

29 January 2020

ASX: ILU

## QUARTERLY REVIEW 31 DECEMBER 2019

### KEY FEATURES - 2019

- Full year zircon, rutile and synthetic rutile (Z/R/SR) production of 702 thousand tonnes, down 4% on 2018 (2018: 732 thousand tonnes)
  - Full year 2019 zircon production of 322 thousand tonnes (2018: 349 thousand tonnes) with Iluka adjusting production settings in response to market dynamics
  - Full year 2019 rutile production of 184 thousand tonnes (2018: 163 thousand tonnes), reflecting completion of expansion projects in Sierra Leone and commencement of production from operations at Cataby, Western Australia
  - Fourth quarter rutile production of 56 thousand tonnes, up from 48 thousand tonnes in Q3 as Sierra Rutile recorded month-on-month improvements and produced 44 thousand tonnes of rutile in Q4
- 2019 Z/R/SR sales of 681 thousand tonnes (2018: 827 thousand tonnes)
  - Full year zircon sales of 274 thousand tonnes was in line with guidance
  - Full year sales of high grade titanium products (rutile and synthetic rutile) exceeded production reflecting solid demand for Iluka's high grade products
- 2019 Z/R/SR revenue of \$1,126 million, down 4% on the prior year with lower sales volumes offset by price growth
  - 17% increase in revenue per tonne of Z/R/SR sold to A\$1,654/t
  - Weighted average received rutile prices for 2019 up 20% year-on-year to US\$1,142/t (2018: US\$952/t)
  - Zircon premium and standard 2019 average received prices up 10% to US\$1,487/t (2018: US\$1,351/t). Average zircon premium and standard price achieved in Q4 of US\$1,438/t, broadly maintaining average price level achieved in Q3 (US\$1,458/t)
- Iluka and Kronos Worldwide Inc (Kronos) have signed a take-or-pay sales offtake agreement for 75% of standard grade rutile (SGR) produced from the Sierra Rutile operation, effective through to December 2022. The agreement provides certainty and security for both Iluka and Kronos in relation to Sierra Rutile's existing operations, which is especially important as Iluka progress work on a longer-term development approach to the Sembehun project.
- Net cash as at 31 December 2019 of \$43 million (31 December 2018: net cash \$2 million), reflecting free cash flow of \$140 million in 2019 while investing \$198 million in capital expenditure.

## PRODUCTION

	Q4 2018	Q3 2019	Q4 2019	Full year 2018	Full year 2019	Full year 2019 vs 2018
	kt	kt	kt	kt	kt	%
Zircon	93.2	93.5	68.9	348.6	322.1	(7.6)
Rutile	36.7	47.5	55.8	163.2	184.1	12.8
Synthetic rutile	56.9	57.0	56.4	219.9	196.2	(10.8)
<b>Total Z/R/SR production</b>	<b>186.8</b>	<b>198.0</b>	<b>181.1</b>	<b>731.7</b>	<b>702.4</b>	<b>(4.0)</b>
Ilmenite	65.9	101.7	91.9	395.1	318.6	(19.4)
<b>Total mineral sands production</b>	<b>252.7</b>	<b>299.7</b>	<b>273.0</b>	<b>1,126.8</b>	<b>1,021.0</b>	<b>(9.4)</b>

## SALES

	H1 2019	H2 2019	Full year 2018	Full year 2019	Full year 2019 vs 2018
	kt	kt	kt	kt	%
Zircon	133.3	140.7	379.3	274.0	(27.8)
Rutile	82.9	117.2	233.2	200.1	(14.2)
Synthetic rutile	85.6	121.1	214.6	206.7	(3.7)
<b>Total Z/R/SR sales</b>	<b>301.8</b>	<b>379.0</b>	<b>827.1</b>	<b>680.8</b>	<b>(17.7)</b>
Ilmenite	121.5	49.3	224.5	170.8	(23.9)
<b>Total mineral sands sales</b>	<b>423.3</b>	<b>428.3</b>	<b>1,051.6</b>	<b>851.6</b>	<b>(19.0)</b>

