)</b>
<b>TOTAL MINERAL SANDS PRODUCTION<sup>1</sup></b>	<b>1,649.7</b>	<b>1,359.7</b>	<b>(17.6)</b>
<b>Ilmenite – Upgradeable</b>			
Eucla/Perth Basin (SAWA)	92.7	201.0	116.8
Murray Basin (VIC)	77.8	86.7	11.4
<b>Australia</b>	<b>170.5</b>	<b>287.7</b>	<b>68.7</b>
<b>Virginia (USA)</b>	<b>-</b>	<b>12.2</b>	<b>-</b>
<b>Total Ilmenite – Upgradeable</b>	<b>170.5</b>	<b>299.9</b>	<b>75.9</b>

### September Quarter Production commentary:

- Mining at the Jacinth-Ambrosia (Eucla Basin, South Australia) deposit was concentrated in a low grade part of the ore body. Following commentary provided at the time of the half year results, Iluka further modified its efforts to reduce heavy mineral concentrate (HMC) production at site, in the context of lower global demand. This entailed a further move of the mining unit plant at Jacinth-Ambrosia into a low grade area in late August, which will enable the extension of this low grade strategy for a longer period, if required. All HMC produced at Jacinth-Ambrosia has been stockpiled on site in line with reduced demand. The lower production rate and stockpiling of HMC at site is sustainable until at least 2014.
- The flexibility of the Jacinth-Ambrosia ore body allows a four to six week turnaround to return to mining in the high grade areas of the deposit, with the subsequent maximisation of production levels as required.

<sup>1</sup> Total mineral sands production excludes upgradeable ilmenite as this is used in the manufacture of synthetic rutile.

- At the Narngulu mineral separation plant in Western Australia, lower levels of Jacinth-Ambrosia HMC are being processed, as a result of stockpiling at the mine site. To ensure optimum plant utilisation, feedstocks (both from Jacinth-Ambrosia and from Eneabba in the Mid West, Western Australia) are being alternated through the two processing trains at Narngulu. This also has the benefit of producing more ilmenite to meet contractual requirements and maintaining synthetic rutile (SR) feed requirements while producing less zircon.
- Iluka has deferred previous plans to process Jacinth-Ambrosia HMC through the Hamilton mineral separation plant in Victoria, a measure it can employ to increase zircon production and which is not appropriate in the current market conditions.
- Iluka operated its main kiln, SR 2 in the South West of Western Australia at a reduced feed rate of approximately 60 per cent of capacity. This approach is consistent with Iluka's stated intention of reducing high grade feedstock production, where practicable, given lower second half demand. This practice has been reflected in lower synthetic rutile production in the September quarter. As indicated previously, Iluka has deferred its planned recommencement of its SR1 kiln (the third of its four kilns) from the planned recommencement in the fourth quarter of 2012. Iluka has available other options to reduce synthetic rutile production if required.
- Mining operations continued in line with expectations at the Murray Basin Woonack, Rownack Pirro (WRP) group of deposits, following successful commissioning in May. The production on site of wet high intensity magnetic separation (WHIMS) ilmenite commenced in September and at the end of the quarter approximately 25 thousand tonnes of this material had been produced and stockpiled. Plant alterations and installation of additional equipment, planned for completion before the end of the year, will allow Iluka to produce a combination of sulphate and chloride ilmenite, available for sale or in some cases for use in synthetic rutile upgrading. This will represent the extended commercialisation of this significant quantity of ilmenite within the northern Murray Basin deposits, which previously were considered to have no commercial value.
- In the Mid West of Western Australia, the Eneabba mining operation continued in line with expectations with full production rates maintained for the quarter and with the mineral separation plant recovery of ilmenite to high grade synthetic rutile feed exceeding expectations.
- Mining operations at Tutunup South in the South West of Western Australian continued in line with expectations with full production rates maintained for the quarter. The Tutunup South mine is a major ilmenite feed source for SR 2 kiln.
- In Virginia, mining continued in lower grade sections of the ore body at both Brink and Concord, following the relocation of the mining units late in the second quarter. Consistent with the decision to mine lower grades, the MSP operated on a reduced schedule. This resulted in production of zircon and ilmenite being lower than in the corresponding period last year.

## **PLANNED NEW PRODUCTION**

### **Balranald Deposits, New South Wales**

Balranald and Nepean are two rutile-dominated deposits in the northern Murray Basin, approximately 20 kilometres north of the town of Balranald in New South Wales.

