

**QUARTERLY REVIEW TO 30 SEPTEMBER 2023**

**19 October 2023**

**KEY FEATURES**

- Q3 2023 zircon/rutile/synthetic rutile (Z/R/SR) production of 167kt
  - 55kt of zircon sand produced from Narngulu mineral separation plant and 20kt of zircon-in-concentrate (ZIC) recognised as production upon sale
  - 81kt of synthetic rutile with both kilns operational
- Subdued economic activity globally, particularly ongoing weakness in the real estate and construction industries in China, is continuing to impact global zircon consumption and Iluka product sales
- Q3 2023 Z/R/SR sales of 82kt
  - 47kt of zircon sales, down from 92kt in Q2 2023 (including ZIC)
  - 34kt of rutile and synthetic rutile sales. Contracted synthetic rutile sales volumes in Q4 of ~65kt
- Pricing outcomes achieved in Q3 consistent with Q2; as anticipated, price stability across product groups
  - weighted average zircon premium and standard price (excluding ZIC) stable at US\$2,062 per tonne
  - rutile price of US\$1,908 per tonne and synthetic rutile price US\$1,262 per tonne
- Previously announced production pause at SR1 kiln and concurrent planned major maintenance outage (MMO) at SR2 kiln from Q4 2023, with both kilns having been safely taken offline in early October
- Progress at the Eneabba rare earths refinery project includes bulk earthworks and operational camp construction. The focus remains on completion of FEED
- Net cash for the Group as at 30 September was \$372 million, up from \$343 million at 30 June

PHYSICAL AND FINANCIAL SUMMARY <sup>1</sup>	Q3 22	Q2 23	Q3 23	Q3 22 YTD	Q3 23 YTD	Q3 23 YTD vs Q3 22 YTD %
<b>PRODUCTION</b>						
<b>kt</b>						
Zircon	53.2	70.1	55.4	152.5	184.7	21.1
ZIC <sup>2</sup>	16.5	37.2	20.0	69.9	57.2	(18.2)
Rutile <sup>3</sup>	15.0	22.8	10.4	38.6	41.1	6.5
Synthetic rutile	59.2	86.6	81.3	173.6	251.5	44.9
<b>Z/R/SR production</b>	<b>143.9</b>	<b>216.7</b>	<b>167.1</b>	<b>434.6</b>	<b>534.5</b>	<b>23.0</b>
Ilmenite	146.1	150.0	123.1	405.0	425.4	5.0
<b>SALES</b>						
<b>kt</b>						
Zircon	45.8	54.5	27.3	172.0	123.8	(28.0)
ZIC <sup>2</sup>	17.3	37.7	20.0	77.5	57.8	(25.4)
Rutile	19.9	15.2	7.4	45.4	34.2	(24.7)
Synthetic rutile	47.9	69.0	26.8	183.6	143.8	(21.7)
<b>Z/R/SR sales</b>	<b>130.8</b>	<b>176.4</b>	<b>81.5</b>	<b>478.5</b>	<b>359.6</b>	<b>(24.8)</b>
Ilmenite	44.0	40.2	40.8	142.1	122.9	(13.5)
<b>REVENUE &amp; CASH COSTS</b>						
<b>A\$ million</b>						
Z/R/SR revenue	303.8	423.9	198.6	1,029.0	860.5	(16.4)
Ilmenite and other revenue	25.2	31.7	22.9	88.6	73.4	(17.2)
<b>Mineral sands revenue</b>	<b>329.0</b>	<b>455.6</b>	<b>221.5</b>	<b>1,117.6</b>	<b>933.9</b>	<b>(16.4)</b>
Production cash costs of Z/R/SR				366.8	462.7	26.1
By-product costs				5.1	5.6	9.8
<b>Total cash cost of production</b>				<b>371.9</b>	<b>468.3</b>	<b>25.9</b>
<b>\$ per tonne</b>						
Unit cash production costs Z/R/SR produced				<b>844</b>	<b>866</b>	<b>2.6</b>
Unit cost of goods sold Z/R/SR sold				<b>871</b>	<b>1,041</b>	<b>19.5</b>
Unit revenue Z/R/SR sold	2,323	2,403	2,437	2,150	2,393	11.3
AUD:USD cents	68.3	66.7	65.5	71.1	66.6	(6.3)

<sup>1</sup> Prior periods (Q3 2022 and Q3 2022 YTD) have been restated to exclude Sierra Rutile Ltd which was demerged from the Iluka Group in August 2022.