## REVENUE AND CASH COST

	Q4 2018	Q3 2019	Q4 2019	Full year 2018	Full year 2019	Full year 2019 vs 2018
<i>A\$ million</i>						%
Z/R/SR revenue	298.4	241.1	377.7	1,170.5	1,125.9	(3.8)
Ilmenite and other revenue <sup>1</sup>	19.8	11.8	17.0	73.6	67.2	(8.7)
<b>Mineral sands revenue</b>	<b>318.2</b>	<b>252.9</b>	<b>394.7</b>	<b>1,244.1</b>	<b>1,193.1</b>	<b>(4.1)</b>
<i>A\$ million</i>						
Production cash costs Z/R/SR				443.6	528.7	19.2
Ilmenite concentrate & by-product costs				11.5	10.9	(5.3)
<b>Total cash cost of production</b>				<b>455.1</b>	<b>539.6</b>	<b>18.5</b>
<i>A\$ per tonne</i>						
<b>Unit cash production cost per tonne Z/R/SR produced<sup>2</sup></b>				<b>606</b>	<b>753</b>	<b>24.1</b>
<b>Unit cost of goods sold per tonne Z/R/SR sold</b>				<b>750</b>	<b>889</b>	<b>18.5</b>
<b>Revenue per tonne of Z/R/SR sold</b>	<b>1,568</b>	<b>1,634</b>	<b>1,632</b>	<b>1,415</b>	<b>1,654</b>	<b>16.9</b>
Average AUD:USD (cents)	71.8	68.6	68.3	74.8	69.5	(7.1)

All currency is Australian dollar denominated unless otherwise indicated.

1. Ilmenite and other revenue include revenues derived from other materials not included in production volumes, including activated carbon products and iron concentrate. Iluka receives a royalty payment from its Mining Area C iron ore royalty. This is not reported as part of quarterly reports but is disclosed in the financial statements.
2. Excludes ilmenite and by-products.

## **PRODUCTION AND OPERATIONS**

### **Australian Operations**

Iluka's Jacinth-Ambrosia mine in South Australia operated at full capacity over the December quarter, with mining focused at the Ambrosia deposit. The mine produced 558 thousand tonnes of heavy mineral concentrate (HMC) in 2019, which resulted from improved grades following the move to Ambrosia and increased mineral recoveries.

The Narngulu mineral separation plant (MSP) processed 519 thousand tonnes of HMC during 2019, including material from both the Cataby mine and Jacinth-Ambrosia. Operational settings at the plant were adjusted during the fourth quarter to meet market requirements across the zircon product suite, including the processing of HMC with lower zircon assemblage.

In Western Australia, the Cataby operation was commissioned in early 2019 and ramped up over the year to produce 240 thousand tonnes of HMC, with a magnetic fraction of 159 thousand tonnes and a non-magnetic fraction of 81 thousand tonnes. The ilmenite contained within the magnetic fraction was processed at Synthetic Rutile kiln 2 (SR2) at Capel to produce synthetic rutile. The non-magnetic fraction was processed at the Narngulu mineral separation plant in Geraldton to produce zircon and rutile.

SR2 produced 196 thousand tonnes of synthetic rutile, down on the previous year due to a planned major maintenance outage undertaken in the first quarter of 2019. Production was above expectations, owing to the maintenance being completed ahead of schedule; and higher runtimes resulting from plant improvements implemented during the year.

### **Sierra Leone Operations**

Iluka's operations at Sierra Rutile produced a total of 137 thousand tonnes of rutile during 2019, up 13% on the previous year (2018: 122 thousand tonnes).

Rutile production for the December quarter increased by 32% to 44 thousand tonnes, from 34 thousand tonnes during the September quarter, with the mineral separation plant operating at capacity.

Expansion projects are now completed at Lanti and Gangama and performance improved month-on-month over the December quarter from these mining areas. Work continues on improving run time and throughput.