A pre-feasibility study is progressing to schedule and includes the evaluation of alternate mining methods, water management options and infrastructure options. During the quarter progress included:

- a water drilling programme to gather water extraction and re-injection data enabling the preparation of the groundwater model;
- the completion of mining method assessments;
- the evaluation of processing plant options; and
- consideration of infrastructure options.

It is expected that a recommendation regarding the progression of the project to the next phase will be made during the first quarter of 2013.

### **Cataby, Western Australia**

Iluka is currently undertaking a pre-feasibility study (PFS) on the Cataby mineral sands deposit located approximately 150 kilometres north of Perth. Cataby is a large, long life and high quality chloride ilmenite deposit, with associated zircon, suitable as a feed source to Iluka's synthetic rutile facilities. The PFS is likely to be completed by mid 2013.

## **Aurelian Springs, North Carolina, United States of America**

The Aurelian Springs project involves a PFS for the potential development of multiple mineral sands deposits, located in Halifax County, North Carolina.

Land acquisition, both mining and access related, continued to progress during the quarter.

Engineering studies for the relocation of the concentrator's from the operations in Virginia have commenced, budget estimates and schedules are due in the second quarter of 2013.

Field work and baseline environmental studies necessary for permit applications commenced during the quarter; the majority of activity is focused on the northern section of the ore body where Iluka has secured sufficient tracts of land to progress the development.

In-fill drilling commenced in the second quarter and is likely to continue through to the end of third quarter. Bulk samples for metallurgical test work have been collected and shipped to Iluka's test facility in Western Australia.

## **Hickory, Virginia, United States**

The Hickory deposits are located approximately 19 kilometres west of the existing Iluka Stony Creek MSP in Virginia.

The definitive feasibility study for the proposed development was completed at the end of the quarter; no fatal flaws to the development have been identified.

The permitting and licensing activities initiated in the second quarter have progressed according to the schedule. Iluka anticipates making formal applications to the relevant agencies during the fourth quarter.

Land access negotiations were also progressed.

## **Enhanced Production Project**

As part of the company's enhanced production project (refer Iluka Briefing Paper Enhanced Production Project, September 2012),<sup>1</sup> Iluka has commenced multiple projects to evaluate potential new production options. These include the following examples from the Perth and Eucla Basin.

Within the Perth Basin the IPLN (at Eneabba in the Mid West) Yoganup Extended, Tutunup and Yarloop deposits are being investigated for potential development.

Iluka is currently assessing several projects in the Eucla Basin, including Sonoran, Atacama and Typhoon. These satellite deposits are adjacent to the Jacinth-Ambrosia mine, and represent potential tie-in opportunities to existing infrastructure, providing product production flexibility from Jacinth-Ambrosia as well as a potential extension of the mine life.

## **EXPLORATION**

### **Eucla Basin, South Australia/Western Australia**

Greenfield exploration activity in the Eucla Basin in the third quarter of 2012 included:

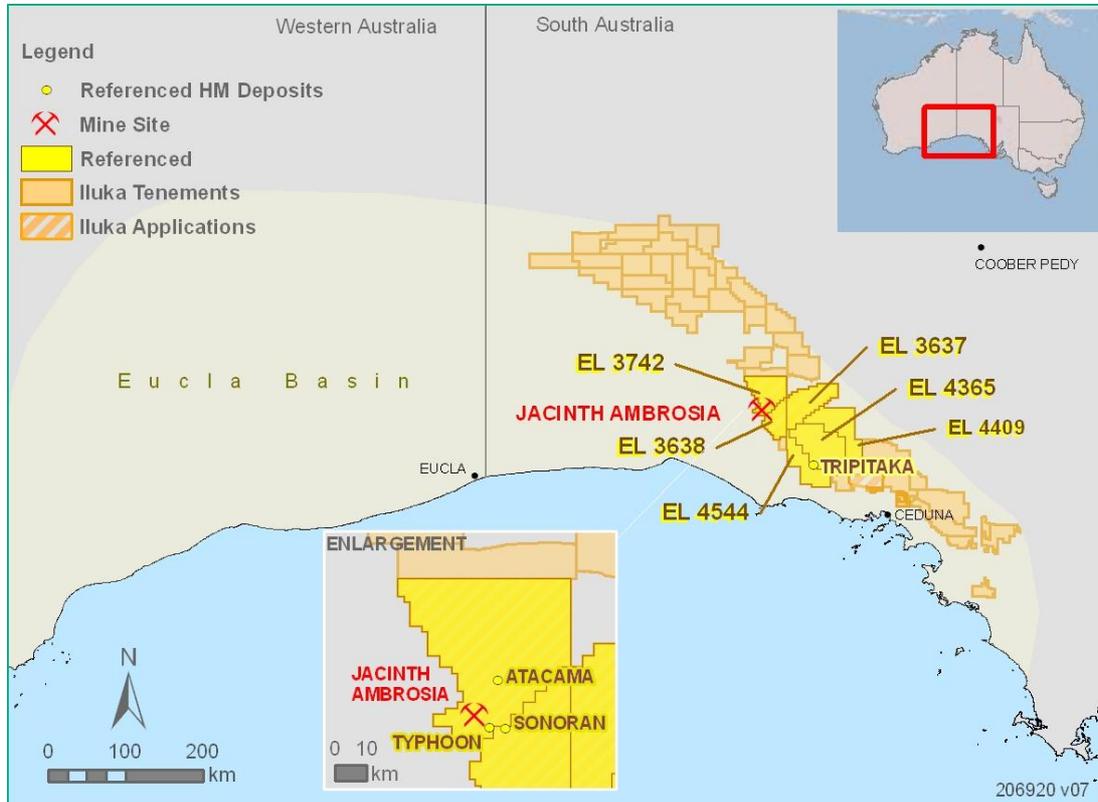
- drilling on tenements EL4365, EL3637, EL3638, EL4409, EL4544 and EL4288 between Tripitaka and Jacinth-Ambrosia with the objective of discovering additional resources between these two deposits;
- drilling on tenement EL3742 approximately 5 to 25 kilometres north of Jacinth-Ambrosia; and
- drilling on tenements EL4455 and EL4456 in the Maralinga area focussing on the Barton Range.

Project exploration activities included resource delineation drilling at Sonoran deposit.

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<sup>1</sup> Available on the Iluka website [www.iluka.com](http://www.iluka.com), Investors and Media, Briefing Papers 2012.