<sup>2</sup> Production of ZIC is recognised on sale. ZIC sales include small amounts of lower grade zircon products processed by third parties.

<sup>3</sup> Rutile sales and production volumes include the lower value titanium dioxide product, HYTI, that typically has a titanium dioxide content of 70-90%. This product sells at a lower price than rutile, which typically has a titanium dioxide content of 95%.

## PRODUCTION COMMENTARY

### Australian Operations

In Q3 2023 mining at Jacinth-Ambrosia in South Australia produced 101kt of heavy mineral concentrate (HMC), up from 59kt in Q2 2023. This reflects mining of relatively higher grade ore in line with the planned mining sequence.

In Western Australia, the Cataby mine produced 114kt of HMC in the quarter, down from 144kt the previous quarter. Lower grade ore was mined in the quarter, as planned.

The Narngulu mineral separation plant in Western Australia processed primarily Jacinth-Ambrosia material in the quarter, producing 75kt of zircon (including ZIC) and 10kt of rutile. Lower zircon production was a function of lower ZIC sales (production recognised on sale) and lower volumes of Cataby HMC processed in the quarter.

Both SR1 and SR2 kilns were operational in Q3, producing 81kt of synthetic rutile, down slightly from 87kt in Q2 2023 reflecting a two week planned maintenance outage of SR1 in July. As previously announced,<sup>4</sup> production at SR1 kiln was paused from Q4 2023, coinciding with the planned MMO at SR2 kiln, which will be completed over four months. As a result of delivering into contracted sales in Q4, the concurrent shutdown will see inventories of synthetic rutile reduced and allow Iluka to utilise the existing workforce to complete the SR2 maintenance. Both kilns were safely taken offline in early October and will be restarted in late January 2024.

ILUKA MINERAL SANDS PRODUCTION	Q3 22	Q2 23	Q3 23	Q3 22 YTD	Q3 23 YTD	Q3 23 YTD vs Q3 22 YTD %
	kt	kt	kt	kt	kt	%
<b>ZIRCON SAND<sup>5</sup></b>						
Jacinth-Ambrosia / Mid west WA	37.2	48.2	49.3	117.3	156.8	33.7
Cataby/South west WA	16.0	21.9	6.1	35.2	27.9	(20.7)
<b>Total zircon</b>	<b>53.2</b>	<b>70.1</b>	<b>55.4</b>	<b>152.5</b>	<b>184.7</b>	<b>21.1</b>
<b>ZIC</b>						
Jacinth-Ambrosia / Mid west WA	16.5	31.9	20.0	67.3	51.9	(22.9)
Cataby/South west WA	-	5.3	-	2.6	5.3	103.8
<b>Total ZIC</b>	<b>16.5</b>	<b>37.2</b>	<b>20.0</b>	<b>69.9</b>	<b>57.2</b>	<b>(18.2)</b>
<b>RUTILE</b>						
Jacinth-Ambrosia / Mid west WA	3.3	5.6	6.2	14.2	19.7	38.7
Cataby/South west WA	11.7	17.2	4.2	24.4	21.4	(12.3)
<b>Total rutile</b>	<b>15.0</b>	<b>22.8</b>	<b>10.4</b>	<b>38.6</b>	<b>41.1</b>	<b>6.5</b>
Synthetic rutile (WA)	<b>59.2</b>	<b>86.6</b>	<b>81.3</b>	<b>173.6</b>	<b>251.5</b>	<b>44.9</b>
<b>TOTAL Z/R/SR</b>	<b>143.9</b>	<b>216.7</b>	<b>167.1</b>	<b>434.6</b>	<b>534.5</b>	<b>23.0</b>
<b>ILMENITE</b>						
Jacinth-Ambrosia / Mid west WA	34.0	20.5	28.0	109.3	82.8	(24.2)
Cataby/South west WA	112.1	129.5	95.1	295.7	342.6	15.9
<b>Total ilmenite</b>	<b>146.1</b>	<b>150.0</b>	<b>123.1</b>	<b>405.0</b>	<b>425.4</b>	<b>5.0</b>

<sup>4</sup> Refer Iluka ASX release, *Iluka Resources Half Year Results 2023*, 23 August 2023

<sup>5</sup> Iluka's zircon production figures include volumes of zircon attributable to external processing arrangements.