## MINERAL SANDS PRODUCTION

	Q4 2018	Q3 2019	Q4 2019	Full year 2018	Full year 2019	Full year 2019 vs 2018
	kt	kt	kt	kt	kt	%
<b>Zircon<sup>1</sup></b>						
Jacinth-Ambrosia/Mid west WA	86.9	75.2	47.9	312.0	260.2	(16.6)
Cataby/South west WA	-	18.0	16.9	15.9	53.5	236.5
Sierra Leone	6.3	0.3	4.1	11.4	8.5	(25.4)
Idle Operations (US/Aus)	-	-	-	9.3	-	n/a
<b>Total zircon production</b>	<b>93.2</b>	<b>93.5</b>	<b>68.9</b>	<b>348.6</b>	<b>322.1</b>	<b>(7.6)</b>
<b>Rutile</b>						
Jacinth-Ambrosia/Mid west WA	8.6	8.7	5.1	38.0	31.2	(17.9)
Cataby/South west WA	-	5.4	6.7	3.7	15.6	321.6
Sierra Leone	28.1	33.4	44.0	121.5	137.2	12.9
<b>Total rutile production</b>	<b>36.7</b>	<b>47.5</b>	<b>55.8</b>	<b>163.2</b>	<b>184.1</b>	<b>12.8</b>
<b>Synthetic rutile (WA)</b>	<b>56.9</b>	<b>57.0</b>	<b>56.4</b>	<b>219.9</b>	<b>196.2</b>	<b>(10.8)</b>
<b>TOTAL Z/R/SR PRODUCTION</b>	<b>186.8</b>	<b>198.0</b>	<b>181.1</b>	<b>731.7</b>	<b>702.4</b>	<b>(4.0)</b>
<b>Ilmenite</b>						
Jacinth-Ambrosia/Mid west WA	28.9	28.3	20.5	121.7	107.0	(12.1)
Cataby/South west WA	24.6	56.8	55.0	168.1	152.4	(9.3)
Sierra Leone	12.4	16.6	16.4	54.5	59.2	8.6
Idle Operations (US/Aus)	-	-	-	50.8	-	n/a
<b>Total Ilmenite</b>	<b>65.9</b>	<b>101.7</b>	<b>91.9</b>	<b>395.1</b>	<b>318.6</b>	<b>(19.4)</b>
<b>TOTAL MINERAL SANDS PRODUCTION</b>	<b>252.7</b>	<b>299.7</b>	<b>273.0</b>	<b>1,126.8</b>	<b>1,021.0</b>	<b>(9.4)</b>

1. Iluka's zircon production figures include volumes of zircon attributable to external processing arrangements (i.e. zircon in concentrate). Note: The above table details Iluka's total production by product group, with the source of that production attributed to the regional operating mines and basins. Processing of final product occurs in mineral separation plants located in Australia at Narngulu, Western Australia and in Sierra Leone. Iluka also has a mineral separation plant at Stony Creek in Virginia, United States (closed) and Hamilton, Murray Basin (idled). Appendix 1 provides further production details.

## **MINERAL SANDS MARKET CONDITIONS**

### **Zircon Market**

Iluka's full year 2019 zircon sales were 274 thousand tonnes, with 89 thousand tonnes achieved in the December quarter. Total sales for the year were in line with guidance.

Business and consumer confidence in the zircon market continued to be affected by a subdued outlook for global economic growth.

In China, soft demand in ceramics and continued downstream stock drawdown was evident. Orders from the foundry industry were also down from the previous quarter, in particular due to slower automotive component demand. The refractory sector was muted, while the zirconium chemicals industry appeared to be more resilient. In Europe, downward pressure on tile selling prices continued to incentivise tile makers to reduce production costs, including by thriftig zircon use where possible. Softness was also apparent in North America.

However, the initiatives introduced by Iluka during the September quarter, including enhanced loyalty rewards and an adjusted product offering, have contributed to satisfactory sales in the final quarter, especially as destocking by most of the company's customers has largely run its course.

The 2019 weighted average price received for premium and standard zircon was US\$1,487 per tonne. For all zircon products, including ZIC, the price was US\$1,380 per tonne. The average zircon premium and standard price achieved in Q4 of US\$1,438 per tonne broadly maintained the average price level achieved in Q3 (US\$1,458 per tonne).

The outlook for Q1 2020 is of subdued demand in light of both current economic conditions and the seasonally low first quarter of the year.

### **Titanium Dioxide Feedstock Market**

Full year sales of high-grade titanium dioxide feedstocks of rutile and synthetic rutile were 407 thousand tonnes, down 9% from 448 thousand tonnes in 2018, with 2019 sales being production constrained with limited inventories.

Monthly sales volumes of titanium dioxide feedstocks during the December quarter were the highest for 2019, indicating customers are anticipating a strong start to the new year as shipments will arrive to customer locations in January and February.

Welding and sponge market demand remains strong, with numerous inquiries for additional supply. Iluka was fully sold in welding grade rutile for 2019 and anticipates continued strong demand in 2020.

### **Offtake Agreement Signed with Kronos for Sierra Rutile Production**

Iluka and Kronos Worldwide Inc (Kronos) have signed a sales take-or-pay offtake agreement for 75% of standard grade rutile (SGR) produced from the Sierra Rutile operation, effective through to December 2022.