**Figure 1 Eucla Basin Tenements and Recent Areas of Exploration Activity**

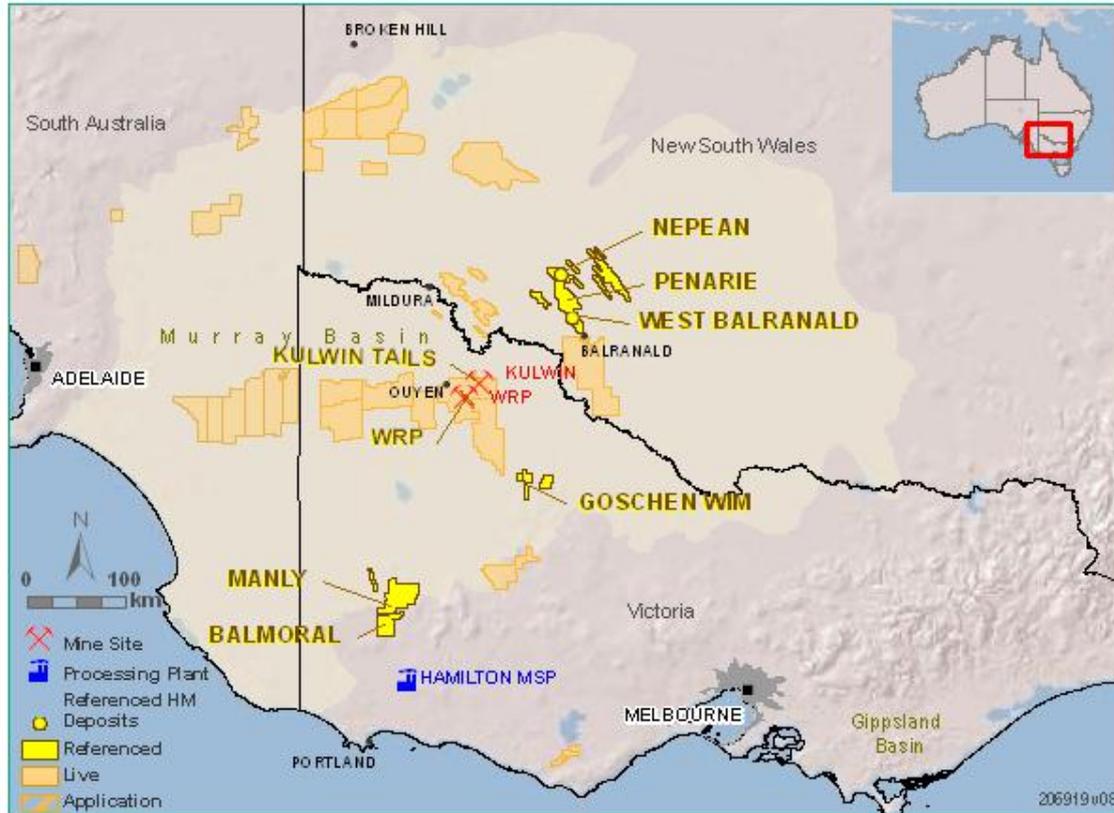


**Murray Basin, Victoria/New South Wales**

Exploration activities during the quarter included:

- completion of greenfields exploration drilling in the Balmoral region and at the Goschen WIM deposits in the central portion of the Murray Basin; and
- commencement of brownfields drilling at Penarie, hydrogeological investigations at the West Balranald/Nepean deposits and brownfields drilling at Manly near the Douglas district in Victoria.

**Figure 2 Iluka's Murray Basin Tenement and Recent Areas of Exploration Activity**



### Project Generation

Iluka is actively exploring for mineral sands outside of Australia, with early stage exploration (including drilling) underway in several countries.

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**APPENDIX 1 - OPERATING MINES – PHYSICAL DATA**  
**Year to date 30 September 2012**

	Jacinth-Ambrosia	Murray Basin <sup>1</sup>	Western Australia	Australia Total	Virginia	Group Total
<b>Mining</b>						
Overburden Moved bcm	149.0	9,335.4	344.5	9,828.9	0.0	<b>9,828.9</b>
Ore Mined kt	6,809.1	2,612.8	9,809.2	19,231.1	3,570.7	<b>22,801.8</b>
Ore Grade HM %	5.3	24.8	4.5	7.5	6.9	<b>7.4</b>
VHM Grade %	4.8	8.4	3.5	4.6	5.8	<b>4.8</b>
<b>Concentrating</b>						
HMC Produced kt	294.4	294.7	339.6	928.7	247.3	<b>1,176.0</b>
VHM Produced kt	265.7	200.7	276.6	743.0	191.9	<b>934.9</b>
VHM in HMC Assemblage %	90.3	68.1	81.5	80.0	77.6	<b>79.5</b>
Zircon	55.0	28.8	12.9	31.3	15.8	<b>28.0</b>
Rutile	5.9	36.7	8.3	16.6	0.0	<b>13.1</b>
Ilmenite	28.4	0.0	55.3	29.2	61.7	<b>36.1</b>
HMC Processed kt	287.9	332.1	282.1	902.1	277.5	<b>1,179.6</b>
Finished Product kt						
Zircon	128.1	103.2	14.9	246.2	40.5	<b>286.7</b>
Rutile	24.1	120.1	19.4	163.6	0.0	<b>163.6</b>
Ilmenite Saleable	75.0	86.8	0.0	161.8	157.1	<b>318.9</b>
Ilmenite Upgradeable	3.6	65.0	158.6	227.2	12.2	<b>239.4</b>
Synthetic Rutile Produced kt			195.6	195.6		<b>195.6</b>

An explanation of the Iluka's physical flow information for mineral sands, from overburden removal and mining to processing, can be obtained from Iluka's Briefing Paper - Iluka Physical Flow Information on the company's website [www.iluka.com](http://www.iluka.com), under Investor Relations, Mineral Sands Briefing Material.

<sup>1</sup> Murray Basin Ore Grade and VHM exclude ilmenite as this was historically returned to the mine as unsaleable product. This material has been recognised as upgradeable ilmenite since 2011. Murray Basin saleable ilmenite was produced at the mine site and does not form part of the HMC produced or processed.

## Explanatory Comments on Terminology

**Overburden moved** (bulk cubic metres) refers to material moved to enable mining of an ore body.

**Ore mined** (thousands of tonnes) refers to material moved containing heavy mineral ore.

**Ore Grade HM %** refers to percentage of heavy mineral ("HM") found in a deposit. In the case of Murray Basin it excludes grade attributable to ilmenite.

**VHM Grade %** refers to percentage of valuable heavy mineral ("VHM") - titanium dioxide (rutile and ilmenite), and zircon found in a deposit.

**Concentrating** refers to the production of heavy mineral concentrate ("HMC") through a wet concentrating process at the mine site, which is then transported for final processing into finished product at one of the company's two Australian mineral processing plants, or the Virginia mineral processing plant.