### Zircon

Total zircon sales in the third quarter were 47kt, including ZIC.

Ongoing global uncertainty, subdued economic activity and weakness in the China property market continue to provide headwinds to the zircon market.

Recent monetary policy changes in China have, to date, provided limited stimulus to the real estate sector impacting the domestic ceramic market. In general, Chinese industrial activity has also remained subdued, contributing to low buying activity in other zircon segments.

European demand was slightly weaker during the quarter as some industries extended their summer break for maintenance. Ceramic tile production was restarted in September but is expected to operate at reduced rates.

The Indian real estate sector has grown strongly year to date as it further recovers from setbacks experienced during the pandemic. This market continues to be a key growth prospect for zircon sales with a strong outlook for the ceramics market, albeit off a low base.

Industrial activity in other Asian economies continues to be subdued, reflecting weak export markets.

In the United States, demand remains stable, with construction spending and manufacturing activity growing.

Inventory levels remain low through the value chain, with consumers of zircon and zircon based products (e.g. opacifier) unwilling to hold or build stocks.

Q3 2023 weighted average zircon premium and standard price (excluding ZIC) was US\$2,062 per tonne. While market conditions are challenging, Iluka continues to maintain market discipline, including price stability.

### Titanium Dioxide Feedstocks

Q3 2023 sales of synthetic rutile were 27kt, with year to date sales of 144kt in line with the 'take or pay' contracts in place for Iluka's SR2 production and some spot sales.

In the titanium dioxide pigment market, production at idled chloride plants in Europe has restarted, however rates remain below seasonal norms as chloride pigment producers seek to match production with demand.

Downstream pigment prices (in the US and Europe) continue to remain stable despite the lower demand environment as producers match production with demand. In China, three consecutive pigment price increases have been announced since August as inflation pushes producers to seek higher prices to offset rising input costs.

Infrastructure spending by emerging economies, including India, is supporting continued demand growth for rutile into the welding market. The titanium sponge market is also experiencing strong demand, reflecting increased activity in the aerospace industry and restricted supply from Russia.

As previously announced, Iluka will pause production at its SR1 kiln from Q4 2023, coinciding with the planned MMO at SR2. This pause will assist Iluka in matching synthetic rutile production with demand. Synthetic rutile inventory built during the year to date will enable Iluka to service sales contracts in Q4 2023, with the company having ~200ktpa on average of synthetic rutile production under 'take or pay' arrangements to 2026. Both kilns will restart in late January 2024.

The Q3 2023 rutile price was US\$1,908 per tonne (noting that Iluka's sales of rutile are almost exclusively to the welding market) and synthetic rutile US\$1,262 per tonne.

## PROJECT UPDATES

Updates on selected projects for the quarter are detailed below.

### Execute



#### Eneabba, Western Australia

Iluka is building Australia's first fully integrated refinery for the production of separated rare earth oxides at Eneabba, Western Australia.<sup>6</sup>

This is taking place via a strategic partnership between Iluka and the Australian Government, including a \$1.25 billion non-recourse loan to Iluka under the \$2 billion Critical Minerals Facility administered by Export Finance Australia.

Bulk earth works, ground improvement activities and the construction of the operational camp are progressing well, with completion expected by the end of 2023. Construction of the operational camp is underway with phased completion expected in Q1 and early Q2 2024.

Fluor Australia, Eneabba's EPCM contractor, has continued to progress key design elements for the refinery, with Front End Engineering Design (FEED) to be completed by the end of the year.



#### Balranald, New South Wales

Balranald is a rutile-rich critical minerals development located in the Riverina district of south western New South Wales. Owing to its relative depth, Iluka is developing Balranald via a novel, internally developed, remotely operated underground mining technology.

Iluka's Board approved the final investment decision for Balranald in February 2023. Site works commenced during the quarter in accordance with the execution plan. Engineering and procurement activities continue to progress, and several key packages were awarded. Recruitment for operations has commenced.