The agreement relates to SGR production from Sierra Rutile's existing mining operations at Lanti and Gangama. In addition to SGR, Sierra Rutile produces an industrial grade rutile (IGR) from the operation.

Key contract terms include:

- offtake is for 75% of SGR production each year, with a minimum of 100 thousand tonnes per annum;
- all offtake is subject to take-or-pay provisions;
- a pricing mechanism that follows fluctuations in a basket of high grade ore transactions of both buyer and seller, which is subject to a floor price adjusted for inflation over the life of the contract; and
- usual commercial terms including force majeure and suspension of operations provisions.

Kronos has been a major purchaser of rutile from Iluka for a number of years and represented the majority of Iluka's rutile sales volumes in 2017, 2018 and 2019. As noted below, Iluka's weighted average received price for all rutile sold in 2019 (excluding its HYTI products) was US\$1,142 per tonne.

SGR is a very high grade product, suitable for both pigment and titanium sponge markets. Sierra Rutile's IGR product has applications in welding and other markets.

### Iluka 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.

Weighted Average Price US\$/tonne FOB	Full year 2018	H1 2019	Q3 2019	Q4 2019	H2 2019	Full year 2019
Zircon Premium and Standard	1,351	1,522	1,458	1,438	1,446	1,487
Zircon (all products including zircon in concentrate) <sup>1</sup>	1,321	1,465	1,364	1,261	1,299	1,380
Rutile (excluding HYTI) <sup>2</sup>	952	1,108	1,152	1,176	1,167	1,142
Synthetic rutile <sup>3</sup>	-	-	-	-	-	-

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 2019, full year split of premium, standard and concentrate by zircon sand-equivalent was approximately: 42%:28%:30% (2018: 50%, 30%, 21%).
- 2: Included in rutile sales volumes reported elsewhere in this Quarterly Review is a lower titanium dioxide product, HYTI that typically has a titanium dioxide content of 70 to 91%. This product sells at a lower price than rutile, which typically has a titanium dioxide content of 95%. 2019 full year sales of the lower grade HYTI material were 23% of rutile sales (2018: 22%).
- 3: Iluka's synthetic rutile sales are, in large part, underpinned by commercial offtake arrangements. The terms of these arrangements, including the pricing arrangements are commercial in confidence and as such not disclosed by Iluka. Synthetic rutile, due to its lower titanium dioxide content than rutile, is priced lower than natural rutile.

## **PROJECT UPDATES**

Iluka continues to progress work on its pipeline of projects. Updates on projects with material progress over the December quarter are detailed below.

### **Sembehun, Sierra Leone**

The Sembehun group of deposits are situated 20 to 30 kilometres north-west of the existing Sierra Rutile operations. Sembehun is one of the largest and highest quality known rutile deposits in the world. Iluka is committed to determining a development approach in a disciplined and rigorous manner which ensures optimum value can be created from Sembehun.

Study work continues across a number of areas including identifying and evaluating optimum infrastructure, logistics and mining methods. Recent work to assess the potential of alternate mining methods has yielded encouraging results and work is progressing on field trials planned for the first half of 2020.

### **Eneabba mineral sands recovery, Western Australia**

The Eneabba mineral sands recovery project (Phase 1) involves the extraction, processing and sale of an historical monazite-rich tailings stockpile that is currently stored in a mining void at Eneabba, Western Australia.

Site construction and off-site fabrication activities both progressed in accordance with schedule and in-line with budget estimates. In December the Radiation Management Plan was approved by the Radiological Council of Western Australia. The company is confident of securing remaining approvals in due course and the project remains on track for commissioning to commence in H1 2020, with first sales in Q3 2020.

The focus of Phase 1 is to monetise monazite concentrates contained in the Mineral Separation Plant By-Product Mineral Resource. This has required the development of a viable processing methodology and the selection of a channel to market, which satisfies product stewardship protocols. Studies into Phase 2 of the project, which involves further processing, progressed over the quarter.

### **Balranald, Murray Basin, New South Wales**

Balranald and Nepean are two rutile-rich deposits in the northern Murray Basin, New South Wales. The purpose of the third trial (T3) is to determine whether an underground mining and backfilling technology developed by Iluka is economically viable in a continuous mining and processing environment.

Preparations for T3 have advanced consistent with the schedule. Earthworks contractors have mobilised and commenced civil works. Major service and supply contracts have been let and orders placed for all long lead items.