**HMC produced** refers to heavy mineral concentrate ("HMC"), which includes the valuable heavy mineral concentrate (zircon, rutile, ilmenite) as well as other non valuable heavy minerals (gangue).

**VHM produced** refers to an estimate of valuable heavy mineral in heavy mineral concentrate expected to be processed.

**VHM produced and the VHM assemblage** - provided to enable an indication of the valuable heavy mineral component in HMC.

**HMC processed** provides an indication of material emanating from each mining operation to be processed.

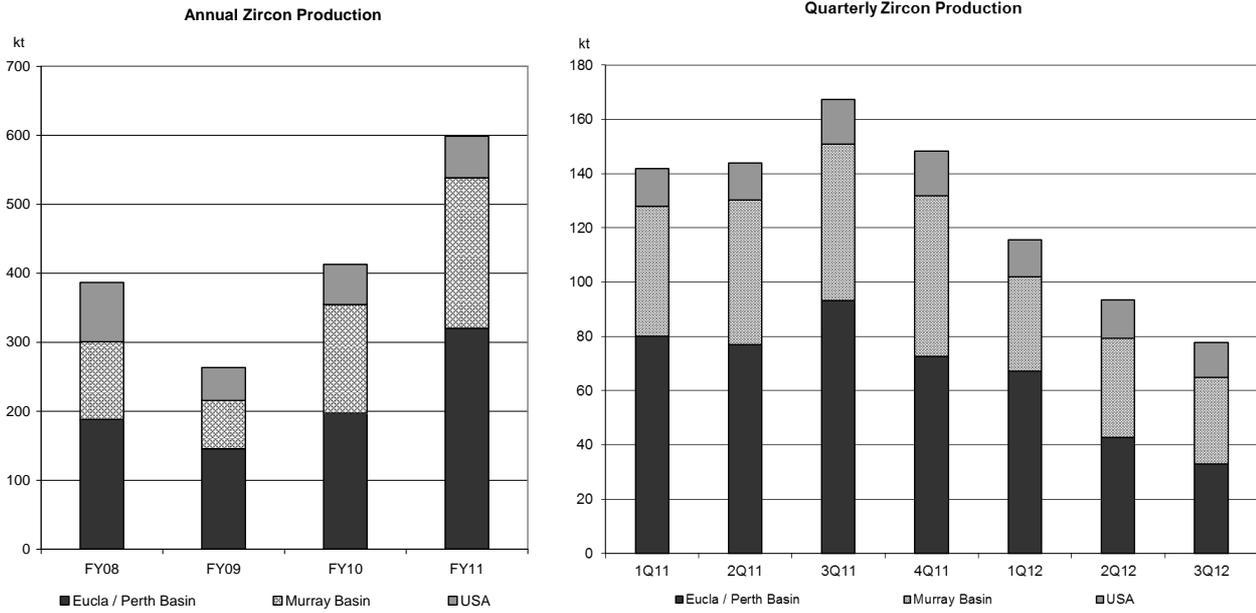
**Attributable finished product** is provided as an indication of the finished production (zircon, rutile, ilmenite – both saleable and upgradeable) attributable to the VHM in HMC production streams from the various mining operations. Finished product levels are subject to recovery factors which can vary. The difference between the VHM produced and finished product reflects the recovery level by operation, as well as processing of finished material/concentrate in inventory. Ultimate finished product production (rutile, ilmenite, zircon) is subject to recovery loss at the processing stage – this may be in the order of 10%.

**Ilmenite saleable** is ilmenite produced for sale rather than as a synthetic rutile feedstock.

**Ilmenite upgradeable** is that which is used in the manufacture of synthetic rutile. Typically 1 tonne of upgradeable ilmenite will produce between 0.58 to 0.62 tonnes of SR. Iluka also purchases external ilmenite for its synthetic rutile production process.