### Definitive Feasibility Study (DFS)



#### Wimmera, Victoria

The Wimmera development involves the mining and beneficiation of a fine grained heavy mineral sands ore body in Western Australia for the potential long term supply of rare earths and zircon.

A preliminary feasibility study (PFS) was completed in early 2023 and Iluka's Board approved \$30 million funding for a DFS in February 2023. This was accompanied by the declaration of an Ore Reserve for the WIM 100 deposit, which is the focus of the Wimmera development.

Wimmera's DFS is scheduled for completion at the end of 2025. The Environment Effects Statement (EES) approvals process is progressing, alongside process engineering and mine design.

In parallel, Iluka is continuing the process design of the zircon purification process, with the goal of demonstrating commercial viability via a demonstration plant. Zircon revenue has not yet been accounted for in Wimmera's Ore Reserve.



#### South West Deposits, Western Australia

The South West Deposits project in Western Australia is initially focused on the Tutunup mineral sands deposit. Tutunup has significant ilmenite assemblage, as well as some zircon and rutile. The ilmenite at Tutunup is suitable as a feedstock for Iluka's synthetic rutile production and may unlock additional value across Iluka's portfolio if blended with other ilmenites with quality constraints. The development would be an open cut wet mine with dredge operations. Iluka's portfolio includes other deposits in the South West region that represent potential extensions to the Tutunup deposit.

Iluka's Board approved \$12 million funding for a DFS in May 2023. The DFS has commenced and will be finalised in 2025.

For more detail on projects please refer to Iluka's website [iluka.com/operations-resource-development/resource-development](https://iluka.com/operations-resource-development/resource-development)

<sup>6</sup> For further information refer Iluka ASX release, *Eneabba Rare Earths Refinery – Final Investment Decision*, 3 April 2022.

## EXPLORATION

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Expenditure on exploration and evaluation in Q3 2023 was \$3.5 million compared with \$2.5 million in Q3 2022. Drilling completed during the quarter utilised a combination of air core and sonic techniques.

In Australia, a total of 24,074 metres was completed, comprising resource evaluation activities at Balranald, Euston, and Atacama. Preparations are well progressed for drill testing of regional exploration targets in Queensland.

In the US, the 1,316 metres of sonic drilling completed was focussed on regional targets in southeastern USA. A detailed remote mapping study using high resolution Lidar data, radiometric and geological data sets was focussed on identifying similar regional targets for future drill testing in the region.

Target generation has continued in Australia and the US in line with Iluka's exploration strategy with plans to further test targets that demonstrated promise. In addition, Iluka continues to identify and apply for tenure over additional prospective regions in Australia. Exploration on these properties will commence subject to necessary land access approvals being negotiated and received. The company continues to review rare earths exploration opportunities, including those presented by third parties.

This document was approved and authorised for release to the market by Iluka's Managing Director.

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## APPENDIX 1 – MINING AND PRODUCTION PHYSICAL DATA

Physicals Data 9 months to September 2023	Jacinth-Ambrosia / Mid west	Cataby / South west	Group Total 2023
<b>Mining</b>			
Overburden Moved kbcm	3,066	9,685	12,751
Ore Mined kt	7,591	9,438	17,029
Ore Fed/Treated kt	7,440	7,642	15,082
Ore Treated Grade HM %	3.8%	5.2%	4.5%
VHM Treated Grade %	3.5%	4.6%	4.1%
<b>Concentrating</b>			
HMC Produced kt	254.8	424.0	678.8
VHM Produced kt	234.6	331.6	566.2
VHM in HMC Assemblage %	92.1%	78.2%	83.5%
Zircon	59.8%	10.1%	28.8%
Rutile	8.6%	6.0%	7.0%
Ilmenite	23.7%	62.1%	47.7%
HMC Processsed kt	344.6	388.8	733.3
<b>Finished Product<sup>7</sup> kt</b>			
Zircon	208.8	33.2	242.0
Rutile	19.7	21.4	41.1
Ilmenite (saleable/upgradeable)	82.8	342.6	425.4
Synthetic Rutile	-	251.5	251.5

<sup>7</sup> Finished product includes material from heavy mineral concentrate (HMC) initially processed in prior periods.