## EXPLORATION

Expenditure on exploration and evaluation charged to the profit and loss account for the December quarter 2019 was \$2.7 million with full year expenditure of \$11.0 million (2018: \$11.7 million).

### Canada

Iluka continued to fund Societe d'Exploration Miniere Vior Inc. ("Vior") to undertake greenfield exploration for high grade rutile/ilmenite deposits in the Foothills and Grand Duc project areas in Quebec.

1,256 metres of drilling was completed at the Foothills prospect. The targeted anomalies were tested and explained effectively and were not due to rutile bearing ilmenite mineralisation. The focus of activity has now shifted to the Grand Duc region where a ground gravity survey was completed to refine targeting for upcoming drilling proposed for Q1 2020.



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Figure 1 Grand Duc and Foothills Projects, Quebec, Canada



## Eucla Basin, South Australia

Iluka continues to assess the Eucla Basin to identify further heavy mineral potential. As part of this assessment, a brownfields target located approximately 10km from Jacinth Ambrosia was identified and drilled during Q4 2019. Significant mineralisation was not identified.

Samples continued to be processed from the more distant Gobi Prospect (see Figure 2 below) through Iluka's internal laboratory. Results are expected to be returned in Q1 2020, which will add to the geological understanding of the prospect and influence the economic assessment of the deposit.

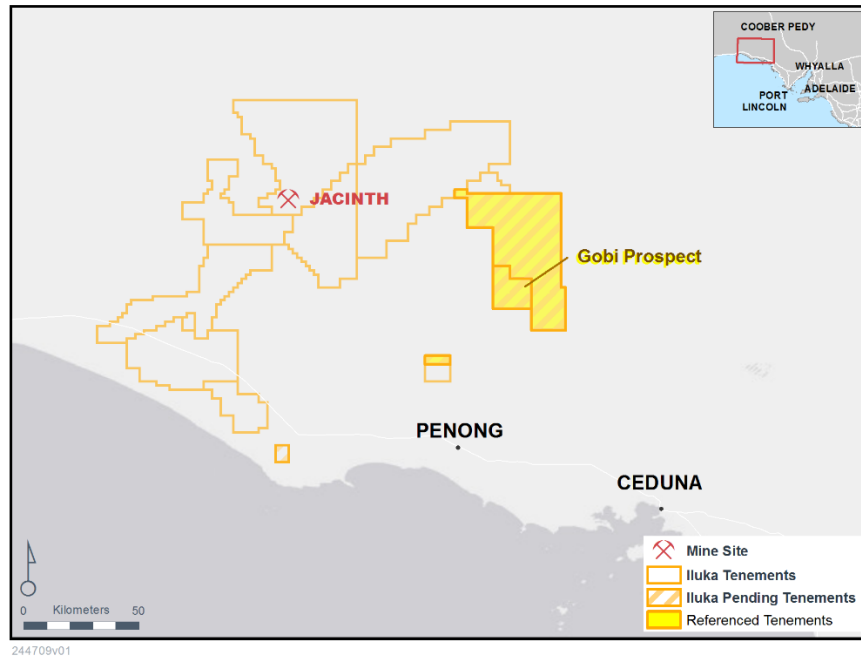


Figure 2 Gobi Prospect, Eucla Basin, South Australia

## **CORPORATE UPDATES**

### **Review of Corporate and Capital Structure of Mineral Sands Operations and Mining Area C Royalty**

As previously announced on 31 October 2019, Iluka has commenced a formal review (the Review) of the corporate and capital structure of Iluka's two principal businesses – mineral sands operations and the Mining Area C royalty (MAC).

Work continues on the Review, and as previously stated the company expects to provide an update on the Review at the announcement of the Full Year Results.

### **2019 Full Year Results**

Iluka is scheduled to release its 2019 Full Year Results on 20 February 2020. An investment market conference call will take place on the day.