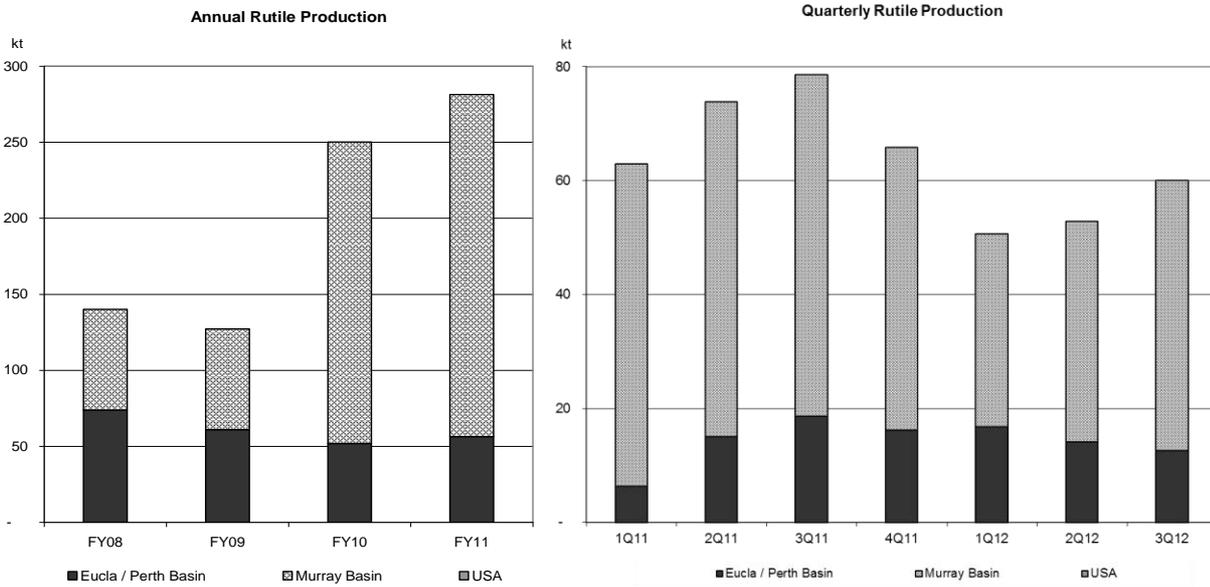
## APPENDIX 2 – QUARTERLY PRODUCTION SUMMARIES

### Zircon



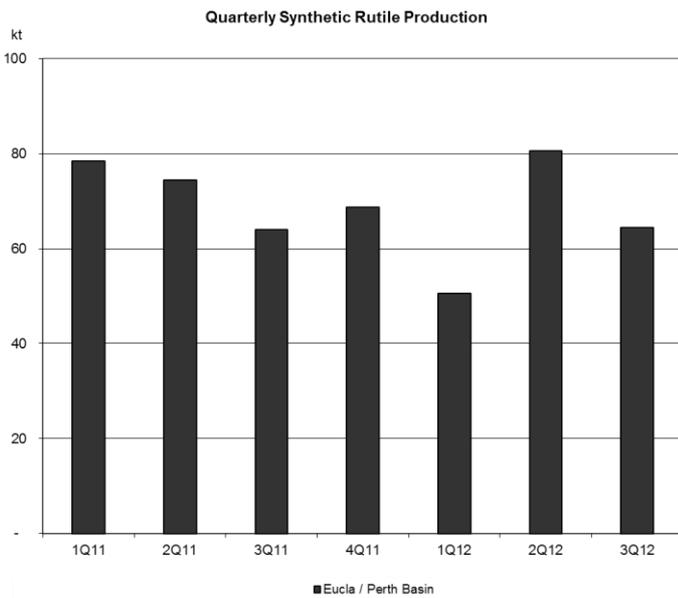
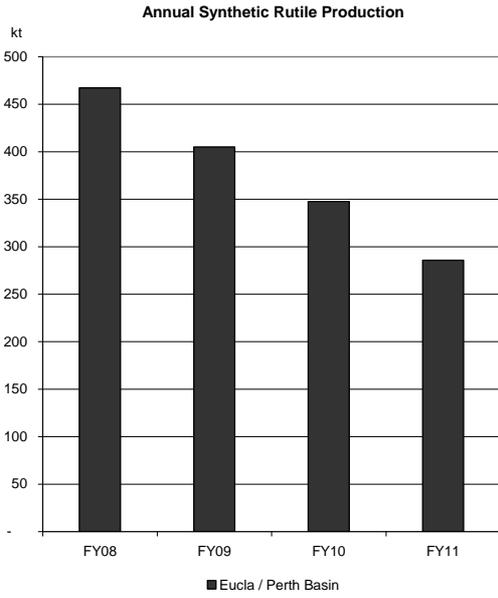
Zircon volumes exclude CRL attributed volumes during 2007-2009, during which Iluka had a 51.04% interest in CRL.

### Rutile



Rutile volumes exclude CRL attributed volumes during 2007-2009, during which Iluka had a 51.04% interest in CRL.

## Synthetic Rutile



## Ilmenite