Physicals Data 3 months to 30 September 2023	Jacinth-Ambrosia / Mid west	Cataby / South west	Group Total
<b>Mining</b>			
Overburden Moved kbcm	1,195	2,706	3,901
Ore Mined kt	2,569	2,864	5,433
Ore Fed/Treated kt	2,537	2,591	5,128
Ore Treated Grade HM %	4.5%	4.7%	4.6%
VHM Treated Grade %	4.1%	4.0%	4.1%
<b>Concentrating</b>			
HMC Produced kt	100.8	129.9	230.8
VHM Produced kt	93.7	96.9	190.6
VHM in HMC Assemblage %	93.0%	74.6%	82.6%
Zircon	57.4%	9.8%	30.6%
Rutile	9.0%	5.5%	7.0%
Ilmenite	26.6%	59.3%	45.0%
HMC Processed kt	115.8	87.3	203.2
<b>Finished Product<sup>8</sup> kt</b>			
Zircon	69.3	6.1	75.4
Rutile	6.2	4.2	10.4
Ilmenite (saleable/upgradeable)	28.0	95.1	123.1
Synthetic Rutile	-	81.3	81.3

#### Explanatory comments on terminology

**Overburden moved** (bank 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. For Cataby/ South West this refers to ore treated.

**Ore Fed/Treated (thousands of tonnes)** refers material processed through the mining units for Cataby/ South West and Sierra Leone.

**Ore Treated Grade HM %** refers to percentage of heavy mineral (HM).

**VHM Treated 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 the company's Australian mineral processing plant, or the Sierra Leone mineral processing plant.

**HMC produced** refers to 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.

**Finished product** is provided as an indication of the finished production (zircon, rutile, ilmenite) 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, and zircon) is subject to recovery loss at the processing stage – this may be in the order of 10 per cent.

**Ilmenite** is produced for sale or as a feedstock for synthetic rutile production.

Typically, 1 tonne of upgradeable ilmenite will produce between 0.56 to 0.60 tonnes of SR. Iluka also purchases external ilmenite for its synthetic rutile production process.

<sup>8</sup> Finished product includes material from heavy mineral concentrate (HMC) initially processed in prior periods.

## APPENDIX 2 – WEIGHTED AVERAGE RECEIVED PRICES

The following table provides weighted average received prices for Iluka’s main products. Iluka’s Annual Report, available at [www.iluka.com](http://www.iluka.com) contains further historical mineral sands price information.

	FY 22	Q1 23	Q2 23	Q3 23	Q3 23 YTD
<i>US\$/tonne FOB</i>					
Zircon premium and standard	1,943	2,053	2,088	2,062	2,070
Zircon (all products, including zircon in concentrate) <sup>1</sup>	1,850	2,053	1,897	1,787	1,904
Rutile (excluding HYTI) <sup>2,3</sup>	1,550	1,903	1,871	1,908	1,890
Synthetic rutile	Note 4	1,265	1,267	1,262	1,265

### Notes:

1. Zircon prices reflect the weighted average price for zircon premium, zircon standard and zircon-in-concentrate. The prices for each product vary considerably, as does the mix of such products sold period to period. In the year to date 2023 the split of zircon sand and concentrate by zircon sand-equivalent was approximately: 68%:32% (2022 full year: 70%:30%).
2. Rutile prices will vary quarter-on-quarter depending on the end market to which the product is supplied (e.g. pigment or welding). Post the demerger of Sierra Rutile Limited in H2 2022, rutile sales are a smaller contributor to Iluka’s revenue.
3. HYTI is a lower value titanium dioxide product that typically has a titanium dioxide content of 70 to 90%. This product sells at a lower price than rutile, which typically has a titanium dioxide content of 95%.
4. From 2018-2022, the majority of Iluka’s synthetic rutile sales were underpinned by three commercial offtake arrangements. The terms of those arrangements, including the pricing arrangements, were commercial in confidence and as such not disclosed by Iluka. Since the restart of SR1, synthetic rutile sales are made to a broader number of customers and Iluka will prospectively disclose the collective pricing outcome achieved from 1 January 2023; notwithstanding the pricing arrangements remain commercial in confidence. Quarterly pricing outcomes are impacted by many variables including but not limited to the timing of shipments sold under long term contract pricing mechanisms, bonus/penalty adjustments for product quality parameters and the proportion of spot sales. Synthetic rutile, due to its lower titanium dioxide content than rutile, is priced lower than natural rutile.