Dial-in details for the conference call will be on the Events page of Iluka's website in due course:

[www.iluka.com/investors-media/events](http://www.iluka.com/investors-media/events)

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

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**APPENDIX 1 - OPERATING MINES – PHYSICAL DATA**  
**12 Months to 31 December 2019**

	Jacinth- Ambrosia / Mid west	Cataby / South west	Australia Total	Sierra Leone	Total Producing Ops	Idle Ops	Group Total 2019	Group Total 2018
<b>Mining</b>								
Overburden moved kbcm	1,465	11,138	12,602	-	12,602	-	12,602	4,467
Ore mined kt	9,845	11,001	20,846	8,278	29,124	-	29,124	20,192
Ore grade HM %	6.3%	0.0%	5.1%	3.3%	4.6%	0.0%	4.6%	5.4%
VHM grade %	5.7%	0.0%	4.3%	2.6%	3.8%	0.0%	3.8%	4.6%
<b>Concentrating</b>								
HMC produced kt	558	240	799	288	1,087	-	1,087	934
VHM produced kt	500	209	709	202	911	-	911	786
VHM in HMC assemblage %	89.6%	86.9%	88.8%	70.0%	83.8%	0.0%	83.8%	84.2%
Zircon	53.6%	10.7%	40.7%	4.0%	30.9%	0.0%	30.9%	46.7%
Rutile	7.9%	9.5%	8.4%	47.1%	18.7%	0.0%	18.7%	16.7%
Ilmenite	28.1%	66.8%	39.7%	18.9%	34.2%	0.0%	34.2%	20.8%
HMC processed kt	455	217	671	290	961	-	961	1,037
Finished product <sup>1</sup> kt								
Zircon	260.2	53.5	313.7	8.5	322.1	-	322.1	348.7
Rutile	31.2	15.6	46.9	137.2	184.1	-	184.1	163.2
Ilmenite (saleable/upgradeable)	107.0	152.4	259.3	59.2	318.6	-	318.6	395.2
Synthetic rutile produced kt	-	196.2	196.2	-	196.2	-	196.2	219.9

**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.

**Ore Grade HM %** refers to percentage of heavy mineral (HM) found in a deposit.

**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 a 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 – 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, and zircon) is subject to recovery loss at the processing stage – this may be in the order of 10 per cent.

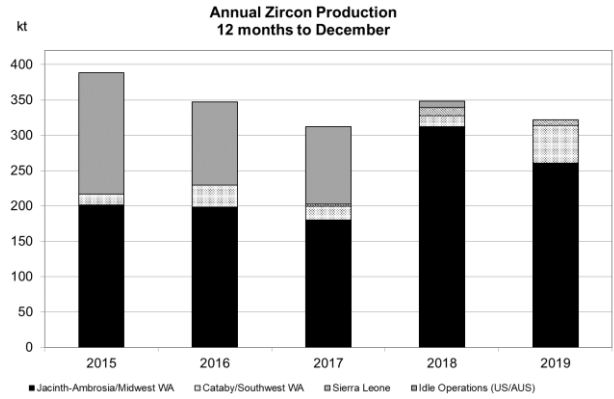
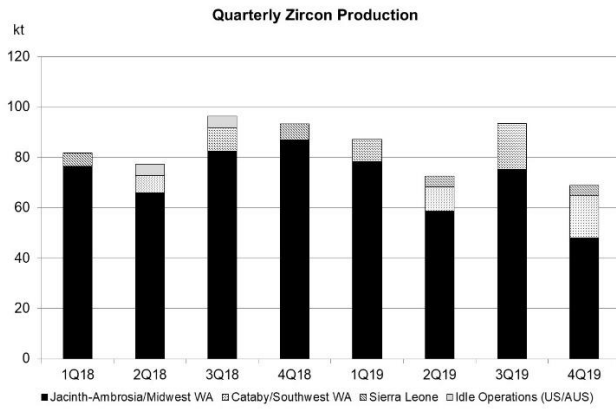
**Ilmenite** is produced for sale or as a feedstock for synthetic rutile production.

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.

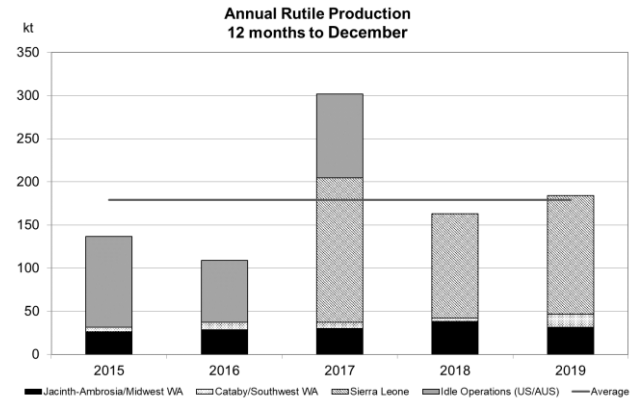
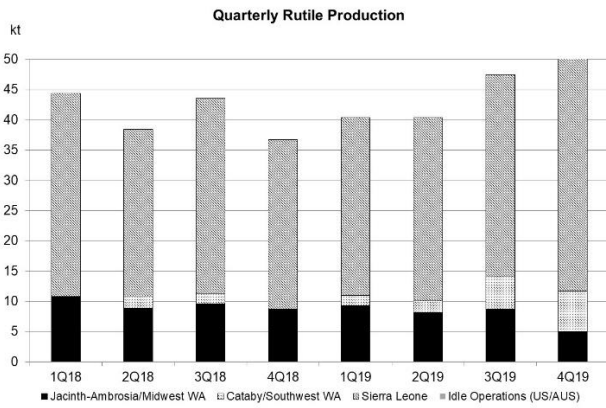
<sup>1</sup> Finished product includes material from heavy mineral concentrate (HMC) initially processed in prior periods.

## APPENDIX 2 – PRODUCTION SUMMARIES

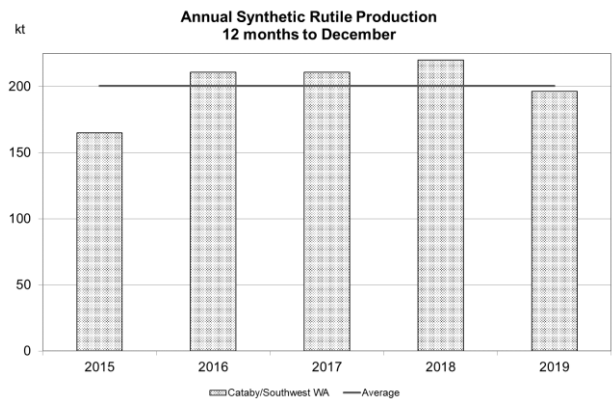
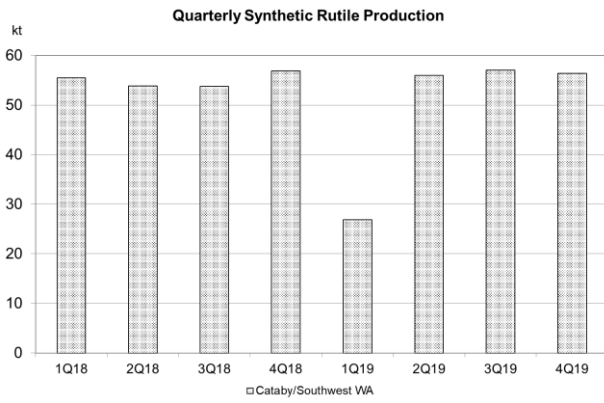
### Zircon



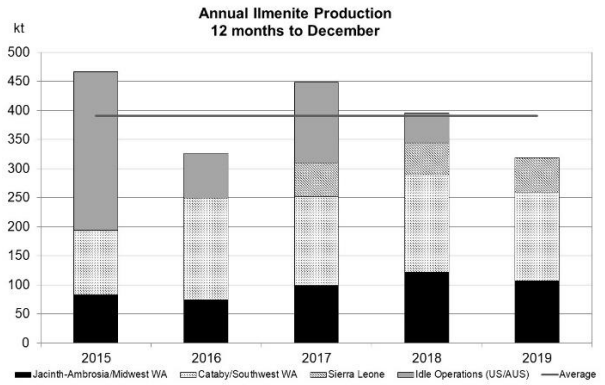
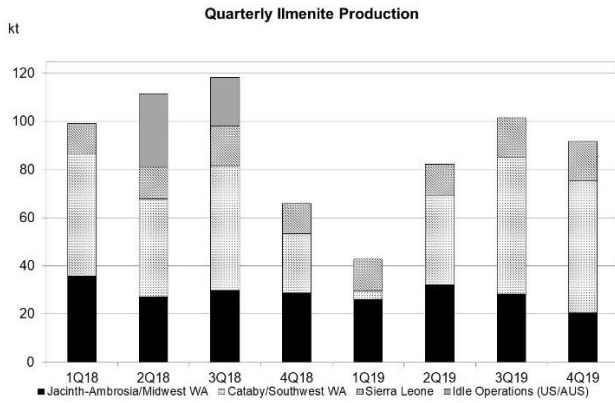
### Rutile



## Synthetic Rutile



## Ilmenite



**APPENDIX 3 – ANNUAL SALES SUMMARIES**

